

Coolant-proof Micrometer

SERIES 293 — with Dust/Water Protection Conforming to IP65 Level

FEATURES

- IP65 protection level, enabling use in environments exposed to cutting oil, etc*.
*Anti-corrosion treatment is required after use.
- Measurement data output function is available with a water-resistant connection cable.
- Auto power ON/OFF function.
- A nonslip surface is employed for the frame cover and surface panel to achieve stable handheld measurement.
- Certificate of inspection* is included.
(2" /50mm or less range models)**
*It is not the type used to obtain calibration certificates.
** except 293-349-30
- With a standard bar except for 0-1" /0-25mm model.
- Supplied in fitted case. Plastic case up to 6" /150mm, wooden box over 6" /150mm.



293-330-30



293-252-30



Oil-resistant materials are used in all plastic components.



Measurement data output function is available with a water-resistant connection cable.



Employed nonslip surface



Mitutoyo			
CERTIFICATE OF INSPECTION / 検査成績書			
1. Item / 品名	Digital Micrometer	Model No. / 型番	293-330
2. Brand / 商標	Mitutoyo	Serial No. / 番付	0000000000
3. Date of Inspection / 検査日付	2023.08.01	Inspection standard / 検査標準	JIS S 9001
4. Inspection result / 検査結果	OK	Standard temperature / 標準温度	20 °C
5. Name of Inspector / 検査者氏名	Y. Y. Y.	Signature / 署名	
6. Name of Inspector / 検査者氏名	Y. Y. Y.	Signature / 署名	
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99. Name of Inspector / 検査者氏名	Y. Y. Y.	Signature / 署名	
100. Name of Inspector / 検査者氏名	Y. Y. Y.	Signature / 署名	

Certificate of inspection

Technical Data

- Accuracy: Refer to the list of specifications.
Resolution: .00005" / 0.001mm or 0.001mm (up to 4" models)
.0001" / 0.001mm (over 4" models)
Flatness: .000012" / 0.3μm
Parallelism: .00004" / 1μm for models up to 2" / 50mm
.00008" / 2μm for models up to 4" / 100mm
.00012" / 3μm for models up to 7" / 175mm
.00016" / 4μm for models up to 11" / 275mm
.0002" / 5μm for models over 12" / 300mm
Measuring faces: Carbide tipped
Display: LCD
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 2.4 years under normal use
Dust/Water protection level: IP65

Function

- Origin-set, Zero / ABS, Hold, Auto power on/off,
Data output (output models),
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error

Optional Accessories

- 05CZA662**: SPC cable with data switch (40" / 1m)
05CZA663: SPC cable with data switch (80" / 2m)



SPC cable with data switch

SPECIFICATIONS

Metric With ratchet stop

Range	Resolution	Order No.	Accuracy
0 - 25mm	0.001mm	293-230-30 / 293-240-30*	±1μm
25 - 50mm	0.001mm	293-231-30 / 293-241-30*	±1μm
50 - 75mm	0.001mm	293-232-30 / 293-242-30*	±1μm
75 - 100mm	0.001mm	293-233-30 / 293-243-30*	±2μm
100 - 125mm	0.001mm	293-250-30	±2μm
125 - 150mm	0.001mm	293-251-30	±2μm
150 - 175mm	0.001mm	293-252-30	±3μm
175 - 200mm	0.001mm	293-253-30	±3μm
200 - 225mm	0.001mm	293-254-30	±3μm
225 - 250mm	0.001mm	293-255-30	±4μm
250 - 275mm	0.001mm	293-256-30	±4μm
275 - 300mm	0.001mm	293-257-30	±4μm

*without SPC data output

Metric With ratchet thimble

Range	Resolution	Order No.	Accuracy
0 - 25mm	0.001mm	293-234-30 / 293-244-30*	±1μm
25 - 50mm	0.001mm	293-235-30 / 293-245-30*	±1μm
50 - 75mm	0.001mm	293-236-30 / 293-246-30*	±1μm
75 - 100mm	0.001mm	293-237-30 / 293-247-30*	±2μm

*without SPC data output

Metric Micrometer Set

Range	Order No.	Included in set
0-50mm (2pcs. Set)	293-966-30	293-230-30, 293-231-30, 25mm CERA block, plastic case
0-75mm (3pcs. Set)	293-962-30	293-230-30, 293-231-30, 293-232-30, 2 standard bars, plastic case
0-100mm (4pcs. Set)	293-963-30	293-230-30, 293-231-30, 293-232-30, 293-233-30, 3 standard bars, wooden box

Inch/Metric With ratchet stop

Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-330-30 / 293-340-30*	±.00005"
1" - 2" / 25.4 - 50.8mm	.00005" / 0.001mm	293-331-30 / 293-341-30*	±.00005"
2" - 3" / 50.8 - 76.2mm	.00005" / 0.001mm	293-332-30 / 293-342-30*	±.00005"
3" - 4" / 76.2 - 101.6mm	.00005" / 0.001mm	293-333-30 / 293-343-30*	±.0001"
4" - 5" / 101.6 - 127.0mm	.0001" / 0.001mm	293-350-30	±.0001"
5" - 6" / 127.0 - 152.4mm	.0001" / 0.001mm	293-351-30	±.0001"
6" - 7" / 152.4 - 177.8mm	.0001" / 0.001mm	293-352-30	±.00015"
7" - 8" / 177.8 - 203.2mm	.0001" / 0.001mm	293-353-30	±.00015"
8" - 9" / 203.2 - 228.6mm	.0001" / 0.001mm	293-354-30	±.00015"
9" - 10" / 228.6 - 254.0mm	.0001" / 0.001mm	293-355-30	±.0002"
10" - 11" / 254.0 - 279.4mm	.0001" / 0.001mm	293-356-30	±.0002"
11" - 12" / 279.4 - 304.8mm	.0001" / 0.001mm	293-357-30	±.0002"

*without SPC data output

Inch/Metric With ratchet thimble

Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-334-30 / 293-344-30*	±.00005"
0 - 1" / 0 - 25.4mm	.0001" / 0.001mm	293-349-30*	±.0001"
1" - 2" / 25.4 - 50.8mm	.00005" / 0.001mm	293-345-30*	±.00005"
2" - 3" / 50.8 - 76.2mm	.00005" / 0.001mm	293-346-30*	±.00005"
3" - 4" / 76.2 - 101.6mm	.00005" / 0.001mm	293-347-30*	±.0001"

*without SPC data output

Inch/Metric With friction thimble

Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-335-30 / 293-348-30*	±.00005"
1" - 2" / 25.4 - 50.8mm	.00005" / 0.001mm	293-336-30	±.00005"

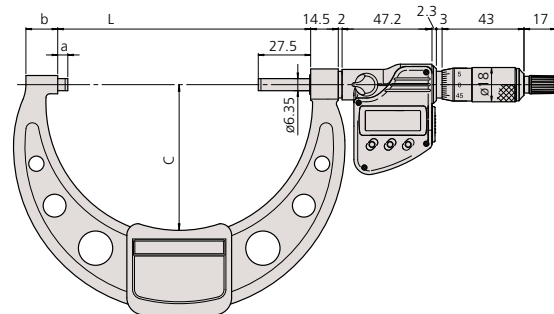
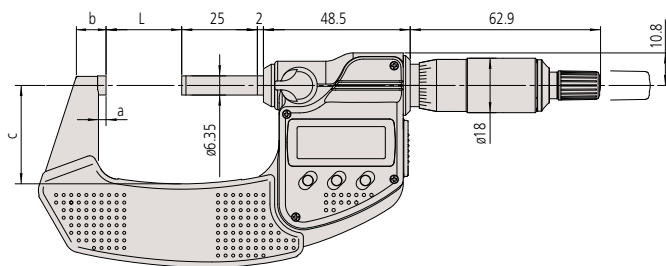
*without SPC data output

Inch/Metric Micrometer Set .00005" / 0.001mm graduation model

Range	Order No.	Included in set
0 - 3" / 0 - 76.2mm (3 pcs. set)	293-960-30	293-330-30, 293-331-30, 293-332-30, 2 standard bars, plastic case
0 - 4" / 0 - 101.6mm (4 pcs. set)	293-961-30	293-330-30, 293-331-30, 293-332-30, 293-333-30, 3 standard bars, wooden box

DIMENSIONS AND MASS

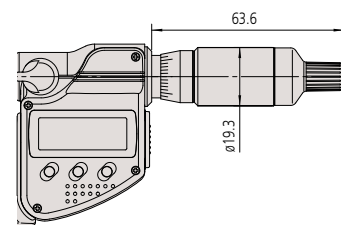
Ratchet-stop type (up to 100mm/4")



Ratchet stop type (over 100mm/4" to 300mm/12")

Ratchet-thimble type and friction-thimble type

Unit: mm



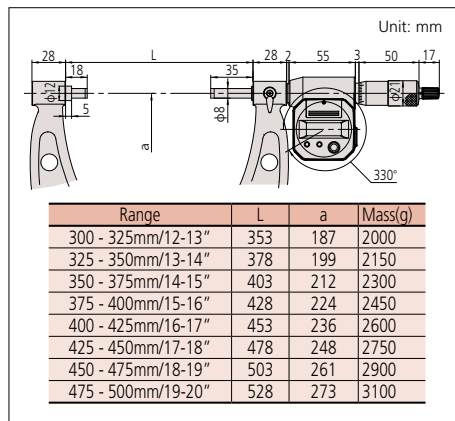
Range (Metric / Inch)	L	a	b	c	Mass (g)
0 - 25mm / 0-1"	0	2.5	9	(25)	270
25 - 50mm / 1-2"	25	2.5	9.8	(32.5)	330
50 - 75mm / 2-3"	50	2.5	12.6	(47)	470
75 - 100mm / 3-4"	75	2.5	14	(60)	625
100 - 125mm / 4-5"	132.8	5.3	16.7	(76.5)	600
125 - 150mm / 5-6"	158.2	5.7	18.8	(91)	740
150 - 175mm / 6-7"	183.6	6.1	19.1	(103.1)	800
175 - 200mm / 7-8"	208.8	6.3	18.2	(115.3)	970
200 - 225mm / 8-9"	234.2	6.7	16.8	(126.8)	1100
225 - 250mm / 9-10"	258	5.5	18	(139.8)	1270
250 - 275mm / 10-11"	284	18	28	(152.3)	1340
275 - 300mm / 11-12"	309	18	28	(166)	1540

Digimatic Micrometer

SERIES 293



DIMENSIONS



SPECIFICATIONS

Metric With ratchet stop			
Range	Resolution	Order No.	Accuracy
300 - 325mm	0.001mm	293-582	±6μm
325 - 350mm	0.001mm	293-583	±6μm
350 - 375mm	0.001mm	293-584	±6μm
375 - 400mm	0.001mm	293-585	±7μm
400 - 425mm	0.001mm	293-586	±7μm
425 - 450mm	0.001mm	293-587	±7μm
450 - 475mm	0.001mm	293-588	±8μm
475 - 500mm	0.001mm	293-589	±8μm

Inch/Metric With ratchet stop			
Range	Resolution	Order No.	Accuracy
12" - 13" / 304.8 - 330.2mm	.0001" / 0.001mm	293-782	±.0003"
13" - 14" / 330.2 - 355.6mm	.0001" / 0.001mm	293-783	±.0003"
14" - 15" / 355.6 - 381.0mm	.0001" / 0.001mm	293-784	±.0003"
15" - 16" / 381.0 - 406.4mm	.0001" / 0.001mm	293-785	±.00035"
16" - 17" / 406.4 - 431.8mm	.0001" / 0.001mm	293-786	±.00035"
17" - 18" / 431.8 - 457.2mm	.0001" / 0.001mm	293-787	±.00035"
18" - 19" / 457.2 - 482.6mm	.0001" / 0.001mm	293-788	±.0004"
19" - 20" / 482.6 - 508.0mm	.0001" / 0.001mm	293-789	±.0004"

Technical Data

Accuracy: Refer to the list of specifications.
 Resolution: .0001"/0.001mm or 0.001mm
 Flatness: .000024" / 0.6μm
 Parallelism: .0002"/5μm for models up to 15"/375mm
 .00024"/6μm for models up to 19"/475mm
 .00028"/7μm for models over 20"/500mm
 Measuring faces: Carbide tipped
 Display: LCD
 Battery: SR44 (2 pcs.), **938882**
 Battery life: Approx. 1.8 years under normal use

Function

Preset, Zero-setting, Power ON/OFF, Data hold, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

959149: SPC cable (40"/1m) Straight type
959150: SPC cable (80"/2m) Straight type
04AZB512: SPC cable L-type (40"/1m)
04AZB513: SPC cable L-type (80"/2m)



Digimatic Micrometer

SERIES 293 MDC-Lite

FEATURES

- Provided only with zero set and in/mm (inch/metric models only) keys.
- A ratchet stop or friction thimble for a constant measuring force.
- Measurement readout with large characters on the LCD.
- No spindle clamp. No data output.
- Supplied in fitted plastic case.



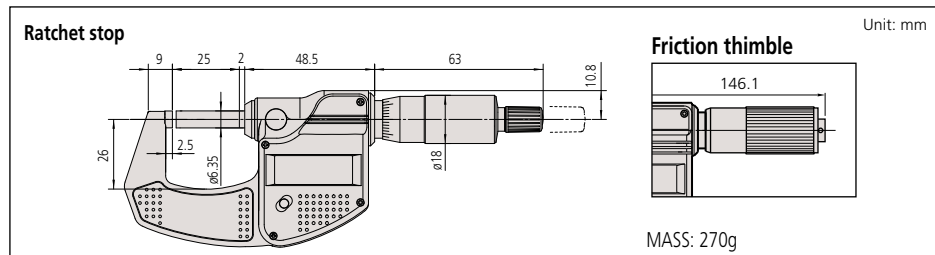
SPECIFICATIONS

Metric With ratchet stop			
Range	Resolution	Order No.	Accuracy
0 - 25mm	0.001mm	293-821-30	±2μm

Inch/Metric With ratchet stop			
Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-831-30	±.0001"

Inch/Metric With friction thimble			
Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-832-30	±.0001"

DIMENSIONS AND MASS



Technical Data

Accuracy: Refer to the list of specifications
 Resolution: .00005"/0.001mm or 0.001mm
 Flatness: .000012" / 0.3μm
 Parallelism: .00008" / 2μm
 Measuring faces: Carbide tipped
 Display: LCD
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 2.4 years under normal use

Function

Origin-set, Automatic power on/off, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error



QuantuMike

SERIES 293 — Coolant-proof Micrometer

FEATURES

- Faster measurement with 2mm per revolution instead of the standard 0.5mm.
- A patented ratchet thimble mechanism helps ensure repeatability.
- A function lock helps prevent error.
- IP-65 protection level.
- Certificate of inspection provided.
- With a standard bar except for 0-25mm/0-1" model.
- Supplied in fitted plastic case.



293-180-30



293-187-30

SPECIFICATIONS

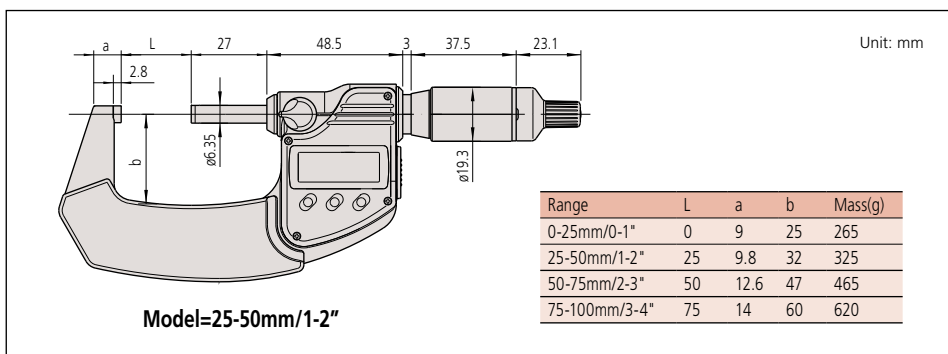
Metric			
Range	Resolution	Order No.	Accuracy
0-25mm	0.001mm	293-140-30	1μm
0-25mm	0.001mm	293-145-30*	1μm
25-50mm	0.001mm	293-141-30	1μm
25-50mm	0.001mm	293-146-30*	1μm
50-75mm	0.001mm	293-142-30	2μm
50-75mm	0.001mm	293-147-30*	2μm
75-100mm	0.001mm	293-143-30	2μm
75-100mm	0.001mm	293-148-30*	2μm

* without SPC data output

Inch/Metric			
Range	Resolution	Order No.	Accuracy
0-1"/0 - 25.4mm	.00005"/0.001mm	293-180-30	.00005"
0-1"/0 - 25.4mm	.00005"/0.001mm	293-185-30*	.00005"
1-2"/25.4 - 50.8mm	.00005"/0.001mm	293-181-30	.00005"
1-2"/25.4 - 50.8mm	.00005"/0.001mm	293-186-30*	.00005"
2-3"/50.8 - 76.2mm	.00005"/0.001mm	293-182-30	.0001"
2-3"/50.8 - 76.2mm	.00005"/0.001mm	293-187-30*	.0001"
3-4"/76.2 - 101.6mm	.00005"/0.001mm	293-183-30	.0001"
3-4"/76.2 - 101.6mm	.00005"/0.001mm	293-188-30*	.0001"

* without SPC data output

DIMENSIONS AND MASS



Certificate of inspection provided for 0-1" and 1-2" models only.

Technical Data

Accuracy: Refer to the list of specifications
 Resolution: 0.001mm or .00005"/0.001mm
 Flatness: 0.3μm/.000012"
 Parallelism: 1μm/.00004" for models up to 50mm/2"
 2μm/.00008" for models up to 100mm/4"
 Measuring force: 7-12N
 Measuring faces: Carbide tipped
 Display: LCD
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 2.4 years under normal use
 Dust/Water protection level: IP65

Function

Origin-set, Zero / ABS, Hold, Function lock, Auto power on/off, Data output (output models), inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

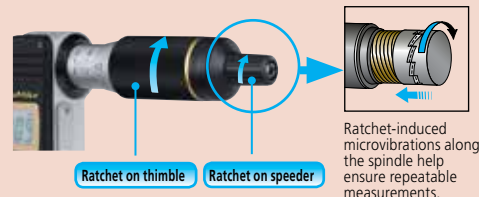
Optional Accessories

- 05CZA662:** SPC cable with data switch (1m/40")
05CZA663: SPC cable with data switch (2m/80")

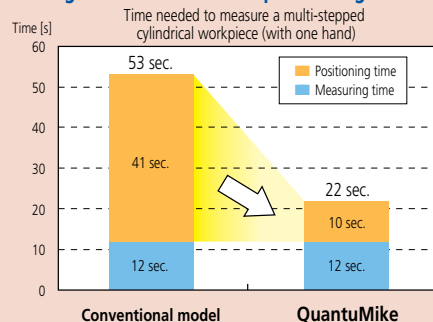


516-529-26 Inspection Gage Block Set
 Rectangular Steel Gage Block
 10 pc. blocks and 1 pc. optical parallel

516-319-26 Inspection Gage Block Set
 Rectangular Cera Gage Block
 10 pc. blocks and 1 pc. optical parallel



Significant reduction in positioning time



Quickmike

SERIES 293 — IP-54 ABSOLUTE Digimatic Micrometers

The Quickmike provides a speedy spindle feed of 10mm / .4" per thimble rotation as compared to the conventional micrometer with 0.5mm / .025" per rotation. Its wide 30mm / 1.2" measuring range allows various workpieces with different shapes to be measured quickly.

FEATURES

- Non-rotating spindle and the new ratchet friction thimble.
- Speedy spindle feed by 10mm/rev and .4"/rev for inch/metric models.
- With absolute linear scale.
- IP54 dust/water protection (when not connected with data output cable).
- With SPC data output.
- With a standard bar to set the origin point (for models with a range over 30mm / 1.2").
- Supplied in fitted plastic case.



293-676



293-677



293-678



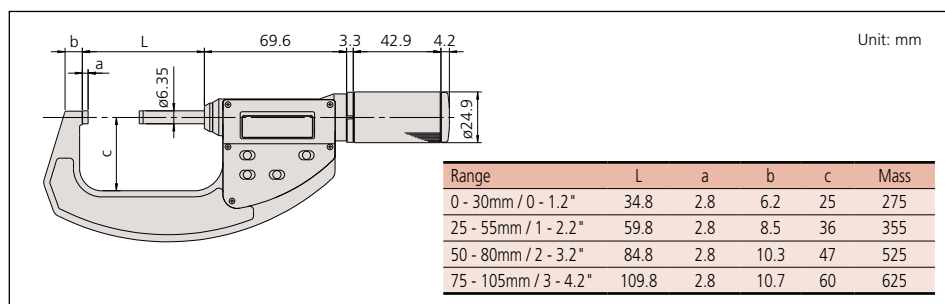
293-679

SPECIFICATIONS

Metric			
Range	Resolution	Order No.	Accuracy
0 - 30mm	0.001mm	293-666	±2μm
25 - 55mm	0.001mm	293-667	±2μm
50 - 80mm	0.001mm	293-668	±3μm
75 - 105mm	0.001mm	293-669	±3μm

Inch/Metric			
Range	Resolution	Order No.	Accuracy
0 - 1.2" / 0 - 30.48mm	.00005" / 0.001mm	293-676	±.0001"
1" - 2.2" / 25.4 - 55.88mm	.00005" / 0.001mm	293-677	±.0001"
2" - 3.2" / 50.8 - 81.28mm	.00005" / 0.001mm	293-678	±.00015"
3" - 4.2" / 76.2 - 106.68mm	.00005" / 0.001mm	293-679	±.00015"

DIMENSIONS AND MASS

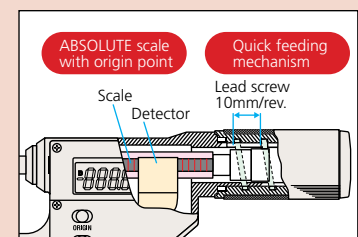


Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.001mm or .00005"/0.001mm
Flatness: 0.3μm / .000012"
Parallelism: 2μm / .00008" for models up to 80mm / 3.2"
3μm / .00012" for models up to 105mm / 4.2"
Measuring force: 5-10N
Measuring faces: Carbide tipped
Display: LCD
Battery: SR44 (1 pc.), 938882
Battery life: Approx. 3 years under normal use
(1 year for models over 30mm / 1.2")
Dust/Water protection level: IP54

Function

Origin, Hold / Data, ON/OFF, Zero / ABS,
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error



Optional Accessories

937387: SPC cable (1m / 40")
965013: SPC cable (2m / 80")

Digimatic Micrometer

SERIES 293 — with Dust/Water Protection Conforming to IP65 Level



• Staubdicht + strahl-
wassergeschützt IP65

IP65

SPC

FEATURES

- IP65 protection level, enabling use in environments exposed to cutting oil, etc*. *Anti-corrosion treatment is required after use.
- Measurement data output function is available with a water-resistant connection cable.
- Oil-resistance materials are used in all plastic components.
- $\pm 1 \mu\text{m}$ instrumental error (75 mm/3" or less range models)
- Auto power ON/OFF function.
- Certificate of inspection* is included. (50mm/2" or less range models) *It is not the type used to obtain calibration certificates.

Technical Data

Display: LCD
Functions: Origin-Set, Zero-Setting, Data hold, Automatic power on/off, inch/mm conversion (inch/mm type only), Data output
Battery: SR44 (1 pc.) (938882)
Battery life: Approx. 1.2 years under normal use
Maximum response speed: Unlimited
Dust/Water protection level: Conforming to IP65
Alarm: Low voltage, counting value composition error
Operating temperature: 0°C to 40°C



SPC cable with data switch

05CZA662: 1m
05CZA663: 2m



OPTIONAL ACCESSORIES

Order No.	Description
05CZA662	SPC cable with data switch (1m)
05CZA663	SPC cable with data switch (2m)
(See page 130.)	Micrometer stands
(See page 276.)	Gauge block set for micrometer inspection

Mitutoyo		Inspection No. / 検査成績書		0304040	
1. Item / 対象製品					
Product name		Digimatic Micrometer		Measuring range	
Model		MDC-25MJ		Resolution	
Code No.		293-230		Serial No.	
2. Result of Inspection / 検査結果		Inspection standard: Mitutoyo standard 1)		Standard temperature: 20 °C	
Performance / 性能		Permissible value / 許容値		Measured value / 実測値	
Flatness of measuring face / 平面度		Anvil / 測定台		0.3	
Parallelism of measuring faces / 平行度		Spindle / 測定棒		0.3	
				1	
				0.3	
Measuring length / 測定長 (mm)		Permissible value / 許容値		Uncertainty of measurement / 測定の不確かさ	
0.0		0		U ₉₅ = 1.3	
7.7		0		(k=2)	
12.9		± 1			
17.8		0			
22.8		+1			
25.0		0			
1) Based on: JIS B 5021 (1994), ISO 3611 (1978)					
Traceable to: NMJ/AIST by JCSS No.0030/AIST via No.821/263174-00, No.821/262133-99.					
PTB via No.4599 PTB 00					
3. Judgment / 総合判定					
4. QC Manager					
E. Otsuka / 合格					
Mitutoyo Corporation					

Certificate of inspection



Technical drawing of the 150mm digital depth gauge (Type 150) showing dimensions in mm. The drawing includes a side view of the gauge with a digital display and a depth rod. Dimensions are labeled: L (total length), a (hook width), b (hook thickness), c (height), 14.5 (rod diameter), 27.5 (rod length), 47.2 (rod diameter), 2.3 (rod diameter), 3 (rod diameter), 43 (rod diameter), and 17 (rod diameter). The digital display shows 0.00.

Range	L	a	b	c
0 - 25mm	0	9	25	(59.8)
25 - 50mm	25	9.8	32	(70.3)
50 - 75mm	50	12.6	47	(91.6)
75 - 100mm	75	14	60	(112.9)
100 - 125mm	132.8	5.3	16.7	(76.5)
125 - 150mm	158.2	5.7	18.8	(91)
150 - 175mm	183.6	6.1	19.1	(103.1)
175 - 200mm	208.8	6.3	18.2	(115.3)
200 - 225mm	234.2	6.7	16.8	(126.8)
225 - 250mm	258	5.5	18	(139.8)
250 - 275mm	284	6.5	18	(152.3)
275 - 300mm	309	6.5	18	(166)

Metric	With friction thimble		
Range	Order No.	Resolution	Accuracy
0 - 25mm	293-238 / 293-248*	0.001mm	±1µm

Inch/Metric	With friction thimble		
Range	Order No.	Resolution	Accuracy
0 - 1"	293-335 / 293-348*	.00005"/0.001mm	±.00005"
1" - 2"	293-336	.00005"/0.001mm	±.00005"

89

Quickmake

SERIES 293, 369, 422 — IP-54 Absolute Digimatic Micrometers

IP54



369-666



293-667



293-668



293-669

SPC

ABSOLUTE

The Quickmake provides a speedy spindle feed of 10mm per thimble rotation as compared to the conventional micrometer with 0.5mm per rotation. Its wide 30mm measuring range allows various workpieces with different shapes to be measured quickly.

SPECIFICATION

Metric				
Range	Order No.	Resolution	Accuracy	Mass
0 - 30mm	293-666	0.01mm	±2μm	275g
	293-661-10*	0.01mm	±2μm	275g
25 - 55mm	293-667	0.01mm	±2μm	355g
50 - 80mm	293-668	0.01mm	±3μm	525g
75 - 105mm	293-669	0.01mm	±3μm	625g

*Without SPC data output

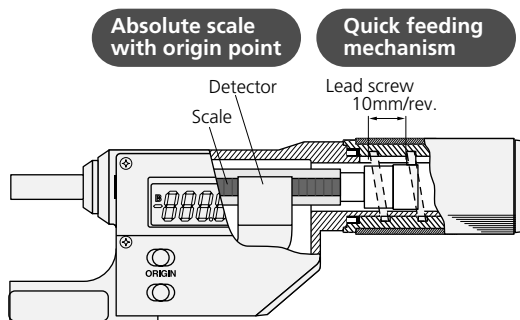
Excluding quantizing error

Inch/Metric				
Range	Order No.	Resolution	Accuracy	Mass
0 - 1.2"	293-676	.00005"/0.001mm	±.00008"	.61 lbs.
1" - 2.2"	293-677	.00005"/0.001mm	±.00008"	.78 lbs.
2" - 3.2"	293-678	.00005"/0.001mm	±.00012"	1.16 lbs.
3" - 4.2"	293-679	.00005"/0.001mm	±.00012"	1.38 lbs.

Excluding quantizing error

FEATURES

- Large LCD digits of 7.5mm height for error-free reading.
- Non-rotating spindle and the new ratchet friction thimble.
- With absolute linear scale.
- IP54 level water resistance protection (when not connected with data output cable).
- Stainless steel spindle.
- With SPC data output.
- With a standard bar to set the origin point (for models with a range over 30mm).



Absolute scale with origin point

Quick feeding mechanism

Detector
Scale
Lead screw 10mm/rev.



369-411

IP54

SPC

ABSOLUTE



342-451



422-411

MICROMETERS



Metric Disk type				
Range	Order No.	Resolution	Accuracy	Mass
0 - 30mm	369-411	0.001mm	±4μm	360g
25 - 55mm	369-412	0.001mm	±4μm	490g

Excluding quantizing error

Inch/Metric Disk type				
Range	Order No.	Resolution	Accuracy	Mass
0 - 1.2"	369-421	.00005"/0.001mm	±.00016"	.79 lbs.
1" - 2.2"	369-422	.00005"/0.001mm	±.00016"	1.08 lbs.

Excluding quantizing error

Metric Crimp height type				
Range	Order No.	Resolution	Accuracy	Mass
0 - 15mm	342-451	0.001mm	±3μm	275g

Excluding quantizing error

Metric Blade type				
Range	Order No.	Resolution	Accuracy	Mass
0 - 30mm	422-411	0.001mm	±3μm	350g
25 - 55mm	422-412	0.001mm	±3μm	490g

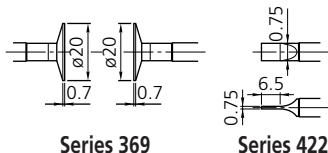
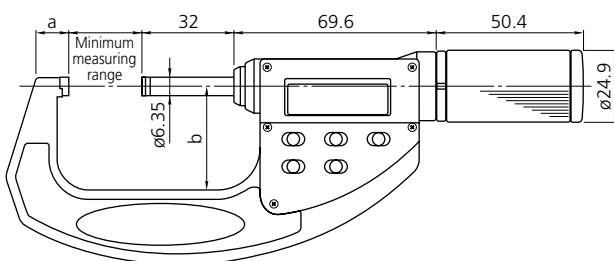
Excluding quantizing error

Inch/Metric Blade type				
Range	Order No.	Resolution	Accuracy	Mass
0 - 1.2"	422-421	.00005"/0.001mm	±.00012"	.77 lbs.
1" - 2.2"	422-422	.00005"/0.001mm	±.00012"	1.08 lbs.

Excluding quantizing error

Dimensions

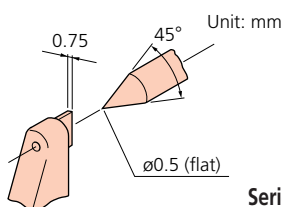
Unit: mm



Series 369

Series 422

Range	a	d
0 - 30mm	9	25
25 - 55mm	11.3	36
50 - 80mm	13.1	47
75 - 105mm	13.5	60



Series 342: Crimp height type

Technical Data

Display: LCD
Functions: Origin-Set, Zero-Set, power on/off, inch/mm conversion (inch/mm type only), SPC data output*, data hold
 *Not provided for 293-661-10 model
Battery: SR44 (1 pc.) (938882)
Battery life: Approx. 3 years (293-666, 293-661-10 and 293-676)/Approx. 1 year
Measuring force: 5 - 10N (500 - 1000gf)
Measuring faces: Carbide-tipped (293 series only)
Alarm: Low battery voltage, scale contamination
Dust/Water protection level: Conforming to IP54

OPTIONAL ACCESSORIES

Order No.	Description
937387	SPC cable (1m)
965013	SPC cable (2m)

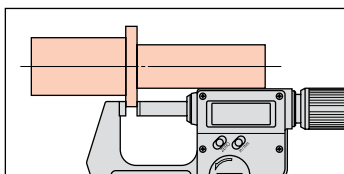
Digimatic Micrometers

SERIES 293



FEATURES

- The world's lightest digital micrometer 215g in mass.
- Simply measures 0 through 25mm (1") with resolution to 0.001mm.
- Measuring faces carbide tipped.
- Provided only with a zero-set key for easy origin setting. (No spindle clamp, no data output, no auto-sleep function)
- A ratchet stop or friction thimble for a constant measuring force.
- Measurement readout with large characters on the LCD screen.
- Battery: SR44 (938882) x 1pc. for 1.2 years
- Slim construction for easy access to the stepped feature like the one shown.



SPECIFICATIONS

Metric		With ratchet stop		
Range	Order No.	Resolution	Accuracy	Mass
0 - 25mm	293-805	0.001mm	$\pm 2\mu\text{m}$	215g

Excluding quantizing error

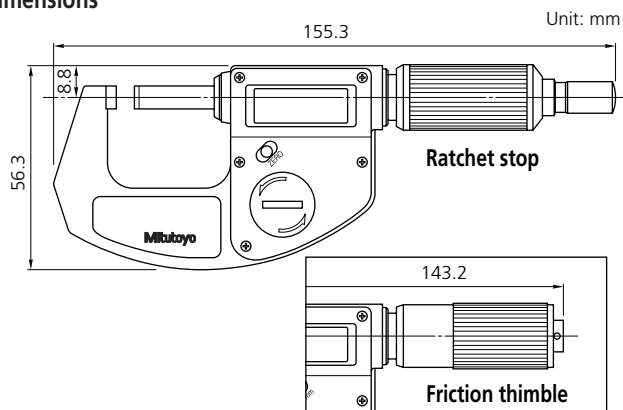
Inch/Metric		With ratchet stop		
Range	Order No.	Resolution	Accuracy	Mass
0 - 1"	293-815	.00005"/0.001mm	$\pm .0001"$	.47 lbs.

Excluding quantizing error

Inch/Metric		With friction thimble		
Range	Order No.	Resolution	Accuracy	Mass
0 - 1"	293-816	.00005"/0.001mm	$\pm .0001"$	.47 lbs.

Excluding quantizing error

Dimensions

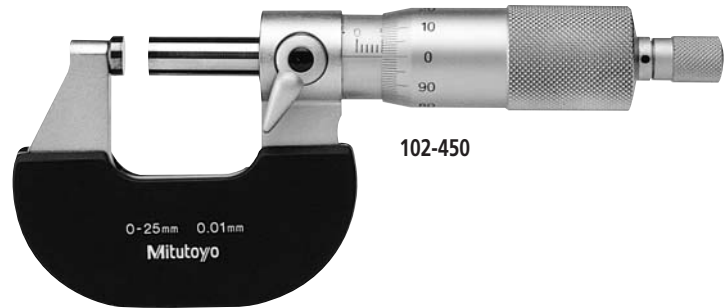


Quick-Setting Outside Micrometers

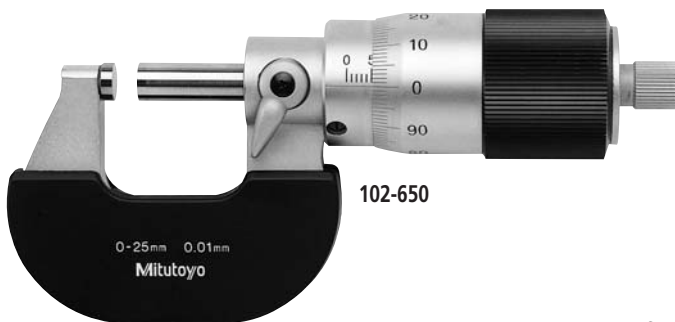
SERIES 293, 102



293-151-30



102-450



102-650

FEATURES

- 1mm spindle thread pitch for quick setting.
- The measurement can be read directly from the thimble due to the 100 step graduation.
- Carbide-tipped measuring faces.
- With Ratchet Thimble for constant force. (Ratchet Stop is also available for the 102 series.)
- Provided with a standard except for 25mm (1") model.
- The 293 series is provided with SPC output.

SPECIFICATIONS

Metric Digital model with ratchet stop			
Range	Order No.	Graduation	Accuracy
0 - 25mm	293-151-30	0.001mm	±1μm
25 - 50mm	293-152-30	0.001mm	±1μm
50 - 75mm	293-153-30	0.001mm	±1μm
75 - 100mm	293-154-30	0.001mm	±2μm

Excluding quantizing error

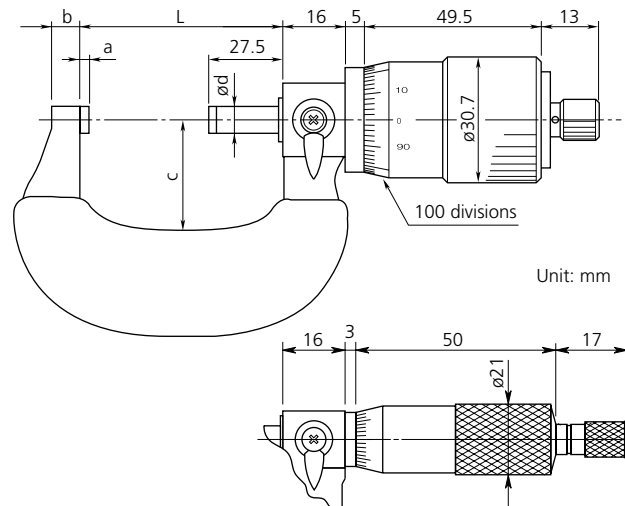
Metric With ratchet stop			
Range	Order No.	Graduation	Accuracy
0 - 25mm	102-450	0.01mm	±2μm
25 - 50mm	102-451	0.01mm	±2μm

Metric With ratchet thimble			
Range	Order No.	Graduation	Accuracy
0 - 25mm	102-650	0.01mm	±2μm
25 - 50mm	102-651	0.01mm	±2μm
50 - 75mm	102-652	0.01mm	±2μm
75 - 100mm	102-653	0.01mm	±2μm

Measuring faces

- Flatness: 0.6μm
- Parallelism: 2μm

Dimensions



Unit: mm

Range	L	a	b	c	d
0 - 25mm	30	2.5	5	26	8
25 - 50mm	55	2.5	8	32.5	8
50 - 75mm	80	2.5	9	45	8
75 - 100mm	105	2.5	9	58	8

Note: The shape of the thimble changes on the digital model.

