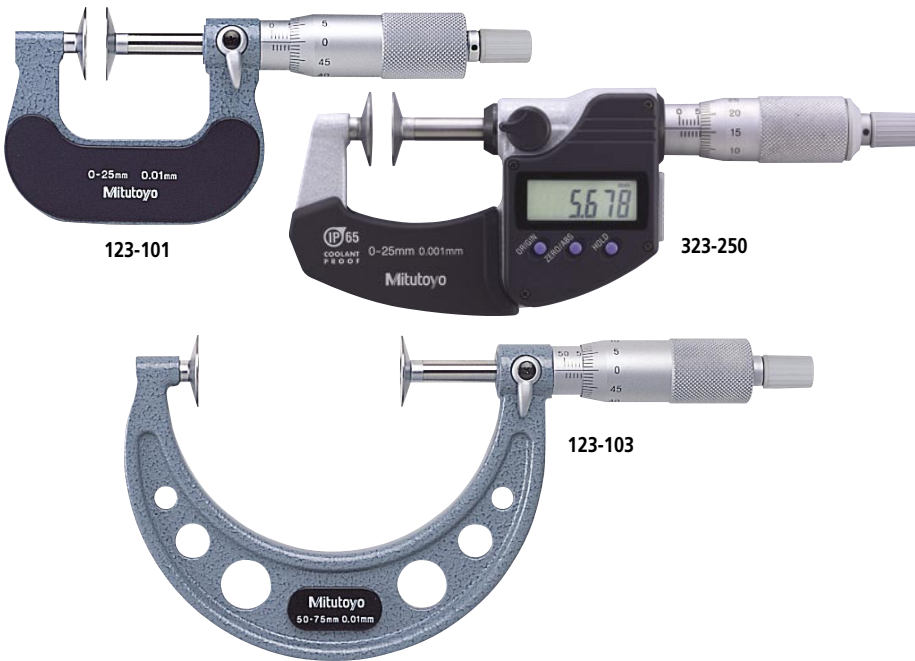


Disk Micrometers

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

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"

*The measuring disks have carbide tips.



(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

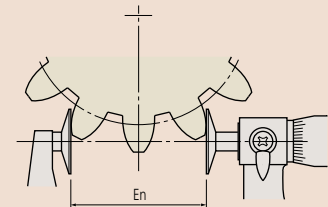
Function of Digital Model

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

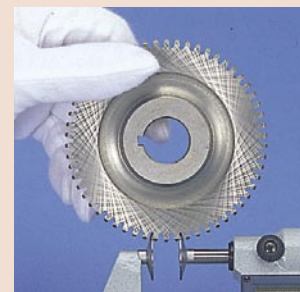
Optional Accessory for Digital Model

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

Root tangent length of gear (En)



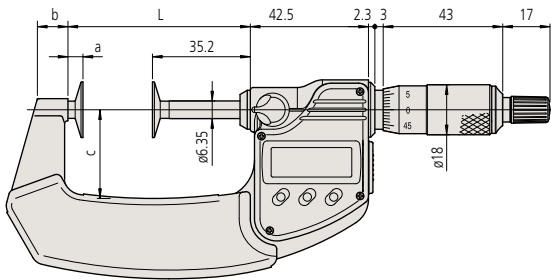
Note: Root tangent length measurement is not available for some types gears.



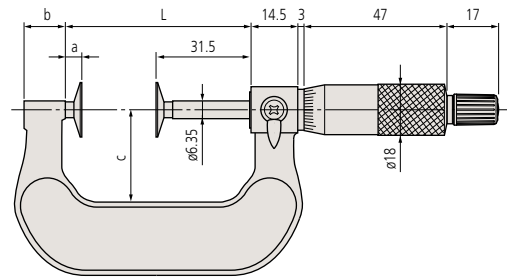
DIMENSION

Unit: mm

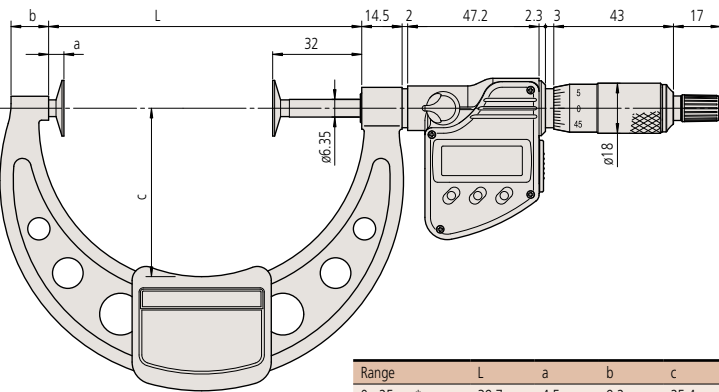
Digital models up to 75mm



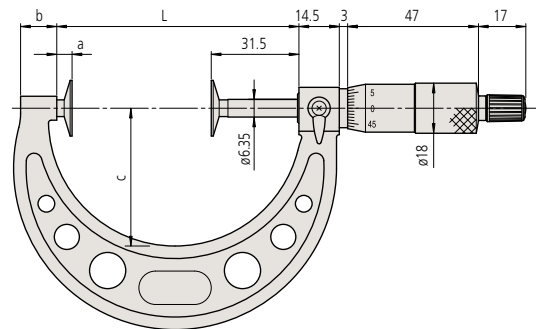
Analog models up to 50mm



Digital models over 75mm

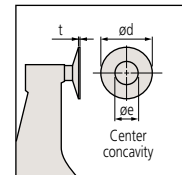


Analog over 50mm



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

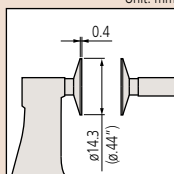


Technical Data

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.

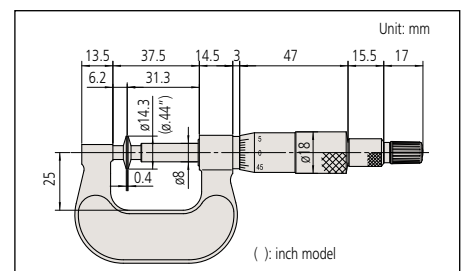


169-101

SPECIFICATIONS

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

DIMENSION



() : inch model

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).



369-250

Quickmike type



369-411



Quickmike type with fine-loading



227-221



169-201

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

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"

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

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

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

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

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		
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

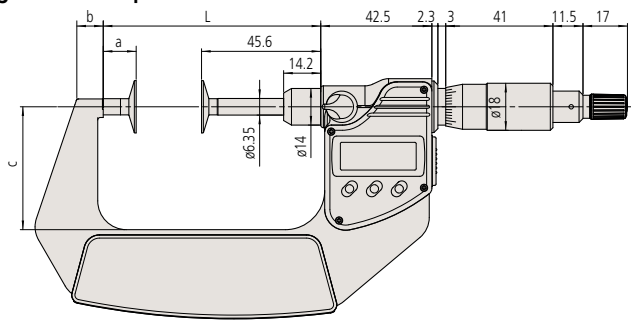
- 05CZA662**: SPC cable with data switch (1m)
- 05CZA663**: SPC cable with data switch (2m)
- 937387**: SPC cable for Quickmike type (1m)
- 965013**: SPC cable for Quickmike type (2m)



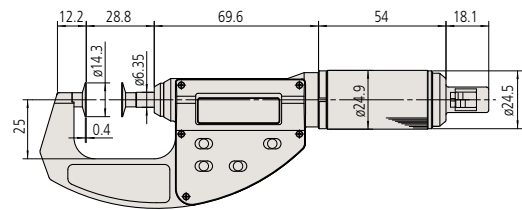
DIMENSION

Unit: mm

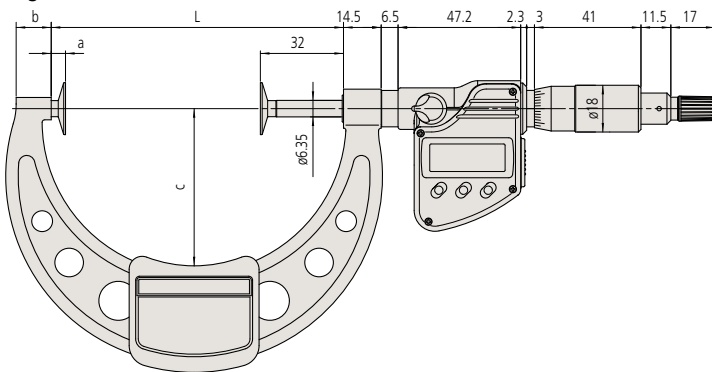
Digital models up to 75mm



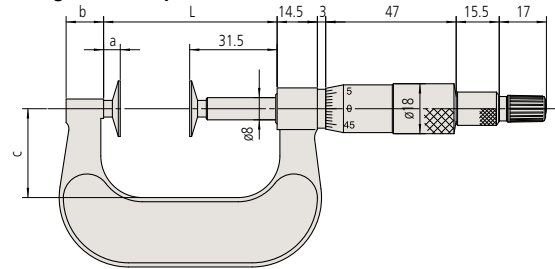
Fine-loading type



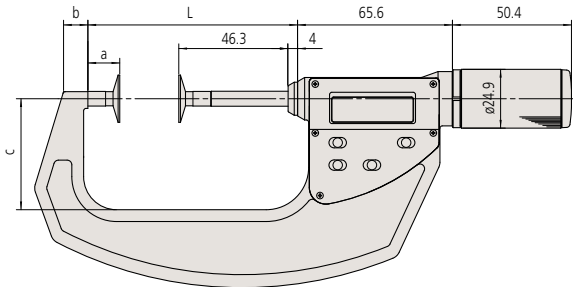
Digital models over 75mm



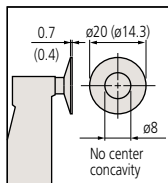
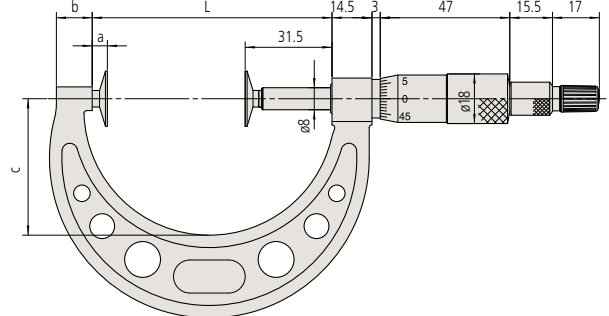
Analog models up to 50mm



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