

Abzar Tejarat : 66736774 - 66736726



Micrometers



Micrometer Heads



New Products

**Coolant Proof
Micrometer**

**Digimatic
Micrometer**

**Ratchet Thimble
Micrometer**

**Digimatic Spline
Micrometer**

**Fine Pitch
Micrometer Head**

Small Tool Instruments and Data Management

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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.



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

*without SPC data output



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

*without SPC data output



SPC



IP65

(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.



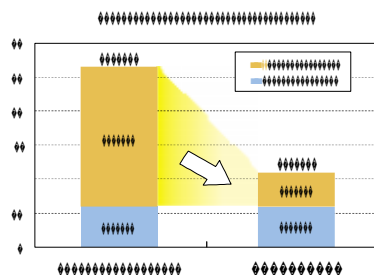
FEATURES

•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.

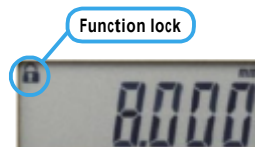
* According to Mitutoyo's comparison test data for measuring time on typical workpieces.



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.

•Function lock

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

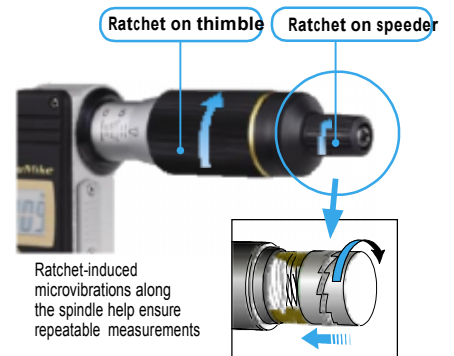


Function lock

•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)

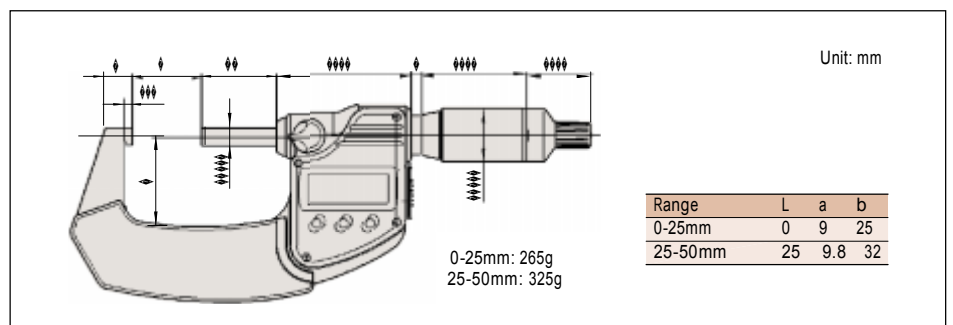


•Dust/water resistance with IP65 protection level

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*.
- 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)



293-230



293-252



Oil-resistance materials are used in all plastic components.

SPC



(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)

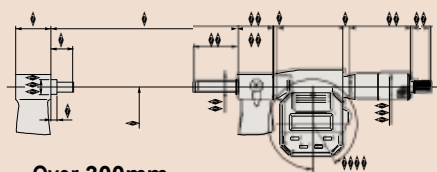


SPC cable with data switch



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

DIMENSION

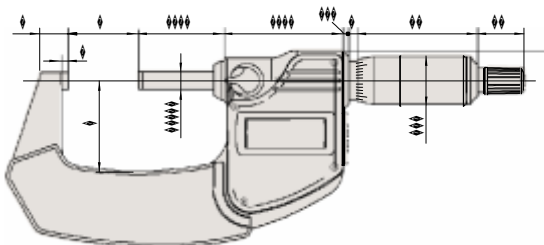


Over 300mm
model

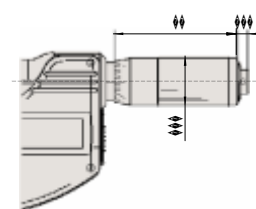
Range	L	a	b	c	d
300 - 235mm	353	18	28	187	8
325 - 350mm	378	18	28	199	8
350 - 375mm	403	18	28	212	8
375 - 400mm	428	18	28	224	8
400 - 425mm	453	18	28	236	8
425 - 450mm	478	18	28	248	8
450 - 475mm	503	18	28	261	8
475 - 500mm	528	18	28	273	8

DIMENSION AND MASS

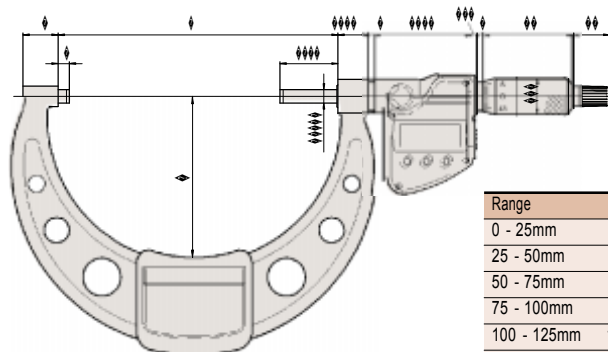
Ratchet stop type up to
100mm



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

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

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

With friction thimble

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

*without SPC data output

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

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

With friction thimble

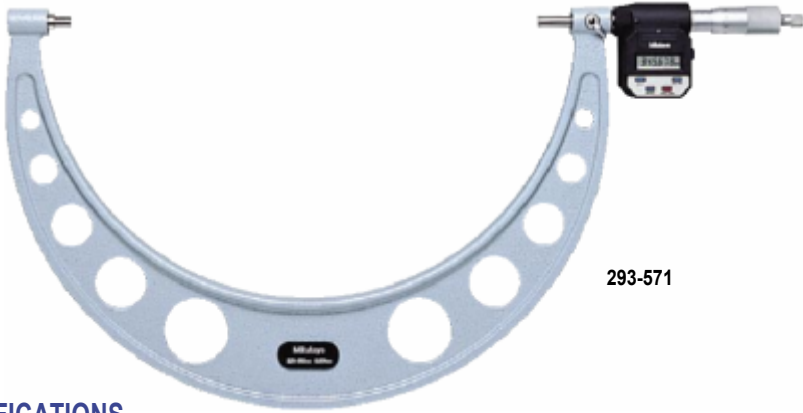
Range	Order No.	Accuracy
0 - 1"	293-335 / 293-348*	±.00005"
1" - 2"	293-336	±.00005"

*without SPC data output

Digimatic Micrometer

SERIES 293

FEATURES



SPECIFICATIONS

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

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"

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

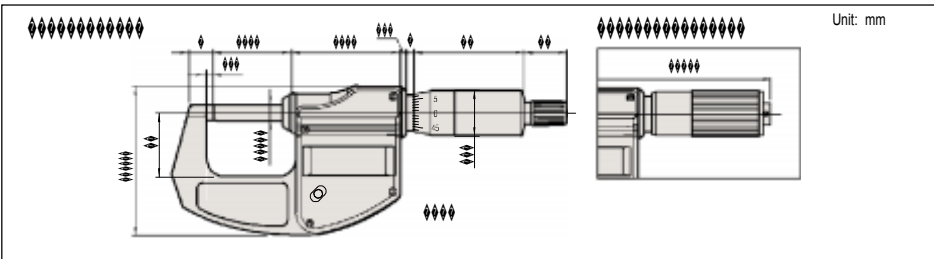
With ratchet stop		
Range	Order No.	Accuracy
0 - 25mm	293-821	±2µm



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

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

DIMENSION AND MASS



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)



(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).

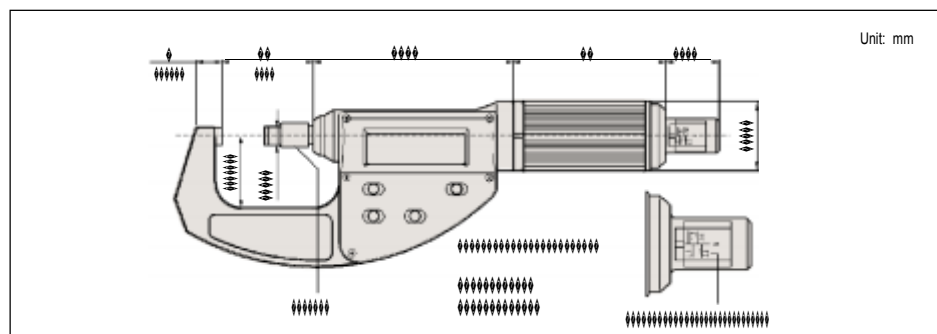


SPECIFICATION

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

Range	Order	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).



293-666



293-667



293-668



293-669

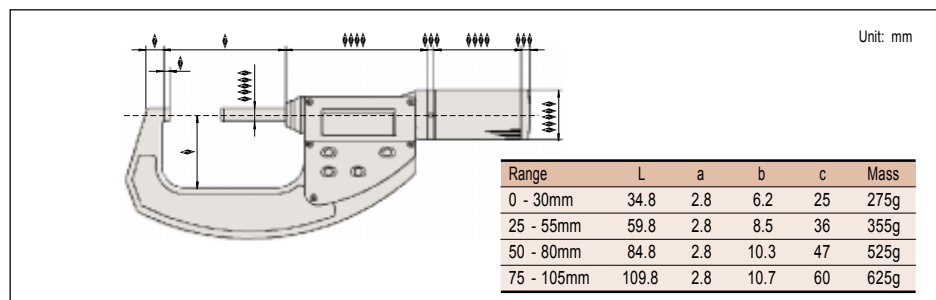
SPECIFICATION

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

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



SPC

IP54

(Refer to the page 9 for details.)

ABSOLUTE[™]
Absolute Systems Patented by MTI/SPS

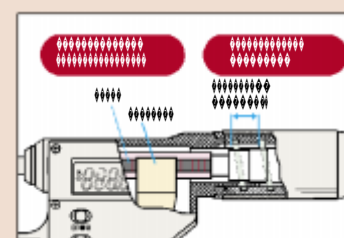
(Refer to the page 9 for details.)

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

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

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.

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

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.

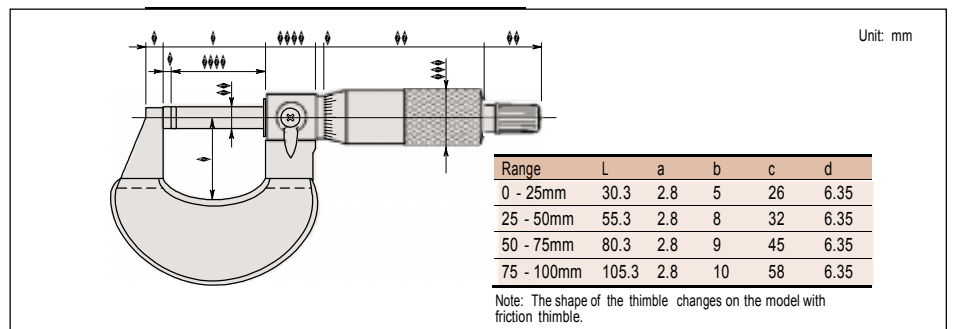
With ratchet stop		
Range	Order No.	Accuracy
0 - 1"	102-321	±.0001"
	102-327*	±.0001"
1" - 2"	102-322	±.0001"
	102-328*	±.0001"
2" - 3"	102-323	±.0001"
3" - 4"	102-324	±.00015"

*.0001" reading is obtained with vernier.

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

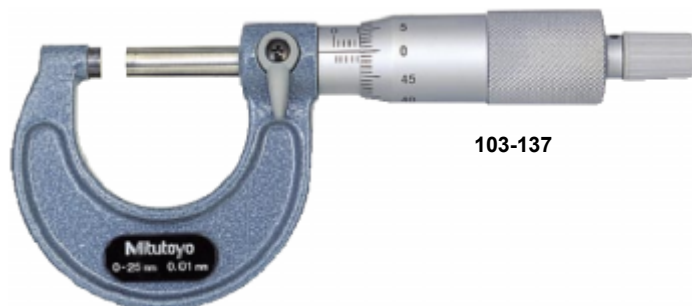


Outside Micrometers

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

SPECIFICATIONS

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.

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.

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,
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

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.

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.

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,
6" - 12" (6 pcs./set)	103-906	103-183, 103-184, 103-185, 103-186, 103-187,
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



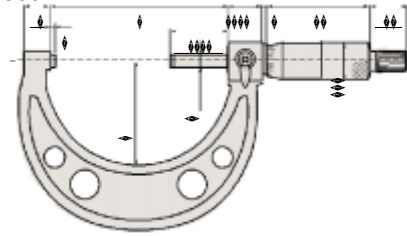
(Refer to the page 9 for details.)

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

DIMENSION AND MASS

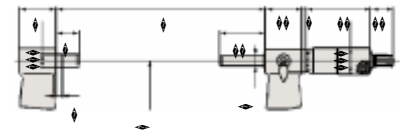
Models up to 300mm



Range	L	a	b	c	d
0 - 25mm	30.3	2.8	9	28	ø6.35
25 - 50mm	55.3	2.8	10	38	ø6.35
50 - 75mm	80.3	2.8	12	49	ø6.35
75 - 100mm	105.3	2.8	14	60	ø6.35
100 - 125mm	132.8	5.3	17	79	ø6.35
125 - 150mm	158.2	5.7	19	94	ø6.35
150 - 175mm	183.6	6.1	20	106	ø6.35
175 - 200mm	208.8	6.3	19	118	ø6.35
200 - 225mm	234.2	6.7	18	130	ø6.35

Models over

Unit: mm



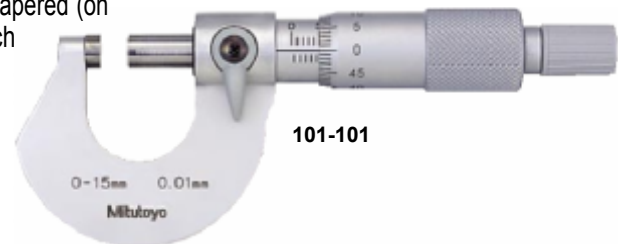
Range	L	a	b	c	d
225 - 250mm	258	5.5	18	143	ø6.35
250 - 275mm	284	6.5	18	156	ø6.35
275 - 300mm	309	6.5	18	169	ø6.35
300 - 325mm	353	18	28	187	ø8
325 - 350mm	378	18	28	199	ø8
350 - 375mm	403	18	28	212	ø8
375 - 400mm	428	18	28	224	ø8
400 - 425mm	453	18	28	236	ø8
425 - 450mm	478	18	28	248	ø8
450 - 475mm	503	18	28	261	ø8
475 - 500mm	528	18	28	273	ø8

Outside Micrometers

SERIES 101

FEATURES

- Satin-chrome-finished frame, tapered (on the anvil side) for hard-to-reach places.
- With a standard except for .5"/1" models.



SPECIFICATIONS

With ratchet stop		
Range	Order No.	Accuracy
0 - 15mm	101-101	±2μm
	101-227*	±2μm

*0.001mm reading is obtained with vernier.

With ratchet stop		
Range	Order No.	Accuracy
0 - 1"	101-105	±.0001"
	101-113*	±.0001"
1" - 2"	101-106	±.0001"
	101-114*	±.0001"
2" - 3"	101-119*	±.0001"
3" - 4"	101-120*	±.00015"

*.0001" reading is obtained with vernier.

With friction thimble		
Range	Order No.	Accuracy
0 - 1"	101-109	±.0001"
	101-117*	±.0001"
1" - 2"	101-110	±.0001"
	101-118*	±.0001"

*.0001" reading is obtained with vernier.

Technical Data

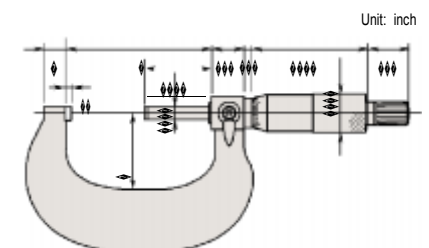
Accuracy: Refer to the list of specifications.
 Graduation: 0.01mm, 0.001mm, .001" or .0001"
 Flatness: 0.6μm
 Parallelism: 1.3μm (.00005") for models up to 15mm

.00008" for models up to 3"
 .00012" for models over 3"

Measuring faces: Carbide tipped



DIMENSION



Range	L	a	b	c
0 - 1"	1.18	.10	.20	1.10
1 - 2"	2.16	.08	.31	1.28
2 - 3"	3.19	.11	.33	1.77
3 - 4"	4.19	.11	.33	2.28

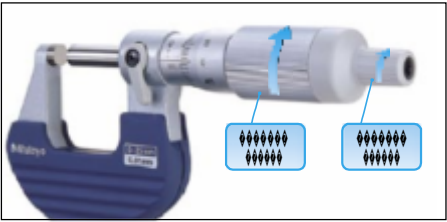
Note: The shape of the thimble changes on the model with friction thimble.

Ratchet Thimble Micrometer

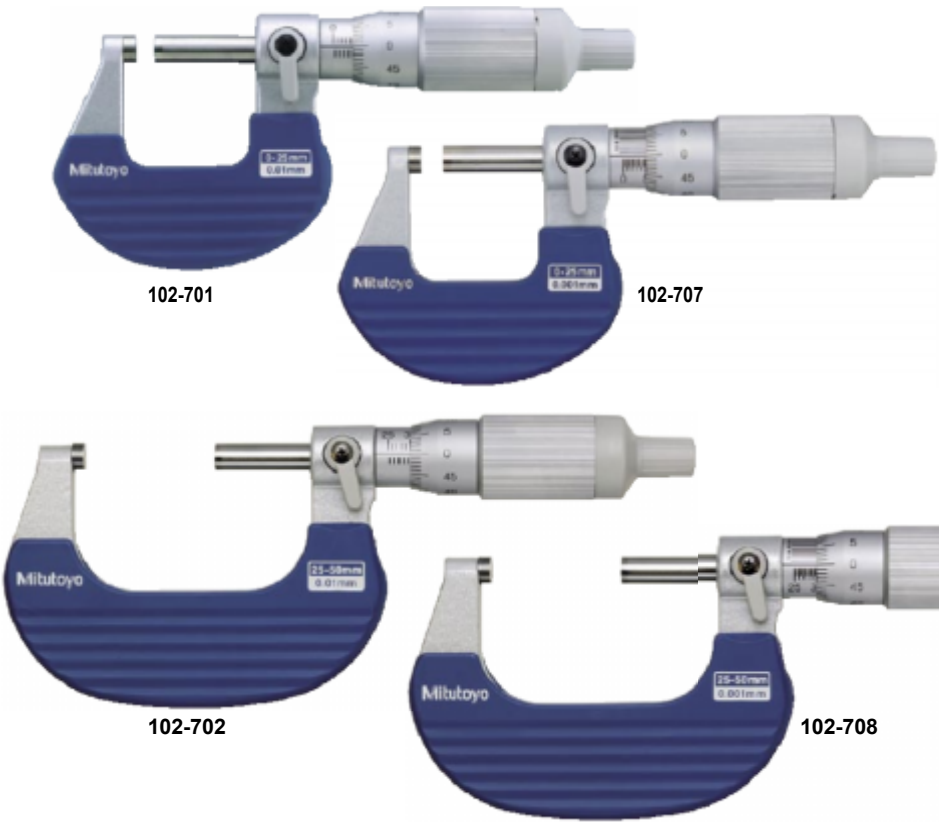
SERIES 101, 102 — New smoother action Ratchet Thimble

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.

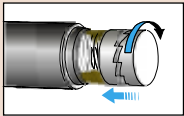


(Refer to the page 9 for details.)

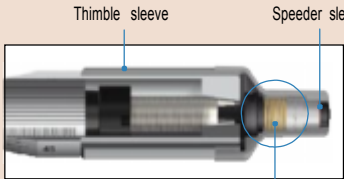


Technical Data

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.



Ratchet mechanism



SPECIFICATIONS

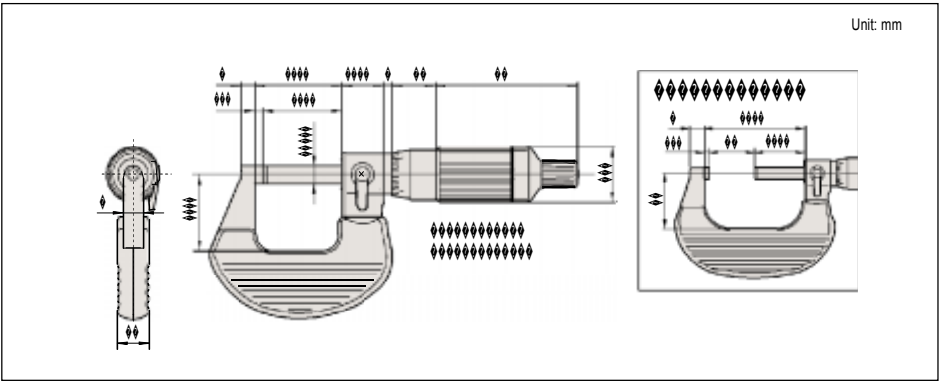
Range	Order No.	Accuracy
0 - 25mm	102-701	±2µm
	102-707*	±2µm
25 - 50mm	102-702	±2µm
	102-708*	±2µm

*0.001mm reading is obtained with vernier.

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

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

DIMENSION AND MASS



Unit: mm



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)



SPECIFICATIONS

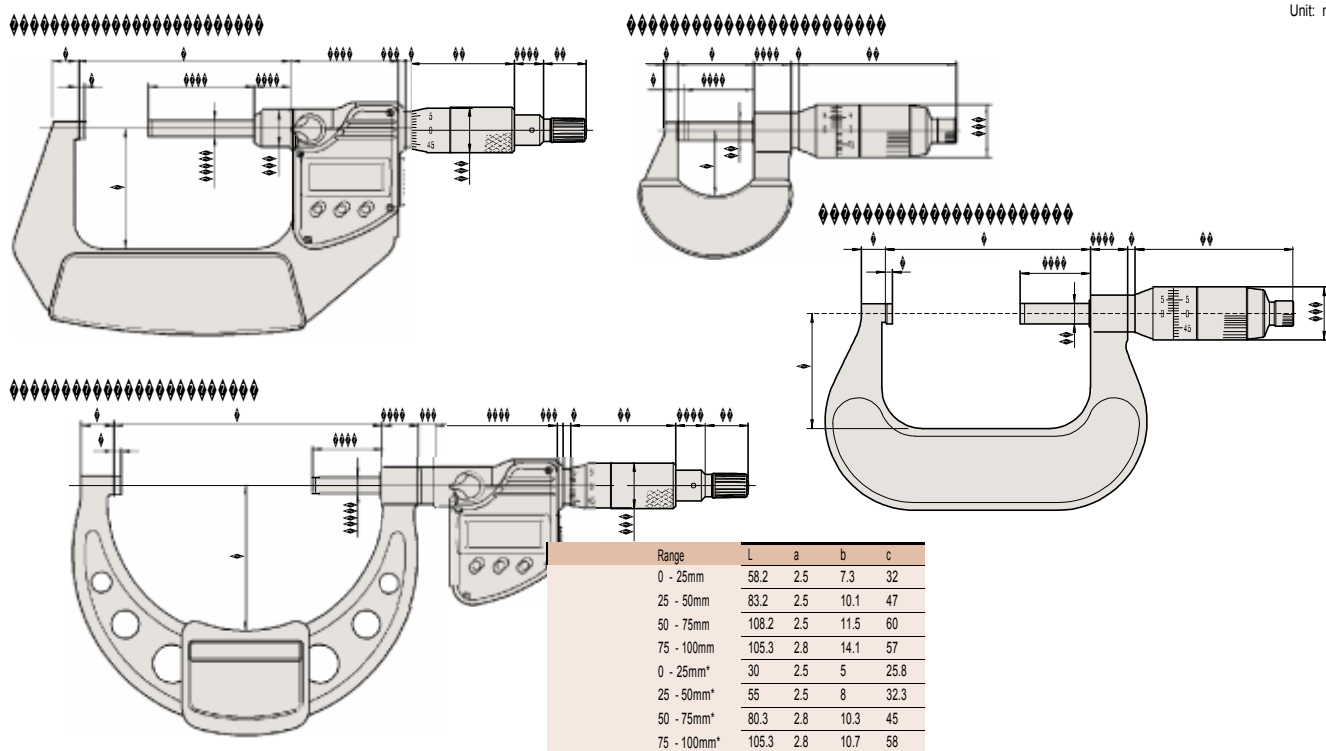
Digital model with ratchet stop		
Range	Order No.	Accuracy
0 - 25mm	406-250	±3μm
25 - 50mm	406-251	±3μm
50 - 75mm	406-252	±3μm
75 - 100mm	406-253	±4μm

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

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"

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

DIMENSION



*Analog model

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

 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

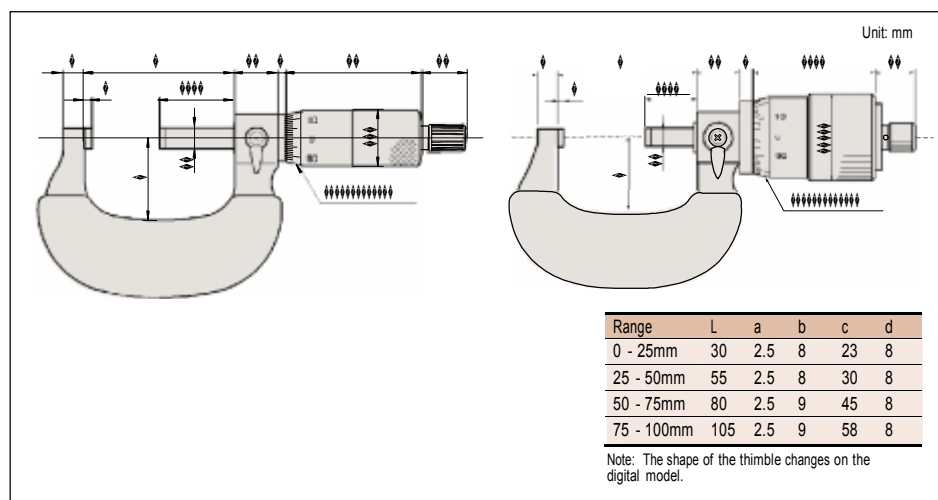
 With ratchet thimble

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

 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

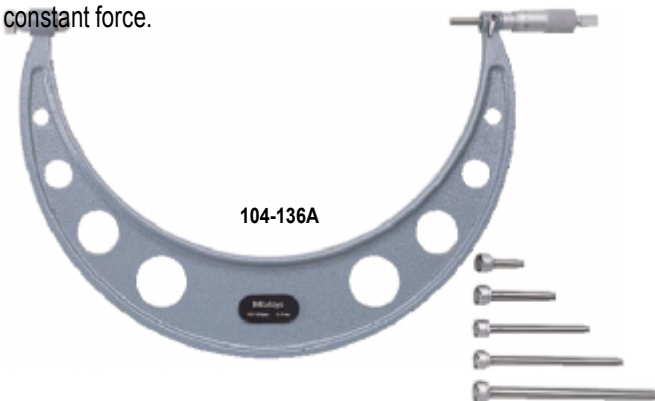
FEATURES

- 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).



340-251



104-136A

SPECIFICATIONS

Digital model

Range	Order	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

Digital model

Range	Order	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"

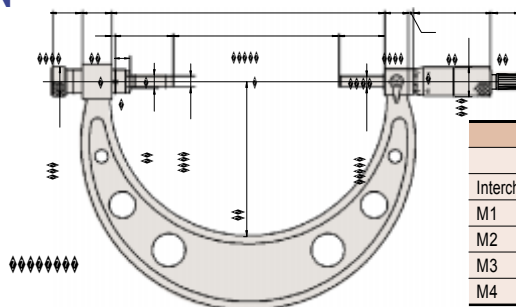
Range	Order	Interchangeable anvils
0 - 50mm	104-171*	0, 25mm
0 - 100mm	104-139A	0, 25, 50, 75mm
0 - 150mm	104-135A	0, 25, 50, 75, 100, 125mm
50 - 150mm	104-161A	0, 25, 50, 75mm
100 - 200mm	104-140A	0, 25, 50, 75mm
150 - 300mm	104-136A	0, 25, 50, 75, 100, 125mm
200 - 300mm	104-141A	0, 25, 50, 75mm
300 - 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

Range	Order	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



Unit: mm

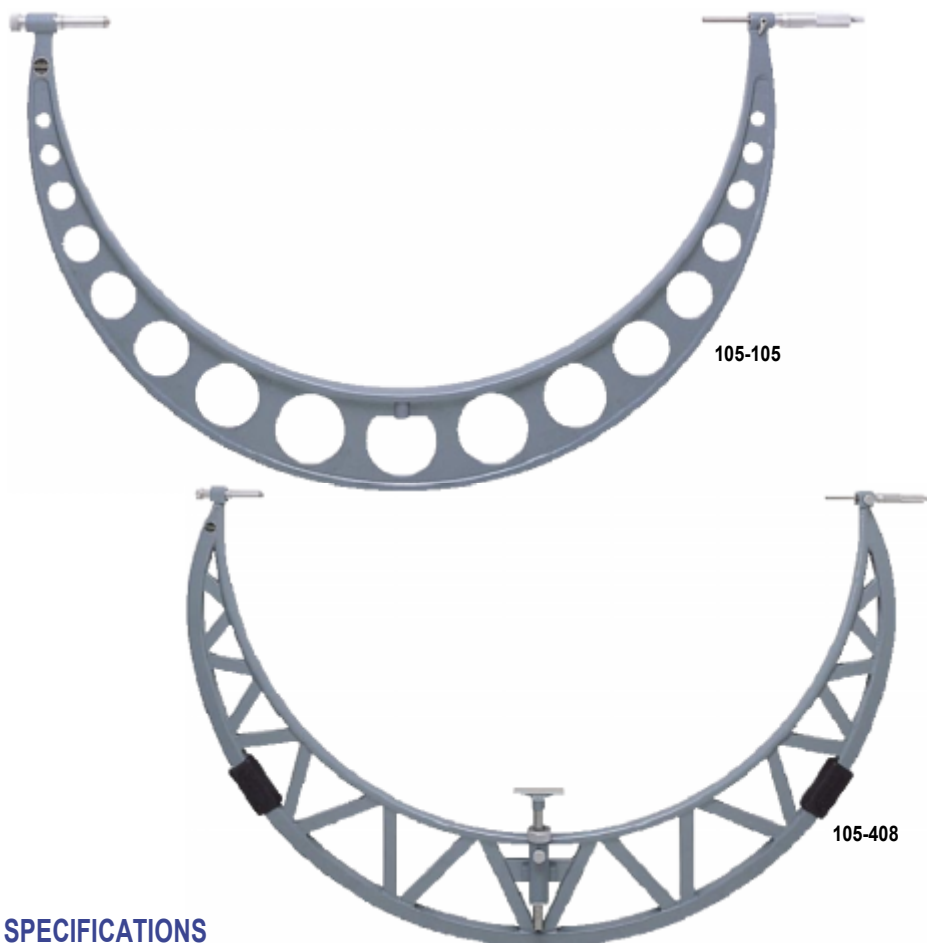
Interchangeable anvil	L	a
M1	0	135
M2	25	110
M3	50	85
M4	75	60
M5	100	35
M6	125	10

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

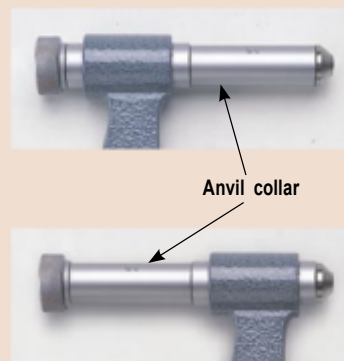
Graduation: 0.01mm

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

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



Caliper Type Micrometers

SERIES 343, 143

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
Flatness: 0.3μm
Parallelism: (3+R/75)μm, R = max. range (mm)
*Fraction rounded down
Measuring faces: Carbide tipped
Display*: LCD
Battery*: SR44 (1 pc.), **938882**
Battery life*: Approx. 1.2 years under normal use
*Digital models **Analog models

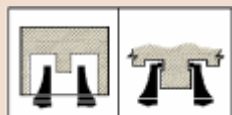
Function of Digital Model

Origin-set, Zero-setting, Automatic power ON/OFF, Data hold, 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)



FEATURES

- With Ratchet Stop for constant force.
- With SPC output (series 343).



SPECIFICATIONS

Digital model		
Range	Order No.	Accuracy
0 - 25mm	343-250	±5μm
25 - 50mm	343-251	±6μm
50 - 75mm	343-252	±7μm
75 - 100mm	343-253	±8μm

Range	Order No.	Accuracy
0 - 25mm	143-101	±5μm
25 - 50mm	143-102	±6μm
50 - 75mm	143-103	±7μm
75 - 100mm	143-104	±8μm
100 - 125mm	143-105	±9μm

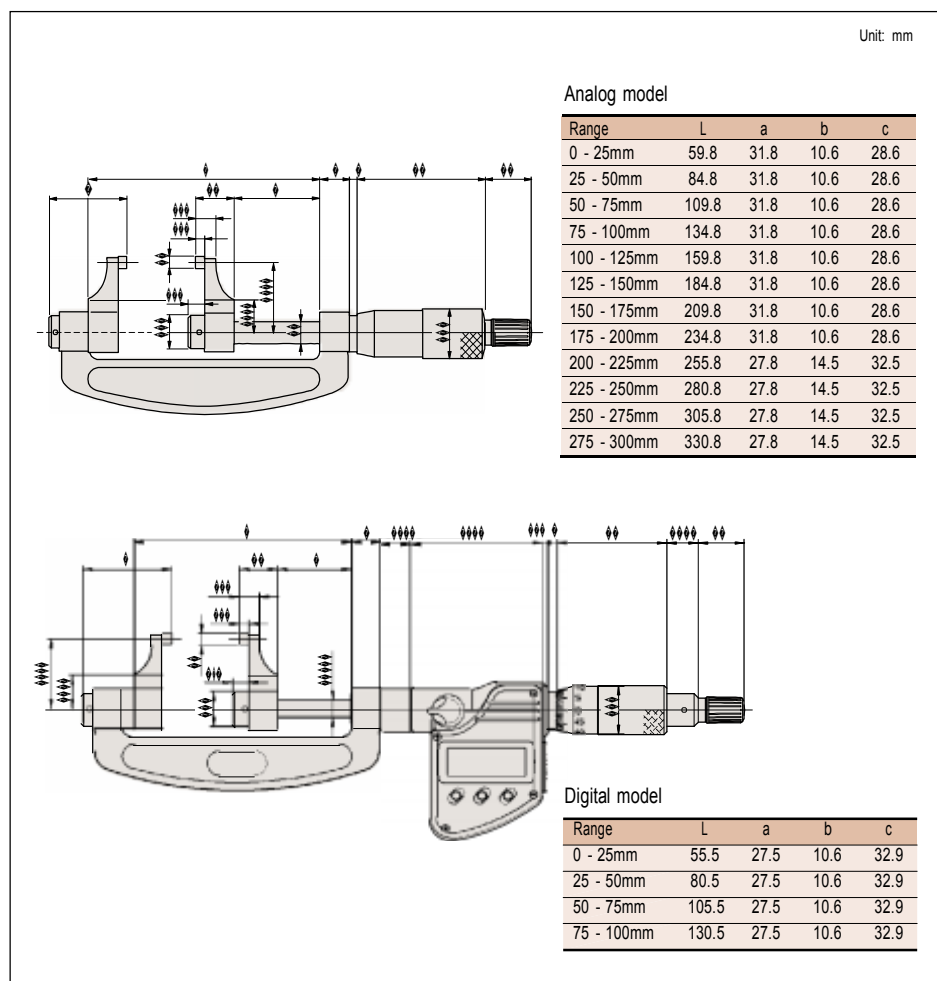
Models with a range up to 300mm are available.

Digital model		
Range	Order No.	Accuracy
0 - 1"	343-350	±.00025"
1" - 2"	343-351	±.0003"
2" - 3"	343-352	±.00035"
3" - 4"	343-353	±.0004"

Range	Order No.	Accuracy
0 - 1"	143-121	±.00025"
1" - 2"	143-122	±.0003"

Models with a range up to 3" are available.

DIMENSION

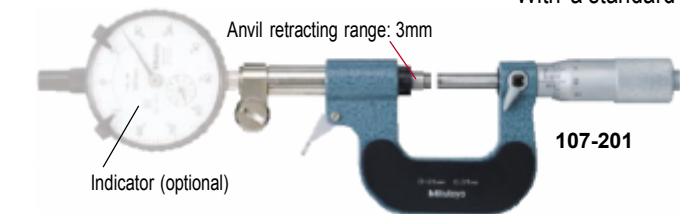


Outside Micrometers

SERIES 107

FEATURES

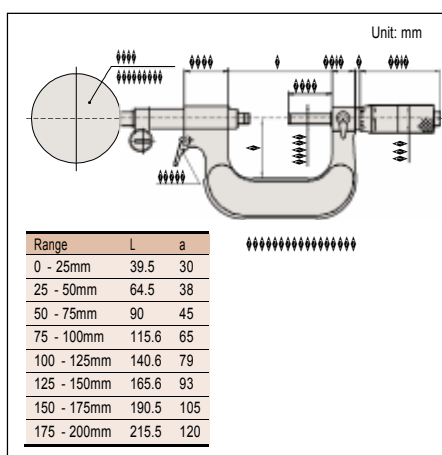
- With dial indicator for direct GO/NG-GO judgment for mass-produced parts.
- Anvil retracting trigger for quick measurement.
- With a standard except for 25mm model.



SPECIFICATIONS

Range	Order No.	Accuracy
0 - 25mm	107-201	±2μm
25 - 50mm	107-202	±2μm
50 - 75mm	107-203	±2μm
75 - 100mm	107-204	±3μm
100 - 125mm	107-205	±3μm
125 - 150mm	107-206	±3μm
150 - 175mm	107-207	±4μm
175 - 200mm	107-208	±4μm

DIMENSION



Technical Data

Accuracy: Refer to the list of specifications.
 Graduation: 0.01mm (thimble)
 Flatness: 0.6μm
 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

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
25 - 50mm	125-106	0.4 - 0.5mm/64 - 48TPI
	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

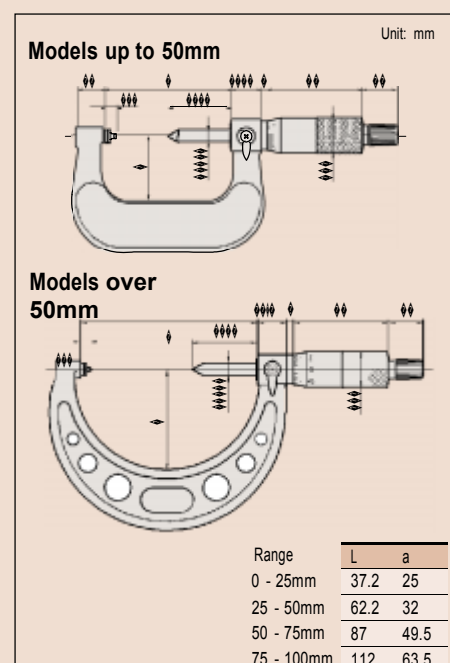
Range	Order No.	Screw to be measured (Metric/Unified)
50 - 75mm	125-111	0.6 - 0.9mm/44 - 28TPI
	125-112	1 - 1.75mm/24 - 14TPI
	125-113	2 - 3mm/13 - 9TPI
	125-114	3.5 - 5mm/8 - 5TPI
	125-115	5.5 - 7mm/4.5 - 3.5TPI
75 - 100mm	125-116	0.6 - 0.9mm/44 - 28TPI
	125-117	1 - 1.75mm/24 - 14TPI
	125-118	2 - 3mm/13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



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:

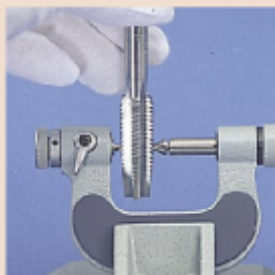


For Metric/Unified screws (60° threads)

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

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

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

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

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.)

DIMENSION

Range	L	a
0 - 25mm	39.5	25
25 - 50mm	64.5	32
50 - 75mm	90	45
75 - 100mm	115.6	65
100 - 125mm	140.6	79
125 - 150mm	165.6	93
150 - 175mm	190.5	105
175 - 200mm	215.5	120
200 - 225mm	240.5	130
225 - 250mm	265.5	147
250 - 275mm	290.5	165
275 - 300mm	315.5	171

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

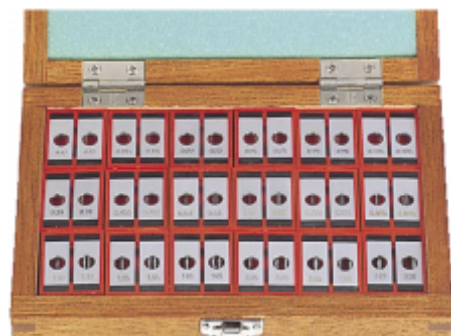
Range	Order No.	Accuracy
0 - 25mm	116-101	±4μm
25 - 50mm	116-102	±4μm

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

3-Wire Units

SERIES 313

- 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

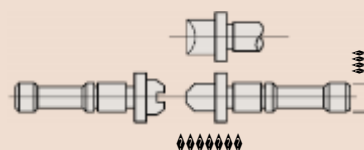
Optional Accessory

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)

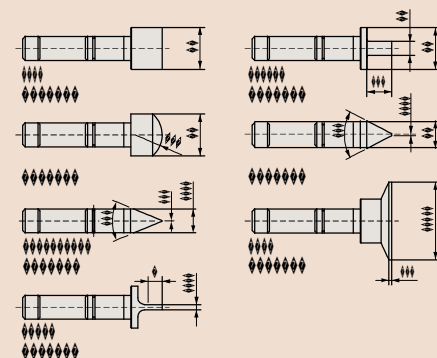
For Whitworth screw

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)



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
5.56mm (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

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

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

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

Unit: mm		
	Range	a
	0 - 25mm	64.5
	25 - 50mm	90
	50 - 75mm	115.6
	75 - 100mm	140.6
	100 - 125mm	165.6
	125 - 150mm	190.5
	150 - 175mm	215.5
	175 - 200mm	240.5
	200 - 225mm	265.5
	Range	L
	0 - 25mm	64.5
	25 - 50mm	90
	50 - 75mm	115.6
	75 - 100mm	140.6
	100 - 125mm	165.6
	125 - 150mm	190.5
	150 - 175mm	215.5
	175 - 200mm	240.5
	200 - 225mm	265.5
	225 - 250mm	290.5
	250 - 275mm	315.5
	275 - 300mm	353

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

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

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

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.

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"

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

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

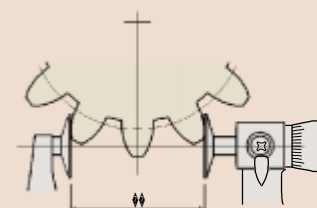
Function of Digital Model

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)

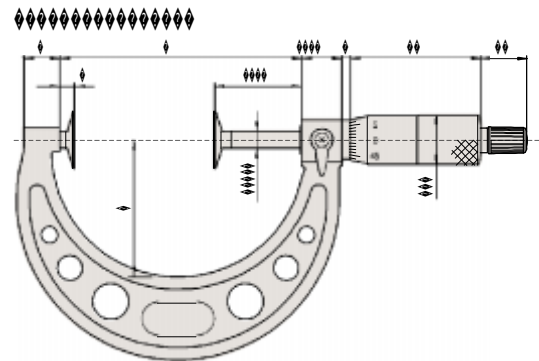
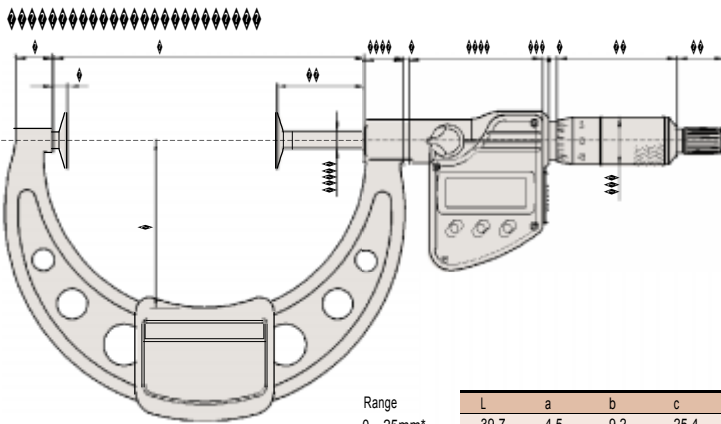
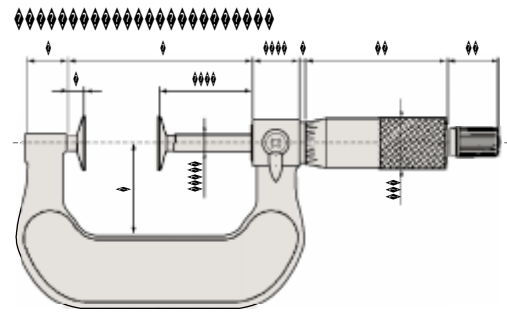
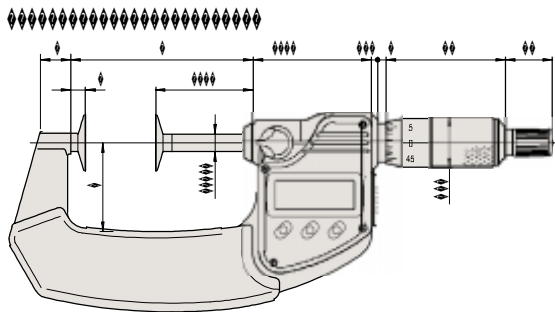
Root tangent length of gear (En)



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

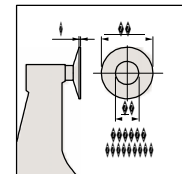


DIMENSION



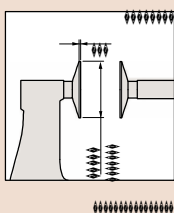
Range	L	a	b	c	d	e	t
0 - 25mm*	39.7	4.5	9.2	25.4	20	8	0.7
25 - 50mm*	65.6	5.4	11	31.9	20	8	0.7
50 - 75mm*	90.7	5.5	12.2	50	20	8	0.7
75 - 100mm*	112.5	5.5	13.5	60.5	20	8	0.7
0 - 25mm	37.5	6	14	25	20	8 (9.8)	0.7 (0.7)
25 - 50mm	62.5	6	14	32	20	8 (9.8)	0.7 (0.7)
50 - 75mm	87	5.5	11	49	20	8 (9.8)	0.7 (0.7)
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



Paper Thickness Micrometers

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

FEATURES

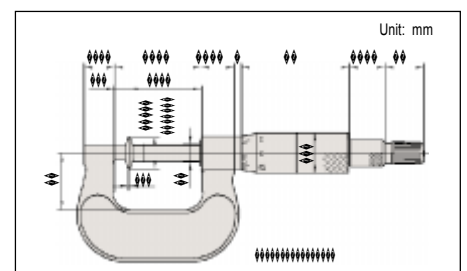
- Non-rotating spindle.
- With Ratchet Stop for constant force.



SPECIFICATIONS

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

DIMENSION



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 helical 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).



SPECIFICATIONS

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

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"

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

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

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

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

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

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

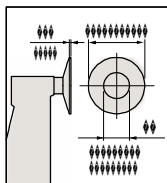
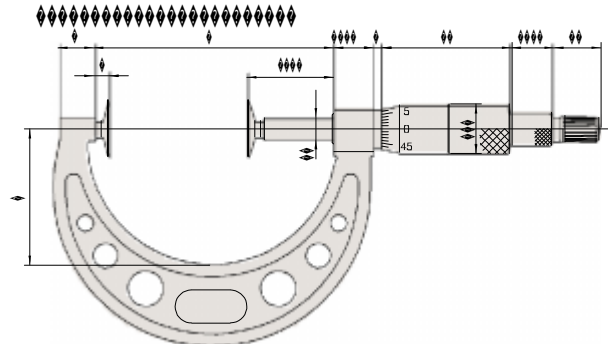
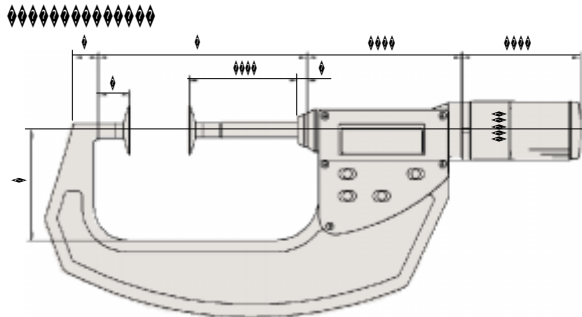
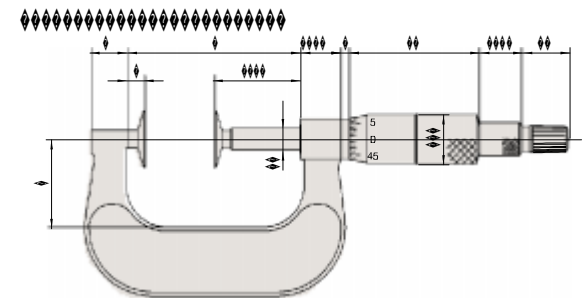
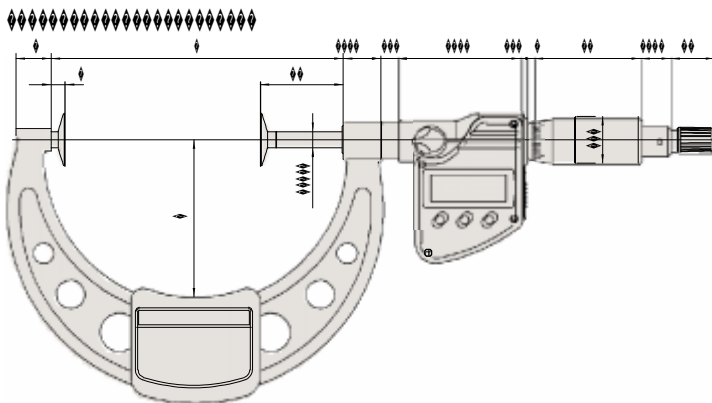
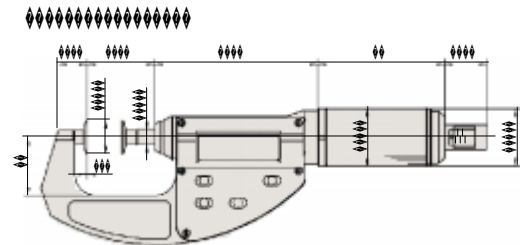
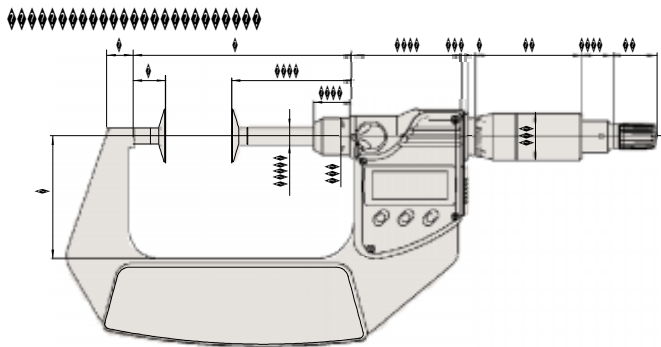
Origin-set, Zero-setting, Data hold, Automatic power ON/OFF, Data output, inch/mm conversion (inch/mm models)
Alarm: Low voltage, Counting value composition error

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



() : 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

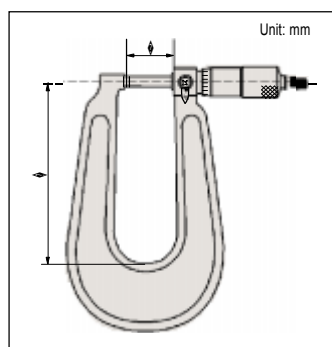
SERIES 389, 189, 119, 118

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

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

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

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

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

S-F: Spherical anvil and flat spindle



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
	389-352	±.0002"	165/27.5mm
1" - 2"	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

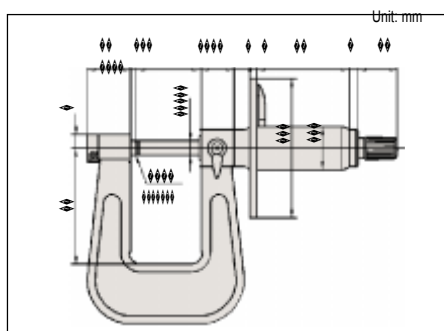
Mechanical counter model			
Range	Order No.	Accuracy	a/b
0 - 1"	189-129*	±.0002"	160/27.5mm

*.0001" reading is obtained with vernier.

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



SPC

www.tuv.com
TÜV
TÜV Rheinland
ID:401207400

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.



Spline Micrometers

SERIES 331, 111

SPC



IP65

(Refer to the page 9 for details.)

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

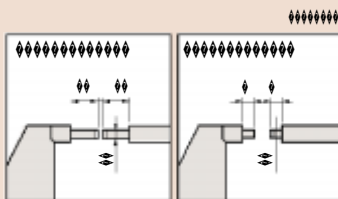
Function of Digital Model

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

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

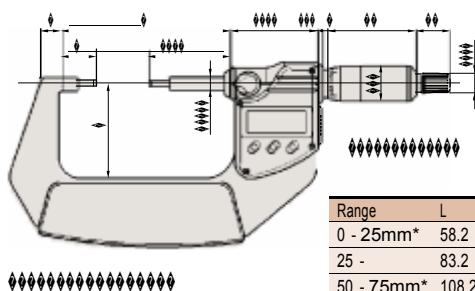
Analog model			
Range	Order No.	Accuracy	Remarks
5mm	111-115	±3μm	Type A
	111-215	±3μm	Type B
50mm	111-116	±3μm	Type A
	111-216	±3μm	Type B
75mm	111-117	±3μm	Type A
	111-217	±3μm	Type B
100mm	111-118	±4μm	Type A
	111-218	±4μm	Type B
125 - 150mm	111-119	±4μm	Type A
	111-219	±4μm	Type B
125 - 150mm	111-120	±4μm	Type A
	111-220	±4μm	Type B
150 - 175mm	111-121	±5μm	Type A
	111-221	±5μm	Type B
175 - 200mm	111-122	±5μm	Type A
	111-222	±5μm	Type B

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

Analog model			
Range	Order No.	Accuracy	Remarks
0 - 1"	111-166*	±.00015"	Type A
	111-266*	±.00015"	Type B
1" - 2"	111-142	±.00015"	Type A
	111-242	±.00015"	Type B
2" - 3"	111-143	±.00015"	Type A
	111-243	±.00015"	Type B

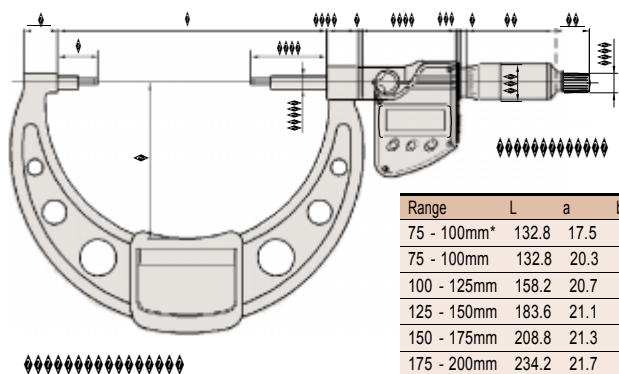
*.0001" reading is obtained with vernier.

DIMENSION



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



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

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, .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

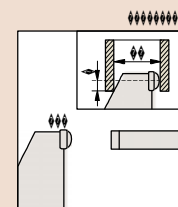
Origin-set, Zero-setting, Data hold, Automatic power ON/OFF, Data output, inch/mm conversion (inch/mm models)
Alarm: Low voltage, Counting value composition error

Optional Accessory for Digital Model

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

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

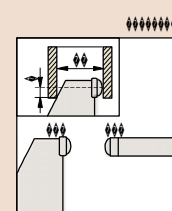
Spherical anvil type



Measuring faces:
Carbide tipped

ød: Mini. inside dia. of
tubing

Spherical anvil-spindle type



Carbide tipped

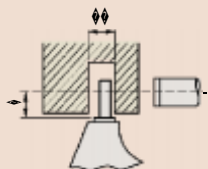
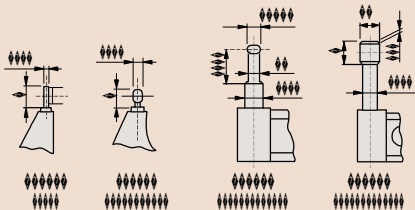
ød: Mini. inside dia. of
tubing

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

Digital model with spherical anvil			
Range	Order No.	Accuracy	Remarks
0 - 25mm	395-251 ^{SF}	±2μm	D: 15mm
	395-271 ^{SS}	±2μm	D: 15mm
25 - 50mm	395-252 ^{SF}	±2μm	D: 15mm
	395-272 ^{SS}	±2μm	D: 15mm
50 - 75mm	395-253 ^{SF}	±2μm	D: 19mm
	395-273 ^{SS}	±2μm	D: 19mm
75 - 100mm	395-254 ^{SF}	±3μm	D: 20mm
	395-274 ^{SS}	±3μm	D: 20mm

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

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

Mechanical counter model with spherical anvil			
Range	Order No.	Accuracy	Remarks
0 - 25mm	295-115 ^{SF}	±3μm	D: 10mm
	295-215 ^{SS}	±3μm	D: 10mm

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

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

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

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
	115-303	±3μm	Type A
25 - 50mm	115-303	±3μm	Type A
	115-309	±3μm	Type B

Digital model with spherical anvil			
Range	Order No.	Accuracy	Remarks
0 - 1"	395-351 ^{SF}	±.0001"	D: .59"
	395-371 ^{SS}	±.0001"	D: .59"
1" - 2"	395-352 ^{SF}	±.0001"	D: .59"
	395-372 ^{SS}	±.0001"	D: .59"
2" - 3"	395-353 ^{SF}	±.0001"	D: .75"
	395-373 ^{SS}	±.0001"	D: .75"
3" - 4"	395-354 ^{SF}	±.00015"	D: .79"
	395-374 ^{SS}	±.00015"	D: .79"

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

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
	395-362	±.00015"	Type B

Mechanical counter model with spherical anvil			
Range	Order No.	Accuracy	Remarks
0 - 1"	295-153 ^{SF*}	±.00015"	D: .40"
	295-253 ^{SS*}	±.00015"	D: .40"

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

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

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

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
	115-305	±.00015"	Type A

*.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).



SPECIFICATIONS

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°

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

Digital model			
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°

*The points have not carbide tips.

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°

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

Digital model			
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



(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)



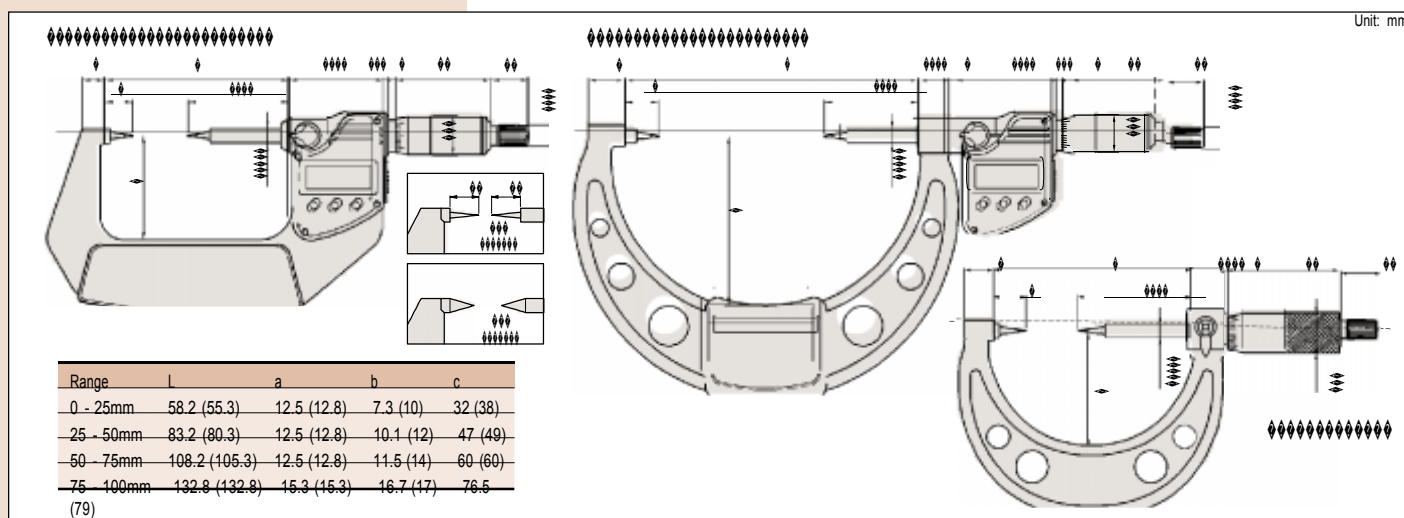
Tip angle: 15° (SR0.3)



Tip angle: 30° (SR0.3)



DIMENSION



() : Analog model



(Refer to the page 9 for details.)

Technical Data

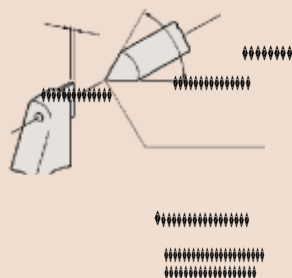
Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.001mm or .00005"/0.001mm
Graduation**: 0.01mm or .001"
Display*: LCD
Battery*: SR44 (1 pc.), **938882**
Battery life*: Approx. 1.2 years under normal use
(3 years: Quickmike type)
Dust/Water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



SPECIFICATIONS

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

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

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

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

Range	Order No.	Accuracy
0 - 25mm	112-401	±3μm

* 0.001mm reading is obtained with vernier.

ابزار تجارت

نماینده فروش ابزار آلات اندازه گیری

دقیق میتوتویو ژاپن همراه با

کالیبراسیون و به شرط اصلی

ابزار آلات اندازه گیری اصلی میتوتویو را از ما بخواهید

تلفن تماس : ۶۶۷۳۶۷۲۶ - ۶۶۷۳۶۷۷۴

The Mitutoyo logo is displayed in a white rectangular box. The word "Mitutoyo" is written in a bold, sans-serif font, with the "M" and "o" featuring double diagonal lines through them.