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Micrometers



Micrometer Heads



New Products

**Coolant Proof
Micrometer**

**Digimatic
Micrometer**

**Ratchet Thimble
Micrometer**

**Digimatic Spline
Micrometer**

**Fine Pitch
Micrometer Head**

QuantuMike

SERIES 293 — IP65 Coolant Proof Micrometer with 2mm/rev Spindle Feed

Speedy measurement is achieved thanks to 2mm of spindle feed for every thimble revolution!

Mitutoyo is proud to have reached its leading position in the micrometer market through a spirit of innovation, imagination and creating added value.

The QuantuMike brand of micrometer, inspired by this Mitutoyo Spirit, provides users with an excellent measuring experience with higher speed, quality and stability than ever before owing to the integration of sophisticated manufacturing and processing technologies.



Metric	
Range	Order No.
0 - 25mm	293-140 / 293-145*
25 - 50mm	293-141 / 293-146*

*without SPC data output



Inch/Metric	
Range	Order No.
0 - 1"	293-180 / 293-185*
1" - 2"	293-181 / 293-186*

*without SPC data output



(Refer to the page 9 for details.)



(Refer to the page 9 for details.)



Certificate of inspection

Technical Data

Accuracy: $\pm 1\mu\text{m}$
(excluding quantizing error)
Resolution: 0.001mm, .00005"/0.001mm
Flatness: 0.3 μm
Parallelism: 1 μm
Measuring faces: Carbide tipped
Display: LCD
Length standard: Electromagnetic rotary sensor
*Patent pending (in Japan, USA, Europe, and China)
Battery: SR44 (1 pc.), 938882
Battery life: Approx. 3 years under normal use
Dust/Water protection level: IP65

Function

Origin-set, Preset (over 100mm models), Zero-setting, Automatic power ON/OFF, Data hold, Data output, inch/mm conversion (inch/mm models)
Alarm: Low voltage, Counting value composition error





Optional Accessory

05CZA662: SPC cable with data switch (1m)
05CZA663: SPC cable with data switch (2m)



SPC cable with data switch



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

Useful application of measured data

A statistical process control system and a measurement network system can be established to share information regarding quality with a model equipped with the data output function.



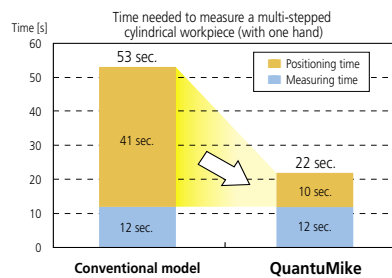
FEATURES

•Speedy measurement

Faster measurement is achieved by using a coarser thread which feeds the spindle by 2mm per revolution of the thimble instead of the standard 0.5mm. This increase in thread lead has been made possible thanks to new high precision thread-cutting and test techniques.

Trials show that a reduction in positioning times of 60% and measuring times of 35%* can be obtained, compared with a conventional micrometer.

* According to Mitutoyo's comparison test data for measuring time on typical workpieces.

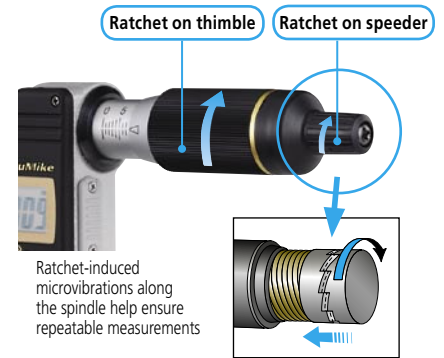


The time needed to measure 6 diameters on a workpiece, from the smallest to the largest with the micrometer held in one hand, was recorded for a conventional digital micrometer and for the QuantuMike

•Repeatable measurement

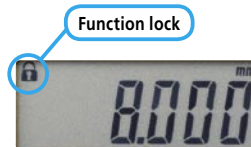
The patented ratchet thimble mechanism* helps ensure repeatable results by transmitting microvibrations along the spindle to the contact face to provide a constant measuring force and encourage good contact with the workpiece. The ratchet works from the thimble as well as the speeder so it is always easy to use - even when making measurements one-handed. The sound of the ratchet provides the user with a sense of confidence and the speeder enables the rapid spindle feed needed when measuring widely different dimensions.

*Patent registered (in Japan, USA, China, Germany, UK, and France)



•Function lock

QuantuMike is equipped with a function lock feature to prevent the origin point being moved by mistake during measurement.

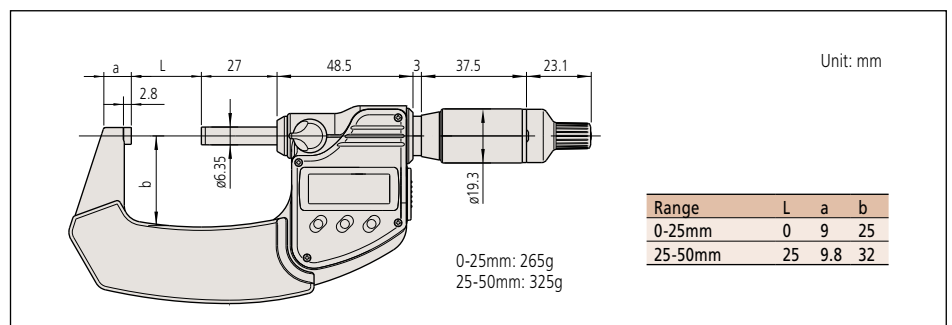


•Dust/water resistance with IP65 protection level

Excellent resistance against oil, water and dust enables this product to be used in machining situations that include splashing coolant fluid.



DIMENSION AND MASS



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.
- Oil-resistance materials are used in all plastic components.
- $\pm 1\mu\text{m}$ instrumental error (75mm or less range models)
- Auto power ON/OFF function.
- Certificate of inspection* is included.
(50mm or less range models)
*It is not the type used to obtain calibration certificates.



293-230



293-252



Oil-resistance materials are used in all plastic components.

SPC



IP65

(Refer to the page 9 for details.)



(Refer to the page 9 for details.)



Certificate of inspection

Technical Data

- Accuracy: Refer to the list of specifications.
(excluding quantizing error)
- Resolution: 0.001mm, .00005"/0.001mm (up to 4") or .0001"/0.001mm (over 4")
- Flatness: 0.3 μm
- Parallelism: 1 μm for models up to 50mm
2 μm for models up to 100mm
3 μm for models up to 175mm
4 μm for models up to 275mm
5 μm for models over 275mm
- Measuring faces: Carbide tipped
- Display: LCD
- Battery: SR44 (1 pc.), **938882**
- Battery life: Approx. 1.2 years under normal use
(8 months: over 100mm models)
- Dust/Water protection level: IP65

Function

- Origin-set, Preset (over 100mm models), Zero-setting, Automatic power ON/OFF, Data hold, Data output, inch/mm conversion (inch/mm models)
- Alarm: Low voltage, Counting value composition error

Optional Accessory

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

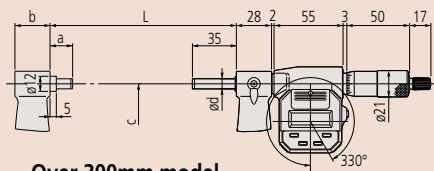


SPC cable with data switch



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

DIMENSION

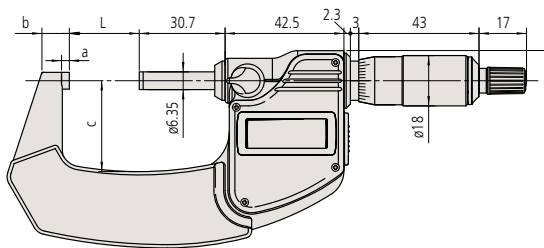


Over 300mm model

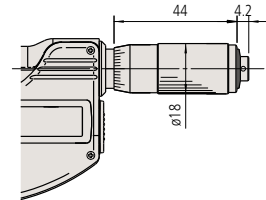
Range	L	a	b	c	d
300 - 235mm	353	18	28	187	8
325 - 350mm	378	18	28	199	8
350 - 375mm	403	18	28	212	8
375 - 400mm	428	18	28	224	8
400 - 425mm	453	18	28	236	8
425 - 450mm	478	18	28	248	8
450 - 475mm	503	18	28	261	8
475 - 500mm	528	18	28	273	8

DIMENSION AND MASS

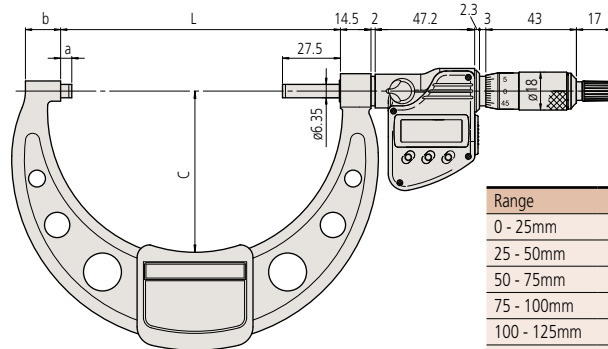
Ratchet stop type up to 100mm



Ratchet thimble type / Friction thimble type



Unit: mm



Ratchet stop type over 100mm

Range	L	a	b	c	Mass
0 - 25mm	0	2.8	9	(25)	270g
25 - 50mm	25	2.8	9.8	(32)	330g
50 - 75mm	50	2.8	12.6	(47)	470g
75 - 100mm	75	2.8	14	(60)	625g
100 - 125mm	132.8	5.3	16.7	(76.5)	600g
125 - 150mm	158.2	5.7	18.8	(91)	740g
150 - 175mm	183.6	6.1	19.1	(103.1)	800g
175 - 200mm	208.8	6.3	18.2	(115.3)	970g
200 - 225mm	234.2	6.7	16.8	(126.8)	1100g
225 - 250mm	258	5.5	18	(139.8)	1270g
250 - 275mm	284	6.5	18	(152.3)	1340g
275 - 300mm	309	6.5	18	(166)	1540g

SPECIFICATIONS

Metric With ratchet stop

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

*without SPC data output

Metric With ratchet thimble

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

*without SPC data output

Metric With friction thimble

Range	Order No.	Accuracy
0 - 25mm	293-238 / 293-248*	±1μm

*without SPC data output

Inch/Metric With ratchet stop

Range	Order No.	Accuracy
0 - 1"	293-330 / 293-340*	±.00005"
1" - 2"	293-331 / 293-341*	±.00005"
2" - 3"	293-332 / 293-342*	±.00005"
3" - 4"	293-333 / 293-343*	±.0001"
4" - 5"	293-350	±.0001"
5" - 6"	293-351	±.0001"
6" - 7"	293-352	±.00015"
7" - 8"	293-353	±.00015"
8" - 9"	293-354	±.00015"
9" - 10"	293-355	±.0002"
10" - 11"	293-356	±.0002"
11" - 12"	293-357	±.0002"

*without SPC data output

Inch/Metric With ratchet thimble

Range	Order No.	Accuracy
0 - 1"	293-334 / 293-344*	±.00005"
1" - 2"	293-345*	±.00005"
2" - 3"	293-346*	±.00005"
3" - 4"	293-347*	±.0001"

*without SPC data output

Inch/Metric With friction thimble

Range	Order No.	Accuracy
0 - 1"	293-335 / 293-348*	±.00005"
1" - 2"	293-336	±.00005"

*without SPC data output

Digimatic Micrometer

SERIES 293

FEATURES



293-571

SPECIFICATIONS

Metric With ratchet stop		
Range	Order No.	Accuracy
300 - 325mm	293-571	±6μm
325 - 350mm	293-572	±6μm
350 - 375mm	293-573	±6μm
375 - 400mm	293-574	±7μm
400 - 425mm	293-575	±7μm
425 - 450mm	293-576	±7μm
450 - 475mm	293-577	±8μm
475 - 500mm	293-578	±8μm

Inch/Metric With ratchet stop		
Range	Order No.	Accuracy
12" - 13"	293-771	±.0003"
13" - 14"	293-772	±.0003"
14" - 15"	293-773	±.0003"
15" - 16"	293-774	±.00035"
16" - 17"	293-775	±.00035"
17" - 18"	293-776	±.00035"
18" - 19"	293-777	±.0004"
19" - 20"	293-778	±.0004"



Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error)
Resolution: 0.001mm or .0001"/0.001mm
Flatness: 0.6μm
Parallelism: 5μm for models up to 375mm
6μm for models up to 475mm
7μm for models over 500mm

Measuring faces: Carbide tipped
Display: LCD
Battery: SR44 (2 pcs.), **938882**
Battery life: Approx. 1.8 years under normal use
Dimensions: Refer to the page 27 for details.

Function

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

Optional Accessory

937387: SPC cable (1m)
965013: SPC cable (2m)



Digimatic Micrometer

SERIES 293

FEATURES

- Simply measures 0 through 25mm with resolution to 0.001mm.
- Provided only with a origin-set key for easy origin setting.
- A ratchet stop or friction thimble for a constant measuring force.
- Measurement readout with large characters on the LCD screen.

SPECIFICATIONS

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

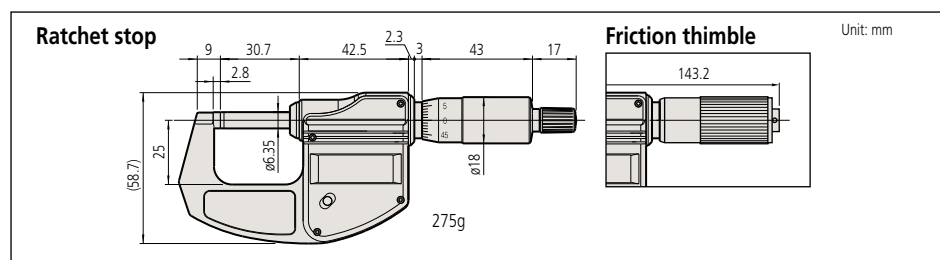


293-821

Inch/Metric With ratchet stop		
Range	Order No.	Accuracy
0 - 1"	293-831	±.0001"

Inch/Metric With friction thimble		
Range	Order No.	Accuracy
0 - 1"	293-832	±.0001"

DIMENSION AND MASS



(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error)
Resolution: 0.001mm or .00005"/0.001mm
Flatness: 0.3μm
Parallelism: 2μm
Measuring faces: Carbide tipped
Display: LCD
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 1.2 years under normal use

Function

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





(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error)
Resolution: 0.001mm or .00005"/0.001mm
Flatness: 0.3μm
Parallelism: 2μm
Measuring faces: Carbide tipped
Display: LCD
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 3 years under normal use
(1 year for 15-30mm range model)

Function

Origin-set, Power ON/OFF, Data hold, Data output, Preset
(15-30mm range model), inch/mm conversion (inch/mm
models)
Alarm: Low voltage, Counting value composition error

Optional Accessory

937387: SPC cable (1m)
965013: SPC cable (2m)



ABSOLUTE Digimatic Micrometers

SERIES 227 — with Constant & Adjustable Fine-loading Device

FEATURES

- Constant and low measuring force mechanism in the thimble.
- Adjustable measuring force* accommodates various kind of work materials.
*0.5-2.5N or 2-10N
- The measurement-value hold function automatically retains the data at a specified measuring force, ensuring accuracy.
- Non-rotating spindle and the new ratchet friction thimble.
- Speedy spindle feed of 10mm/rev.
- With absolute linear scale.
- With SPC data output.
- With a standard bar to set the origin point (for models with 15 - 30mm range).



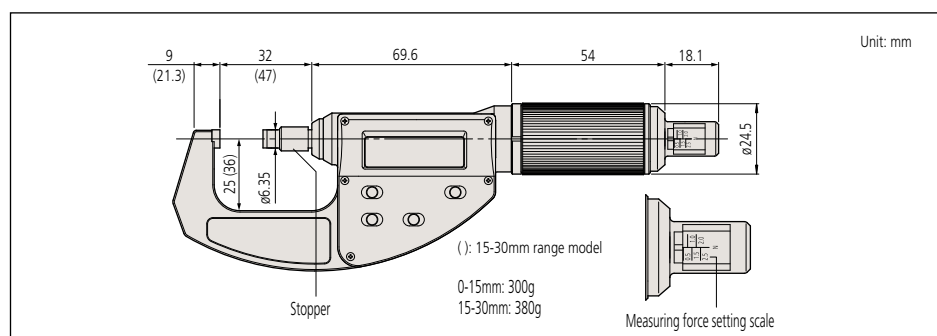
227-201

SPECIFICATION

Metric			
Range	Order No.	Accuracy	Measuring force
0 - 15mm	227-201	±2μm	0.5N - 2.5N
	227-202	±2μm	2N - 10N
15 - 30mm	227-203	±2μm	0.5N - 2.5N
	227-204	±2μm	2N - 10N

Inch/Metric			
Range	Order No.	Accuracy	Measuring force
0 - .6"	227-211	±.0001"	0.5N - 2.5N
	227-212	±.0001"	2N - 10N
.6" - 1.2"	227-213	±.0001"	0.5N - 2.5N
	227-214	±.0001"	2N - 10N

DIMENSION AND MASS



Quickmike

SERIES 293 — IP-54 ABSOLUTE Digimatic Micrometers

The Quickmike 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.

FEATURES

- Non-rotating spindle and the new ratchet friction thimble.
- Speedy spindle feed of 10mm/rev.
- 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).

SPC

IP54

(Refer to the page 9 for details.)

ABSOLUTE®
Absolute System Patented by MITUTOYO

(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error)
Resolution: 0.001mm or .00005"/0.001mm
Flatness: 0.3μm
Parallelism: 2μm for models up to 80mm
3μm for models up to 105mm
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)
Dust/Water protection level: IP54



293-666



293-667



293-668



293-669

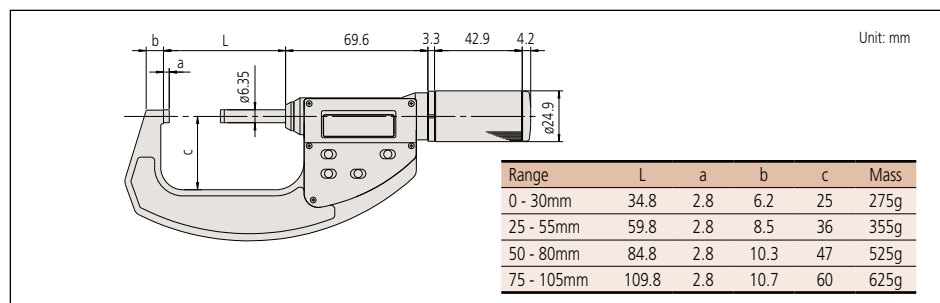
SPECIFICATION

Metric		
Range	Order No.	Accuracy
0 - 30mm	293-666	±2μm
	293-661-10*	±2μm
25 - 55mm	293-667	±2μm
50 - 80mm	293-668	±3μm
75 - 105mm	293-669	±3μm

*Without SPC data output

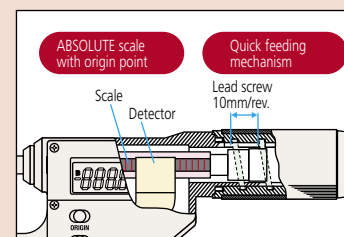
Inch/Metric		
Range	Order No.	Accuracy
0 - 1.2"	293-676	±.0001"
1" - 2.2"	293-677	±.0001"
2" - 3.2"	293-678	±.00015"
3" - 4.2"	293-679	±.00015"

DIMENSION AND MASS



Function

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



Optional Accessory

937387: SPC cable (1m)
965013: SPC cable (2m)

Outside Micrometers

SERIES 102



(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
 Graduation: 0.01mm, 0.001mm, .001" or .0001"
 Flatness: 0.6μm
 Parallelism: 2μm for 25mm model
 3μm for models up to 100mm
 Measuring faces: Carbide tipped

Ratchet stop type



Friction thimble type



FEATURES

- Heat-insulated frame, tapered (on the anvil side) for hard-to-reach places.
- With a standard except for 25mm model.
- A ratchet stop or friction thimble for a constant measuring force.



SPECIFICATIONS

Metric With ratchet stop		
Range	Order No.	Accuracy
0 - 25mm	102-301	±2μm
	102-307*	±2μm
25 - 50mm	102-302	±2μm
	102-308*	±2μm
50 - 75mm	102-303	±2μm
75 - 100mm	102-304	±3μm

*0.001mm reading is obtained with vernier.

Metric With friction thimble		
Range	Order No.	Accuracy
0 - 25mm	102-305	±2μm
	102-309*	±2μm
25 - 50mm	102-306	±2μm
	102-310*	±2μm

*0.001mm reading is obtained with vernier

Metric Micrometer set		
Range	Order No.	Assortment of micrometers
0 - 100mm (4 mikes/set)	102-911-01	• 102-701* • 102-302 • 102-303 • 102-304 • 3 micrometer standards

*Ratchet thimble micrometer.

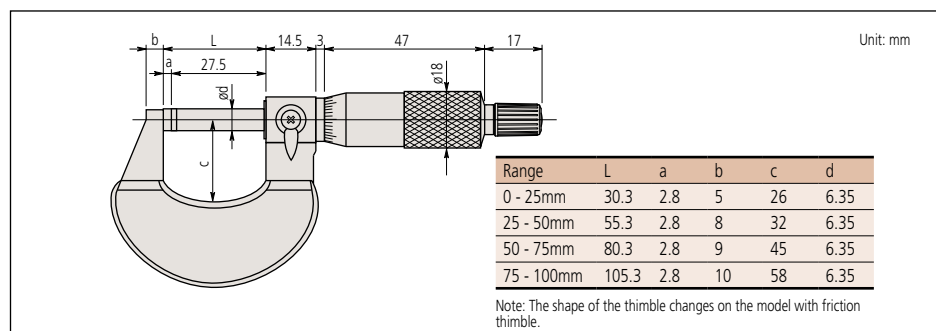
Inch With ratchet stop		
Range	Order No.	Accuracy
0 - 1"	102-321	±.0001"
	102-327*	±.0001"
1" - 2"	102-322	±.0001"
	102-328*	±.0001"
2" - 3"	102-323	±.0001"
3" - 4"	102-324	±.00015"

*.0001" reading is obtained with vernier.

Inch With friction thimble		
Range	Order No.	Accuracy
0 - 1"	102-325	±.0001"
	102-329*	±.0001"
1" - 2"	102-326	±.0001"
	102-330*	±.0001"

*.0001" reading is obtained with vernier.

DIMENSION

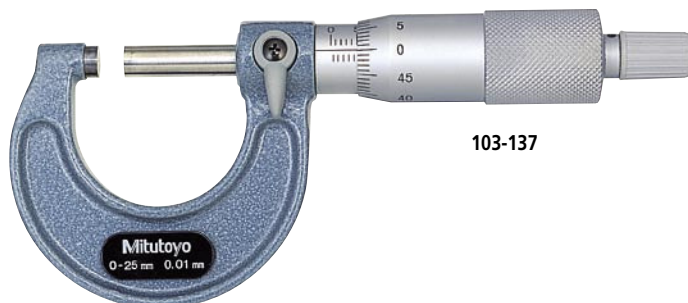


Outside Micrometers

SERIES 103

FEATURES

- Hammertone-green, baked-enamel-finished frame.
- Ratchet Stop or Friction Thimble for exact repetitive readings.
- With a standard except for 25mm model.



103-137



(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
 Graduation: 0.01mm, 0.001mm, .001" or .0001"
 Flatness: 0.6μm for models up to 300mm
 1μm for models over 300mm
 Parallelism: (2+R/100)μm, R = max. range (mm)
 *fraction rounded down
 Measuring faces: Carbide tipped

SPECIFICATIONS

Metric With ratchet stop		
Range	Order No.	Accuracy
0 - 25mm	103-137	±2μm
	103-129*	±2μm
25 - 50mm	103-138	±2μm
	103-130*	±2μm
50 - 75mm	103-139-10	±2μm
75 - 100mm	103-140-10	±3μm
100 - 125mm	103-141-10	±3μm
125 - 150mm	103-142-10	±3μm
150 - 175mm	103-143-10	±4μm
175 - 200mm	103-144-10	±4μm
200 - 225mm	103-145-10	±4μm
225 - 250mm	103-146-10	±5μm
250 - 275mm	103-147-10	±5μm
275 - 300mm	103-148-10	±5μm
300 - 325mm	103-149	±6μm
325 - 350mm	103-150	±6μm
350 - 375mm	103-151	±6μm
375 - 400mm	103-152	±7μm
400 - 425mm	103-153	±7μm
425 - 450mm	103-154	±7μm
450 - 475mm	103-155	±8μm
475 - 500mm	103-156	±8μm
(Models with a range up to 1000mm are available.)		

*0.001mm reading is obtained with vernier.

Inch With ratchet stop		
Range	Order No.	Accuracy
0 - 1"	103-177	±.0001"
	103-131*	±.0001"
1" - 2"	103-178	±.0001"
	103-132*	±.0001"
2" - 3"	103-179	±.0001"
3" - 4"	103-180	±.00015"
4" - 5"	103-181	±.00015"
5" - 6"	103-182	±.00015"
6" - 7"	103-183	±.0002"
7" - 8"	103-184	±.0002"
8" - 9"	103-185	±.0002"
9" - 10"	103-186	±.00025"
10" - 11"	103-187	±.00025"
11" - 12"	103-188	±.00025"
12" - 13"	103-189	±.0003"
13" - 14"	103-190	±.0003"
14" - 15"	103-191	±.0003"
15" - 16"	103-192	±.00035"
16" - 17"	103-193	±.00035"
17" - 18"	103-194	±.00035"
18" - 19"	103-195	±.0004"
19" - 20"	103-196	±.0004"
(Models with a range up to 40" are available.)		

*.0001" reading is obtained with vernier.

Metric With friction thimble		
Range	Order No.	Accuracy
0 - 25mm	103-125	±2μm
	103-133*	±2μm
25 - 50mm	103-126	±2μm

*0.001mm reading is obtained with vernier.

Inch With friction thimble		
Range	Order No.	Accuracy
0 - 1"	103-127	±.0001"
	103-135*	±.0001"
1" - 2"	103-128	±.0001"
	103-136*	±.0001"

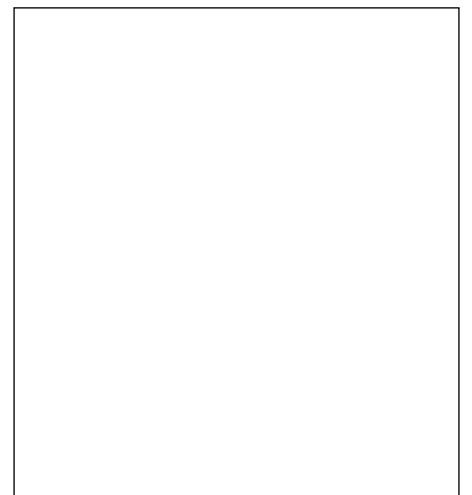
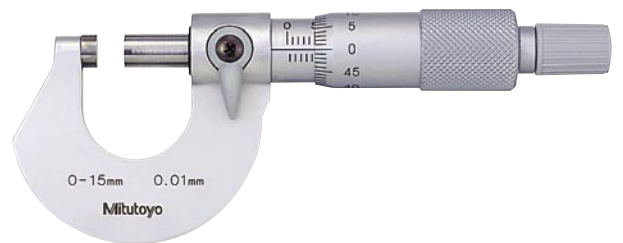
*.0001" reading is obtained with vernier.

Metric Micrometer set		
Range	Order No.	Assortment of micrometers
0 - 75mm (3 pcs./set)	103-927-10	103-137, 103-138, 103-139-10, 2 micrometer standards
0 - 150mm (6 pcs./set)	103-913-31	102-701*, 103-138, 103-139-10, 103-140-10, 103-141-10, 103-142-10, 5 micrometer standards
150 - 300mm (6 pcs./set)	103-915-10	103-143-10, 103-144-10, 103-145-10, 103-146-10, 103-147-10, 103-148-10, 6 micrometer standards
0 - 300mm (12 pcs./set)	103-914-31	All micrometers of 103-913-31 and 103-915-10 in one set, 11 micrometer standards

*Ratchet thimble micrometer

Inch Micrometer set		
Range	Order No.	Assortment of micrometers
0 - 3" (3 pcs./set)	103-929	103-177, 103-178, 103-179, 2 micrometer standards
0 - 4" (4 pcs./set)	103-930	103-177, 103-178, 103-179, 103-180, 3 micrometer standards
0 - 6" (6 pcs./set)	103-904-01	101-711*, 101-106, 103-179, 103-180, 103-181, 103-182, 5 micrometer standards
6" - 12" (6 pcs./set)	103-906	103-183, 103-184, 103-185, 103-186, 103-187, 103-188, 6 micrometer standards
0 - 12" (12 pcs./set)	103-905-01	All micrometers of 103-904-01 and 103-906 in one set, 11 micrometer standards

*Ratchet thimble micrometer



Ratchet Thimble Micrometer

SERIES 101, 102 — New smoother action Ratchet Thimble

FEATURES

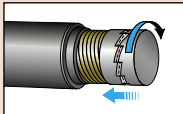
- Ratchet function works both from the thimble and the speeder, allowing easy one-handed operation.
- Clearly audible ratchet operation for reassurance that measurement is being performed at constant, preset force.
- Provided with a Certificate of Inspection.



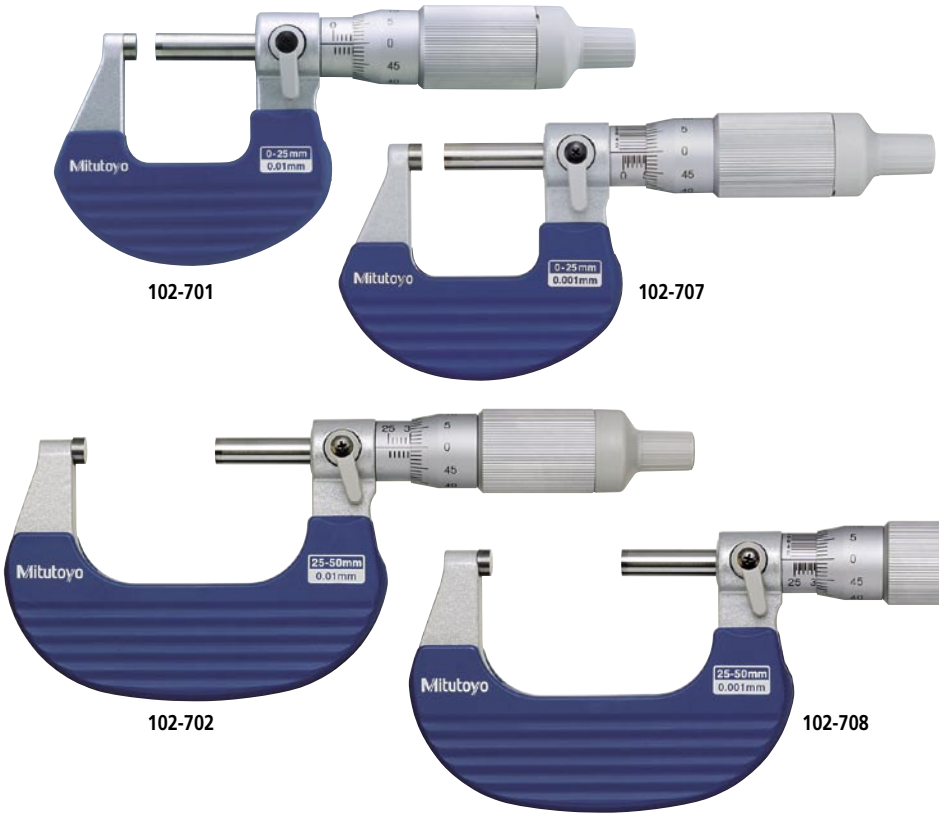
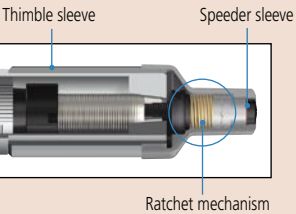
(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
Graduation: 0.01mm, 0.001mm, .001" or .0001"
Flatness: 0.6μm
Parallelism: 2μm
Measuring faces: Carbide tipped
Measuring force: 5 - 10N



Rotating the thimble/speeder sleeve when the workpiece is between the anvil and spindle causes the ratchet mechanism to tap the spindle and apply a constant measuring force to the workpiece.



SPECIFICATIONS

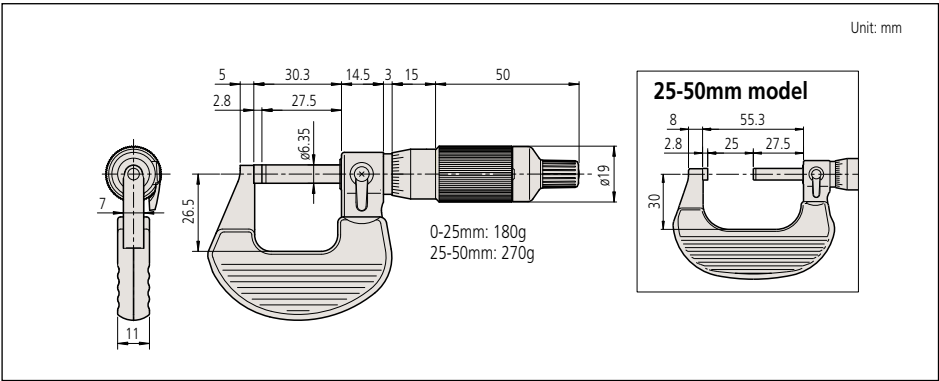
Metric		
Range	Order No.	Accuracy
0 - 25mm	102-701	±2μm
	102-707*	±2μm
25 - 50mm	102-702	±2μm
	102-708*	±2μm

*0.001mm reading is obtained with vernier.

Inch		
Range	Order No.	Accuracy
0 - 1"	101-711	±.0001"
	101-717*	±.0001"
0 - 1"	102-711	±.0001"
	102-717	±.0001"
1 - 2"	102-712	±.0001"
	102-718*	±.0001"

*.0001" reading is obtained with vernier.
101-711/101-717: Stain-chrome-finished frame model

DIMENSION AND MASS



Outside Micrometers

SERIES 406, 106 — Non-Rotating Spindle Type

FEATURES

- Easy-to-read with large vernier on the thimble (series 106).
- With a standard except for 25mm model.
- With SPC output (series 406).

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation*: 0.001mm or .0001"
Flatness: 0.3μm
Parallelism: 3μm for models up to 75mm*
4μm for models over 75mm*
1.6μm for models up to 50mm**
2μm for models over 50mm**
Measuring faces: Carbide tipped
Display*: LCD
Battery*: SR44 (1 pc.), **938882**
Battery life*: Approx. 1.2 years under normal use
*Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Data hold, Data output, inch/mm conversion (inch/mm models), Automatic power ON/OFF
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

05CZA662: SPC cable with data switch (1m)
05CZA663: SPC cable with data switch (2m)



406-250



106-101

SPECIFICATIONS

Metric Digital model with ratchet stop

Range	Order No.	Accuracy
0 - 25mm	406-250	±3μm
25 - 50mm	406-251	±3μm
50 - 75mm	406-252	±3μm
75 - 100mm	406-253	±4μm

Metric With ratchet thimble

Range	Order No.	Accuracy
0 - 25mm	106-101	±2μm
25 - 50mm	106-103	±2μm
50 - 75mm	106-105	±3μm
75 - 100mm	106-106	±3μm

Inch/Metric Digital model with ratchet stop

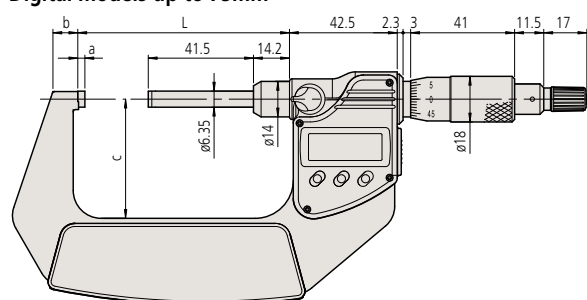
Range	Order No.	Accuracy
0 - 1"	406-350	±.00015"
1" - 2"	406-351	±.00015"
2" - 3"	406-352	±.00015"
3" - 4"	406-353	±.0002"

Inch With friction thimble

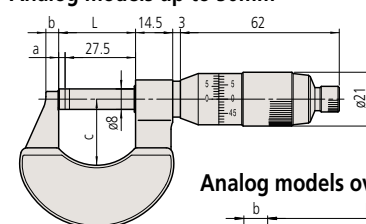
Range	Order No.	Accuracy
0 - 1"	106-102	±.0001"
1" - 2"	106-104	±.0001"

DIMENSION

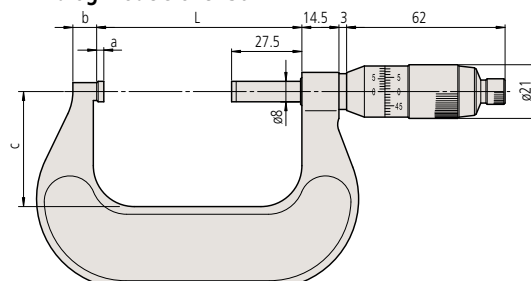
Digital models up to 75mm



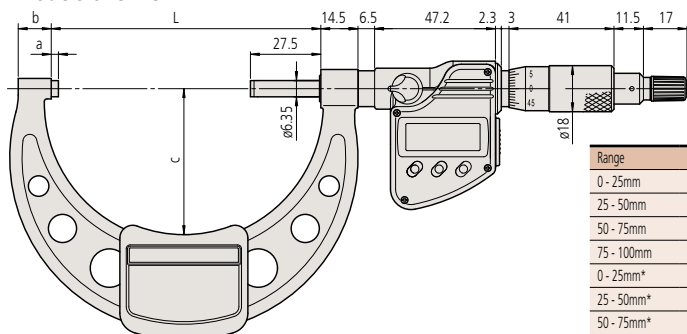
Analog models up to 50mm



Analog models over 50mm



Digital models over 75mm



Range	L	a	b	c
0 - 25mm	58.2	2.5	7.3	32
25 - 50mm	83.2	2.5	10.1	47
50 - 75mm	108.2	2.5	11.5	60
75 - 100mm	105.3	2.8	14.1	57
0 - 25mm*	30	2.5	5	25.8
25 - 50mm*	55	2.5	8	32.3
50 - 75mm*	80.3	2.8	10.3	45
75 - 100mm*	105.3	2.8	10.7	58

*Analog model

Unit: mm

Quick-Setting Outside Micrometers

SERIES 293,102

FEATURES

- 1mm spindle thread pitch for quick setting.
- The measurement can be read directly from the thimble due to the 100 step graduation.
- With Ratchet Thimble or Ratchet Stop for constant force.
- With a standard except for 25mm model.
- With SPC output (series 293).



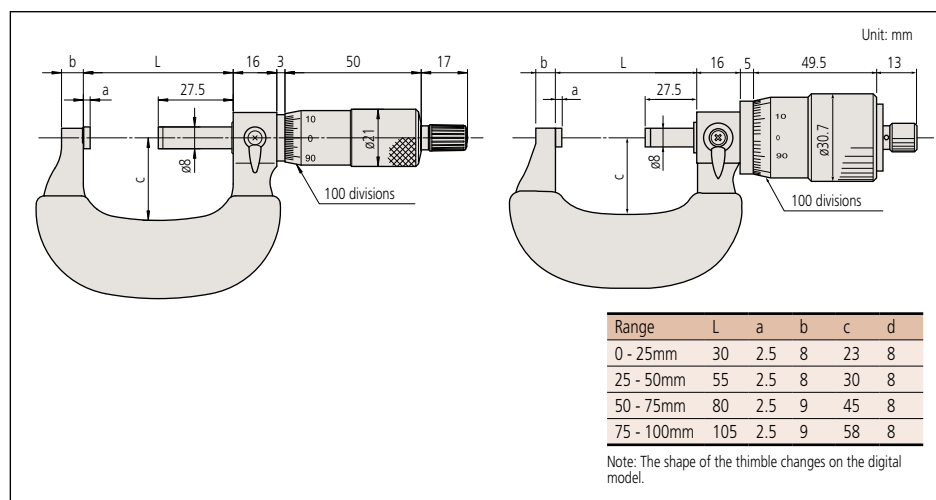
SPECIFICATIONS

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

Metric With ratchet thimble		
Range	Order No.	Accuracy
0 - 25mm	102-650	±2μm
25 - 50mm	102-651	±2μm
50 - 75mm	102-652	±2μm
75 - 100mm	102-653	±3μm

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

DIMENSION



Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm
Graduation**: 0.01mm
Flatness: 0.6μm
Parallelism: 1μm (digital), 2μm (analog)
Measuring faces: Carbide tipped
Display*: LCD
Battery*: SR44 (1pc.), 938882
Battery life*: Approx. 1.2 years under normal use
*Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Data hold, Data output
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

937387: SPC cable (1m)
965013: SPC cable (2m)



(Refer to the page 9 for details.)

Technical Data

Accuracy: $\pm(4+R/75)\mu\text{m}$, R = max. range (mm)
(excluding quantizing error for digital models)
*fraction rounded up

Resolution*: 0.001mm or .0001"/0.001mm
(.00005"/0.001mm: **340-351**)

Graduation*: 0.01mm

Flatness: 0.6 μm for models up to 300mm

1 μm for models over 300mm

Parallelism: 2 μm for models up to 75mm

3 μm for models up to 150mm

(2+R/100) μm for models over 150mm,

R = max. range (mm) *fraction rounded up

Measuring faces: Carbide tipped

Display*: LCD

Battery*: SR44 (2 pc.), **938882**

(1 pc.: **340-251, 252, 340-351, 352**)

Battery life*: Approx. 1.8 years under normal use

(8 months for **340-251, 252, 340-351, 352**)

Dust/Water protection level*: IP65

*Digital models **Analog models

Function of Digital Model

Zero-setting, Data hold, Preset, Power ON/OFF*, Data output,
inch/mm conversion (inch/mm models)

*Not available for **340-251, 252, 340-351, 352**

Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

05CZA662: SPC cable with data switch (1m)

05CZA663: SPC cable with data switch (2m)



Outside Micrometers

SERIES 340, 104 — with Interchangeable Anvils

FEATURES

- IP65 water/dust protection (340 series*).
- *Models with a range up to 300mm.
- Wide measuring range with interchangeable anvils.
- With a Ratchet Stop for constant force.

- Supplied with zero-setting standards for each range.
- With SPC output (series 340).

Digital model



SPECIFICATIONS

Metric	Digital model
Range	Order No. Interchangeable anvils
0 - 150mm	340-251 0, 25, 50, 75, 100, 125mm
150 - 300mm	340-252 0, 25, 50, 75, 100, 125mm
300 - 400mm	340-513 0, 25, 50, 75mm
400 - 500mm	340-514 0, 25, 50, 75mm
500 - 600mm	340-515 0, 25, 50, 75mm
600 - 700mm	340-516 0, 25, 50, 75mm
700 - 800mm	340-517 0, 25, 50, 75mm
800 - 900mm	340-518 0, 25, 50, 75mm
900 - 1000mm	340-519 0, 25, 50, 75mm

Inch/Metric	Digital model
Range	Order No. Interchangeable anvils
0 - 6"	340-351 0, 1", 2", 3", 4", 5"
6" - 12"	340-352 0, 1", 2", 3", 4", 5"
12" - 18"	340-713 0, 1", 2", 3", 4", 5"
18" - 24"	340-714 0, 1", 2", 3", 4", 5"
24" - 30"	340-715 0, 1", 2", 3", 4", 5"
30" - 36"	340-716 0, 1", 2", 3", 4", 5"

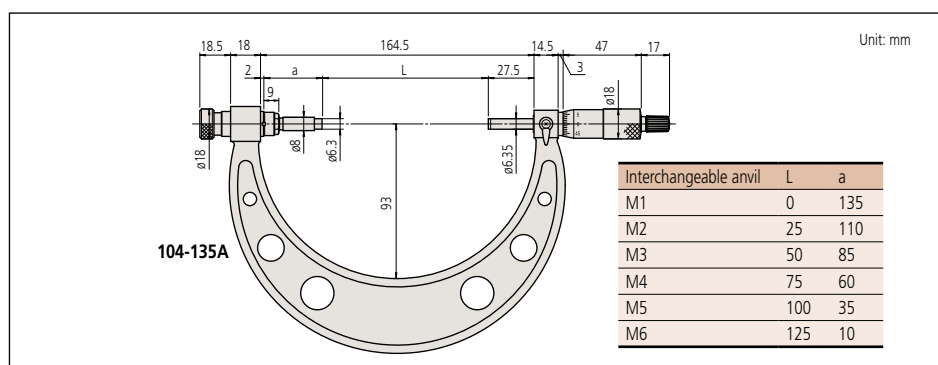
Metric	
Range	Order No. Interchangeable anvils
0 - 50mm	104-171* 0, 25mm
0 - 100mm	104-139A 0, 25, 50, 75mm
0 - 150mm	104-135A 0, 25, 50, 75, 100, 125mm
50 - 150mm	104-161A 0, 25, 50, 75mm
100 - 200mm	104-140A 0, 25, 50, 75mm
150 - 300mm	104-136A 0, 25, 50, 75, 100, 125mm
200 - 300mm	104-141A 0, 25, 50, 75mm
300 - 400mm	104-142A 0, 25, 50, 75mm
400 - 500mm	104-143A 0, 25, 50, 75mm
500 - 600mm	104-144A 0, 25, 50, 75mm
600 - 700mm	104-145A 0, 25, 50, 75mm
700 - 800mm	104-146A 0, 25, 50, 75mm
800 - 900mm	104-147A 0, 25, 50, 75mm
900 - 1000mm	104-148A 0, 25, 50, 75mm

Inch	
Range	Order No. Interchangeable anvils
0 - 2"	104-165* 0, 1"
0 - 4"	104-149 0, 1", 2", 3"
0 - 6"	104-137 0, 1", 2", 3", 4", 5"
2 - 6"	104-162 0, 1", 2", 3"
4 - 8"	104-150 0, 1", 2", 3"
8 - 12"	104-151 0, 1", 2", 3"
6" - 12"	104-138 0, 1", 2", 3", 4", 5"
12" - 18"	104-201 0, 1", 2", 3", 4", 5"
18" - 24"	104-202 0, 1", 2", 3", 4", 5"
24" - 30"	104-203 0, 1", 2", 3", 4", 5"
30" - 36"	104-204 0, 1", 2", 3", 4", 5"
36" - 42"	104-205 0, 1", 2", 3", 4", 5"

*.0001" reading is obtained with vernier.

*The frame in a heat insulating cover

DIMENSION

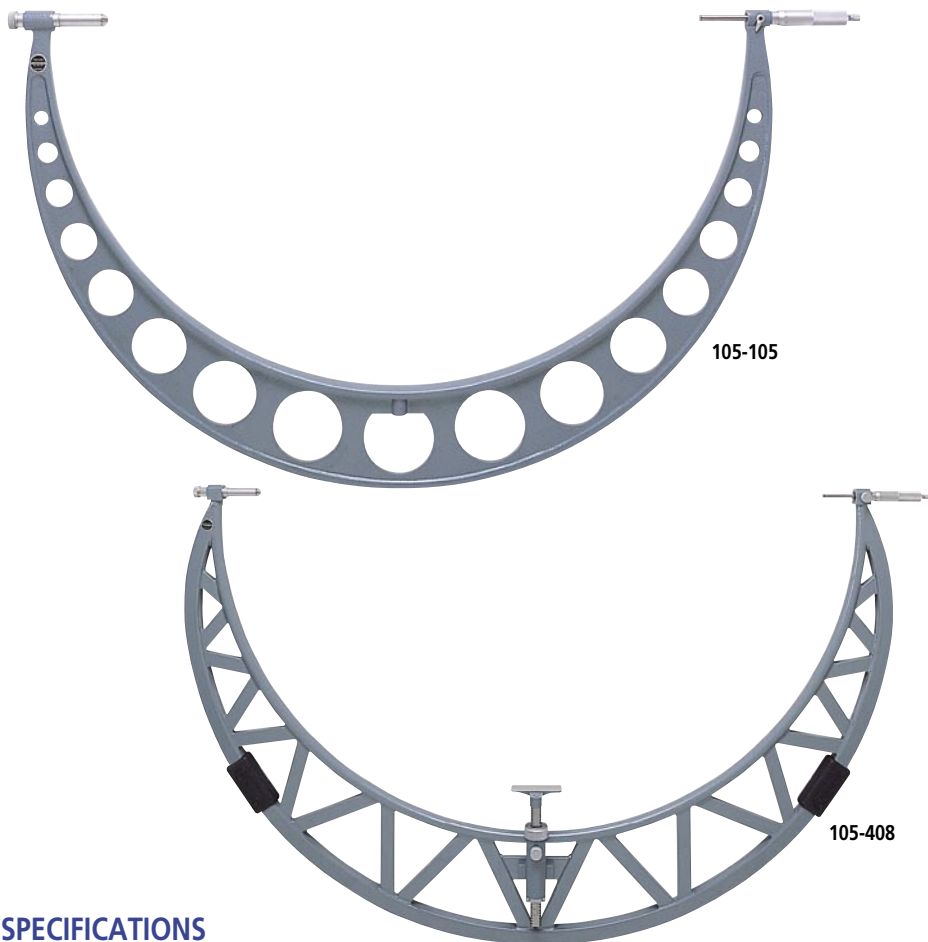


Outside Micrometers

SERIES 105 — with Extension Anvil Collars

FEATURES

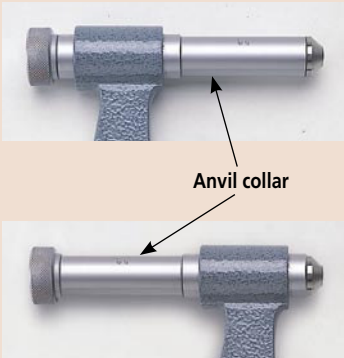
- Wide measuring range with extension anvil collars.
- 50mm spindle stroke.
- With Ratchet Stop for constant force.
- Supplied with zero-setting standards for each range.
- Square and round pipes are combined for light weight and rigid frame (for models over 1000mm range).
- Workpiece stopper (for models over 1000mm range).



Technical Data

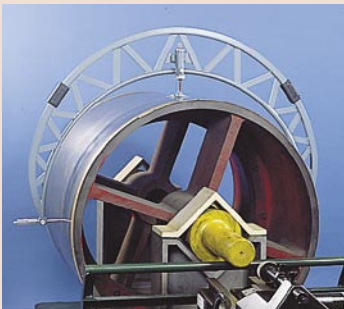
Accuracy: $\pm(6+R/75)\mu\text{m}$, R = max. range (mm)
*fraction rounded up
Graduation: 0.01mm
Flatness: 1.3 μm
Parallelism: $(2+R/100)\mu\text{m}$, R = max. range (mm)
*fraction rounded down
Measuring faces: Carbide tipped

Extension anvil collar



SPECIFICATIONS

Metric		
Range	Order No.	Extension collars
500 - 600mm	105-103	50mm
600 - 700mm	105-104	50mm
700 - 800mm	105-105	50mm
800 - 900mm	105-106	50mm
900 - 1000mm	105-107	50mm
1000 - 1100mm	105-408	50mm
1100 - 1200mm	105-409	50mm
1000 - 1200mm	105-418	50mm, 100mm
1200 - 1300mm	105-410	50mm
1300 - 1400mm	105-411	50mm
1200 - 1400mm	105-419	50mm, 100mm
1400 - 1500mm	105-412	50mm
1500 - 1600mm	105-413	50mm
1400 - 1600mm	105-420	50mm, 100mm
1600 - 1700mm	105-414	50mm
1700 - 1800mm	105-415	50mm
1600 - 1800mm	105-421	50mm, 100mm
1800 - 1900mm	105-416	50mm
1900 - 2000mm	105-417	50mm
1800 - 2000mm	105-422	50mm, 100mm



Outside Micrometers

SERIES 107

FEATURES

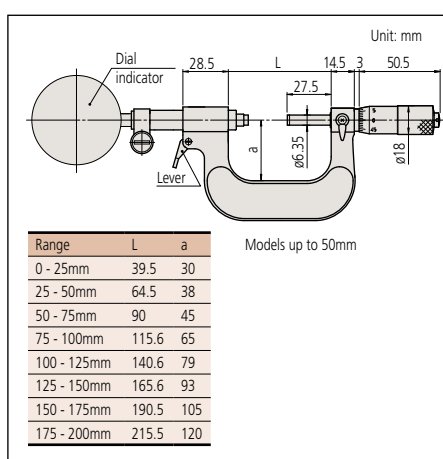
- With dial indicator for direct GO/NG-GO judgment for mass-produced parts.
- Anvil retracting trigger for quick measurement.
- With a standard except for 25mm model.



SPECIFICATIONS

Metric		
Range	Order No.	Accuracy
0 - 25mm	107-201	$\pm 2\mu\text{m}$
25 - 50mm	107-202	$\pm 2\mu\text{m}$
50 - 75mm	107-203	$\pm 2\mu\text{m}$
75 - 100mm	107-204	$\pm 3\mu\text{m}$
100 - 125mm	107-205	$\pm 3\mu\text{m}$
125 - 150mm	107-206	$\pm 3\mu\text{m}$
150 - 175mm	107-207	$\pm 4\mu\text{m}$
175 - 200mm	107-208	$\pm 4\mu\text{m}$

DIMENSION



Technical Data

Accuracy: Refer to the list of specifications.
 Graduation: 0.01mm (thimble)
 Flatness: 0.6 μm
 Parallelism: (2+R/100) μm , R = max. range (mm)
 Measuring faces: Carbide tipped



Screw Thread Micrometers

SERIES 125

FEATURES

- Provided with a 60 degree V-anvil and conical spindle for easily measuring pitch diameters of metric or unified screw threads.
- With Ratchet Stop for constant force.
- With a standard for zero point adjustment.



SPECIFICATIONS

Metric		
Range	Order No.	Screw to be measured (Metric/Unified)
0 - 25mm	125-101	0.4 - 0.5mm/64 - 48TPI
	125-102	0.6 - 0.9mm/44 - 28TPI
	125-103	1 - 1.75mm/24 - 14TPI
	125-104	2 - 3mm/13 - 9TPI
	125-105	3.5 - 5mm/8 - 5TPI
	125-106	0.4 - 0.5mm/64 - 48TPI
25 - 50mm	125-107	0.6 - 0.9mm/44 - 28TPI
	125-108	1 - 1.75mm/24 - 14TPI
	125-109	2 - 3mm/13 - 9TPI
	125-110	3.5 - 5mm/8 - 5TPI

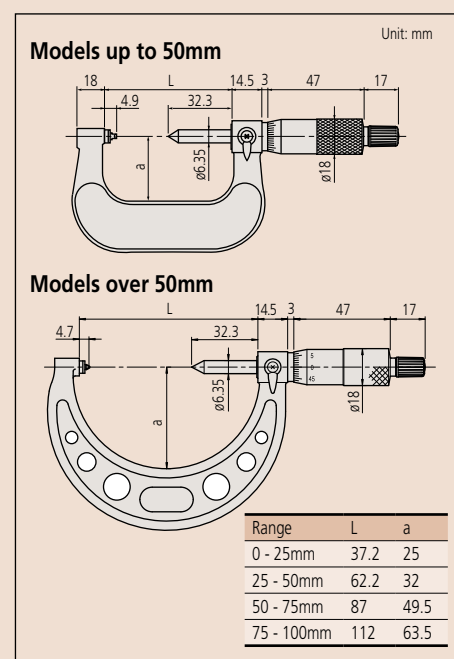
Range	Order No.	Screw to be measured (Metric/Unified)
50 - 75mm	125-111	0.6 - 0.9mm/44 - 28TPI
	125-112	1 - 1.75mm/24 - 14TPI
	125-113	2 - 3mm/13 - 9TPI
	125-114	3.5 - 5mm/8 - 5TPI
	125-115	5.5 - 7mm/4.5 - 3.5TPI
	125-116	0.6 - 0.9mm/44 - 28TPI
75 - 100mm	125-117	1 - 1.75mm/24 - 14TPI
	125-118	2 - 3mm/13 - 9TPI
	125-119	3.5 - 5mm/8 - 5TPI
	125-120	5.5 - 7mm/4.5 - 3.5TPI

Technical Data

Accuracy: $\pm(2+R/75)\mu\text{m}$, R = max. range (mm)
 *fraction rounded up
 Graduation: 0.01mm
 Spindle feed error: 3 μm



DIMENSION





(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)

Resolution*: 0.001mm or .00005"/0.001mm

Graduation**: 0.01mm or .001"

Spindle feed error: 3µm

Display*: LCD

Battery*: SR44 (1 pc.), **938882**

Battery life*: Approx. 8 months under normal use

Dust/Water protection level*: IP65

*Digital models **Analog models

Function of Digital Model

Zero-setting, Data hold, Automatic power ON/OFF, Data output, Preset, inch/mm conversion (inch/mm models)

Alarm: Low voltage, Counting value composition error

Optional Accessory

05CZA662: SPC cable with data switch (1m)*

05CZA663: SPC cable with data switch (2m)*

*Only for digital models

(See page 69.): Standard for screw thread micrometer

Anvil-spindle tip set:

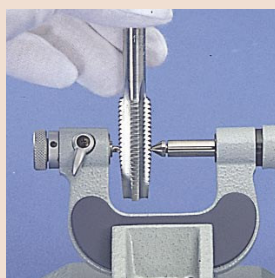


For Metric/Unified screws (60° threads)

Order No.	Assortment of anvil-spindle tips
126-800	0.4 - 0.5mm/64 - 48TPI (126-801) 0.6 - 0.9mm/44 - 28TPI (126-802) 1 - 1.75mm/24 - 14TPI (126-803) 2 - 3mm/13 - 9TPI (126-804) 3.5 - 5mm/8 - 5TPI (126-805) 5.5 - 7mm/4.5 - 3.5TPI (126-806)

For Whitworth screws (55° threads)

Order No.	Assortment of anvil-spindle tips
126-810	60 - 48TPI (126-811) 48 - 40TPI (126-812) 40 - 32TPI (126-813) 32 - 24TPI (126-814) 24 - 18TPI (126-815) 18 - 14TPI (126-816) 14 - 10TPI (126-817) 10 - 7TPI (126-818) 7 - 4.5TPI (126-819) 4.5 - 3.5TPI (126-820)



Screw Thread Micrometers

SERIES 326, 126 — Interchangeable Anvil-Spindle Tip Type

FEATURES

- IP65 water/dust protection (326 series).
- 60 degree or 55 degree V-anvil and conical spindle (interchangeable) are optional, which are made of high-grade special steel, hardened and precision ground.
- With Ratchet Stop for constant force.
- With SPC output (series 326).



326-251



126-125

SPECIFICATIONS

Metric	Digital model	
Range	Order No.	Accuracy
0 - 25mm	326-251	±4µm
25 - 50mm	326-252	±4µm
50 - 75mm	326-253	±4µm
75 - 100mm	326-254	±5µm

Metric		
Range	Order No.	Accuracy
0 - 25mm	126-125	±4µm
25 - 50mm	126-126	±4µm
50 - 75mm	126-127	±4µm
75 - 100mm	126-128	±5µm
100 - 125mm	126-129	±5µm
125 - 150mm	126-130	±5µm
150 - 175mm	126-131	±6µm
175 - 200mm	126-132	±6µm
200 - 225mm	126-133	±6µm
225 - 250mm	126-134	±7µm
250 - 275mm	126-135	±7µm
275 - 300mm	126-136	±7µm

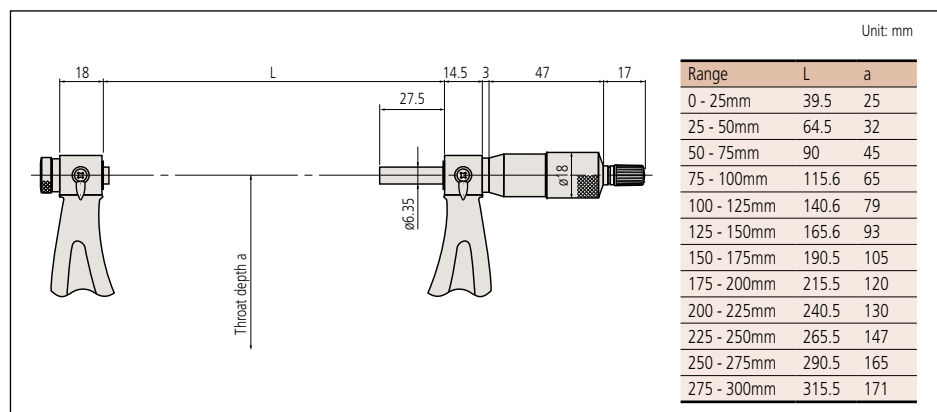
Inch/Metric	Digital model	
Range	Order No.	Accuracy
0 - 1"	326-351	±.0002"
1" - 2"	326-352	±.0002"
2" - 3"	326-353	±.0002"
3" - 4"	326-354	±.00025"

Inch		
Range	Order No.	Accuracy
0 - 1 "	126-137	±.0002 "
1" - 2 "	126-138	±.0002 "
2" - 3 "	126-139	±.0002 "
3" - 4 "	126-140	±.00025 "

(Models with a range up to 7" are available.)

(Models with a range up to 7" are available.)

DIMENSION



Universal Micrometers

SERIES 116 — Interchangeable Anvil Type

FEATURES

- Non-rotating spindle with seven interchangeable anvils (flat, spline, spherical, point, knife-edge, disk, and blade) for a wide range of applications.
- Interchangeable anvils (pair) are optional.
- V-anvils and conical spindle tips (matching pair) for screw thread measurement are also available.
- With Ratchet Stop for constant force.



116-101

SPECIFICATIONS

Metric		
Range	Order No.	Accuracy
0 - 25mm	116-101	±4μm
25 - 50mm	116-102	±4μm

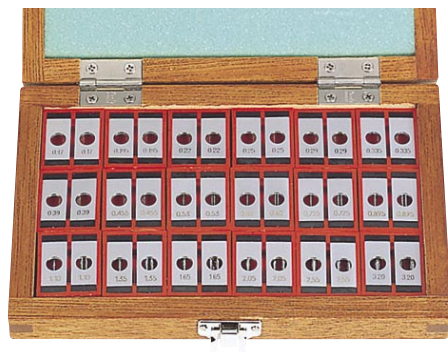
Inch		
Range	Order No.	Accuracy
0 - 1"	116-105	±.0002"
1" - 2"	116-106	±.0002"

3-Wire Units

SERIES 313

FEATURES

- Facilitates measurement of the pitch diameter of screw threads with a standard micrometer.
- 18 sizes of wires are assorted in a set.



313-101

SPECIFICATIONS

Application	Order No.	Assortment of wire units
ø6.35mm (.25" DIA.)	313-101	0.17mm (952131), 0.195mm (952132), 0.22mm (952133), 0.25mm (952134), 0.29mm (952135), 0.335mm (952136), 0.39mm (952137), 0.455mm (952138), 0.53mm (952139), 0.62mm (952140), 0.725mm (952141), 0.895mm (952142), 1.1mm (952143), 1.35mm (952144), 1.65mm (952145), 2.05mm (952146), 2.55mm (952147), 3.2mm (952148)
ø8mm (.315" DIA.)	313-102	0.17mm (952149), 0.195mm (952150), 0.22mm (952151), 0.25mm (952152), 0.29mm (952153), 0.335mm (952154), 0.39mm (952155), 0.455mm (952156), 0.53mm (952157), 0.62mm (952158), 0.725mm (952159), 0.895mm (952160), 1.1mm (952161), 1.35mm (952162), 1.65mm (952163), 2.05mm (952164), 2.55mm (952165), 3.2mm (952166)

Technical Data

Accuracy: Refer to the list of specifications.
Graduation: 0.01mm or .001"
Spindle feed error: 3μm

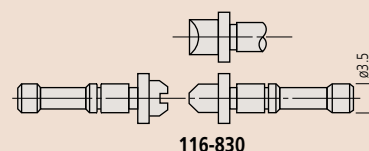
Optional Accessory

Interchangeable V-anvil and conical spindle tip set:
For Metric/Unified screw

Order No.	Assortment of anvils and tips
116-830	0.4 - 0.5mm/64 - 48TPI (116-831) 0.6 - 0.9mm/44 - 28TPI (116-832) 1 - 1.75mm/24 - 14TPI (116-833) 2 - 3mm/13 - 9TPI (116-834) 3.5 - 5mm/8 - 5TPI (116-835) 5.5 - 7mm/4.5 - 3.5TPI (116-836)

For Whitworth screw

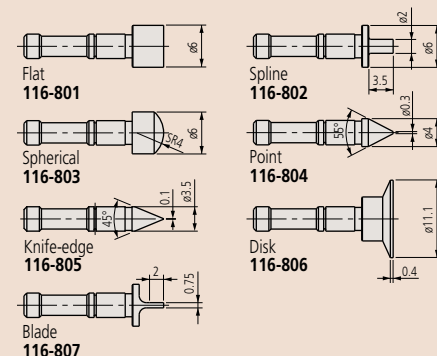
Order No.	Assortment of anvils and tip
116-840	60 - 48TPI (116-841) 48 - 40TPI (116-842) 40 - 32TPI (116-843) 32 - 24TPI (116-844) 24 - 18TPI (116-845) 18 - 14TPI (116-846) 14 - 10TPI (116-847) 10 - 7TPI (116-848) 7 - 4.5TPI (116-849) 4.5 - 3.5TPI (116-850)



116-830

Interchangeable anvils set

Order No.	Assortment of anvils
116-800	Flat anvils (116-801) Spline anvils (116-802) Spherical anvils (116-803) Point anvils (116-804) Knife-edge anvils (116-805) Disk anvils (116-806) Blade anvils (116-807)



Technical Data

Roundness of wire: within 0.5μm
Cylindricity of wire: within 1μm
Hardness of wire: 63-66 HRC
Accuracy of wire diameter: ±2μm





(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)

Resolution*: 0.001mm or .00005"/0.001mm

Graduation**: 0.01mm

Display*: LCD

Battery*: SR44 (1 pc.), 938882

Battery life*: Approx. 8 months under normal use

Dust/Water protection level*: IP65

*Digital models **Analog models

Function of Digital Model

Zero-setting, Data hold, Automatic power ON/OFF, Data output, Preset, inch/mm conversion (inch/mm models)

Alarm: Low voltage, Counting value composition error

Optional Accessory

05CZA662: SPC cable with data switch (1m)*

05CZA663: SPC cable with data switch (2m)*

*Only for digital models

Interchangeable ball anvil-spindle tip set:

Diameter	Order No.	Gear module	Dia. pitch
0.8mm	124-801*	0.5 - 0.55	50
1mm	124-802*	0.6 - 0.65	45
1.191mm (3/64")	124-803*	0.7 - 0.8	35 - 30
1.5mm	124-821*	0.9 - 1	28 - 26
1.588mm (1/16")	124-804*	0.9 - 1	28 - 26
2mm	124-805*	1.25	22
2.381mm (3/32")	124-806	1.5	17
2.5mm	124-822	1.5	17
3mm	124-807	1.75	15
3.175mm (1/8")	124-808	—	14
3.5mm	124-823	2	13
3.969mm (5/32")	124-809	2	13
4mm	124-810	2.25	11
4.5mm	124-824	2.5	10
4.763mm (3/16")	124-811	2.5	10
5mm	124-812	2.75	9
5.556mm (7/32")	124-813	3.0 - 3.25	8
6mm	124-814	3.5	7
6.35mm (1/4")	124-815	3.75	7
7mm	124-816	4.0	6.5
7.144mm (9/32")	124-817	4.25	6
7.938mm (5/16")	124-818	4.5	5.5
8mm	124-819	4.75	5.5
8.731mm (11/32")	124-820	5.0 - 5.25	5

*Carbide-tipped type



Gear Tooth Micrometers

SERIES 324, 124 — Interchangeable Ball Anvil-Spindle Tip Type

FEATURES

- IP65 water/dust protection (324 series).
- Measures over-pin diameter of gears with precision steel (carbide) ball-tipped measuring faces.
- Interchangeable ball anvil-spindle tips for various gear modules (0.5 - 5.25) are optional.
- With Ratchet Stop for constant force.
- With SPC output (series 324).



324-251



124-173

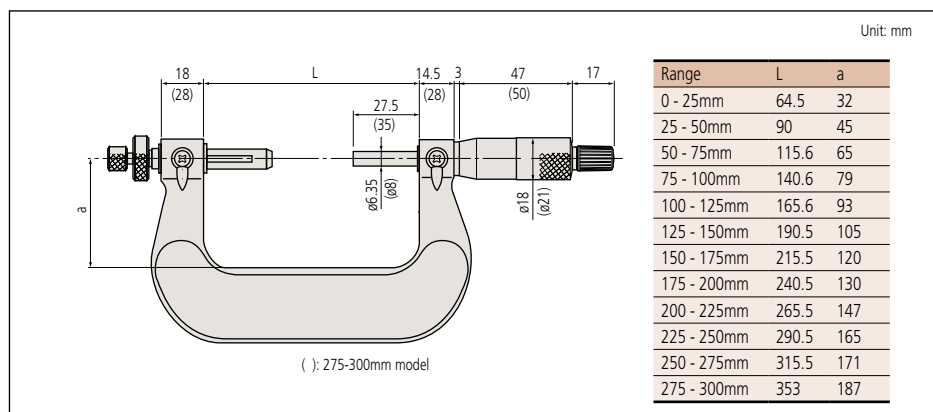
SPECIFICATIONS

Metric	Digital model	
Range	Order No.	Accuracy
0 - 25mm	324-251	±4μm
25 - 50mm	324-252	±4μm
50 - 75mm	324-253	±4μm
75 - 100mm	324-254	±5μm

Metric		
Range	Order No.	Accuracy
0 - 25mm	124-173	±4μm
25 - 50mm	124-174	±4μm
50 - 75mm	124-175	±4μm
75 - 100mm	124-176	±5μm
100 - 125mm	124-177	±5μm
125 - 150mm	124-178	±5μm
150 - 175mm	124-179	±6μm
175 - 200mm	124-180	±6μm
200 - 225mm	124-181	±6μm
225 - 250mm	124-182	±7μm
250 - 275mm	124-183	±7μm
275 - 300mm	124-195	±7μm

Inch/Metric	Digital model	
Range	Order No.	Accuracy
0 - 1"	324-351	±.0002"
1" - 2"	324-352	±.0002"
2" - 3"	324-353	±.0002"
3" - 4"	324-354	±.00025"

DIMENSION



Disk Micrometers

SERIES 323, 223, 123

FEATURES

- Diameter of measuring disk: 20mm (30mm: models over 100mm)
- 0.7mm (1mm: models over 100mm) edge thickness to enter narrow recesses.
- With Ratchet Stop for constant force.
- With a standard except for 25mm model.
- With SPC output (series 323).
- The 223 series is provided with a mechanical digit counter for quick reading of measurements.



SPECIFICATIONS

Metric Digital model		
Range	Order No.	Accuracy
0 - 25mm	323-250	±4μm
25 - 50mm	323-251	±4μm
50 - 75mm	323-252	±6μm
75 - 100mm	323-253	±6μm

Metric Mechanical counter model		
Range	Order No.	Accuracy
0 - 25mm	223-101	±4μm
25 - 50mm	223-102	±4μm

Metric		
Range	Order No.	Accuracy
0 - 25mm	123-101	±4μm
	123-113*	±4μm
25 - 50mm	123-102	±4μm
	123-114*	±4μm
50 - 75mm	123-103	±6μm
	123-115*	±6μm
75 - 100mm	123-104	±6μm
	123-116*	±6μm
100 - 125mm	123-105	±7μm
125 - 150mm	123-106	±7μm
150 - 175mm	123-107	±8μm
175 - 200mm	123-108	±8μm
200 - 225mm	123-109	±8μm
225 - 250mm	123-110	±9μm
250 - 275mm	123-111	±9μm
275 - 300mm	123-112	±9μm

*The measuring disks have carbide tips.

Inch/Metric Digital model		
Range	Order No.	Accuracy
0 - 1"	323-350	±.0002"
1" - 2"	323-351	±.0002"
2" - 3"	323-352	±.0003"
3" - 4"	323-353	±.0003"

Inch Mechanical counter model		
Range	Order No.	Accuracy
0 - 1"	223-125	±.0002"

Inch		
Range	Order No.	Accuracy
0 - 1"	123-125	±.0002"
1" - 2"	123-126	±.0002"
2" - 3"	123-127	±.0003"
3" - 4"	123-128	±.0003"

SPC



IP65

(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation**: 0.01mm or .001"
Flatness: 1μm for models up to 100mm
1.6μm for models over 100mm
Parallelism: 4μm for models up to 50mm
(4+R/50)μm for models up to 100mm
(5+R/75)μm for models over 100mm,
R = max. range (mm) *Fraction rounded up
Measurable module: 0.5 - 6 (0.7 - 11: models over 100mm)
Display*: LCD
Battery*: SR44 (1 pc.), 938882
Battery life*: Approx. 1.2 years under normal use
*Digital models **Analog models

Function of Digital Model

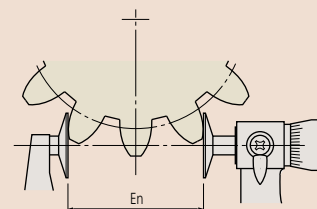
Origin-set, Zero-setting, Data hold, Data output, inch/mm conversion (inch/mm models), Automatic power ON/OFF
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

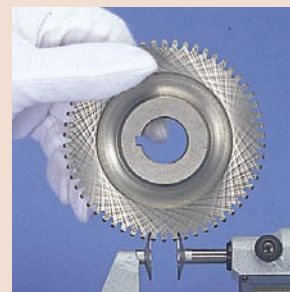
05CZA662: SPC cable with data switch (1m)

05CZA663: SPC cable with data switch (2m)

Root tangent length of gear (En)



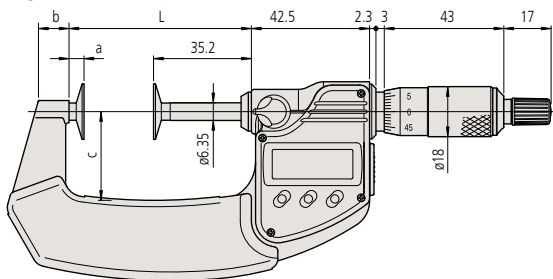
Note: Root tangent length measurement is not available for some types gears.



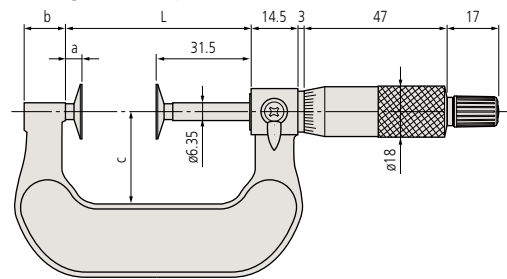
DIMENSION

Unit: mm

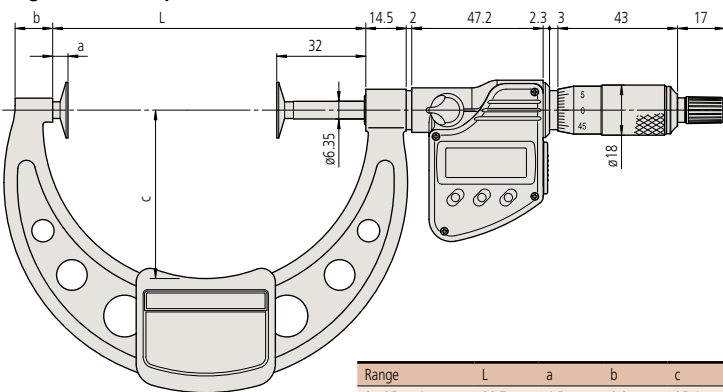
Digital models up to 75mm



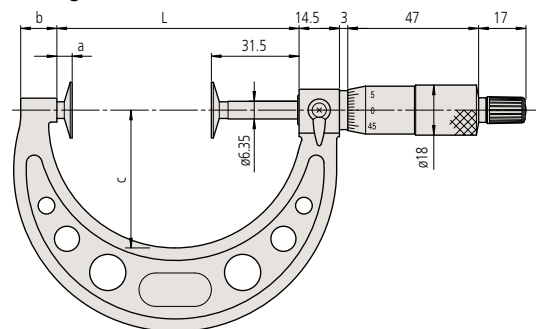
Analog models up to 50mm



Digital models over 75mm

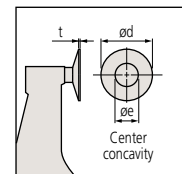


Analog over 50mm



Range	L	a	b	c	d	e	t
0 - 25mm*	39.7	4.5	9.2	25.4	20	8	0.7
25 - 50mm*	65.6	5.4	11	31.9	20	8	0.7
50 - 75mm*	90.7	5.5	12.2	50	20	8	0.7
75 - 100mm*	112.5	5.5	13.5	60.5	20	8	0.7
0 - 25mm	37.5	6	14	25	20	8 (9.8)	0.7 (0.7)
25 - 50mm	62.5	6	14	32	20	8 (9.8)	0.7 (0.7)
50 - 75mm	87	5.5	11	49	20	8 (9.8)	0.7 (0.7)
75 - 100mm	112	5.5	11	63	20	8 (9.8)	0.7 (0.7)
100 - 125mm	137.5	6	12	79	30	12	1
125 - 150mm	162.5	6	15	94	30	12	1
150 - 175mm	187.5	6	16	106	30	12	1
175 - 200mm	212.5	6	15	118	30	12	1
200 - 225mm	237.5	6	14	130	30	12	1
225 - 250mm	262.5	6	14	143	30	12	1
250 - 275mm	287.5	6	15	156	30	12	1
275 - 300mm	312.5	6	15	169	30	12	1

Data in () applies to those with carbide tipped disks. *Digital models

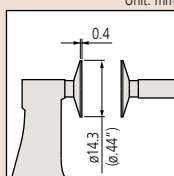


Technical Data

Accuracy: Refer to the list of specifications
 Graduation: 0.01mm or .001"
 Flatness: 1µm
 Parallelism: 3µm



Unit: mm



() : inch model

Paper Thickness Micrometers

SERIES 169 — Non-Rotating Spindle Type Designed for Paper Thickness Measurement

FEATURES

- Non-rotating spindle.
- With Ratchet Stop for constant force.

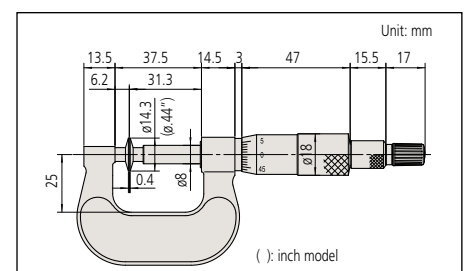


169-101

SPECIFICATIONS

Metric		
Range	Order No.	Accuracy
0 - 25mm	169-101	±4µm

DIMENSION



Inch		
Range	Order No.	Accuracy
0 - 1"	169-103	±.0002"

Disk Micrometers

SERIES 369, 227, 169 — Non-Rotating Spindle Type

FEATURES

- The Disk Micrometer is designed to easily measure root tangent length of spur gears and herical gears.
- Non-rotating spindle eliminates torque on workpiece.
- Speedy spindle feed of 10mm/rev. (Quickmike type).
- Diameter of measuring disk: 20mm
- With Ratchet Stop for constant force.
- With SPC output (series 369).



Quickmike type



Quickmike type with fine-loading



SPECIFICATIONS

Metric Digital model		
Range	Order No.	Accuracy
0 - 25mm	369-250	±4μm
25 - 50mm	369-251	±4μm
50 - 75mm	369-252	±6μm
75 - 100mm	369-253	±6μm

Metric Quickmike type		
Range	Order No.	Accuracy
0 - 30mm	369-411	±4μm
25 - 55mm	369-412	±4μm

Metric Quickmike type with fine-loading			
Range	Order No.	Accuracy	Measuring force
0 - 15mm	227-221	±4μm	0.5N - 2.5N
	227-222	±4μm	2N - 10N

Metric		
Range	Order No.	Accuracy
0 - 25mm	169-201	±4μm
25 - 50mm	169-202	±4μm
50 - 75mm	169-205	±6μm
75 - 100mm	169-207	±6μm

Inch/Metric Digital model		
Range	Order No.	Accuracy
0 - 1"	369-350	±.0002"
1" - 2"	369-351	±.0002"
2" - 3"	369-352	±.0003"
3" - 4"	369-353	±.0003"

Inch/Metric Quickmike type		
Range	Order No.	Accuracy
0 - 1.2"	369-421	±.0002"
1" - 2.2"	369-422	±.0002"

Inch/Metric Quickmike type with fine-loading			
Range	Order No.	Accuracy	Measuring force
0 - .6"	227-231	±.0002"	0.5N - 2.5N
	227-232	±.0002"	2N - 10N

Inch		
Range	Order No.	Accuracy
0 - 1"	169-203	±.0002"
1" - 2"	169-204	±.0002"
2" - 3"	169-206	±.0003"
3" - 4"	169-208	±.0003"



Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)

Resolution*: 0.001mm or .00005"/0.001mm

Graduation**: 0.01mm or .001"

Flatness: 1μm

Parallelism: 4μm for models up to 50mm
6μm for models over 50mm
(3μm: Quickmike type with fine-loading)

Measurable module: 0.5-6,
(0.4 - 3: Quickmike type with fine-loading)

Display*: LCD

Battery*: SR44 (1 pc.), 938882

Battery life*: Approx. 1.2 years under normal use
(1 year: Quickmike type, 3 years: Quickmike type with fine-loading)

Series 227: Refer to the page 27 for more information.

*Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Data hold, Automatic power ON/OFF, Data output, inch/mm conversion (inch/mm models)

Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

05CZA662: SPC cable with data switch (1m)

05CZA663: SPC cable with data switch (2m)

937387: SPC cable for Quickmike type (1m)

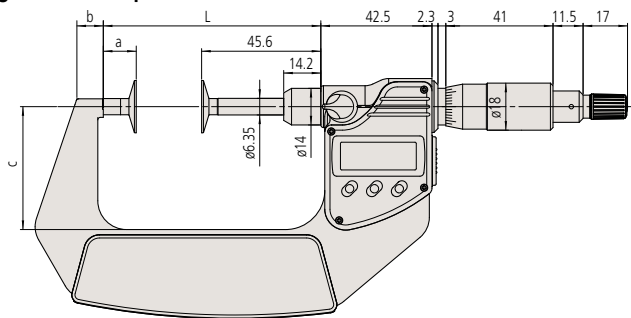
965013: SPC cable for Quickmike type (2m)



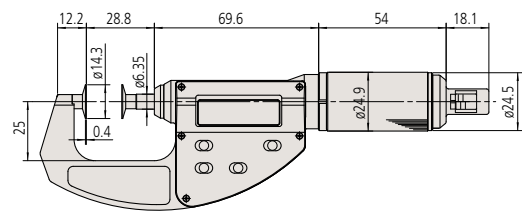
DIMENSION

Unit: mm

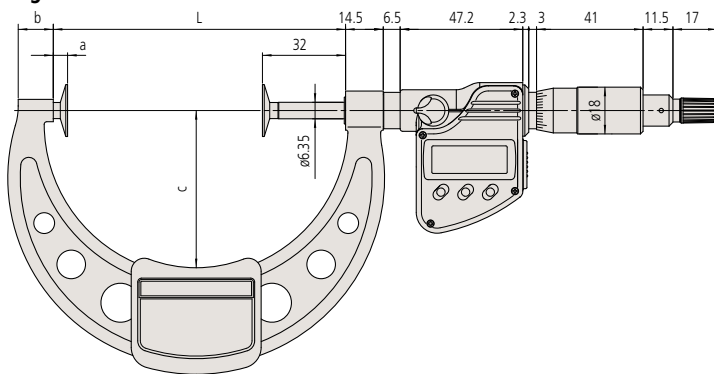
Digital models up to 75mm



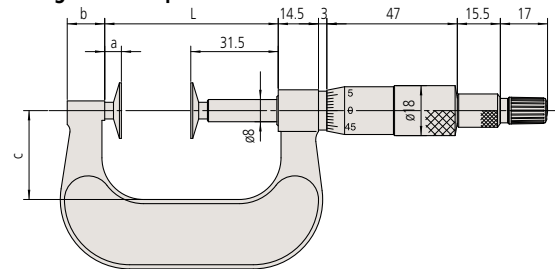
Fine-loading type



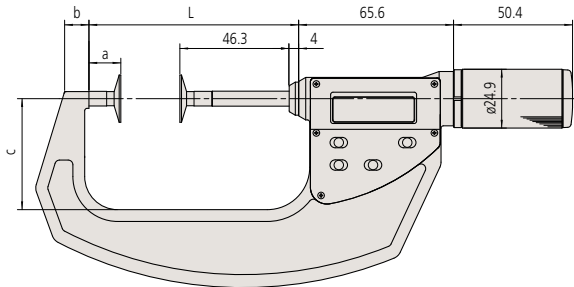
Digital models over 75mm



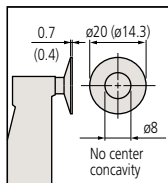
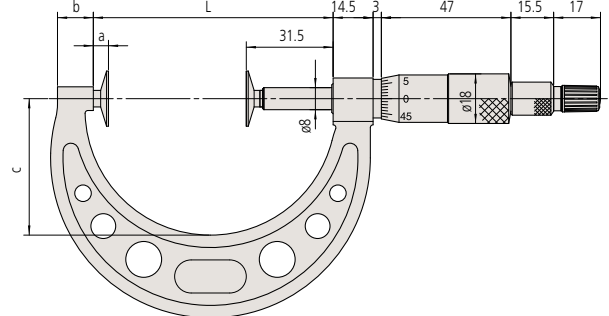
Analog models up to 50mm



Quickmike type



Analog models over 50mm



() : Fine-loading type

Digital model

Range	L	a	b	c
0 - 25mm	58.5	12.9	7	32
25 - 50mm	83.5	12.9	9.8	47
50 - 75mm	108.5	12.9	11.2	60
75 - 100mm	112.5	5.5	13.5	60.5
0 - 30mm*	63.8	13.5	8.5	36
25 - 55mm*	88.8	13.5	10.3	47

*Quickmike type

Analog model

Range	L	a	b	c
0 - 25mm	37.5	6	13.5	25
25 - 50mm	62.5	6	13.5	32
50 - 75mm	87	5.5	13	49.5
75 - 100mm	112	5.5	13	63.5

Sheet Metal Micrometers

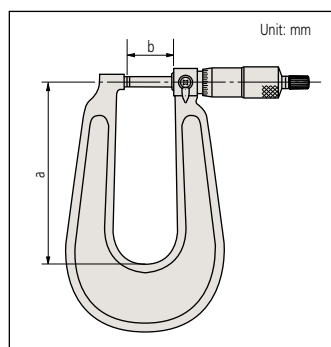
SERIES 389, 189, 119, 118

FEATURES

- Measures thickness of sheet metal, and rubber parts.
- With Ratchet Stop for constant force.
- With a standard except for 25mm model.
- IP65 water/dust protection (389 series*).
- *Except for 389-513
- With digit counter (series 189).



DIMENSION



SPECIFICATIONS

Metric	Digital model			
Range	Order No.	Accuracy	a/b	
0 - 25mm	389-251	±4μm	160/27.5mm	
	389-261^{S-F}	±4μm	160/27.5mm	
	389-271^{S-S}	±4μm	160/27.5mm	
	389-513	±5μm	330/35mm	
25 - 50mm	389-252	±4μm	165/27.5mm	
	389-262^{S-F}	±4μm	165/27.5mm	
	389-272^{S-S}	±4μm	165/27.5mm	

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle

Inch/Metric	Digital model			
Range	Order No.	Accuracy	a/b	
0 - 1"	389-351	±.0002"	160/27.5mm	
	389-361^{S-F}	±.0002"	160/27.5mm	
	389-371^{S-S}	±.0002"	160/27.5mm	
	389-713	±.00025"	330/35mm	
1" - 2"	389-352	±.0002"	165/27.5mm	
	389-362^{S-F}	±.0002"	165/27.5mm	
	389-372^{S-S}	±.0002"	165/27.5mm	

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle

S-S:

Metric	Mechanical counter model			
Range	Order No.	Accuracy	a/b	
0 - 25mm	189-102	±4μm	160/27.5mm	

Inch	Mechanical counter model			
Range	Order No.	Accuracy	a/b	
0 - 1"	189-129*	±.0002"	160/27.5mm	

*.0001" reading is obtained with vernier.

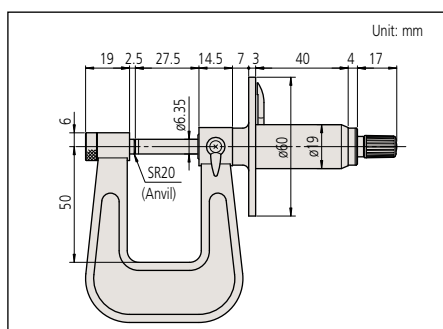
Metric				
Range	Order No.	Accuracy	a/b	
0 - 25mm	118-101	±4μm	110/27.5mm	
	118-102	±4μm	160/27.5mm	
	118-114^{S-F}	±4μm	160/27.5mm	
	118-118^{S-S}	±4μm	160/27.5mm	
	118-103	±5μm	330/35mm	
25 - 50mm	118-110	±4μm	165/27.5mm	

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle

Inch				
Range	Order No.	Accuracy	a/b	
0 - 1"	118-129*	±.0002"	160/27.5mm	
	118-116^{S-F*}	±.0002"	160/27.5mm	
	118-120^{S-S*}	±.0002"	160/27.5mm	
	118-107	±.00025"	330/35mm	
1" - 2"	118-112	±.0002"	165/27.5mm	

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle
*.0001" reading is obtained with vernier.

DIMENSION



Metric	Dial reading model			
Range	Order No.	Accuracy	Throat	
0 - 25mm	119-202^{S-F}	±4μm	50mm	

S-F: Spherical anvil and flat spindle



SPC



IP65

(Refer to the page 9 for details.)

Anvil-Spindle Combinations



Standard, Flat-Flat



Spherical-Flat (S-F)



Spherical-Spherical (S-S)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation**: 0.01mm, .001" or .0001"
Flatness: 0.6μm for models with 150mm throat
1μm for models with 300mm throat
Parallelism: 3μm
Measuring faces: Carbide tipped
Display*: LCD
Battery*: SR44 [1 pc. (2 pcs.: **389-513** and **389-713**), **938882**]
Battery life*: Approx. 1.2 years under normal use
(1.8 years: **389-513** and **389-713**)
Dust/Water protection level*: IP65
*Digital models **Analog models

Function of Digital Model

Origin-set (Preset*), Zero-setting, Data hold, Power ON/OFF*,
Data output, inch/mm conversion (inch/mm models)
Preset zero-setting Power ON/OFF Data hold Data output
inch/mm conversion (inch/mm models) *Only for **389-513**,
389-713
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

05CZA662: SPC cable with data switch (1m)
05CZA663: SPC cable with data switch (2m)
937387: SPC cable for **389-513/389-713** (1m)
965013: SPC cable for **389-513/389-713** (2m)

The 119 series is provided with a dial for making easy and quick reading.





(Refer to the page 9 for details.)

Spline Micrometers

SERIES 331, 111

FEATURES

- IP65 water/dust protection (series 331).
- The anvil and spindle have a small diameter for measuring splined shafts, slots, and keyways.
- With Ratchet Stop for constant force.
- With SPC output (series 331).



331-251



111-115

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation*: 0.01mm, .001" or .0001"
Flatness: 0.3μm
Parallelism: (2+R/100)μm, R = max. range (mm)
*fraction rounded up
Measuring faces: Carbide tipped
Display*: LCD
Battery*: SR44 (1 pc.), **938882**
Battery life*: Approx. 1.2 years under normal use
Dust/Water protection level*: IP65
*Digital models **Analog models

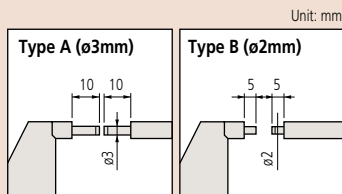
Function of Digital Model

Origin-set, Zero-setting, Data hold, Automatic power ON/OFF, Data output, inch/mm conversion (inch/mm models)
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

05CZA662: SPC cable with data switch (1m)

05CZA663: SPC cable with data switch (2m)



SPECIFICATIONS

Metric	Digital model		
Range	Order No.	Accuracy	Remarks
0 - 25mm	331-251	±2μm	Type A
	331-261	±2μm	Type B
25 - 50mm	331-252	±2μm	Type A
	331-262	±2μm	Type B
50 - 75mm	331-253	±2μm	Type A
	331-263	±2μm	Type B
75 - 100mm	331-254	±3μm	Type A
	331-264	±3μm	Type B

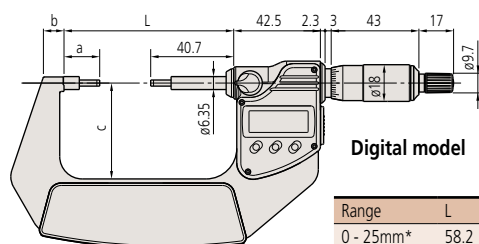
Metric			
Range	Order No.	Accuracy	Remarks
0 - 25mm	111-115	±3μm	Type A
	111-215	±3μm	Type B
25 - 50mm	111-116	±3μm	Type A
50 - 75mm	111-117	±3μm	Type A
75 - 100mm	111-118	±4μm	Type A
100 - 125mm	111-119	±4μm	Type A
125 - 150mm	111-120	±4μm	Type A
150 - 175mm	111-121	±5μm	Type A
175 - 200mm	111-122	±5μm	Type A

Inch/Metric	Digital model		
Range	Order No.	Accuracy	Remarks
0 - 1"	331-351	±.0001"	Type A
	331-361	±.0001"	Type B
1" - 2"	331-352	±.0001"	Type A
	331-362	±.0001"	Type B
2" - 3"	331-353	±.0001"	Type A
	331-363	±.0001"	Type B
3" - 4"	331-354	±.00015"	Type A
	331-364	±.00015"	Type B

Inch			
Range	Order No.	Accuracy	Remarks
0 - 1"	111-166*	±.00015"	Type A
1" - 2"	111-142	±.00015"	Type A
2" - 3"	111-143	±.00015"	Type A

*.0001" reading is obtained with vernier.

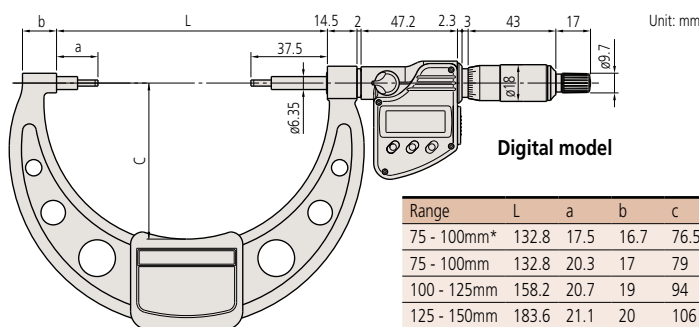
DIMENSION



Models up to 75mm

Range	L	a	b	c
0 - 25mm*	58.2	17.5	7.3	32
25 - 50mm*	83.2	17.5	10.1	47
50 - 75mm*	108.2	17.5	11.5	60
0 - 25mm	55.3	17.8	10	38
25 - 50mm	80.3	17.8	12	49
50 - 75mm	105.3	17.8	14	60

*Digital models



Models over 75mm

Range	L	a	b	c
75 - 100mm*	132.8	17.5	16.7	76.5
75 - 100mm	132.8	20.3	17	79
100 - 125mm	158.2	20.7	19	94
125 - 150mm	183.6	21.1	20	106
150 - 175mm	208.8	21.3	19	118
175 - 200mm	234.2	21.7	18	130

*Digital models

Tube Micrometers

SERIES 395, 295, 115 — Spherical and Cylindrical Anvils

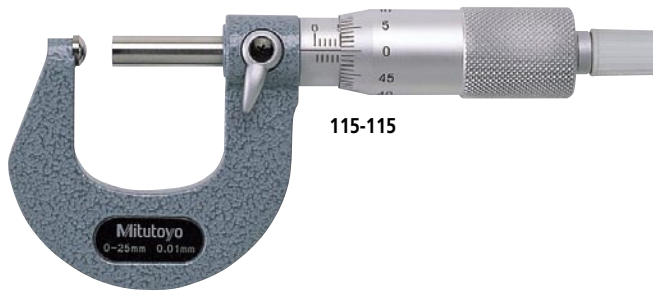
FEATURES

- IP65 water/dust protection (395 series).
- Designed to measure the wall thickness of various tubing.
- The Tube Micrometers have two combinations of measuring faces (carbide-tipped): spherical-flat type, and spherical-spherical type.
- Cylindrical anvils (perpendicular) are also available.
- With Ratchet Stop for constant force.
- With SPC output (series 395).
- With digit counter (series 295).



395-251

Spherical-flat Type



115-115



395-271

Spherical-spherical Type



115-215



(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation**: 0.01mm, .001" or .0001"
Flatness: 0.6μm
Display*: LCD
Battery*: SR44 (1 pc.), 938882
Battery life*: Approx. 1.2 years under normal use
Dust/Water protection level*: IP65
*Digital models **Analog models

Function of Digital Model

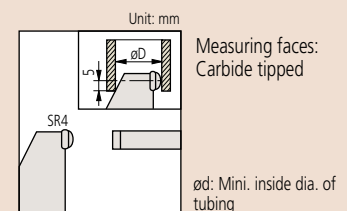
Origin-set, Zero-setting, Data hold, Automatic power ON/OFF, Data output, inch/mm conversion (inch/mm models)
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

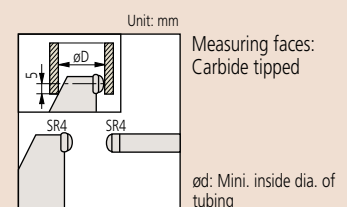
05CZA662: SPC cable with data switch (1m)

05CZA663: SPC cable with data switch (2m)

Spherical anvil type



Spherical anvil-spindle type

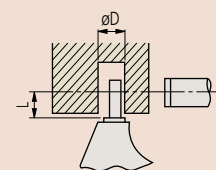
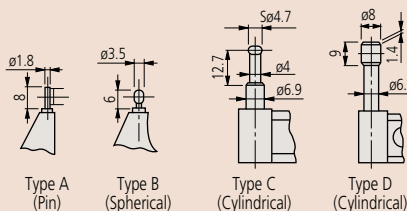


Cylindrical Anvil Type



395-261

Cylindrical anvil type



ØD: Mini. inside dia. of tubing
Spindle face: Carbide tipped

Anvil	D	L
Type A	2	4
Type B	3.6	4
Type C	4.8	12
Type D	8.2	22

SPECIFICATIONS

Metric Digital model with spherical anvil

Range	Order No.	Accuracy	Remarks
0 - 25mm	395-251 ^{S-F}	±2µm	D: 15mm
	395-271 ^{S-S}	±2µm	D: 15mm
25 - 50mm	395-252 ^{S-F}	±2µm	D: 15mm
	395-272 ^{S-S}	±2µm	D: 15mm
50 - 75mm	395-253 ^{S-F}	±2µm	D: 19mm
	395-273 ^{S-S}	±2µm	D: 19mm
75 - 100mm	395-254 ^{S-F}	±3µm	D: 20mm
	395-274 ^{S-S}	±3µm	D: 20mm

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle

Metric Digital model with cylindrical anvil

Range	Order No.	Accuracy	Remarks
0 - 25mm	395-261	±3µm	Type A
	395-262	±3µm	Type B
	395-263	±3µm	Type C
	395-264	±3µm	Type D

Metric Mechanical counter model with spherical anvil

Range	Order No.	Accuracy	Remarks
0 - 25mm	295-115 ^{S-F}	±3µm	D: 10mm
	295-215 ^{S-S}	±3µm	D: 10mm

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle

Metric With spherical anvil

Range	Order No.	Accuracy	Remarks
0 - 25mm	115-115 ^{S-F}	±3µm	D: 10mm
	115-215 ^{S-S}	±3µm	D: 10mm
25 - 50mm	115-116 ^{S-F}	±3µm	D: 11mm
	115-216 ^{S-S}	±3µm	D: 11mm
50 - 75mm	115-117 ^{S-F}	±3µm	D: 17mm
	115-217 ^{S-S}	±3µm	D: 17mm
75 - 100mm	115-118 ^{S-F}	±4µm	D: 18mm
	115-218 ^{S-S}	±4µm	D: 18mm

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle

Metric With cylindrical anvil

Range	Order No.	Accuracy	Remarks
0 - 25mm	115-302	±3µm	Type A
	115-308	±3µm	Type B
	115-315	±3µm	Type C
	115-316	±3µm	Type D
25 - 50mm	115-303	±3µm	Type A
	115-309	±3µm	Type B

Inch/Metric Digital model with spherical anvil

Range	Order No.	Accuracy	Remarks
0 - 1"	395-351 ^{S-F}	±.0001"	D: .59"
	395-371 ^{S-S}	±.0001"	D: .59"
1" - 2"	395-352 ^{S-F}	±.0001"	D: .59"
	395-372 ^{S-S}	±.0001"	D: .59"
2" - 3"	395-353 ^{S-F}	±.0001"	D: .75"
	395-373 ^{S-S}	±.0001"	D: .75"
3" - 4"	395-354 ^{S-F}	±.00015"	D: .79"
	395-374 ^{S-S}	±.00015"	D: .79"

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle

Inch/Metric Digital model with cylindrical anvil

Range	Order No.	Accuracy	Remarks
0 - 1"	395-362	±.00015"	Type B
	395-363	±.00015"	Type C
	395-364	±.00015"	Type D

Inch Mechanical counter model with spherical anvil

Range	Order No.	Accuracy	Remarks
0 - 1"	295-153 ^{S-F} *	±.00015"	D: .40"
	295-253 ^{S-S} *	±.00015"	D: .40"

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle
*.0001" reading is obtained with vernier.

Inch With spherical anvil

Range	Order No.	Accuracy	Remarks
0 - 1"	115-153 ^{S-F} *	±.00015"	D: .40"
	115-253 ^{S-S} *	±.00015"	D: .40"
1" - 2"	115-242 ^{S-S}	±.00015"	D: .44"
2" - 3"	115-243 ^{S-S}	±.00015"	D: .67"

S-F: Spherical anvil and flat spindle
S-S: Spherical anvil and spherical spindle
*.0001" reading is obtained with vernier.

Inch With cylindrical anvil

Range	Order No.	Accuracy	Remarks
0 - 1"	115-305	±.00015"	Type A
	115-313*	±.00015"	Type C
	115-314*	±.00015"	Type D

*.0001" reading is obtained with vernier.

Point Micrometers

SERIES 342, 142, 112

FEATURES

- IP65 water/dust protection (342 series).
- Pointed spindle and anvil for measuring the web thickness of drills, small grooves, keyways, and other hard-to-reach dimensions.
- 15 degree and 30 degree measuring points are available.
- The measuring points (carbide-tipped) have approximately 0.3mm radius.
- With Ratchet Stop for constant force.
- With SPC output (series 342).
- With digit counter (series 142).
- With digit counter (series 142).



SPECIFICATIONS

Metric		Digital model	
Range	Order No.	Accuracy	Point
0 - 25mm	342-251	±2μm	15°
	342-261	±2μm	30°
25 - 50mm	342-252	±2μm	15°
	342-262	±2μm	30°
50 - 75mm	342-253	±2μm	15°
	342-263	±2μm	30°
75 - 100mm	342-254	±3μm	15°
	342-264	±3μm	30°

Metric			
Range	Order No.	Accuracy	Point
0 - 25mm	142-153	±3μm	15°
	142-201	±3μm	30°

Metric			
Range	Order No.	Accuracy	Point
0 - 25mm	112-165	±3μm	15°
	112-153*	±3μm	15°
	112-213	±3μm	30°
	112-201*	±3μm	30°
25 - 50mm	112-166	±3μm	15°
	112-154*	±3μm	15°
	112-214	±3μm	30°
	112-202*	±3μm	30°
50 - 75mm	112-167	±3μm	15°
	112-155*	±3μm	15°
	112-215	±3μm	30°
	112-203*	±3μm	30°
75 - 100mm	112-168	±4μm	15°
	112-156*	±4μm	15°
	112-216	±4μm	30°
	112-204*	±4μm	30°

Inch/Metric		Digital model	
Range	Order No.	Accuracy	Point
0 - 1"	342-351	±.0001"	15°
	342-361	±.0001"	30°
1" - 2"	342-352	±.0001"	15°
	342-362	±.0001"	30°
2" - 3"	342-353	±.0001"	15°
	342-363	±.0001"	30°
3" - 4"	342-354	±.00015"	15°
	342-364	±.00015"	30°

Inch			
Range	Order No.	Accuracy	Point
0 - 1"	142-177	±.00015"	15°
	142-225	±.00015"	30°

Inch			
Range	Order No.	Accuracy	Point
0 - 1"	112-189	±.00015"	15°
	112-177*	±.00015"	15°
	112-237	±.00015"	30°
	112-225*	±.00015"	30°
1" - 2"	112-190	±.00015"	15°
	112-178*	±.00015"	15°
	112-238	±.00015"	30°
	112-226*	±.00015"	30°
2" - 3"	112-191	±.00015"	15°

*The points have not carbide tips.

SPC



IP65

(Refer to the page 9 for details.)

Technical Data

Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation**: 0.01mm or .001"
Display*: LCD
Battery*: SR44 (1 pc.), **938882**
Battery life*: Approx. 1.2 years under normal use
Dust/Water protection level*: IP65
*Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Data hold, Automatic power ON/OFF, inch/mm conversion (inch/mm models) Data hold
Alarm: Low voltage, Counting value composition error

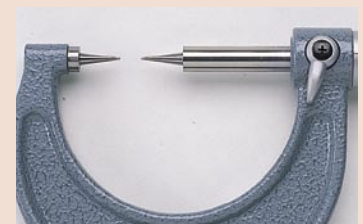
Optional Accessory for Digital Model

05CZA662: SPC cable with data switch (1m)

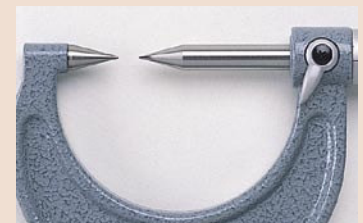
05CZA663: SPC cable with data switch (2m)



Tip angle: 15° (SR0.3)



Tip angle: 30° (SR0.3)

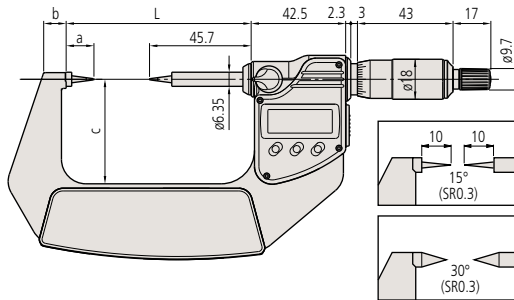


*The points have not carbide tips.

DIMENSION

Unit: mm

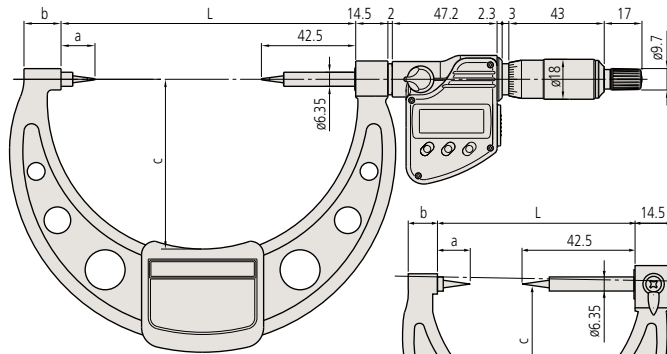
Digital models up to 75mm



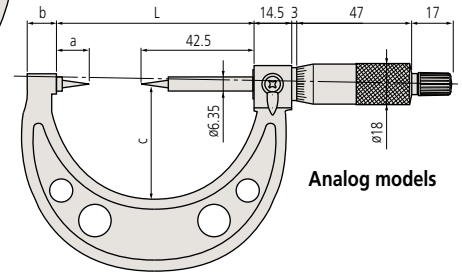
Range	L	a	b	c
0 - 25mm	58.2 (55.3)	12.5 (12.8)	7.3 (10)	32 (38)
25 - 50mm	83.2 (80.3)	12.5 (12.8)	10.1 (12)	47 (49)
50 - 75mm	108.2 (105.3)	12.5 (12.8)	11.5 (14)	60 (60)
75 - 100mm	132.8 (132.8)	15.3 (15.3)	16.7 (17)	76.5 (79)

(): Analog model

Digital models over 75mm



Analog models



SPC



IP65

(Refer to the page 9 for details.)

Technical Data

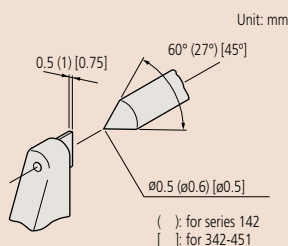
Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation*: 0.01mm or .001"
Display*: LCD
Battery*: SR44 (1 pc.), 938882
Battery life*: Approx. 1.2 years under normal use
(3 years: Quickmike type)
Dust/Water protection level*: IP65
*Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Data hold, Power ON/OFF*, Data output, inch/mm conversion (inch/mm models)
*Only for Quickmike type
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

05CZA662: SPC cable with data switch (1m)
05CZA663: SPC cable with data switch (2m)
937387: SPC cable for Quickmike type (1m)
965013: SPC cable for Quickmike type (2m)



Crimp Height Micrometers

SERIES 342, 142, 112 — Point Spindle and Blade Anvil

FEATURES

- IP54/65 water/dust protection (342 series).
- Measures the height of crimp contacts.
- With Ratchet Stop for constant force.
- With SPC output (series 342).
- With digit counter (series 142).



342-271



112-401



Quickmike type

342-451

IP54

ABSOLUTE[®]
Absolute System Protected by MITUTOYO



SPECIFICATIONS

Metric	Digital model	
Range	Order No.	Accuracy
0 - 20mm	342-271	±3μm

Metric	Quickmike type	
Range	Order No.	Accuracy
0 - 15mm	342-451	±3µm

Metric	Mechanical counter model	
Range	Order No.	Accuracy
0 - 25mm	142-402/142-403*	±3μm

* 0.001mm reading is obtained with vernier.

Inch/Metric		Digital model
Range	Order No.	Accuracy
0 - 0.8"	342-371	±.00015"

Metric