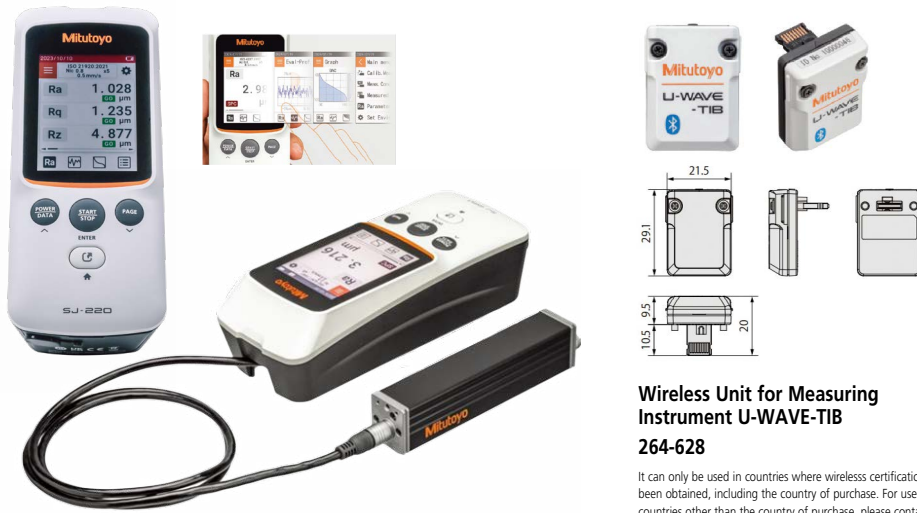


Surftest

Surftest SJ-220 SERIES 178 – On-site Surface Roughness Tester



Wireless Unit for Measuring Instrument U-WAVE-TIB
264-628

It can only be used in countries where wireless certification has been obtained, including the country of purchase. For use in countries other than the country of purchase, please contact the nearest Mitutoyo M³ Solution Center.

SPECIFICATIONS

Model No.	Standard drive unit		Retractable drive unit		Transverse tracing drive unit	
	SJ-220 (0.75 mN type)	SJ-220 (4 mN type)	SJ-220 (0.75 mN type)	SJ-220 (4 mN type)	SJ-220 (0.75 mN type)	SJ-220 (4 mN type)
Order No.	inch/mm	178-741-13	178-742-13	178-743-13	178-744-13	178-745-13
Drive Unit Order No.		178-747	178-748	178-749		
Measuring range	X-axis	16.0 mm				5.6 mm
Detector	Range	360 μ m (-200 μ m to +160 μ m)				
	Range/Resolution	360 μ m/0.0256 μ m, 100 μ m/0.0064 μ m, 25 μ m/0.0016 μ m				
Measuring force/Stylus tip shape		Depends on the Order No.: 0.75 mN/2 μ mR 60° 4 mN/5 μ mR 90°				
Applicable standards		JIS B 6011:1982 / 1994 / 2013 JIS B 0671:2002 JIS B 0631:2000 ISO 4287:1997 ISO 13565:1996 ISO 12085:1996 ISO 21920:2021 ASME B46.1 VDA2006				
Assessed profile		Primary profile, Roughness profile, DF profile, Roughness motif profile				

Surftest SJ-310 SERIES 178 — On-site Surface Roughness Tester



SPECIFICATIONS

Model No.	Standard drive unit		Retractable drive unit		Transverse tracing drive unit	
	SJ-310 (0.75 mN type)	SJ-310 (4 mN type)	SJ-310 (0.75 mN type)	SJ-310 (4 mN type)	SJ-310 (0.75 mN type)	SJ-310 (4 mN type)
Order No.	inch/mm	178-571-21A	178-571-22A	178-573-21A	178-573-22A	178-575-21A
Drive unit Order No.		178-747	178-748	178-749		
Measuring range	X-axis	16.0 mm				5.6 mm
Detector	Range	360 μ m (-200 μ m to +160 μ m)				
	Range/Resolution	360 μ m/0.0256 μ m, 100 μ m/0.0064 μ m, 25 μ m/0.0016 μ m				
Measuring force/Stylus tip shape		Depends on the Order No.: 0.75 mN/2 μ mR 60° (when the Order No. ends with "-21") 4 mN/5 μ mR 90° (when the Order No. ends with "-22")				
Applicable standards		JIS B 0601:2001, JIS B 0601:1994, JIS B 0601:1982, VDA, ISO:1997, ANSI				
Assessed profile		Primary profile, Roughness profile, DF profile, Roughness motif profile, Waviness motif profile				

MeasurLink ENABLED
Data Management Software by Mitutoyo

Free Communication Software

Output software based on Microsoft-Excel for controlling the devices and reproducing and storing the measurement data.

Software

PC-linked software
"SJ-Communication-Tool"

Freely available

Can be downloaded from the Mitutoyo website.
Download site URL
<https://www2.mitutoyo.co.jp/eng/contact/products/SJ-Communication-Tool/>
Windows 10/11, Bluetooth® 5.0 compatible (Windows only)

Dedicated "SJ-APP" for increased efficiency of measurement work
The dedicated app that enables communication with the SJ-220 is equipped with various functions to increase work efficiency.
It is also possible to manage data, create inspection reports, and export to CSV and PDF files on the terminal.

Smartphone or Tablet

Setup screen

Calculation result

Inspection report

Print

Printed inspection report "SJ-APP"

Go to download from the Mitutoyo website.
#MeasurLink
<https://www2.mitutoyo.co.jp/eng/contact/products/SJ-Communication-Tool/>
Android 5.0 or later, Bluetooth 5.0 compatible (Android only)

Standard accessories for SJ-220

- 12AA5583** Handy case
- 12BAA303** Connecting cable
- 12BAS450** AC adaptor
- 12BAS451** USB 2.0 cable
- 178-601-1** Roughness specimen (mm)
- 178-602-1** Roughness specimen (inch/mm)
- 178-605** Roughness specimen (mm) for Transverse drive
- 178-606** Roughness specimen (inch/mm) for Transverse drive
- 12BAK700** Calibration stage
- 12BAS476** Tool for battery switch
- 12AAE643** Point-contact adapter for transverse drive
- 12AAE644** V-type adapter for transverse drive

SJ Stand 178-069
(must order optional part **12AAA221** to mount **SJ-220/310** drive unit)



MeasurLink ENABLED
Data Management Software by Mitutoyo

Standard accessories for SJ-310

- 12AAW066** Connecting cable for Drive unit to Display unit
- 178-602** Roughness reference specimen (Ra3 μ m)
- 178-606** Roughness reference specimen (Ra1 μ m) (For Transverse Drive Type only)
- 357651** AC adaptor
- 12AAA217** Nosepiece for plane surface
- 12AAA218** Nosepiece for cylinder
- 12AAA216** Supporting leg
- 12AAE643** Point-contact adapter (For Transverse Drive Type only)
- 12AAE644** V-type adapter (For Transverse Drive Type only)
- 12BAK700** Calibration stage
- 12BAG834** Stylus pen
- 12BAL402** Protection sheet
- 270732** Printer paper (5 pieces)
- 12BAL400** Carrying case

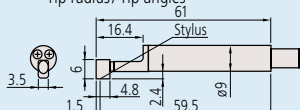
Philips screwdriver, strap for stylus pen, operation manual, quick reference manual, warranty.

Optional Accessories for Surftest SJ-220/310

• Standard detectors

Order No.	Measuring force	Stylus profiles*	Remarks
178-296	0.75 mN	2 $\mu\text{mR}/60^\circ$	Dedicated to the standard/retractable drive unit
178-390	4 mN	5 $\mu\text{mR}/90^\circ$	
178-387	0.75 mN	2 $\mu\text{mR}/60^\circ$	Dedicated to the transverse tracing drive unit
178-386	4 mN	5 $\mu\text{mR}/90^\circ$	
178-391	4 mN	10 $\mu\text{mR}/90^\circ$	Dedicated to the standard/retractable drive unit

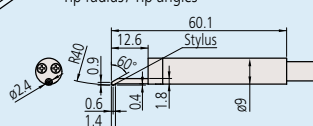
*Tip radius/Tip angles



• Gear-tooth surface detectors

Order No.	Measuring force	Stylus profiles*
178-388	0.75 mN	2 $\mu\text{mR}/60^\circ$
178-398	4 mN	5 $\mu\text{mR}/60^\circ$

*Tip radius/Tip angles

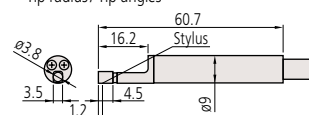


Detector

• Small hole detectors

Order No.	Measuring force	Stylus profiles*	Remarks
178-383	0.75 mN	2 $\mu\text{mR}/60^\circ$	Minimum measurable hole diameter: $\phi 4.5$ mm
178-392	4 mN	5 $\mu\text{mR}/90^\circ$	

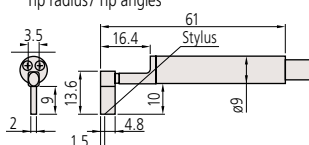
*Tip radius/Tip angles



• Deep groove detectors

Order No.	Measuring force	Stylus profiles*	Remarks
178-385	0.75 mN	2 $\mu\text{mR}/60^\circ$	Not available for the transverse tracing drive unit
178-394	4 mN	5 $\mu\text{mR}/90^\circ$	

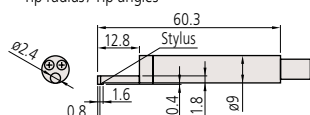
*Tip radius/Tip angles



• Extra small hole detectors

Order No.	Measuring force	Stylus profiles*	Remarks
178-384	0.75 mN	2 $\mu\text{mR}/60^\circ$	Minimum measurable hole diameter: $\phi 2.8$ mm
178-393	4 mN	5 $\mu\text{mR}/90^\circ$	

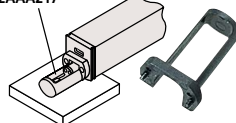
*Tip radius/Tip angles



Optional Accessories for Drive Units

• Nosepiece for flat surfaces

Nosepiece for flat surfaces
12AAA217



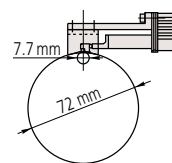
12AAA217

- Standard accessory for the standard/retractable drive unit of the SJ-310 Series
- Not available for the transverse tracing drive unit

• V-type adapter

12AAE644

- Transverse tracing type standard accessory.
- Dedicated to the transverse tracing drive unit.



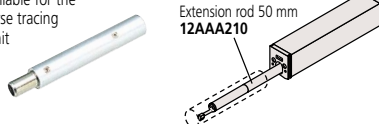
• Extension rod (50 mm)

12AAA210

- Not available for the transverse tracing drive unit

(Note: Only one rod can be used.)

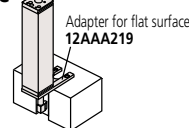
• Not applicable to upward measurement.



• Adapter for flat surface

12AAA219

- Not available for the transverse tracing drive unit



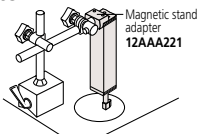
• Magnetic stand adapter

12AAA221

Mounting spigot diameter is 8 mm.

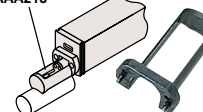
12AAA220

Mounting spigot diameter is 9.5 mm.



• Nosepiece for cylindrical surfaces

Nosepiece for cylindrical surfaces
12AAA218



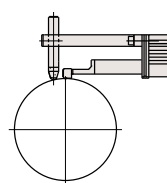
12AAA218

- Standard accessory for the standard/retractable drive unit of the SJ-310 Series
- Not available for the transverse tracing drive unit

• Point-contact adapter

12AAE643

- Transverse tracing type standard accessory.
- Dedicated to the transverse tracing drive unit.



• Extension cable (1 m)

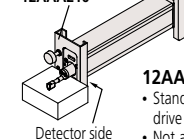
12BAA303

(Note: Only one rod can be used.)

• For the connection between the calculation display unit and drive unit

• Support feet set

Support feet set
12AAA216



12AAA216

- Standard accessory for the standard/retractable drive unit of the SJ-310 Series
- Not available for the transverse tracing drive unit
- Adjustment range is 28 mm from bottom face.

• Height gage adapter

Note: Suitable for a height gage holder designed for 9x9 mm section scribes.

12AAA222 (9x9mm)

12AAA233 (1/4x1/2")

