

Specifications

Type of detector			Standard drive unit type		Retractable drive unit type	Transverse tracing drive unit type	
Model No.			SJ-210 (0.75mN type)	SJ-210 (4mN type)	SJ-210 (4mN type)	SJ-210 (4mN type)	
Order No.			inch/mm	178-561-01A	178-561-02A	178-563-02A	178-565-02A
Measuring range	X axis		.69" (17.5mm)				.22" (5.6mm)
	Z axis (Detector)	Range Range / Resolution	14200 μin (-7900μin~+6300μin) / 360μm (-200μm ~ +160μm)				
Measuring speed			14170μin / .8μin (360μm / 0.02μm), 4000μin / .2μin (100μm / 0.006μm), 1000μin / .08μin (25μm / 0.002μm)				
Measuring force / Stylus tip			Measuring: 0.01, 0.02, 0.03 in/s (0.25mm/s, 0.5mm/s, 0.75mm/s) Returning: 1mm/s				
Skid force			0.75mN type: 0.75mN / 2μmR 60°, 4mN type: 4mN / 5μmR 90°				
Applicable standards			Less than 400mN				
Assessed profiles			JIS '82 / JIS '94 / JIS '01 / ISO '97 / ANSI / VDA				
Evaluation parameters			Primary profile / Roughness profile / DF profile / Roughness profile-Motif				
Analysis graphs			Ra, Rc, Ry, Rz, Rq, Rt, Rmax, Rp, Rv, R3z, Rsk, Rku, R _{Pc} , R _{sm} , R _{max} , Rz1max, S, HSC, RzJIS, R _{ppi} , RΔa, RΔq, Rlr, Rmr, Rmr(c), R Δ c, Rk, Rpk, Rvk, Mr1, Mr2, A1, A2, Vo, Rpm, tp, Htp, R, Rx, AR, Possible Customize				
Filters			Bearing area curve / Amplitude distribution curve				
Cut off length			Gaussian, 2CR75, PC75				
Sampling length			0.003, 0.01, 0.03, 0.1" (0.08, 0.25, 0.8, 2.5mm)				
Number of Sampling lengths (xn)			100, 300μin (2.5, 8μm) or none				
LCD dimensions			0.003, 0.01, 0.03, .1" (0.08, 0.25, 0.8, 2.5mm)				
Display languages			×1,×2,×3,×4,×5,×6,×7,×8,×9,×10, Arbitrary 0.01~.63" (.0001"interval) [(0.3~16.0mm: 0.01mm interval)]				
Calculation result display			×1, ×2, ×3, ×4, ×5, ×6, ×7, ×8, ×9, ×10, Arbitrary .0118 ~ .22"(.0001" Interval) [(0.3 ~ 5.6mm: 0.01mm Interval)]				
Printing function *1 (Dedicated printer is required separately.)			1.45 x 1.93" (36.7x48.9 mm)				
External I/O			Japanese, English, German, French, Italian, Spanish, Portuguese, Korean, Traditional Chinese, Simplified Chinese, Czech, Polish, Hungarian, Turkish, Swedish, Dutch				
Functions			Vertical display: 1 parameter / 3 parameter / trace to measurements Horizontal display: 1 parameter / 4 parameter / trace to measurements (Horizontal display is invertable)				
Customization			Measurement conditions / Calculation results / Calculation results for each sampling length / Assessed profile / Bearing area curve / Amplitude distribution curve / Environment setting information				
GO/NG judgment *2			USB I/F, Digimatic Output, Printer Output, RS-232C I/F, Foot SW I/F				
Storage of measurement condition			Desired parameters can be selected for calculation and display				
Storage			By max value / 16% / Standard deviation				
Calibration			Save the conditions at power OFF				
Power-saving function			Internal memory: Measurement condition (10sets), Measured profile (1set) Memory card (Option): 500 measurement conditions, 10000 measured profiles, 500 display images Text file (Measurement conditions / Measured profile / Assessed profile / Bearing area curve / Amplitude distribution curve)				
Power supply			Saves last inputted nominal value of specimen / Average calibration with multiple measurement (Max.5 times) is available				
Size (WxDxH)			Auto-sleep off function (10-600sec) *3				
Mass			Two-way power supply: battery (rechargeable Ni-MH battery) and AC adapter *Charging time: about 4 hours (may vary due to ambient temperature) *Endurance: about 1000 measurements (differs slightly due to use conditions / environment)				
Standard accessories			2.05 x 2.6" x 6.3" (52.1x65.8x160mm)				
			4.5 x .9 x 1.02" (115x23x26mm)				
			About 1.1lbs (500g) (Display unit + Drive unit + Standard detector)				
			12BAA303 Connecting cable *4 178-602 Roughness specimen (Ra 3.00μm) 12BAK699 Carrying case 12BAK700 Calibration stage 12BAK820 Protective sheets for display AC Adapter Operation manual Quick reference manual Warranty				
			12BAA303 Connecting cable *4 178-606 Roughness specimen (Ra 1.00μm) 12AAE643 Point-contact adapter 12AAE644 V-type adapter 12BAK699 Carrying case 12BAK700 Calibration stage 12BAK820 Protective sheets for display AC Adapter, Operation manual Quick reference manual, Warranty				

*1: Order the SJ-210 printer (No.178-421A, optional accessory) separately.
See page 10 for details about the SJ-210 printer.

*2: Standard deviation only can be selected in ANSI. 16% rule cannot be selected in VDA.

*3: Auto-sleep function is invalid when AC adaptor is used.

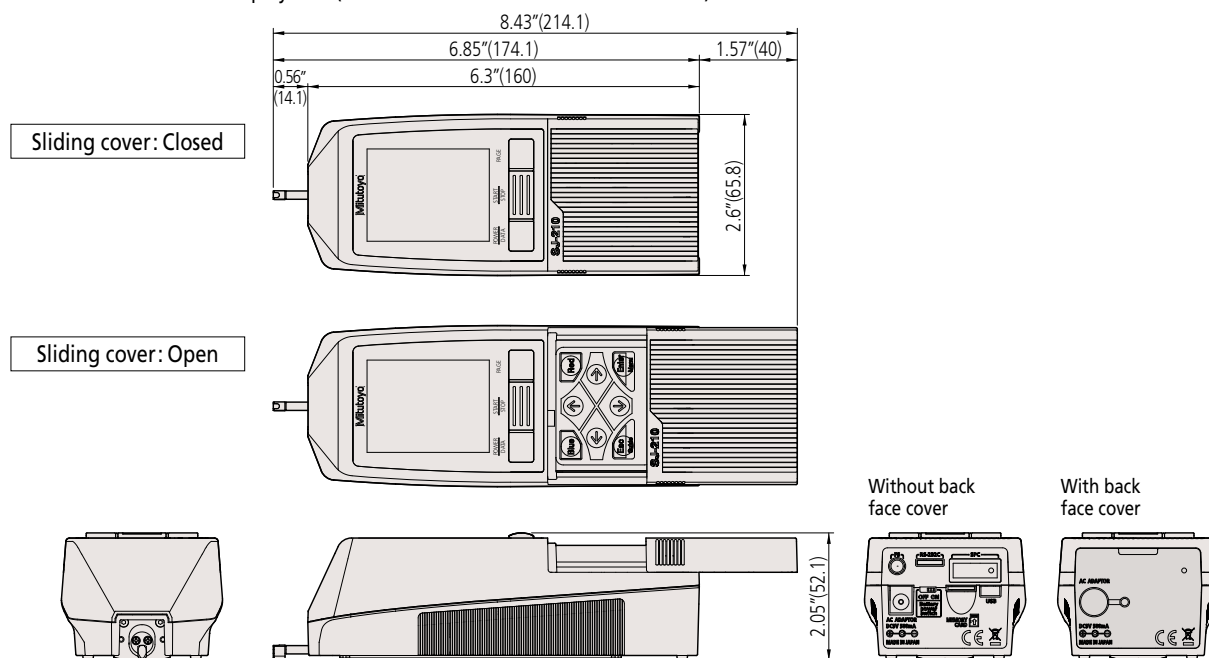
*4: For connecting the calculation display unit and drive unit.

Dimension Display Unit and Drive Unit

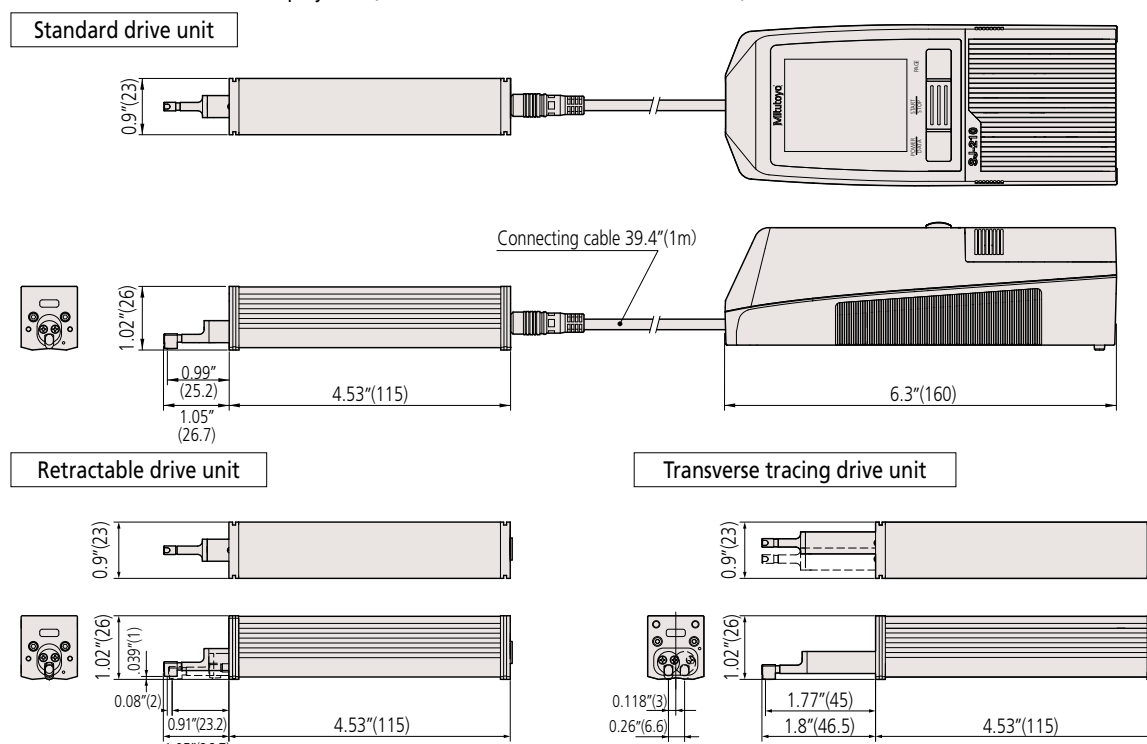
Display unit, Drive unit

Unit: inch(mm)

- Drive unit stored inside display unit (Standard detector installed in drive unit)



- Drive unit not stored inside display unit (Standard detector installed in drive unit)

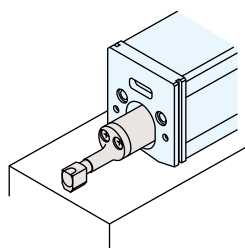


Dimensions Detectors and Drive units

Detectors

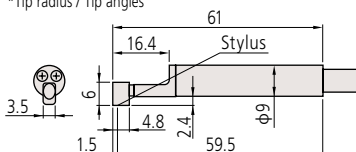
Unit: inch(mm)

Standard detectors

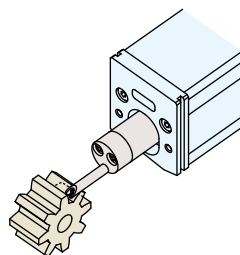


Order No.	Measuring force	Stylus profiles*	Remarks column
178-296	0.75mN	2μmR/60°	Dedicated to the standard/retractable drive unit
178-390	4 mN	5μmR/90°	
178-387	0.75mN	2μmR/60°	Dedicated to the transverse tracing drive unit
178-386	4 mN	5μmR/90°	
178-395	0.75mN	2μmR/90°	Dedicated to the standard/retractable drive unit
178-391	4 mN	10μmR/90°	

*Tip radius / Tip angles

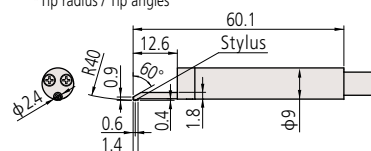


Gear-tooth surface detectors

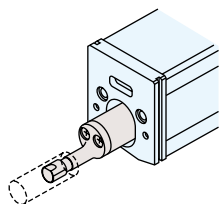


Order No.	Measuring force	Stylus profiles*
178-388	0.75mN	2μmR/60°
178-398	4 mN	5μmR/90°

*Tip radius / Tip angles

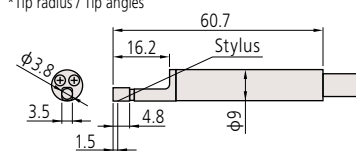


Small hole detectors

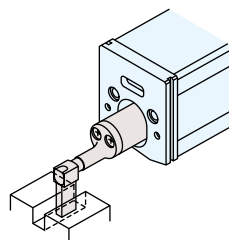


Order No.	Measuring force	Stylus profiles*	Remarks column
178-383	0.75mN	2μmR/60°	Minimum measurable hole diameter: 4.5mm
178-392	4 mN	5μmR/90°	

*Tip radius / Tip angles

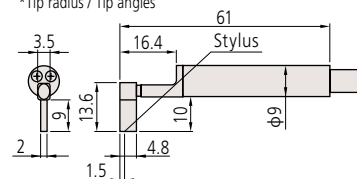


Deep groove detectors

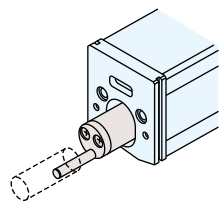


Order No.	Measuring force	Stylus profiles*	Remarks column
178-385	0.75mN	2μmR/60°	Not available for the transverse tracing drive unit
178-394	4 mN	5μmR/90°	

*Tip radius / Tip angles

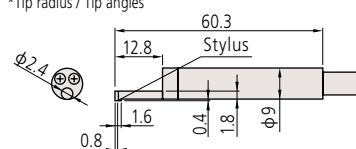


Extra small hole detectors



Order No.	Measuring force	Stylus profiles*	Remarks column
178-384	0.75mN	2μmR/60°	Minimum measurable hole diameter: 2.8mm
178-393	4 mN	5μmR/90°	

*Tip radius / Tip angles



Drive units

Order No.	
178-230-2	Standard drive unit
178-233-2	S-Drive unit
178-234-2	S-Drive unit set (includes point-contact adapter)
178-235	R-Drive unit



Optional Accessories For Drive Unit

Drive unit accessories

Nosepiece for flat surface

No.12AAA217

*Not available for the transverse tracing drive unit.



Nosepiece for cylindrical surface

No.12AAA218

*Not available for the transverse tracing drive unit.

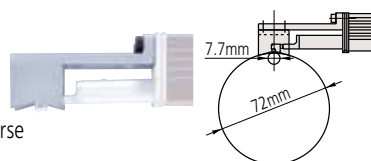


V-type adapter

No.12AAE644

*Transverse tracing drive unit type standard accessories.

*Dedicated to the transverse tracing drive unit.

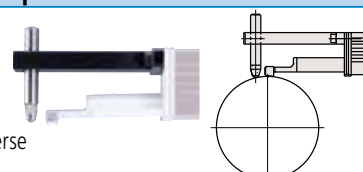


Point-contact adapter

No.12AAE643

*Transverse tracing drive unit type standard accessories.

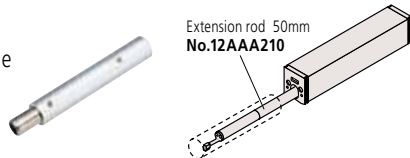
*Dedicated to the transverse tracing drive unit.



Extension rod (50mm) (Note: Extension is possible with only a single rod.)

No.12AAA210

*Not available for the transverse tracing drive unit.



Extension cable (1m) (Note: Extension is possible with only a single cable.)

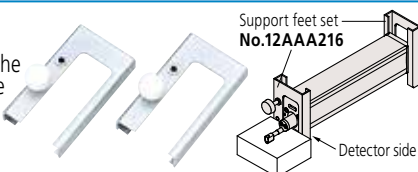
No.12BAA303

*For connecting between calculation display unit and drive unit.

Support feet set

No.12AAA216

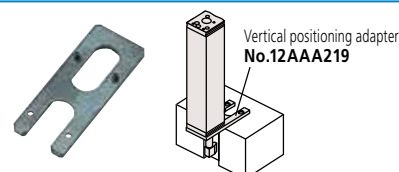
*Not attachable to the detector side of the transverse tracing drive unit.



Vertical positioning adapter

No.12AAA219

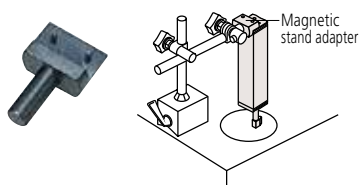
*Not available for the transverse tracing drive unit.



Magnetic stand adapter

No.12AAA221 (ø8mm)

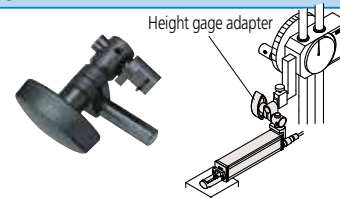
No.12AAA220 (ø9.5mm)



Height gage adapter

No.12AAA222 (9×9mm)

No.12AAA233 (1/4in×1/2 in)



Setting attachments

* Not available for the transverse tracing drive unit

Enhances measurement efficiency by facilitating the measurement setup of multiple workpieces of the same type and of the hard-to-access sections of a workpiece.

Setting attachment: V type for measuring in the cylinder axis direction

No.178-033

The V-width is adjustable to the cylinder diameter facilitating axial measurement of a wide range of cylinder diameters.

- Adjustable range:
ø 5 ~ 150mm



Setting attachment: Magnetic slider type

No.178-034

Best suited for measurement of the flat surface of a workpiece that has partial indentions and steps and that is hard to set the drive unit. Combination use with the magnet type specimen holder (Option No. 12AAA910) further improves the ease of operation.



Setting attachment: Inside diameter type

No.178-035

Greatly facilitates measurement of internal wall surfaces, for example, a cylinder block.

- Applicable diameter:
ø 75 ~ ø 95mm
- Accessible depth:
30 ~ 135 mm



Optional Accessories For External Equipment

Printer for SJ-210

Assessed profiles and calculation results and curves can be printed out by connecting the SJ-210-dedicated printer, which is palm sized 3.7 x 4.9 x 2.7" (WxDxH: 93x125x70mm) and can run on an internal battery.

- Power supply can be selected. (AC adaptor or battery pack)
- Printable items: Measurement conditions, calculation results, assessed profile, bearing area curve (BAC), amplitude distribution curve (ADC), and environment settings.



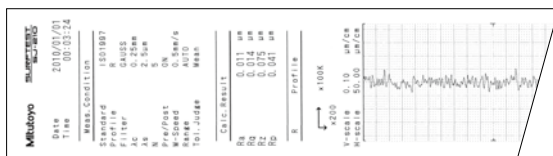
178-421A

Unit configuration:

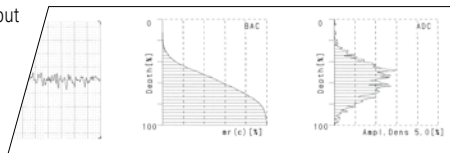
- Printer main unit
- Printer connecting cable
- Printing paper 6-pack
- Battery pack 1 piece
- Exclusive use AC adaptor (with AC power cord) 1 piece



Example of the connection with SJ-210



Example of the output by the printer



Printer for SJ-210 supplies:

Printing paper (5-pack) No. 12AAA876

Digimatic mini processor DP-1VR

By connecting this printer to the Surftest SJ-210's digimatic output, you can print calculation results, perform a variety of statistical analyses, draw a histogram or D chart, and also perform complicated operations for X-R control charts.



264-504-5A

SJ-210 → DP-1VR Connecting cable

1m: No. 936937 Digimatic SPC cable

2m: No. 965014 Digimatic SPC cable

Memory card

A memory card for saving 500 measurement conditions, 10,000 measured profiles, 500 display images, text file (measurement conditions, measured profiles, assessed profiles, BAC, ADC)



*Not all memory cards can be recognized. Please use the memory card recommended by Mitutoyo.

No. 12AAL069