Digimatic Micrometer QuantuMike IP65

Series 293

- Speedy measurement is achieved thanks to 2mm of spindle feed for every thimble revolution !
- The dual function offered by the ratchet on the thimble and the fast drive mechanism ensure easy single-handed or stand operation.

Only for 0-25, 25-50 mm, 0-1" and 1-2"

QuantuMike

Functions	Series 293
ORIGIN until 100 mm	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

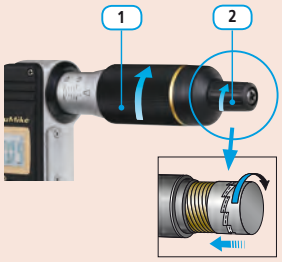
Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Flatness	0,3 µm/0.000012"
Parallelism	1 µm/0.00004" for models up to 50 mm/2" 2 µm/0.00008" for models up to 100 mm/4"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring force	7-12 N
Delivered	Including box, key, 1 battery, setting standard (from 25 mm upward)

Optional accessories

No.	Description
04AAB208	Grey ratchet cap
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
04GAA900	Red ratchet cap
04GAA901	Yellow ratchet cap
04GAA902	Green ratchet cap
04GAA903	Blue ratchet cap
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
04GAA899	Black ratchet cap
938882	Battery SR44



1 : Ratchet on thimble
2 : Ratchet on speeder

293-140

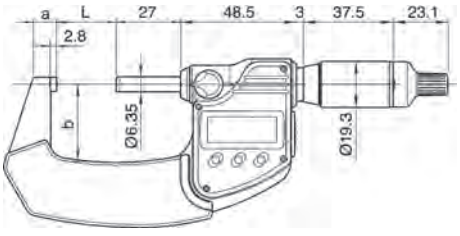
Coloured ratchet caps

Metric

No.	Range	Accuracy	Data Output	L mm	a mm	b mm	Mass g
293-140	0-25 mm	±1 µm	●	0	9	25	265
293-145	0-25 mm	±1 µm		0	9	25	265
293-141	25-50 mm	±1 µm	●	25	9.8	32	325
293-146	25-50 mm	±1 µm		25	9.8	32	325
293-142	50-75 mm	±1 µm	●	50	12.6	47	465
293-147	50-75 mm	±1 µm		50	12.6	47	465
293-143	75-100 mm	±2 µm	●	75	14	60	620
293-148	75-100 mm	±2 µm		75	14	60	620

Inch/Metric

No.	Range	Accuracy	Data Output	L mm	a mm	b mm	Mass g
293-180	0-25 mm/0-1"	±1 µm/0.00005"	●	0	9	25	265
293-185	0-25 mm/0-1"	±1 µm/0.00005"		0	9	25	265
293-181	25-50 mm/1-2"	±1 µm/0.00005"	●	25	9.8	32	325
293-186*	25-50 mm/1-2"	±1 µm/0.00005"		25	9.8	32	325
293-182*	50-75 mm/2-3"	±1 µm/0.00005"	●	50	12.6	47	465
293-187*	50-75 mm/2-3"	±1 µm/0.00005"		50	12.6	47	465
293-183*	75-100 mm/3-4"	±2 µm/0.0001"	●	75	14	60	620
293-188*	75-100 mm/3-4"	±2 µm/0.0001"		75	14	60	620



Digimatic Micrometer IP65

Series 293

- With and without data output.

Only for 0-25, 25-50 mm

293-230

293-252-10

With friction thimble and ratchet thimble

With ratchet stop

Functions	Series 293
ORIGIN until 100 mm	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
2 x PRESET over 100 mm	●
Function lock over 100 mm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,3 µm
Parallelism	1 µm for models up to 50 mm 2 µm for models up to 100 mm 3 µm for models up to 175 mm 4 µm for models up to 275 mm 5 µm for models over 300 mm
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	With spindle lock ø6,35 mm
Measuring force	5-10 N
Delivered	Including box, key, 1 battery, setting standard (from 25 mm upward)

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

Metric — With ratchet stop

No.	Range	Accuracy	Data Output	L mm	a mm	b mm	c mm	Mass g
293-230	0-25 mm	±1 µm	●	0	2.8	9	25	270
293-240	0-25 mm	±1 µm		0	2.8	9	25	270
293-231	25-50 mm	±1 µm	●	25	2.8	9.8	32	330
293-241	25-50 mm	±1 µm		25	2.8	9.8	32	330
293-232	50-75 mm	±1 µm	●	50	2.8	12.6	47	470
293-242	50-75 mm	±1 µm		50	2.8	12.6	47	470
293-233	75-100 mm	±2 µm	●	75	2.8	14	60	625
293-243	75-100 mm	±2 µm		75	2.8	14	60	625
293-250-10	100-125 mm	±2 µm	●	132.8	5.3	16.7	76.5	600
293-251-10	125-150 mm	±2 µm	●	158.2	5.7	18.8	91	740
293-252-10	150-175 mm	±3 µm	●	183.6	6.1	19.1	102	800
293-253-10	175-200 mm	±3 µm	●	208.8	6.3	18.2	115	970
293-254-10	200-225 mm	±3 µm	●	234.2	6.7	16.8	127	1,100
293-255-10	225-250 mm	±4 µm	●	258	5.5	18	139	1,270
293-256-10	250-275 mm	±4 µm	●	284	6.5	18	152	1,340
293-257-10	275-300 mm	±4 µm	●	309	6.5	18	166	1,540

Metric — With ratchet thimble

No.	Range	Accuracy	Data Output	L mm	a mm	b mm	c mm	Mass g
293-234	0-25 mm	±1 µm	●	0	2.8	9	25	270
293-244*	0-25 mm	±1 µm		0	2.8	9	25	270
293-235	25-50 mm	±1 µm	●	25	2.8	9.8	32	330
293-245	25-50 mm	±1 µm		25	2.8	9.8	32	330
293-236	50-75 mm	±1 µm	●	50	2.8	12.6	47	470
293-246*	50-75 mm	±1 µm		50	2.8	12.6	47	470
293-237	75-100 mm	±2 µm	●	75	2.8	14	60	625
293-247*	75-100 mm	±2 µm		75	2.8	14	60	625

Metric — With friction thimble

No.	Range	Accuracy	Data Output	L mm	a mm	b mm	c mm	Mass g
293-238	0-25 mm	±1 µm	●	0	2.8	9	25	270
293-248*	0-25 mm	±1 µm		0	2.8	9	25	270

Digimatic Micrometer IP65

Series 293

- With data output.

Functions	Series 293
ORIGIN until 100 mm	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
2 x PRESET over 100 mm	●
Function lock over 100 mm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,3 µm
Parallelism	1 µm for models up to 50 mm 2 µm for models up to 100 mm 3 µm for models up to 175 mm 4 µm for models up to 275 mm 5 µm for models over 300 mm
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	With spindle lock ø6,35 mm
Measuring force	5-10 N
Delivered	Including box, key, 1 battery, setting standard (from 25 mm upward)

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

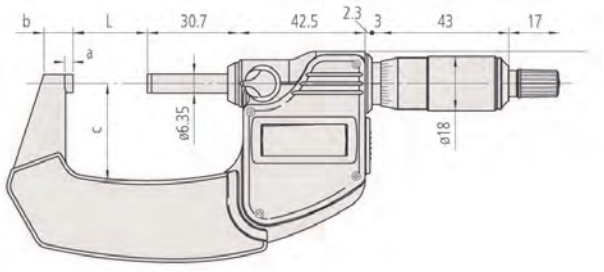
Consumable spares

No.	Description
938882	Battery SR44

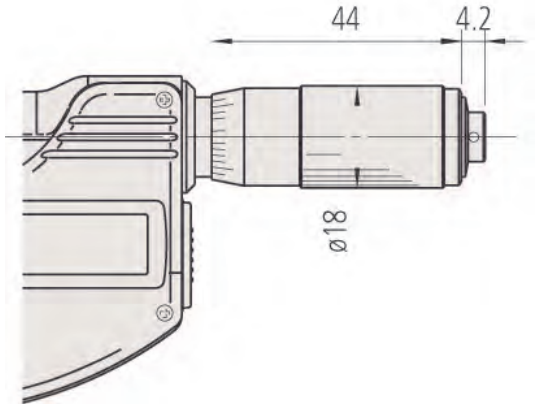
Metric

Set/With ratchet stop

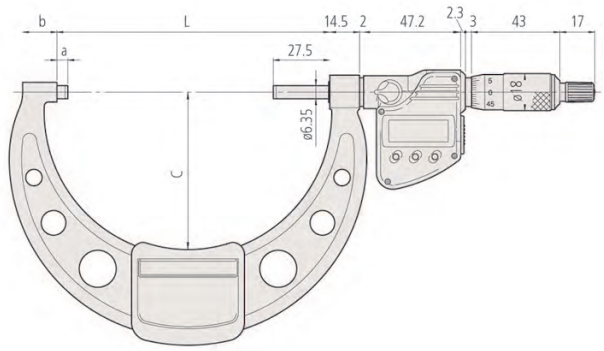
No.	Range	Data Output	Set combination
293-966	0-50 mm	●	293-230 / 293-231 + setting standard 25 mm made of ceramics
293-962	0-75 mm	●	293-230 / 293-231 / 293-232 + setting standard 25 mm and 50 mm
293-963	0-100 mm	●	293-230 / 293-231 / 293-232 / 293-233 + setting standard 25 mm, 50 mm and 75 mm



Ratchet stop type up to 100 mm



Ratchet thimble type / Friction thimble type



Ratchet stop type over 100 mm

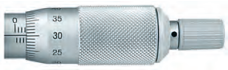
Digimatic Micrometer IP65

Series 293

- With and without data output.

293-334

With ratchet thimble



With ratchet stop

Functions	Series 293
ORIGIN until 100 mm	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
2 x PRESET over 100 mm	●
Function lock over 100 mm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm/0.00005" (up to 4") or 0,001 mm/0.0001" (over 4")
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,3 µm/0.000012"
Parallelism	1 µm/0.00004" for models up to 50 mm/2" 2 µm/0.00008" for models up to 100 mm/4" 3 µm/0.00012" for models up to 175 mm/7" 4 µm/0.00016" for models up to 275 mm/11" 5 µm/0.0002" for models over 300 mm/12"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	With spindle lock ø6,35 mm
Measuring force	5-10 N
Delivered	Including box, key, 1 battery, setting standard (from 25 mm upward)

Inch/Metric — With ratchet stop

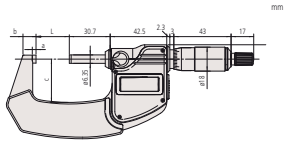
No.	Range	Accuracy	Data Output	L mm	a mm	b mm	c mm	Mass g
293-330	0-25 mm/0-1"	±1 µm/0.00005"	●	0	2.8	9	25	270
293-340	0-25 mm/0-1"	±1 µm/0.00005"		0	2.8	9	25	270
293-331	25-50 mm/1-2"	±1 µm/0.00005"	●	25	2.8	9.8	32	330
293-341	25-50 mm/1-2"	±1 µm/0.00005"		25	2.8	9.8	32	330
293-332	50-75 mm/2-3"	±1 µm/0.00005"	●	50	2.8	12.6	47	470
293-342	50-75 mm/2-3"	±1 µm/0.00005"		50	2.8	12.6	47	470
293-333	75-100 mm/3-4"	±2 µm/0.0001"	●	75	2.8	14	60	625
293-343*	75-100 mm/3-4"	±2 µm/0.0001"		75	2.8	14	60	625
293-350-10	100-125 mm/4-5"	±2 µm/0.0001"	●	132.8	5.3	16.7	76	600
293-351-10	100-125 mm/4-5"	±2 µm/0.0001"	●	158.2	5.7	18.8	90	740
293-352-10	150-175 mm/6-7"	±3 µm/0.00015"	●	183.6	6.1	19.1	102	800
293-353-10	175-200 mm/7-8"	±3 µm/0.00015"	●	208.8	6.3	18.2	115	970
293-354-10	200-225 mm/8-9"	±3 µm/0.00015"	●	234.2	6.7	16.8	127	1,100
293-355-10	225-250 mm/9-10"	±4 µm/0.0002"	●	258	5.5	18	139	1,270
293-356-10	250-275 mm/10-11"	±4 µm/0.0002"	●	284	6.5	18	152	1,340
293-357-10	275-300 mm/11-12"	±4 µm/0.0002"	●	309	6.5	18	166	1,540

Inch/Metric — With ratchet thimble

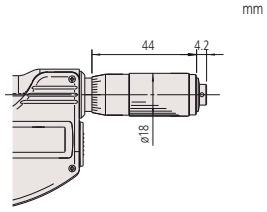
No.	Range	Accuracy	Data Output	L mm	a mm	b mm	c mm	Mass g
293-334	0-25 mm/0-1"	±1 µm/0.00005"	●	0	2.8	9	25	270
293-344	0-25 mm/0-1"	±1 µm/0.00005"		0	2.8	9	25	270
293-345	25-50 mm/1-2"	±1 µm/0.00005"		25	2.8	9.8	32	330
293-346	50-75 mm/2-3"	±1 µm/0.00005"		50	2.8	12.6	47	470
293-347	75-100 mm/3-4"	±2 µm/0.0001"		75	2.8	14	60	625

Inch/Metric — With friction thimble

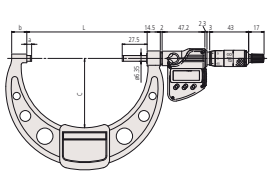
No.	Range	Accuracy	Data Output	L mm	a mm	b mm	c mm	Mass g
293-335	0-25 mm/0-1"	±1 µm/0.00005"	●	0	2.8	9	25	270
293-348*	0-25 mm/0-1"	±1 µm/0.00005"		0	2.8	9	25	270
293-336*	25-50 mm/1-2"	±1 µm/0.00005"	●	25	2.8	9.8	32	330



Ratchet stop type up to 100 mm



Ratchet thimble type / Friction thimble type



Ratchet stop type over 100 mm

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

MDC Lite Digital Micrometer

Functions	Series 293
ORIGIN	●
Auto Power OFF	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish ø18 mm
Flatness	0,3 µm/0.000012"
Parallelism	2 µm/0.00008"
Measuring surfaces	Carbide tipped, micro-lap finish
Measuring force	5-10 N
Delivered	Including box, key, 1 battery

Consumable spares

No.	Description
938882	Battery SR44

Series 293

- A cost-effective model with simplified functionality for less-demanding applications.
- Available with a ratchet stop or friction thimble for a constant measuring force.
- Measurement results displayed on a large character LCD for easy reading.

293-821

Metric — With ratchet stop

No.	Range	Accuracy	Mass g
293-821	0-25 mm	±2 µm	275

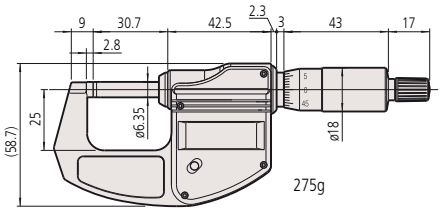
Inch/Metric — With ratchet stop

No.	Range	Accuracy	Mass g
293-831	0-25 mm/0-1"	±2 µm/0.0001"	275

Inch/Metric — With friction thimble

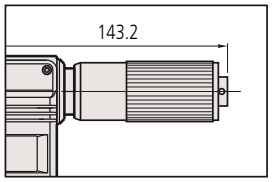
No.	Range	Accuracy	Mass g
293-832	0-25 mm/0-1"	±2 µm/0.0001"	275

mm



Ratchet stop

mm



Friction thimble

MDC Lite Digital Micrometer

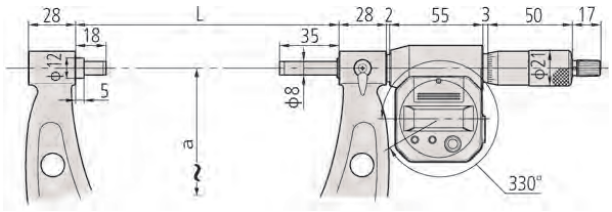
Series 293

- Digimatic standard micrometer, measuring range 300-500 mm.

293-582

Metric

No.	Range	Accuracy	L mm	a mm
293-582	300-325 mm	±6 µm	353	187
293-583	325-350 mm	±6 µm	378	199
293-584	350-375 mm	±6 µm	403	212
293-585	375-400 mm	±7 µm	428	224
293-586	400-425 mm	±7 µm	453	236
293-587	425-450 mm	±7 µm	478	248
293-588*	450-475 mm	±8 µm	503	261
293-589*	475-500 mm	±8 µm	528	273



Functions	Series 293
Data Output	●
ZERO/ABS	●
PRESET	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm
Scales	Thimble and sleeve satin chrome finish
Flatness	0,6 µm
Parallelism	5 µm for models up to 375 mm 6 µm for models up to 475 mm 7 µm for models over 500 mm
Measuring surfaces	Carbide tipped, micro lap finish
Frame	Enamelled
Measuring spindle	ø8 mm, spindle pitch 0,5 mm with spindle lock
Measuring force	10-14 N
Delivered	Including box, setting standard, key, 2 batteries

Optional accessories

No.	Description
04AZB512	SPC cable 1 m with data switch
04AZB513	SPC cable 2 m with data switch
02AZD790C	Signal cable for U-Wave with data switch
06ADV380C	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

ABSOLUTE Digimatic Micrometer QuickMike

Series 293

Quick-action type with non-rotating spindle.

- 10 mm feed per revolution gives 20x faster adjustment speed than standard type.
- Non-rotating spindle enables a wider range of application.
- IP54 protection allows a wider of operating environment (only applies when data cable not fitted).
- ABSOLUTE linear scale means no restriction on adjustment speed.
- Greater measuring range - 30 mm (1.2") compared with 25 mm (1") for standard micrometer.

Functions	Series 293		
	293-661-10	293-666 293-676	293-667 up to 293-679
Data Output		●	●
ORIGIN	●	●	●
ZERO/ABS			●
ON/OFF	●	●	●
HOLD		●	●
Low voltage alarm	●	●	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Flatness	0,3 µm/0.000012"
Parallelism	2 µm/0.00008" for models up to 80 mm/3.2" 3 µm/0.00012" for models up to 105 mm/4.2"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, non-rotating, pitch 10 mm
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), 1 battery

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
06ADV380E	Signal cable 2 m USB
02AZD790E	Signal cable U-Wave

Consumable spares

No.	Description
938882	Battery SR44

293-666

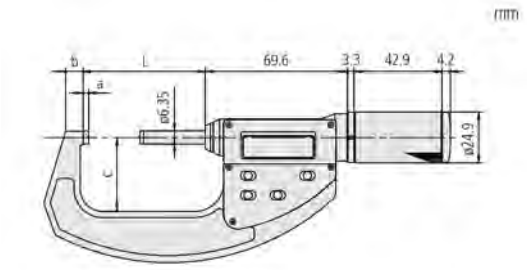
293-669

Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
293-661-10	0-30 mm	±2 µm	34.8	2.8	6.2	25	275
293-666	0-30 mm	±2 µm	34.8	2.8	6.2	25	275
293-667	25-55 mm	±2 µm	59.8	2.8	8.5	36	355
293-668	50-80 mm	±3 µm	84.8	2.8	10.3	47	525
293-669	75-105 mm	±3 µm	109.8	2.8	10.7	60	625

Inch/Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
293-676	0-30 mm/0-1.2"	±2 µm/0.0001"	34.8	2.8	6.2	25	275
293-677*	25-55 mm/1-2.2"	±2 µm/0.0001"	59.8	2.8	8.5	36	355
293-678*	50-80 mm/2-3.2"	±3 µm/0.00015"	84.8	2.8	10.3	47	525
293-679*	75-105 mm/3-4.2"	±3 µm/0.00015"	109.8	2.8	10.7	60	625



ABSOLUTE Digimatic Micrometer QuickMike

Series 227

ABSOLUTE

- Constant and low measuring force mechanism in the thimble.
- Adjustable measuring force to suit various kinds of workpiece.
- Non-rotating spindle and the new ratchet friction thimble.
- Speedy spindle feed of 10 mm/rev.

227-201

227-204

Metric

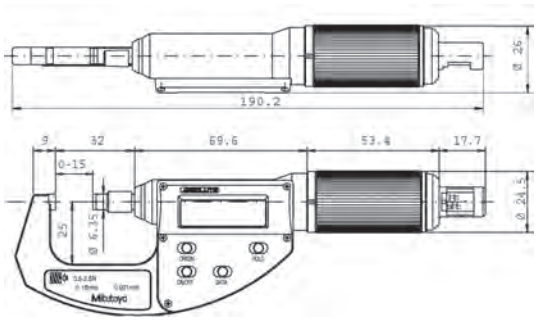
No.	Range	Accuracy	Measuring force (N) settings(1)	Measuring force accuracy (N) (1)	Mass g
227-201	0-15 mm	±2 µm	0,5; 1,0; 1,5; 2,0; 2,5	0,1 + (force setting/10)	300
227-202	0-15 mm	±2 µm	2; 4; 6; 8; 10	0,4 + (force setting/10)	300
227-203	15-30 mm	±2 µm	0,5; 1,0; 1,5; 2,0; 2,5	0,1 + (force setting/10)	380
227-204	15-30 mm	±2 µm	2; 4; 6; 8; 10	0,4 + (force setting/10)	380

(1) Only valid for instrument orientation within 3 degrees of horizontal when measuring (gravitational influence).

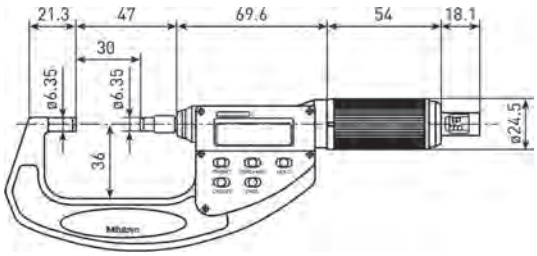
Inch/Metric

No.	Range	Accuracy	Measuring force (N) settings(1)	Measuring force accuracy (N) (1)	Mass g
227-211	0-15 mm/0-0.6"	±2 µm/0.0001"	0,5; 1,0; 1,5; 2,0; 2,5	0,1 + (force setting/10)	300
227-212*	0-15 mm/0-0.6"	±2 µm/0.0001"	2; 4; 6; 8; 10	0,4 + (force setting/10)	300
227-213*	15-30 mm/0.6-1.2"	±2 µm/0.0001"	0,5: 1,0; 1,5; 2,0; 2,5	0,1 + (force setting/10)	380
227-214*	15-30 mm/0.6-1.2"	±2 µm/0.0001"	2; 4; 6; 8; 10	0,4 + (force setting/10)	380

(1) Only valid for instrument orientation within 3 degrees of horizontal when measuring (gravitational influence).



0-15 mm



15-30 mm

Functions	Series 227			
	227-201	227-202	227-203	227-204
Data Output	●		●	
ORIGIN	●			
ZERO/ABS			●	
PRESET			●	
ON/OFF	●		●	
HOLD	●		●	
Low voltage alarm	●		●	

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Flatness	0,3 µm/0.000012"
Parallelism	2 µm/0.00008"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring direction	Horizontal
Delivered	Including box, setting standard (for 15-30 mm models), screwdriver, 1 battery

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
02AZD790E	Signal cable U-Wave
06ADV380E	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

Measuring force adjustable

Outside Micrometer non-rotating spindle type

Functions	Series 406
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Flatness	0,3 µm
Parallelism	3 µm/0.00012" for models up to 75 mm/3" 4 µm/0.00016" for models over 75 mm/3"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm
Measuring force	3-8 N
Delivered	Including box, setting standard (from 25 mm upward), key

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Series 406

- Ratchet stop and SPC output

406-250

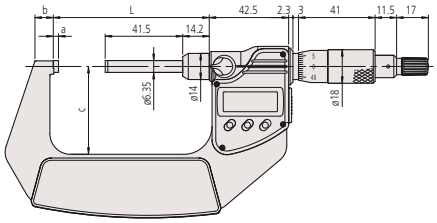
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
406-250	0-25 mm	±3 µm	58.2	2.5	7.3	32	330
406-251	25-50 mm	±3 µm	83.2	2.5	10.1	47	470
406-252*	50-75 mm	±3 µm	108.2	2.5	11.5	60	625
406-253*	75-100 mm	±4 µm	105.3	2.8	14.1	57	460

Inch/Metric

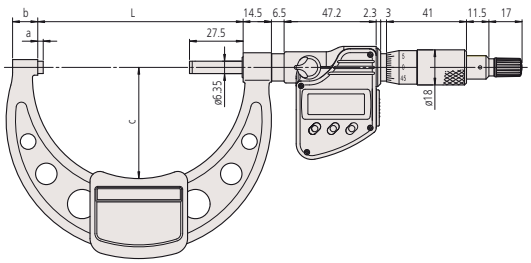
No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
406-350*	0-25 mm/0-1"	±3 µm/0.00015"	58.2	2.5	7.3	32	330
406-351*	25-50 mm/1-2"	±3 µm/0.00015"	83.2	2.5	10.1	47	470
406-352*	50-75 mm/2-3"	±3 µm/0.00015"	108.2	2.5	11.5	60	625
406-353*	75-100 mm/3-4"	±4 µm/0.0002"	105.3	2.8	14.1	57	460

mm



0-75 mm

mm



75-100 mm

Outside Micrometer

Series 101

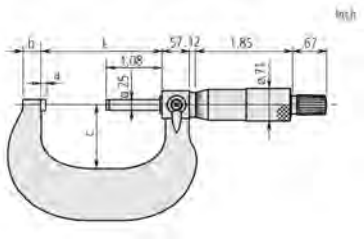
- Satin-chrome-finished frame, tapered (on the anvil side) for hard-to-reach places.

Inch — With ratchet stop

No.	Range	Accuracy	L"	a"	b"	c"	Mass g
101-113*	0-1"	±0.0001"	1.18	0.1	0.2	1.1	180
101-114*	1-2"	±0.0001"	2.16	0.08	0.31	1.28	245
101-120*	3-4"	±0.00015"	4.19	0.11	0.33	2.28	525

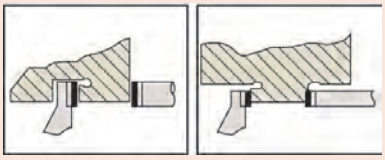
Inch — With friction thimble

No.	Range	Accuracy	L"	a"	b"	c"	Mass g
101-117*	0-1"	±0.0001"	1.18	0.1	0.2	1.1	180
101-118*	1-2"	±0.0001"	2.16	0.08	0.31	1.28	245



Specifications

Accuracy	Refer to the list of specifications
Graduation	0.0001"
Flatness	0.000024"
Parallelism	0.00008" for models up to 3", 0.00012" for models over 3"
Measuring surfaces	Carbide

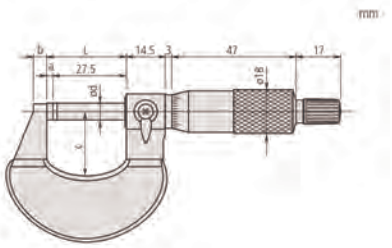


Series 102

- Heat-insulated frame, tapered (behind the anvil) for hard-to-reach places.
- Ratchet stop type.

Only for 0-25, 25-50 mm

102-301



Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish ø18 mm
Flatness	0,6 µm
Parallelism	2 µm for 0 to 75 mm model 3 µm for models 75-100 mm
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	Spindle pitch 0,5 mm with spindle lock, ø6,35 mm
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), up to 50 mm with factory certificate, key

Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	Mass g
102-301	0-25 mm	±2 µm	30.3	2.8	5	26	6.35	180
102-302	25-50 mm	±2 µm	55.3	2.8	8	32	6.35	270
102-303	50-75 mm	±2 µm	80.3	2.8	9	45	6.35	375
102-304	75-100 mm	±3 µm	105.3	2.8	10	58	6.35	490

Metric — Micrometer set

No.	Range	Mass g
102-911-01	0-100 mm	1,315

Outside Micrometer

Series 103

- Lightweight workshop design.
- With ratchet stop.

Only for 0-25 and 25-50 mm

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm, 0,001 mm (103-129/103-130)
Scales	Thimble and sleeve satin chrome finish
Flatness	0,6 µm for models up to 300 mm 1 µm for models over 300 mm
Parallelism	(2+L/100) µm (mm), L = max. range
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	spindle pitch 0,5 mm with spindle lock
Measuring force	5-10 N (from 100 mm upward : 5-15 N)
Delivered	Including box, setting standard (from 25 mm upward), key

103-137

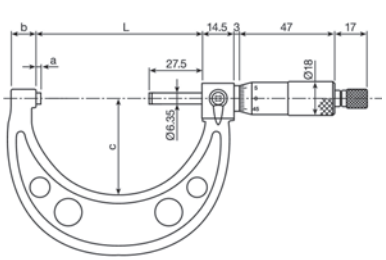
Metric — Graduation 0,001 mm

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	Mass g
103-129	0-25 mm	±2 µm	30.3	2.8	9	28	6.35	175
103-130	25-50 mm	±2 µm	55.3	2.8	10	38	6.35	215

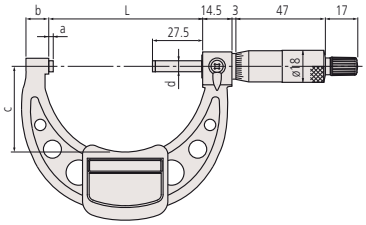
Metric — Graduation 0,01 mm

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	Mass g
103-137	0-25 mm	±2 µm	30.3	2.8	9	28	6.35	175
103-138	25-50 mm	±2 µm	55.3	2.8	10	38	6.35	215
103-139-10	50-75 mm	±2 µm	80.3	2.8	12	49	6.35	315
103-140-10	75-100 mm	±3 µm	105.3	2.8	14	60	6.35	375
103-141-10	100-125 mm	±3 µm	132.8	5.3	17	79	6.35	515
103-142-10	125-150 mm	±3 µm	158.2	5.7	19	94	6.35	665
103-143-10	150-175 mm	±4 µm	183.6	6.1	20	106	6.35	720
103-144-10	175-200 mm	±4 µm	208.8	6.3	19	118	6.35	920
103-145-10	200-225 mm	±4 µm	234.2	6.7	18	130	6.35	1,080
103-146-10	225-250 mm	±5 µm	258	5.5	18	143	6.35	1,255
103-147-10	250-275 mm	±5 µm	284	6.5	18	156	6.35	1,405
103-148-10	275-300 mm	±5 µm	309	6.5	18	169	6.35	1,565
103-149	300-325 mm	±6 µm	353	18	28	187	8	1,985
103-150	325-350 mm	±6 µm	378	18	28	199	8	2,155
103-151	350-375 mm	±6 µm	403	18	28	212	8	2,305
103-152	375-400 mm	±7 µm	428	18	28	224	8	2,455
103-153	400-425 mm	±7 µm	453	18	28	236	8	2,715
103-154	425-450 mm	±7 µm	478	18	28	248	8	2,965
103-155	450-475 mm	±8 µm	503	18	28	261	8	3,215
103-156	475-500 mm	±8 µm	528	18	28	273	8	3,450

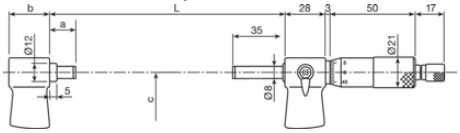
mm



Models up to 75 mm



Models 75 mm to 300 mm



Models over 300 mm

Outside Micrometer

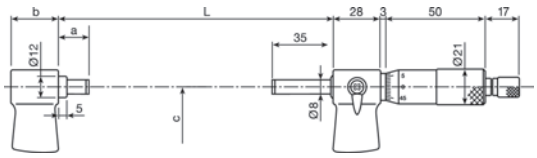
Series 103

- Lightweight workshop design.
- With ratchet stop.

Metric

Graduation 0,01 mm

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	Mass g
103-157	500-525 mm	±9 µm	575	40	28	307	8	4,060
103-158	525-550 mm	±9 µm	575	15	28	307	8	4,080
103-159	550-575 mm	±9 µm	625	40	28	332	8	4,500
103-160	575-600 mm	±9 µm	625	15	28	332	8	4,525
103-161	600-625 mm	±9 µm	675	40	28	355	8	4,915
103-162	625-650 mm	±9 µm	675	15	28	355	8	4,930
103-163	650-675 mm	±9 µm	725	40	28	382	8	5,200
103-164	675-700 mm	±9 µm	725	15	28	382	8	5,215
103-165	700-725 mm	±9 µm	775	40	28	405	8	5,835
103-166*	725-750 mm	±9 µm	775	15	28	405	8	5,860
103-167*	750-775 mm	±9 µm	825	40	28	430	8	6,385
103-168*	775-800 mm	±9 µm	825	15	28	430	8	6,410
103-169*	800-825 mm	±9 µm	875	40	28	455	8	6,925
103-170*	825-850 mm	±9 µm	875	15	28	455	8	6,940
103-171*	850-875 mm	±9 µm	925	40	28	480	8	7,565
103-172*	875-900 mm	±9 µm	925	15	28	480	8	7,590
103-173*	900-925 mm	±9 µm	975	40	28	505	8	8,215
103-174*	925-950 mm	±9 µm	975	15	28	505	8	8,240
103-175*	950-975 mm	±9 µm	1,025	40	28	530	8	8,860
103-176*	975-1000 mm	±9 µm	1,025	15	28	530	8	8,880



Models 500 to 1000 mm

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish
Flatness	0,6 µm for models up to 300 mm 1 µm for models over 300 mm
Parallelism	(2+L/100) µm (mm), L = max. range
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	spindle pitch 0,5 mm with spindle lock
Measuring force	5-15 N
Delivered	Including box, setting standard, key

Outside Micrometer Inch

Series 103

- Lightweight workshop design.

Only for 0-1" and 1-2"

Specifications

Accuracy	Refer to the list of specifications
Graduation	0.001" or 0.0001"
Scales	Thimble and sleeve satin chrome finish
Flatness	0.000024" for models up to 12" 0.00004" for models over 12"
Parallelism	[0.00008+0.00004(L/4)]"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	Spindle pitch 0.025" with spindle lock
Measuring force	5-10 N (from 4" upward : 5-15 N)
Delivered	Including box, setting standard (from 1" upward), key

Inch — Graduation 0,0001" / With ratchet stop

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
103-131	0-1"	±0.0001"	30.3	2.8	9	28	175
103-132*	1-2"	±0.0001"	55.3	2.8	10	38	215

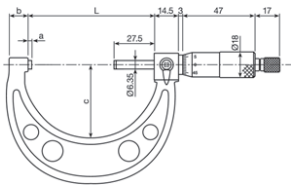
Inch — Graduation 0,0001" / With friction thimble

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
103-135*	0-1"	±0.0001"	30.3	2.8	9	28	175
103-136*	1-2"	±0.0001"	55.3	2.8	10	38	215

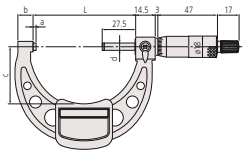
Inch — Graduation 0,001" / With ratchet stop

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	Mass g
103-177	0-1"	±0.0001"	30.3	2.8	9	28		175
103-178	1-2"	±0.0001"	55.3	2.8	10	35		215
103-179	2-3"	±0.0001"	80.3	2.8	12	49		315
103-180	3-4"	±0.00015"	105.3	2.8	14	60	6.35	375
103-181*	4-5"	±0.00015"	132.8	5.3	17	76	6.35	515
103-182*	5-6"	±0.00015"	158.2	5.7	19	90	6.35	665
103-183*	6-7"	±0.0002"	183.6	6.1	20	102	6.35	720
103-184	7-8"	±0.0002"	208.8	6.3	19	115	6.35	920
103-185	8-9"	±0.0002"	234.2	6.7	18	127	6.35	1,080
103-186	9-10"	±0.00025"	258	5.5	18	139	6.35	1,255
103-187*	10-11"	±0.00025"	284	6.5	18	152	6.35	1,405
103-188	11-12"	±0.00025"	309	6.5	18	166	6.35	1,565
103-189*	12-13"	±0.0003"	353	18	28	187		1,985
103-190*	13-14"	±0.0003"	378	18	28	199		2,155
103-191*	14-15"	±0.0003"	403	18	28	212		2,305
103-192*	15-16"	±0.00035"	428	18	28	224		2,455
103-193	16-17"	±0.00035"	453	18	28	236		2,715
103-194*	17-18"	±0.00035"	478	18	28	248		2,965
103-195*	18-19"	±0.0004"	503	18	28	261		3,215
103-196	19-20"	±0.0004"	528	18	28	273		3,450

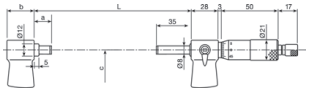
mm



Models up to 3"



Models 3" to 12"



Models over 12"

Outside Micrometers in set

Series 103

- Lightweight workshop design supplied as a boxed set.
- Drawings see page Series 103

103-913-31

Specifications

Accuracy	See ref. 103-137 page
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm (or 0.025") with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key

Metric — Micrometer set

No.	Range	Models included	Mass g
103-927-10	0-75 mm	103-137, 103-138, 103-139-10, 2 setting standards	750
103-913-31	0-150 mm	102-701(1), 103-138, 103-139-10, 103-140-10, 103-141-10, 103-142-10, 5 setting standards	2,435
103-915-10	150-300 mm	103-143-10, 103-144-10, 103-145-10, 103-146-10, 103-147-10, 103-148-10, 6 setting standards	7,695
103-914-31	0-300 mm	All micrometers of 103-913-31 and 103-915-10 in one set, 11 setting standards	10,130

(1) Ratchet thimble micrometer

Inch — Micrometer set

No.	Range	Models included	Mass g
103-929*	0-3"	103-177, 103-178, 103-179, 2 setting standards	750
103-930*	0-4"	103-177, 103-178, 103-179, 103-180, 3 setting standards	1,600
103-904-01*	0-6"	101-711(1), 101-106, 103-179, 103-180, 103-181, 103-182, 5 setting standards	2,435
103-906*	6-12"	103-183, 103-184, 103-185, 103-186, 103-187, 103-188, 6 setting standards	7,695
103-905-01	0-12"	All micrometers of 103-904-01 and 103-906 in one set, 11 setting standards	10,130

(1) Ratchet thimble micrometer

Ratchet Thimble Micrometer

Series 102

- 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 measuring force.

102-701

102-702

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm, 0,001 mm or 0.0001"
Scales	Thimble and sleeve satin chrome finish ø19 mm
Flatness	0,6 µm/0.000024"
Parallelism	2 µm/0.00008"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	Spindle pitch 0,5 mm (or 0.025") with spindle lock, ø6,35 mm
Measuring force	5-10 N
Delivered	Including box, key, setting standard (from 25 mm upward)

Optional accessories

No.	Description
04GAA899	Black ratchet cap
04GAA900	Red ratchet cap
04GAA901	Yellow ratchet cap
04GAA902	Green ratchet cap
04GAA903	Blue ratchet cap

Consumable spares

No.	Description
04AAB208	Grey ratchet cap

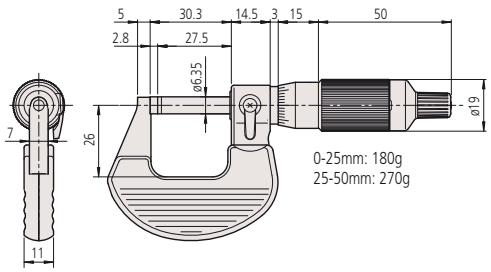
Metric

No.	Range	Accuracy	Graduation	Mass g
102-701	0-25 mm	±2 µm	0,01 mm	180
102-707	0-25 mm	±2 µm	0,001 mm	180
102-702	25-50 mm	±2 µm	0,01 mm	270
102-708	25-50 mm	±2 µm	0,001 mm	270

Inch

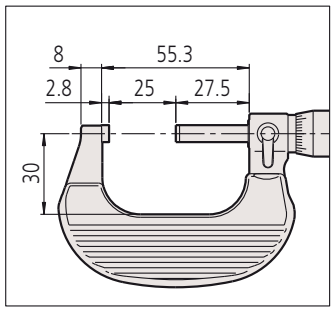
No.	Range	Accuracy	Graduation	Mass g
102-717	0-1"	±0.0001"	0.0001"	180
102-718	1-2"	±0.0001"	0.0001"	270

mm



0-25 mm

mm



25-50 mm

Digit Outside Micrometer

Series 193

Outside Micrometer with Mechanical Counter

- Direct-reading outside micrometer for quick and easy reading.

193-101

Specifications

Accuracy	Refer to the list of specifications
Counter reading	0,01 mm or 0.001"
Graduation	0,01mm, 0,001mm, 0.0001"
Scales	Thimble and sleeve satin chrome finish
Flatness	0,6 µm/0.000024"
Parallelism	(2+L/100) µm, L = max. range (mm) [0.00008+0.00004(L/4)]", L = max. range (inch)
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Forged, enamelled
Measuring spindle	Spindle pitch 0,5 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key

193-902

Metric — With ratchet stop (reading 0,01 mm)

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d ø mm	e ø mm	Mass g
193-101	0-25 mm	±2 µm	30	2.5	5	26	6.35	18	224
193-102	25-50 mm	±2 µm	55	2	8	32	6.35	18	275
193-103	50-75 mm	±2 µm	80	2	9	45	6.35	18	379
193-104	75-100 mm	±3 µm	105	2	9	57	6.35	18	489

Metric — With ratchet stop (reading 0,001 mm)

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d ø mm	e ø mm	Mass g
193-111	0-25 mm	±2 µm	30	2.5	5	26	6.35	18	224
193-112	25-50 mm	±2 µm	55	2	8	32	6.35	18	275
193-113	50-75 mm	±2 µm	80	2	9	45	6.35	18	379
193-114	75-100 mm	±3 µm	105	2	9	57	6.35	18	489

Metric — Micrometer set

No.	Range	Models included	Mass g
193-901	0-75 mm	193-101, 193-102, 193-103 2 micrometers standard	820
193-902	0-100 mm	193-101, 193-102, 193-103, 193-104 3 micrometers standard	1,280

Inch — With friction thimble (reading 0.0001")

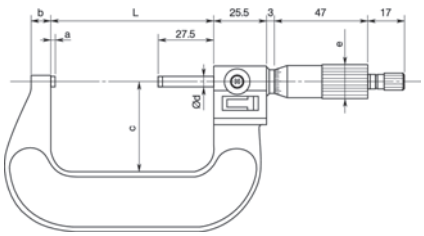
No.	Range	Accuracy	L mm	a mm	b mm	c mm	d ø mm	e ø mm	Mass g
193-211	0-1"	±0.0001"	30	2.5	5	26	6.35	18	222
193-212	1-2"	±0.0001"	55	2	8	32	6.35	18	270

Inch — With ratchet stop (reading 0.0001")

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d ø mm	e ø mm	Mass g
193-213	2-3"	±0.0001"	80	2	9	45	6.35	18	379
193-214*	3-4"	±0.00015"	105	2	9	57	6.35	18	489

Inch — Micrometer set

No.	Range	Models included	Mass g
193-923*	0-3"	193-211, 193-212, 193-213 2 micrometers standard	878



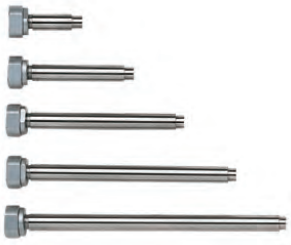
The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Digimatic Micrometer with interchangeable anvils

Series 340

- Interchangeable anvils provide a wide measuring range.

Functions	340-251-10 up to 340-352-10	340-520 up to 340-723
Data Output	●	●
ZERO/ABS	●	●
PRESET		●
ON/OFF		●
Auto power OFF	●	●
HOLD	●	●
2 x PRESET	●	
Low voltage alarm	●	●
Function lock	●	



340-251-10

Specifications

Accuracy	±(4+L/75) µm, L = max. range (mm) ±[0.00016"+0.00004 (L/3)], L = max. range (inch) (excluding quantizing error for digital models)
Resolution	0,001 mm or 0,001 mm/0.0001"
Scales	Thimble and sleeve satin chrome finish ø18 mm (up to 300 mm) ø21 mm (over 300 mm)
Flatness	0,6 µm/0.000024" for models up to 300 mm/12" 1 µm/0.00004" for models over 300 mm/12"
Parallelism	2 µm/0.00008" for models up to 75 mm/3" 3 µm/0.00012" for models up to 150 mm/6" (2+L/100) µm for models over 150 mm, L = max. range (mm) ±[0.00008"+0.00004(L/4)]" for models over 6" L = max. range (inch)
Measuring surfaces	Hardened, lapped (Anvil), carbide tipped, lapped (Spindle side)
Frame	Lightweight construction, enamelled
Measuring spindle	ø6,35 mm (up to 300 mm), ø8 mm (over 300 mm), spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N (10-14 N for measuring range of 300 mm and more)
Delivered	Including box, setting standard, anvils, key, 1 battery

Optional accessories

No.	Description
04AZB512	SPC cable 1 m with data switch
04AZB513	SPC cable 2 m with data switch
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB
02AZD790C	Signal cable for U-Wave with data switch
06ADV380C	Signal cable 2 m USB

05CZA662/05CZA663/02AZD790B/06ADV380B for 340-25X/-35X

Consumable spares

No.	Description
938882	Battery SR44

Metric

No.	Range	Interchangeable anvils	Protection IP65	Applicable Standards	Mass kg
340-251-10	0-150 mm	6 pcs	●	5 pcs	0.96
340-252-10	150-300 mm	6 pcs	●	6 pcs	1.88
340-520	300-400 mm	4 pcs		4 pcs	2.6
340-521	400-500 mm	4 pcs		4 pcs	4.1
340-522	500-600 mm	4 pcs		4 pcs	5.5
340-523	600-700 mm	4 pcs		4 pcs	6.8
340-524	700-800 mm	4 pcs		4 pcs	8.2
340-525	800-900 mm	4 pcs		4 pcs	9.5
340-526	900-1000 mm	4 pcs		4 pcs	10.9

Inch/Metric

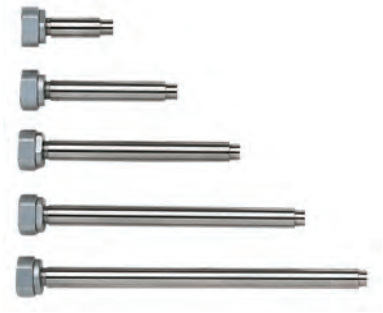
No.	Range	Interchangeable anvils	Protection IP65	Applicable Standards	Mass kg
340-351-10	0-150 mm/0-6"	6 pcs	●	5 pcs	0.96
340-352-10	150-300 mm/6-12"	6 pcs	●	6 pcs	1.88
340-720	300-400 mm/12-18"	6 pcs		6 pcs	2.6
340-721	400-500 mm/18-24"	6 pcs		6 pcs	4.1
340-722*	500-600 mm/24-30"	6 pcs		6 pcs	5.5
340-723*	600-700 mm/30-36"	6 pcs		6 pcs	6.8

Outside Micrometer with interchangeable anvils

Series 104

- Interchangeable anvils provide a wide measuring range.

104-135A



Metric

No.	Range	Interchangeable anvils	Applicable Standards	Mass kg
104-171	0-50 mm	1 pcs	-	0.32
104-139A	0-100 mm	4 pcs	3	0.79
104-135A	0-150 mm	6 pcs	5	1.35
104-161A	50-150 mm	4 pcs	4	1.35
104-140A	100-200 mm	4 pcs	4	1.38
104-136A	150-300 mm	6 pcs	6	2.65
104-141A	200-300 mm	4 pcs	4	2.22
104-142A	300-400 mm	4 pcs	4	3.31
104-143A	400-500 mm	4 pcs	4	4.81
104-144A	500-600 mm	4 pcs	4	6.35
104-145A	600-700 mm	4 pcs	4	7.72
104-146A	700-800 mm	4 pcs	4	9.08
104-147A	800-900 mm	4 pcs	4	10.41
104-148A	900-1000 mm	4 pcs	4	11.78

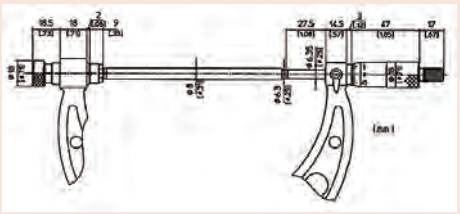
Inch

No.	Range	Interchangeable anvils	Applicable Standards	Mass kg
104-165*	0-2"	1 pcs	-	0.32
104-149	0-4"	4 pcs	3	0.79
104-137	0-6"	6 pcs	5	1.35
104-162*	2-6"	4 pcs	4	1.35
104-150	4-8"	4 pcs	4	1.38
104-138	6-12"	6 pcs	6	2.65
104-151	8-12"	4 pcs	4	2.22
104-152	12-16"	4 pcs	4	3.31
104-201*	12-18"	6 pcs	6	4.65
104-153	16-20"	4 pcs	4	4.805
104-202*	18-24"	6 pcs	6	6.515
104-154	20-24"	4 pcs	4	6.35
104-155	24-28"	4 pcs	4	7.715
104-203*	24-30"	6 pcs	6	9.96
104-156	28-32"	4 pcs	4	9.075
104-204*	30-36"	6 pcs	6	11.88
104-157*	32-36"	4 pcs	4	10.405
104-158	36-40"	4 pcs	4	11.78
104-205*	36-42"	6 pcs	6	13.7

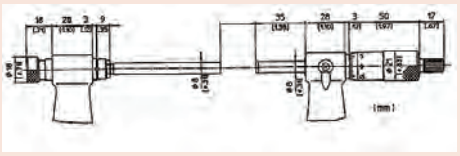
Specifications

Accuracy	±(4+L/75) µm, L = max. range (mm) ±[0.00016"+0.00004 (L/3)], L = max. range (inch)
Graduation	0,01 mm/0.001"
Scales	Thimble and sleeve satin chrome finish ø18 mm (up to 300 mm) ø21 mm (over 300 mm)
Flatness	0,6 µm/0.000024" for models up to 300 mm/12" 1 µm/0.00004" for models over 300 mm/12"
Parallelism	2 µm/0.00008" for models up to 75 mm/3" 3 µm/0.00012" for models up to 150 mm/6" (2+L/100) µm for models over 150 mm L = max. range (mm) ±[0.00008"+0.00004(L/4)]" for models over 6" L = max. range (inch)
Measuring surfaces	Hardened, lapped (Anvil), carbide tipped, lapped (Spindle side)
Frame	Lightweight construction, enamelled
Measuring spindle	ø6,35 mm (up to 300 mm) ø8 mm (over 300 mm) Spindle pitch 0,5 mm (or 0.025") with spindle lock
Measuring force	5-10 N (10-14 N for measuring range of 300 mm and more)
Delivered	Including box, setting standard, anvils, key

Outside Micrometer with interchangeable anvils



Series 104
0-300 mm/0-12"



Series 104
300-1000 mm/12-42"

° Except for 104-171 and 104-165

Series 104/340

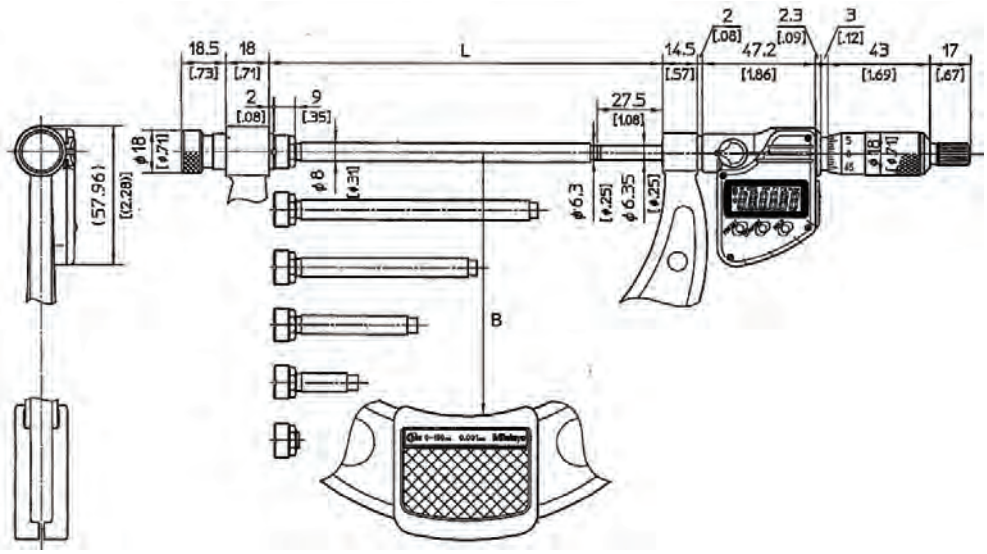
Optional interchangeable anvils for 104 and 340 series

0 - 300 mm

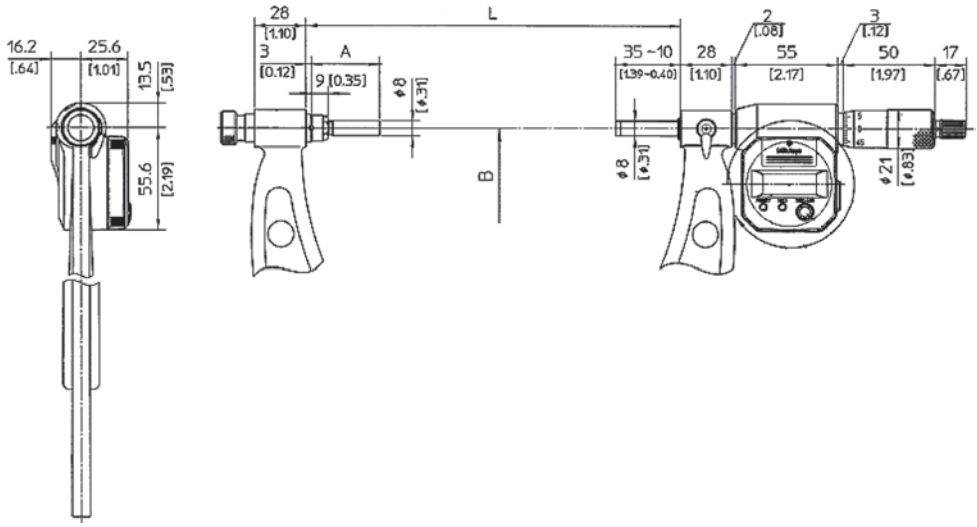
Interchangeable anvil ident	M1 mm°	M2 mm	M3 mm	M4 mm	M5 mm	M6 mm
No.	**303950**	**303951**	**303952**	**303953**	**303954**	**303955**
0/150 mm	0-25	25-50	50-75	75-100	100-125	125-150
150/300 mm	150-175	175-200	200-225	225-250	250-275	275-300

300 - 1000 mm

Interchangeable anvil ident	M3 mm	M4 mm	M5 mm	M6 mm	L mm	B mm
No.	**304001**	**304002**	**304003**	**304004**	**L**	**B**
300/400 mm	300-325	325-350	350-375	375-400	425	224
400/500 mm	400-425	425-450	450-475	475-500	525	273
500/600 mm	500-525	525-550	550-575	575-600	625	332
600/700 mm	600-625	625-650	650-675	675-700	725	382
700/800 mm	700-725	725-750	750-775	775-800	825	430
800/900 mm	800-825	825-850	850-875	875-900	925	480
900/1000 mm	900-925	925-950	950-975	975-1000	1025	530
A mm	87	62	37	12	-	-



Series 340
0-150 mm = L 164 mm / B 90 mm
150-300 mm = L 314 mm / B 166 mm



Series 340
300-1000 mm/12-42"
Dimensions in parentheses apply to inch models

Outside Micrometer with adjustable anvil

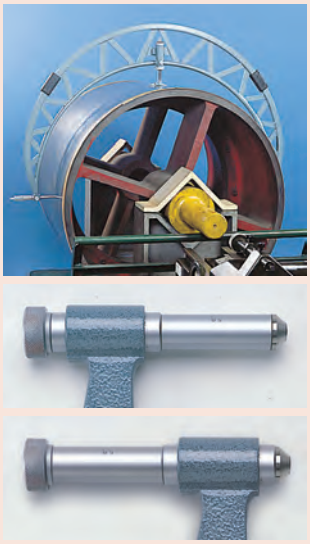
Series 105

- Stable and rugged lightweight rectangular-tube construction is ideal for large micrometers.
- 50 mm (or 2") spindle stroke provides extended range compared to standard spindle types.
- Anvil collars extend the measuring range even further.
- Setting standards supplied cover the whole measuring range.

105-105

Specifications

Accuracy	±(6+L/75) µm, L = max. range (mm) ±[0.0003"+0.00005 (L/3)], L = max. range (inch)
Graduation	0,01 mm/0.001"
Scales	Thimble and sleeve satin chrome finish, ø21 mm
Flatness	1,3 µm/0.00052"
Parallelism	(2+L/100) µm (mm), L = max. range (mm) [0.00008"+0.00004(L/4)]" (inch), L = max. range (inch)
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Lightweight welded, enamelled
Measuring spindle	ø8 mm Spindle pitch 0,5 mm (or 0.025")
Measuring force	5-10 N
Delivered	Including box, setting standards (2 pieces), adjustable stop (for models over 1000 mm/40" range)



Anvil extension collar

Metric

No.	Range	Extension collars	Mass kg
105-103*	500-600 mm	50 mm	5.53
105-104*	600-700 mm	50 mm	6.35
105-105*	700-800 mm	50 mm	7.17
105-106*	800-900 mm	50 mm	7.99
105-107*	900-1000 mm	50 mm	8.81
105-408	1000-1100 mm	50 mm	10.49
105-409	1100-1200 mm	50 mm	11.28
105-418*	1000-1200 mm	50 mm, 100 mm	13.77
105-410	1200-1300 mm	50 mm	12.05
105-411	1300-1400 mm	50 mm	12.72
105-419*	1200-1400 mm	50 mm, 100 mm	15.77
105-412	1400-1500 mm	50 mm	13.4
105-413	1500-1600 mm	50 mm	14.33
105-420*	1400-1600 mm	50 mm, 100 mm	17.91
105-414*	1600-1700 mm	50 mm	15.26
105-415	1700-1800 mm	50 mm	16.44
105-421*	1600-1800 mm	50 mm, 100 mm	20.8
105-416	1800-1900 mm	50 mm	18.1
105-417	1900-2000 mm	50 mm	19.76
105-422*	1800-2000 mm	50 mm, 100 mm	22.76

Inch

No.	Range	Extension collars	Mass kg
105-428*	40-44"	2"	10
105-429*	44-48"	2"	10.9
105-430*	48-52"	2"	11.4
105-431*	52-56"	2"	11.9
105-432*	56-60"	2"	12.6
105-433*	60-64"	2"	13.2
105-434*	64-68"	2"	14.1
105-435*	68-72"	2"	14.9
105-436*	72-76"	2"	15.8
105-437*	76-80"	2"	16.7

Digimatic Sheet Metal Micrometer

Series 389

IP65

- Designed with a deep frame for measuring the thickness of sheet material at a greater distance from the edge than is possible with a standard micrometer.

Functions	Series 389
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,6 µm/0.000024" for models with 150 mm/6" throat 1 µm/0.00004" for models with 300 mm/12" throat
Parallelism	3 µm/0.00012"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	3-8 N
Delivered	Including box, key, 1 battery

Optional accessories

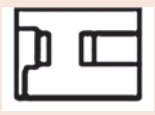
No.	Description
04AZB512	SPC cable 1 m with data switch
04AZB513	SPC cable 2 m with data switch
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB
02AZD790C	Signal cable for U-Wave with data switch
06ADV380C	Signal cable 2 m USB

04AZB512/04AZB513/02AZD790C/06ADV380C only for No. 389-514/389-714

Consumable spares

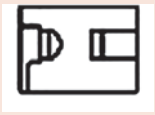
No.	Description
938882	Battery SR44

Flat-Flat



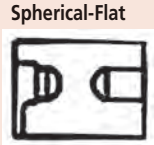
Type A
Flat-Flat

Spherical-Flat



Type B
Spherical-Flat

Spherical-Spherical



Type C
Spherical-Spherical

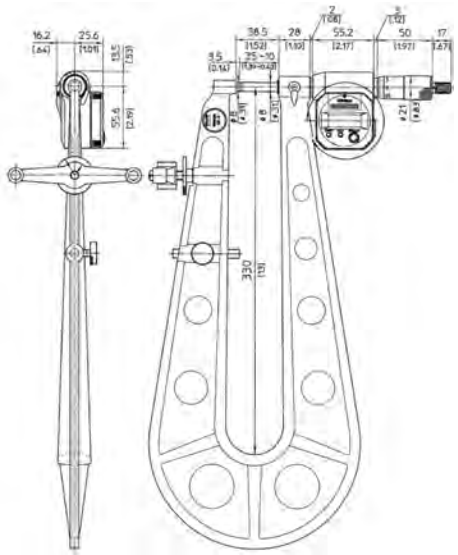
389-251

Metric

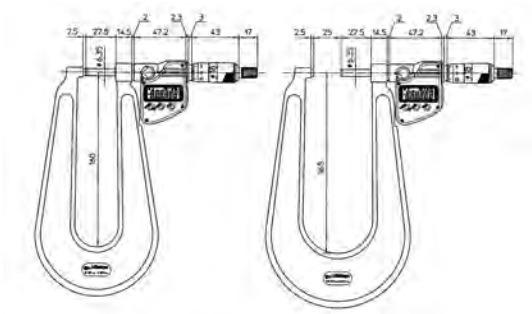
No.	Range	Accuracy	Anvil/Tip	Mass g
389-251	0-25 mm	±4 µm	A	840
389-261	0-25 mm	±4 µm	B	840
389-271	0-25 mm	±4 µm	C	840
389-514	0-25 mm	±5 µm	A	4,500
389-252	25-50 mm	±4 µm	A	920
389-262*	25-50 mm	±4 µm	B	920
389-272*	25-50 mm	±4 µm	C	920

Inch/Metric

No.	Range	Accuracy	Anvil/Tip	Mass g
389-351	0-25 mm/0-1"	±4 µm/0.0002"	A	840
389-361*	0-25 mm/0-1"	±4 µm/0.0002"	B	840
389-371	0-25 mm/0-1"	±4 µm/0.0002"	C	840
389-714*	0-25 mm/0-1"	±5 µm/0.00025"	A	4,500
389-352	25-50 mm/1-2"	±4 µm/0.0002"	A	920
389-362*	25-50 mm/1-2"	±4 µm/0.0002"	B	920
389-372*	25-50 mm/1-2"	±4 µm/0.0002"	C	920



389-514/389-714 (between brackets)



0-25 mm/25-50 mm

Sheet Metal Micrometer

Series 118

Special Purpose Micrometer

- Designed with a deep frame for measuring the thickness of sheet material at a greater distance from the edge than is possible with a standard micrometer.
- Ratchet stop applies constant measuring force for maximum repeatability.

118-102

Specifications

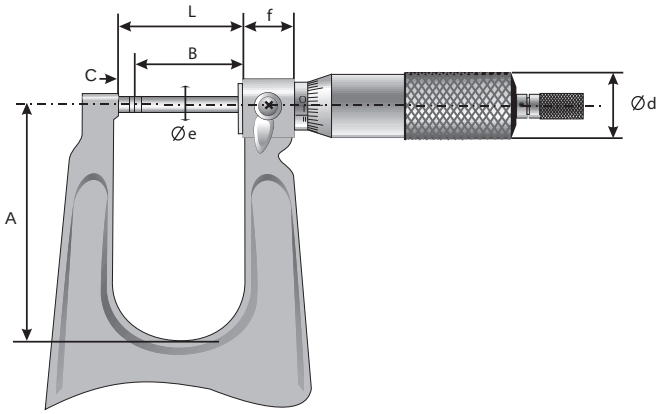
Accuracy	Refer to the list of specifications
Graduation	0,01 mm, 0.001" or 0.0001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm or ø21 mm
Flatness	0,6 µm/0.000024" for models with 150 mm/6" throat 1 µm/0.00004" for models with 300 mm/12" throat
Parallelism	3 µm/0.00012"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	Throat depth up to 150 mm : ø6,35 mm Throat depth up to 300 mm : ø8 mm Spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Delivered	Including box, key

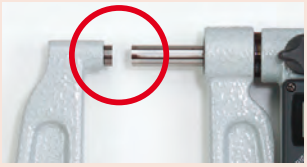
Metric

No.	Range	Accuracy	L (mm)	A (mm)	B (mm)	C (mm)	d (mm)	e (mm)	f (mm)	Anvil/Tip	Mass g
118-101*	0-25 mm	±4 µm	30,3	110	27,5	2,8	18	6,35	14,5	A	445
118-102	0-25 mm	±4 µm	30,3	160	27,5	2,8	18	6,35	14,5	A	740
118-114*	0-25 mm	±4 µm	30,3	160	27,5	2,8	18	6,35	14,5	B	740
118-118	0-25 mm	±4 µm	30,3	160	27,5	2,8	18	6,35	14,5	C	740
118-103	0-25 mm	±5 µm	38,5	330	35	3,5	21	8	28	A	2,650
118-110*	25-50 mm	±4 µm	55,3	165	27,5	2,5	18	6,35	14,5	A	820
118-126*	25-50 mm	±4 µm	55,3	165	27,5	2,5	18	6,35	14,5	C	820

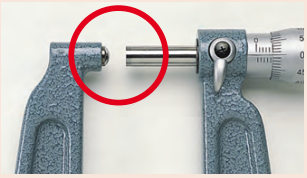
Inch

No.	Range	Accuracy	Anvil/Tip	Mass g
118-129*	0-1"	±0.0002"	A	740
118-116*	0-1"	±0.0002"	B	740
118-120	0-1"	±0.0002"	C	740
118-107*	0-1"	±0.00025"	A	2,650
118-112*	1-2"	±0.0002"	A	820

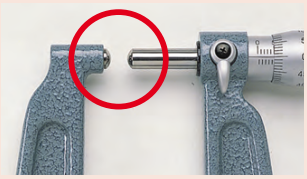




Type A
Flat-Flat



Type B
Spherical-Flat



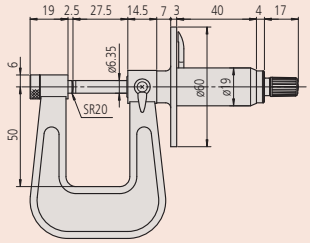
Type C
Spherical-Spherical

Sheet Metal Micrometer graduated dial

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Convex anvil and level spindle
Frame	Enamelled
Measuring spindle	ø6,35 mm, with spindle lock

mm



Series 119

- Features a deep frame and easily read graduated dial for measuring the thickness of sheet material.

119-202

Metric — Dial reading model

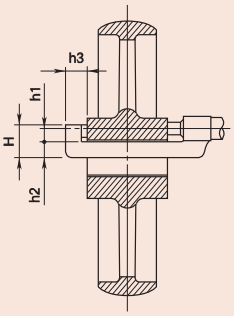
No.	Range	Accuracy	Throat depth mm	Mass g
119-202	0-25 mm	±4 µm	50 mm (1)	305

(1) S-F : Spherical anvil and Flat spindle

Hub Micrometer

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,6 µm/0.000024"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	Spindle pitch 0,5 mm
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key



Series 147

Special Purpose Micrometer

- Designed with a very small throat depth for measuring hub thickness, shouldered features inside a bore, bearing bushings, etc.
- Ratchet stop provides constant measuring force.

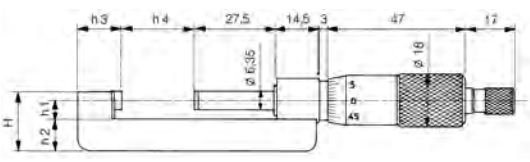
147-301

Metric

No.	Range	Accuracy	H mm	h1 mm	h2 mm	h3 mm	h4 mm	Mass g
147-301	0-25 mm	±2 µm	17.5	6	8.5	13.5	0	135
147-302	25-50 mm	±2 µm	20.5	6.5	11	14	25	150
147-303	50-75 mm	±2 µm	20.5	6.5	11	13	50	170
147-304	75-100 mm	±3 µm	20.5	6.5	11	13	75	185

Inch

No.	Range	Accuracy	H mm	h1 mm	h2 mm	h3 mm	h4 mm	Mass g
147-351	0-1"	±0,0001"	17.5	6	8.5	13.5	0	135
147-352*	1-2"	±0,0001"	20.5	6.5	11	14	25.4	150
147-353*	2-3"	±0,0001"	20.5	6.5	11	13	50.8	170
147-354*	3-4"	±0,00015"	20.5	6.5	11	13	76.2	185



Digimatic Caliper Jaw Micrometer

Series 343

Digimatic Model

- This type of micrometer has been especially designed for measuring in hard-to-reach places.
- With ratchet stop for constant measuring force.
- SPC output.

343-250

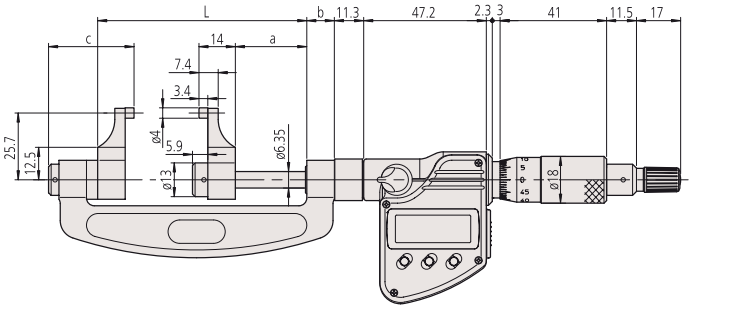
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
343-250	0-25 mm	±5 µm	55.5	27.5	10.6	32.9	320
343-251	25-50 mm	±6 µm	80.5	27.5	10.6	32.9	340
343-252	50-75 mm	±7 µm	105.5	27.5	10.6	32.9	390
343-253*	75-100 mm	±8 µm	130.5	27.5	10.6	32.9	440

Inch/Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
343-350*	0-25 mm/0-1"	±5 µm/0.00025"	55.5	27.5	10.6	32.9	320
343-351*	25-50 mm/1-2"	±6 µm/0.0003"	80.5	27.5	10.6	32.9	340
343-352*	50-75 mm/2-3"	±7 µm/0.00035"	105.5	27.5	10.6	32.9	390
343-353*	75-100 mm/3-4"	±8 µm/0.0004"	130.5	27.5	10.6	32.9	440

mm



Functions	Series 343
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

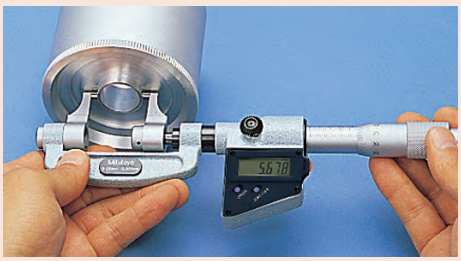
Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,3 µm/0.000012"
Parallelism	(3+L/75) µm (mm), L = max. range (mm) [0.00012"+ 0.00004(L/3)]" (inch) L = max. range (inch)
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44



Caliper Jaw Micrometer

Series 143

Analog Model

- This type of micrometer has been especially designed for measuring in hard-to-reach places.

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm/0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,3 µm/0.000012"
Parallelism	(3+L/75) µm (mm), L = max. range (mm) [0.00012"+0.00004(L/3)]" (inch) L = max. range (inch)
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm
Delivered	Including box, setting standard (from 25 mm/1" upward), key

143-101

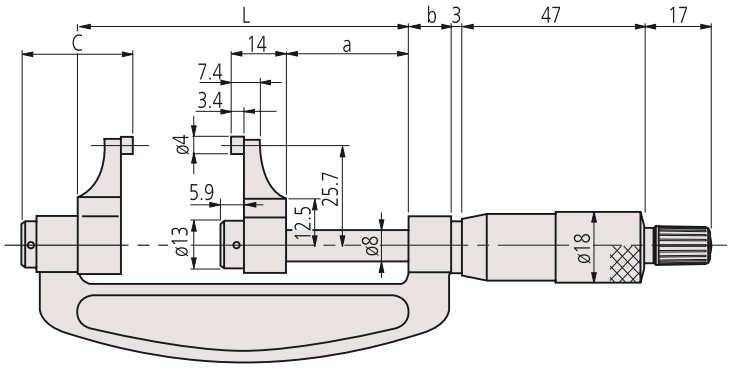
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
143-101	0-25 mm	±5 µm	59.8	31.8	10.6	28.6	210
143-102	25-50 mm	±6 µm	84.8	31.8	10.6	28.6	230
143-103	50-75 mm	±7 µm	109.8	31.8	10.6	28.6	280
143-104	75-100 mm	±8 µm	134.8	31.8	10.6	28.6	330
143-105	100-125 mm	±9 µm	159.8	31.8	10.6	28.6	400
143-106*	125-150 mm	±9 µm	184.8	31.8	10.6	28.6	450
143-107*	150-175 mm	±10 µm	209.8	31.8	10.6	28.6	520
143-108*	175-200 mm	±10 µm	234.8	31.8	10.6	28.6	600
143-109*	200-225 mm	±11 µm	255.8	27.8	14.5	32.5	690
143-110*	225-250 mm	±11 µm	280.8	27.8	14.5	32.5	790
143-111*	250-275 mm	±12 µm	305.8	27.8	14.5	32.5	900
143-112*	275-300 mm	±12 µm	330.8	27.8	14.5	32.5	920

Inch

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
143-121	0-1"	±0.00025"	59.8	31.8	10.6	28.6	210
143-122*	1-2"	±0.0003"	84.8	31.8	10.6	28.6	230
143-123	2-3"	±0.00035"	109.8	31.8	10.6	28.6	280

mm



Universal Micrometer

Series 116

Accepts various types of anvil and spindle tip

- Non-rotating spindle type which accepts seven forms of optional interchangeable anvil/spindle-tip (flat, spline, spherical, point, knife-edge, disc, and blade) for a wide range of applications.
- Optional anvils/spindle-tips for screw thread measurement (matching V and cone) are also available.
- With Ratchet Stop for constant measuring force.

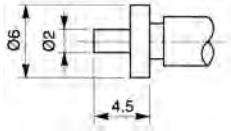
116-101

Metric

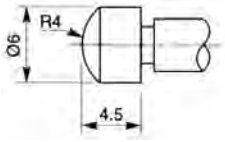
No.	Range	Accuracy	Mass g
116-101	0-25 mm	±4 µm	250
116-102	25-50 mm	±4 µm	300

Inch

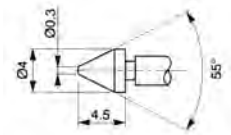
No.	Range	Accuracy
116-105*	0-1"	±0.0002"
116-106*	1-2"	±0.0002"



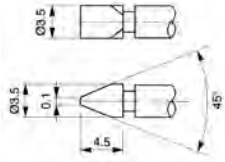
Spline
116-802



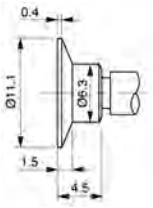
Spherical
116-803



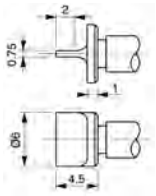
Point
116-804



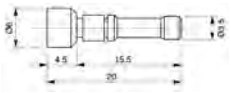
Knife-edge
116-805



Disc
116-806



Blade
116-807



Flat
116-801

Specifications

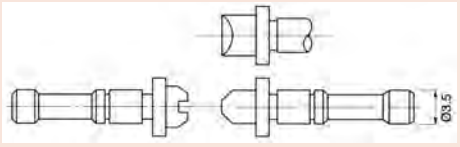
Accuracy	Refer to the list of specifications
Graduation	0,01mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Frame	Enamelled
Measuring spindle	ø8 mm, spindle pitch 0,5 mm
Spindle feed error	3 µm/0.00015"
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key Interchangeable anvils/spindle-tips not included

Optional accessories

No.	Description
116-800	7 pairs of anvils/spindle-tips No. 116-801 to -807
116-801	Matched pair anvil/spindle-tip (flat)
116-802	Matched pair anvil/spindle-tip (spline)
116-803	Matched pair anvil/spindle-tip (spherical)
116-804	Matched pair anvil/spindle-tip (point)
116-805	Matched pair anvil/spindle-tip (knife-edge)
116-806	Matched pair anvil/spindle-tip (disc)
116-807	Matched pair anvil/spindle-tip (blade)
116-830	6 pairs of anvils/spindle-tips for measuring metric threads, pitch 0,4-7 mm
116-840	10 pairs of anvils/spindle-tips for whitworth threads

116-830 :
- 0,4-0,5 mm/64-48TPI (**116-831**)
- 0,6-0,9 mm/44-28TPI (**116-832**)
- 1-1,75 mm/24-14TPI (**116-833**)
- 2-3 mm/13-9TPI (**116-834**)
- 3,5-5mm/8-5TPI (**116-835**)
-5,5-7mm/4.5-3.5TPI (**116-836**)

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/spindle-tips are available in sets

Digimatic Screw Thread Micrometer

Functions	Series 326
Data Output	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
2 x PRESET	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Spindle feed error	3 µm/0.00015"
Delivered	Including box, setting standard (60°) (from 25 mm upward), key, 1 battery

Standard accessories

No.	Description
167-261	Setting standard 25 mm/60°
167-262	Setting standard 50 mm/60°
167-263	Setting standard 75 mm/60°
167-264	Setting standard 100 mm/60°

Optional accessories

No.	Description
167-272	Setting standard 25 mm/55°
167-273	Setting standard 50 mm/55°
167-274	Setting standard 75 mm/55°
167-275	Setting standard 100 mm/55°
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

Standard accessories for Inch

No.	Description
167-294	Setting standard 1"/60°
167-295	Setting standard 2"/60°
167-296	Setting standard 3"/60°
167-297	Setting standard 4"/60°

Optional accessories for Inch

No.	Description
167-283	Setting standard 1"/55°
167-284	Setting standard 2"/55°
167-285	Setting standard 3"/55°
167-286	Setting standard 4"/55°

Anvil/spindle-tip matching pair

Series 326

IP65

Interchangeable anvil/spindle-tip type.

- Optional, interchangeable, anvils/spindle-tips enable a wide range of Metric/Unified and Whitworth screw-thread pitch diameters to be measured.
- Digimatic data output enables incorporation into an SPC System.

326-251-10

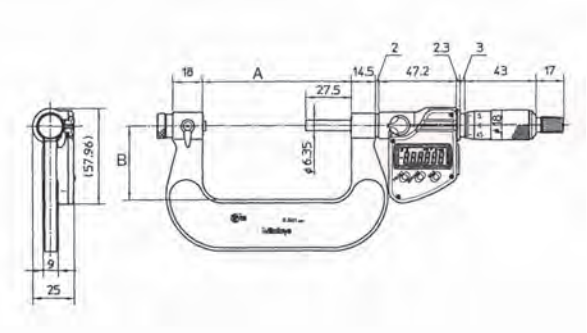
Interchangeable anvils/spindle tips in matching pairs

Metric

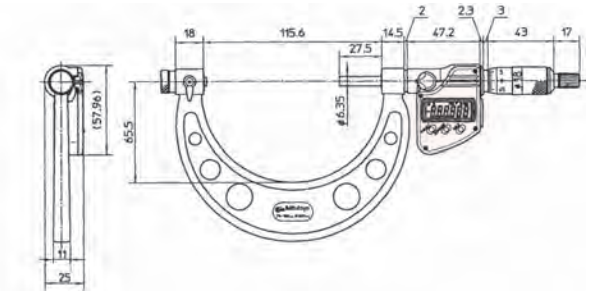
No.	Range	Accuracy	A mm	B mm	Mass g
326-251-10	0-25 mm	±4 µm	39.5	25	350
326-252-10	25-50 mm	±4 µm	64.5	32	380
326-253-10	50-75 mm	±4 µm	90	45	470
326-254-10	75-100 mm	±5 µm	115.6	65	510

Inch/Metric

No.	Range	Accuracy	A mm	B mm	Mass g
326-351-10	0-25 mm/0-1"	±4 µm/0.0002"	39.5	25	350
326-352-10	25-50 mm/1-2"	±4 µm/0.0002"	64.5	32	380
326-353-10*	50-75 mm/2-3"	±4 µm/0.0002"	90	45	470
326-354-10*	75-100 mm/3-4"	±5 µm/0.00025"	115.6	65	510



0-75 mm

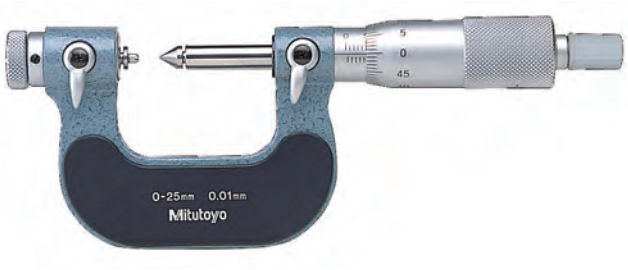


75-100 mm

Screw Thread Micrometer

Series 126

- Optional, interchangeable, anvils/spindle-tips enable a wide range of Metric/Unified and Whitworth screw-thread pitch diameters to be measured.



126-125

Interchangeable anvils/ spindle tips in matching pairs

Specifications

Accuracy	Refer to the list of specifications
Graduation	0.01 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Spindle feed error	3 µm/0.00015"
Delivered	Including box, setting standard (60°) (from 25 mm upward), key

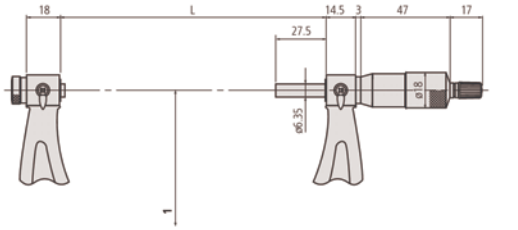
Metric

No.	Range	Accuracy	L mm	a mm	Mass g
126-125	0-25 mm	±4 µm	39.5	25	240
126-126	25-50 mm	±4 µm	64.5	32	290
126-127	50-75 mm	±4 µm	90	45	390
126-128	75-100 mm	±5 µm	115.6	65	450
126-129	100-125 mm	±5 µm	140.6	79	530
126-130	125-150 mm	±5 µm	165.6	93	620
126-131	150-175 mm	±6 µm	190.5	105	730
126-132	175-200 mm	±6 µm	214.5	120	860
126-133	200-225 mm	±6 µm	240.5	131	1,030
126-134	225-250 mm	±7 µm	265.5	144	1,200
126-135*	250-275 mm	±7 µm	290.5	156	1,370
126-136	275-300 mm	±7 µm	314.5	171	1,540

Inch

No.	Range	Accuracy	Mass g
126-137	0-1"	±0.0002"	240
126-138	1-2"	±0.0002"	290
126-139*	2-3"	±0.0002"	390
126-140*	3-4"	±0.00025"	450
126-141*	4-5"	±0.00025"	530
126-142	5-6"	±0.00025"	620

mm



Standard accessories

No.	Description
167-261	Setting standard 25 mm/60°
167-262	Setting standard 50 mm/60°
167-263	Setting standard 75 mm/60°
167-264	Setting standard 100 mm/60°
167-265	Setting standard 125 mm/60°
167-266	Setting standard 150 mm/60°
167-267	Setting standard 175 mm/60°
167-268	Setting standard 200 mm/60°
167-269	Setting standard 225 mm/60°
167-270	Setting standard 250 mm/60°
167-271	Setting standard 275 mm/60°

Optional accessories

No.	Description
167-272	Setting standard 25 mm/55°
167-273	Setting standard 50 mm/55°
167-274	Setting standard 75 mm/55°
167-275	Setting standard 100 mm/55°
167-276	Setting standard 125 mm/55°
167-277	Setting standard 150 mm/55°
167-278	Setting standard 175mm/55°
167-279	Setting standard 200 mm/55°
167-280	Setting standard 225 mm/55°
167-281	Setting standard 250 mm/55°
167-282	Setting standard 275 mm/55°

Standard accessories for Inch

No.	Description
167-294	Setting standard 1"/60°
167-295	Setting standard 2"/60°
167-296	Setting standard 3"/60°
167-297	Setting standard 4"/60°
167-298	Setting standard 5"/60°

Optional accessories for Inch

No.	Description
167-283	Setting standard 1"/55°
167-284	Setting standard 2"/55°
167-285	Setting standard 3"/55°
167-286	Setting standard 4"/55°
167-287	Setting standard 5"/55°

Anvil/spindle-tip matching pair

Screw Thread Micrometer

Series 126

Optional accessories anvils/spindle-tips

Measuring anvil/spindle-tip set metric UNF (consists of No. 126-801 to 126-806)

No.	Designation
126-800	M1 to M6

Measuring anvil/spindle-tip set Whitworth (consists of No. 126-811 to 126-820)

No.	Designation
126-810	W1 to W10

Individual measuring anvil/spindle-tip pairs

No.	Accuracy	Metric pitch	UNF threads/inch	Whitworth threads/inch	Designation
126-801	±30'	0.4-0.5	64-48		M1
126-802	±20'	0.6-0.9	44-28		M2
126-803	±15'	1-1.75	24-14		M3
126-804	±10'	2-3	13-9		M4
126-805	±10'	3.5-5	8-5		M5
126-806	±10'	5.5-7	4.5-3.5		M6
126-811	±30'			60-48	W1
126-812	±30'			48-40	W2
126-813	±20'			40-32	W3
126-814	±20'			32-24	W4
126-815	±15'			24-18	W5
126-816	±15'			18-14	W6
126-817	±10'			14-10	W7
126-818	±10'			10-7	W8
126-819	±10'			7-4.5	W9
126-820	±10'			4.5-3.5	W10

Screw Thread Micrometer

Series 125

- 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 measuring force.

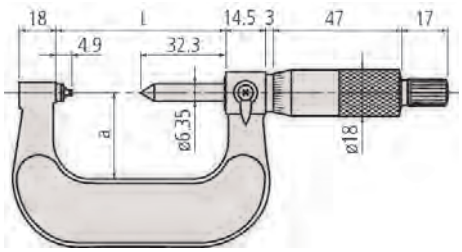
125-103

Specifications

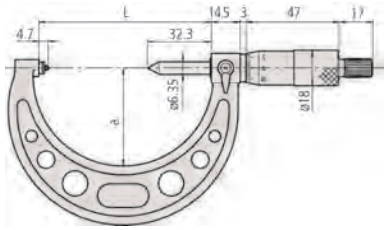
Accuracy	±(2+L/75) µm L = max. range (mm)
Graduation	0,01 mm
Spindle feed error	3 µm
Delivered	Including box, setting standard (from 25 mm upward), key

Metric

No.	Range	L mm	a mm	Mass g	Thread to be measured (Metric/Unified)
125-101*	0-25 mm	37.2	25	200	0,4-0,5 mm /64-48TPI
125-102*	0-25 mm	37.2	25	200	0,6-0,9 mm/44-28TPI
125-103*	0-25 mm	37.2	25	200	1-1,75 mm/24-14TPI
125-104*	0-25 mm	37.2	25	200	2-3 mm/13-9TPI
125-105*	0-25 mm	37.2	25	200	3,5-5 mm/8-5TPI
125-106*	25-50 mm	62.2	32	250	0,4-0,5 mm/64-48TPI
125-107*	25-50 mm	62.2	32	250	0,6-0,9 mm/44-28TPI
125-108*	25-50 mm	62.2	32	250	1-1,75 mm/24-14TPI
125-109*	25-50 mm	62.2	32	250	2-3 mm/13-9TPI
125-110*	25-50 mm	62.2	32	250	3,5-5 mm/8-5TPI
125-111*	50-75 mm	87	49	260	0,6-0,9 mm/44-28TPI
125-112*	50-75 mm	87	49	260	1-1,75 mm/24-14TPI
125-113*	50-75 mm	87	49	260	2-3 mm/13-9TPI
125-114*	50-75 mm	87	49	260	3,5-5 mm/8-5TPI
125-115*	50-75 mm	87	49	260	5,5-7 mm/4.5-3.5TPI
125-116*	75-100 mm	112	63	330	0,6-0,9 mm/44-28TPI
125-117*	75-100 mm	112	63	330	1-1,75 mm/24-14TPI
125-118*	75-100 mm	112	63	330	2-3 mm/13-9TPI
125-119*	75-100 mm	112	63	330	3,5-5 mm/8-5TPI
125-120*	75-100 mm	112	63	330	5,5-7 mm/4.5-3.5TPI



Models up to 50 mm



Models over 50 mm

Gear Tooth Micrometer

Series 324/124

- Interchangeable ball inserts allow measurement of module in the range 0.5-5.25 mm.
- Digimatic data output available on Series 324 models.

Functions	Series 324/124 324-251-10 up to 324-354-10
Data Output	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
2 x PRESET	●
Low voltage alarm	●
Function lock	●

Specifications

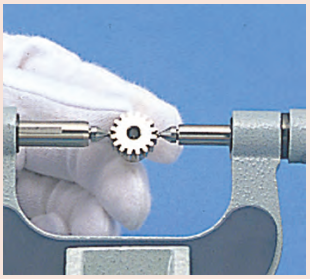
Accuracy	Refer to the list of specifications (excluding quantizing error)
Graduation	0,01 mm (analogue model)
Resolution	0,001 mm or 0,001 mm/0.00005" (digimatic model)
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Frame	Enamelled
Measuring spindle	ø6,35 mm
Measuring force	5-10 N
Delivered	Including box, key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44



324-251-10

124-173

Metric — Digimatic model

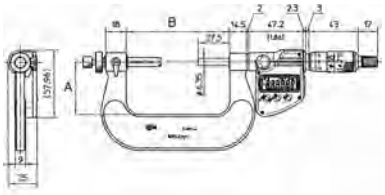
No.	Range	Accuracy	L mm	a mm	Mass g
324-251-10	0-25 mm	±4 µm	64.5	32	400
324-252-10	25-50 mm	±4 µm	90	45	490
324-253-10	50-75 mm	±4 µm	115.6	65	530
324-254-10	75-100 mm	±5 µm	140.6	79	600

Metric

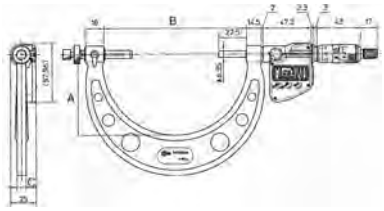
No.	Range	Accuracy	L mm	a mm
124-173*	0-25 mm	±4 µm	64.5	32
124-174*	25-50 mm	±4 µm	90	45
124-175*	50-75 mm	±4 µm	115.6	65
124-176*	75-100 mm	±5 µm	140.6	79
124-177*	100-125 mm	±5 µm	165.6	93
124-178*	125-150 mm	±5 µm	190.5	105
124-179*	150-175 mm	±6 µm	214.5	120
124-180*	175-200 mm	±6 µm	240.5	131
124-181*	200-225 mm	±6 µm	265.5	144
124-182*	225-250 mm	±7 µm	290.5	156
124-183*	250-275 mm	±7 µm	314.5	171
124-195*	275-300 mm	±7 µm	353	187

Inch/Metric — Digimatic model

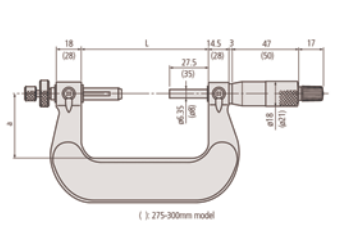
No.	Range	Accuracy	L mm	a mm
324-351-10*	0-25 mm/0-1"	±4 µm/0.0002"	64.5	32
324-352-10*	25-50 mm/1-2"	±4 µm/0.0002"	90	45
324-353-10*	50-75 mm/2-3"	±4 µm/0.0002"	115.6	65
324-354-10*	75-100 mm/3-4"	±5 µm/0.00025"	140.6	79



Series 324
0-50 mm



Series 324
50-100 mm



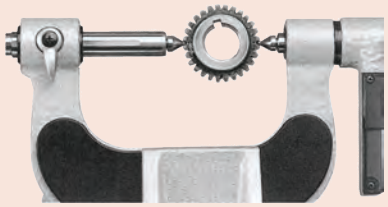
Series 124

Interchangeable anvils for micrometer series 324/124

Series 124

IP65

- Optional interchangeable anvils for series 324-25X and 124-17X /-18X /-19X



Metric

No.	Diameter	Gear module	Dia pitch	Remarks
124-801	0,8 mm	0,5-0,55	50	Carbide-tipped anvil
124-802	1 mm	0,6-0,65	45	Carbide-tipped anvil
124-821	1,5 mm	0,9-1	28-26	Carbide-tipped anvil
124-805	2 mm	1,25	22	Carbide-tipped anvil
124-822	2,5 mm	1,5	17	
124-807	3 mm	1,75	15	
124-823	3,5 mm	2	13	
124-810	4 mm	2,25	11	
124-824	4,5 mm	2,5	10	
124-812	5 mm	2,75	9	
124-814	6 mm	3,5	7	
124-816	7 mm	4,0	6,5	
124-819	8 mm	4,75	5,5	

Inch/Metric

No.	Diameter	Gear module	Dia pitch	Remarks
124-803*	1,191 mm (3/64")	0,7-0,8	35-30	Carbide-tipped anvil
124-804*	1,588 mm (1/16")	0,9-1	28-26	Carbide-tipped anvil
124-806	2,381 mm (3/32")	1,5	17	
124-808*	3,175 mm (1/8")	-	14	
124-809*	3,969 mm (5/32")	2	13	
124-811*	4,763 mm (3/16")	2,5	10	
124-813*	5,556 (7/32")	3,0-3,25	8	
124-815	6,35 mm (1/4")	3,75	7	
124-817*	7,144 (9/32")	4,25	6	
124-818*	7,938 (5/16")	4,5	5,5	
124-820*	8,731 (11/32")	5,0-5,25	5	

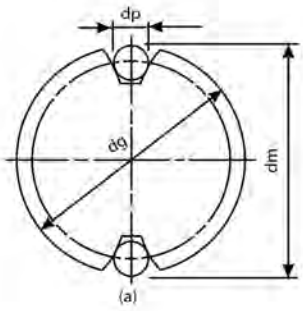
For even-numbered teeth:

$$dm = dp + dg = dp \frac{zm \cos a}{\cos \varnothing}$$

For odd-numbered teeth:

$$dm = dp + \frac{dg}{\cos \varnothing} \cdot \cos\left(\frac{90°}{z}\right)$$

$$= dp + \frac{zm \cos \alpha}{\cos \varnothing} \cdot \cos\left(\frac{90°}{z}\right)$$



(a)

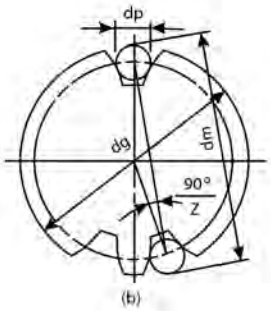
While

$$\text{inv}\varnothing = \frac{dp + \chi}{dg \quad 2}$$

$$= \frac{dp}{zm \cos \alpha} - \left(\frac{\pi}{2z} - \text{inv}\,\alpha\right) + \frac{2 \tan \alpha \cdot \chi}{z}$$

You can find the diameter Ø by looking up the conversion table for gear tooth involutes (value (inv Ø)).

Z: Number of teeth
α: Pressure angle
m: Gearing module
χ: Tooth height-addendum modification factor



(b)

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* Please contact Mitutoyo for more information on delivery times.

Digimatic Disc Micrometer

Functions	Series 323
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

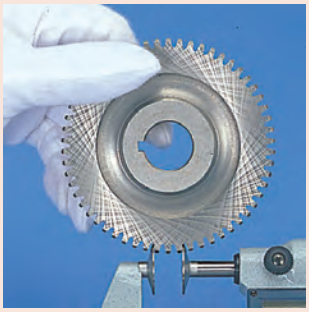
Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Flatness	1 µm/0.00004"
Parallelism	4 µm/0.00016" for models up to 50 mm/2" (4+L/50) µm for models up to 100 mm L = max. range (mm) 0.00024" for models up to 4"
Frame	Enamelled
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring force	3-8 N
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm, with spindle lock
Measurable module	0.5-6
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

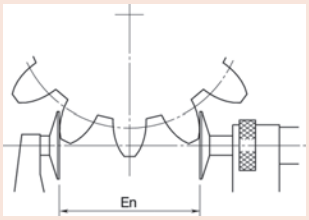
Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44





Root tangent length of gear (En)

Series 323

- For measuring base tangent length and module (0,5 to 6) on gears, and recessed features that are difficult to reach with a standard micrometer.

323-250

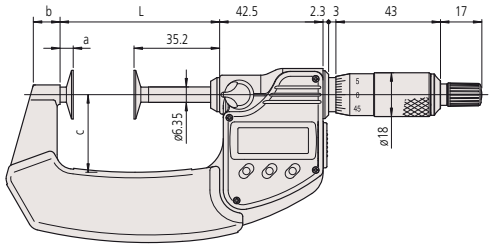
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	e mm	t mm	Mass g
323-250	0-25 mm	±4 µm	39.7	4.5	9.2	25	20	8	0.7	290
323-251	25-50 mm	±4 µm	65.6	5.4	11	31	20	8	0.7	355
323-252	50-75 mm	±6 µm	90.7	5.5	12.2	50	20	8	0.7	555
323-253	75-100 mm	±6 µm	112.5	5.5	13.5	60	20	8	0.7	610

Inch/Metric

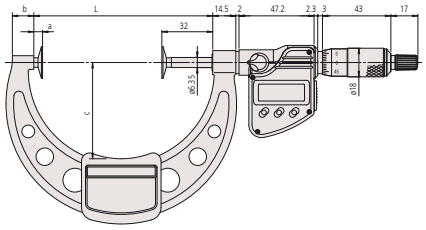
No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	e mm	t mm	Mass g
323-350	0-25 mm/0-1"	±4 µm/0.0002"	39.7	4.5	9.2	25	20	8	0.7	290
323-351	25-50 mm/1-2"	±4 µm/0.0002"	65.6	5.4	11	31	20	8	0.7	355
323-352*	50-75 mm/2-3"	±6 µm/0.0003"	90.7	5.5	12.2	50	20	8	0.7	555
323-353*	75-100 mm/3-4"	±6 µm/0.0003"	112.5	5.5	13.5	60	20	8	0.7	610

mm

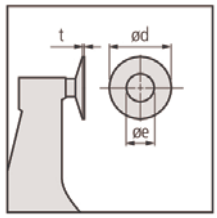


Models up to 75 mm

mm



Models over 75 mm



Disc Micrometer

Series 123

- For measuring base tangent length and module (0,5 to 6) on gears, and recessed features that are difficult to reach with a standard micrometer.

123-101

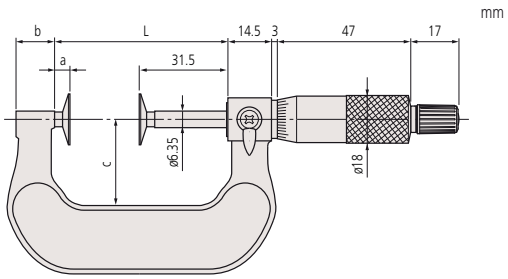
123-103

Metric

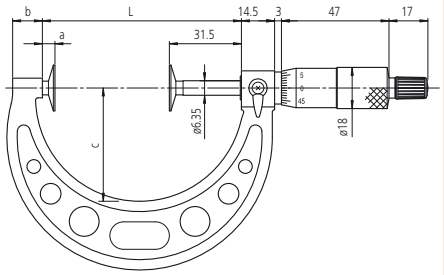
No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	e mm	t mm	Mass g
123-101	0-25 mm	±4 µm	37.5	6	14	25	20	8	0.7	200
123-113*	0-25 mm	±4 µm	39.7	4.5	9.2	25	20	8	0.7	200
123-102	25-50 mm	±4 µm	62.5	6	14	32	20	8	0.7	250
123-114*	25-50 mm	±4 µm	65.6	5.4	11	31	20	8	0.7	250
123-103	50-75 mm	±6 µm	87	5.5	11	49	20	8	0.7	300
123-115*	50-75 mm	±6 µm	90.7	5.5	12.2	50	20	8	0.7	300
123-104	75-100 mm	±6 µm	112	5.5	11	63	20	8	0.7	375
123-116*	75-100 mm	±6 µm	112.5	5.5	13.5	60	20	8	0.7	375
123-105	100-125 mm	±7 µm	137.5	6	12	79	30	12	1	520
123-106	125-150 mm	±7 µm	162.5	6	15	94	30	12	1	570
123-107	150-175 mm	±8 µm	187.5	6	16	106	30	12	1	730
123-108	175-200 mm	±8 µm	212.5	6	15	118	30	12	1	890
123-109	200-225 mm	±8 µm	237.5	6	14	130	30	12	1	1,000
123-110	225-250 mm	±9 µm	262.5	6	14	143	30	12	1	1,200
123-111	250-275 mm	±9 µm	287.5	6	15	156	30	12	1	1,410
123-112	275-300 mm	±9 µm	312.5	6	15	169	30	12	1	1,680

Inch

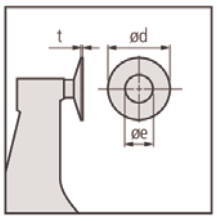
No.	Range	Accuracy	L mm	a mm	b mm	c mm	d mm	e mm	t mm	Mass g
123-125	0-1"	±0.0002"	37.5	6	14	25	20	8	0.7	200
123-126	1-2"	±0.0002"	62.5	6	14	32	20	8	0.7	200
123-127	2-3"	±0.0003"	87	5.5	11	49	20	8	0.7	250
123-128*	3-4"	±0.0003"	112	5.5	11	63	20	8	0.7	250



Models up to 50 mm

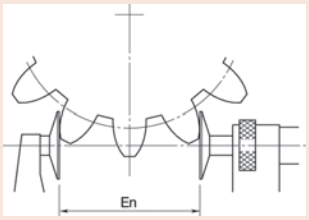


Models over 50 mm



Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	1 µm/0.00004" for models up to 100 mm/4" 1,6 µm/0.000063" for models over 100 mm/4"
Parallelism	4 µm/0.00016" for models up to 50 mm/2" (4+L/50) µm for models up to 100 mm (5+L/75) µm for models over 100 mm L = max. range (mm) 0.00024" for models up to 4"
Frame	Enamelled
Measuring spindle	ø6,35, spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Measurable module	0.5-6 (0.7-11 : models over 100 mm)
Delivered	Including box, setting standard (from 25 mm upward), key



Root tangent length of gear (En)

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* Please contact Mitutoyo for more information on delivery times.

Digimatic Disc Micrometer non-rotating spindle type

Functions	Series 369
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	1 µm/0.00004"
Parallelism	4 µm/0.00016" for models up to 50 mm/2" 6 µm/0.00024" for models over 50 mm/2"
Frame	Enamelled
Measuring spindle	ø6.35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	3-8 N
Measurable module	0.5-6
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

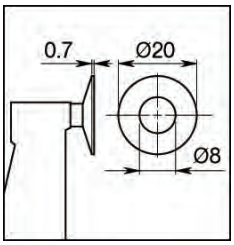
Consumable spares

No.	Description
938882	Battery SR44

Series 369

- With non-rotating spindle and disc-shaped measuring surfaces.
- Suitable for measuring felt, rubber, cardboard, fabric etc.

369-250



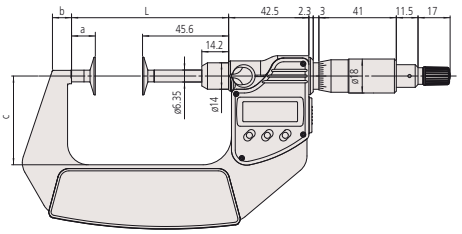
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
369-250	0-25 mm	±4 µm	58.5	12.9	7	32	340
369-251	25-50 mm	±4 µm	83.5	12.9	9.8	47	480
369-252	50-75 mm	±6 µm	108.5	12.9	11.2	60	635
369-253	75-100 mm	±6 µm	112.5	5.5	13.5	60	775

Inch/Metric

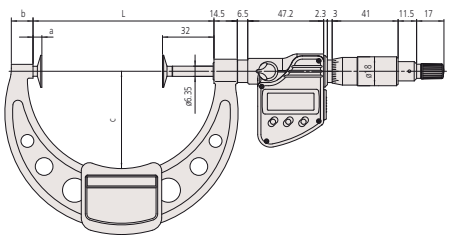
No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
369-350	0-25 mm/0-1"	±4 µm/0.0002"	58.5	12.9	7	32	340
369-351*	25-50 mm/1-2"	±4 µm/0.0002"	83.5	12.9	9.8	47	480
369-352*	50-75 mm/2-3"	±6 µm/0.0003"	108.5	12.9	11.2	60	635
369-353*	75-100 mm/3-4"	±6 µm/0.0003"	112.5	5.5	13.5	60	775

mm



Models up to 75 mm

mm



Models over 75 mm

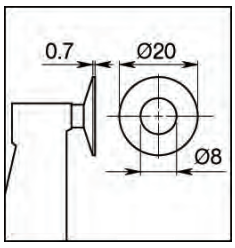
ABSOLUTE Digimatic Disc Micrometer Quickmike

Series 369

Quick-action micrometer

- With non-rotating spindle and disc-shaped measuring surfaces.
- Suitable for measuring felt, rubber, cardboard, fabric etc.

369-411

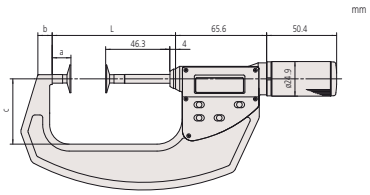


Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
369-411	0-30 mm	±4 µm	63.8	13.5	8.5	36	360
369-412	25-55 mm	±4 µm	88.8	13.5	10.3	47	490

Inch/Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
369-421*	0-30 mm/0-1.2"	±4 µm/0.0002"	63.8	13.5	8.5	36	360
369-422*	25-55 mm/1-2.2"	±4 µm/0.0002"	88.8	13.5	10.3	47	490



Functions	Series 369
Data Output	●
ORIGIN	●
ZERO/ABS	●
ON/OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Flatness	1 µm/0.00004"
Parallelism	3 µm/0.00012"
Frame	Enamelled
Measuring force	3-8 N
Measurable module	0.5-6
Delivered	Including box, setting standard (from 25 mm upward), 1 battery

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
02AZD790E	Signal cable U-Wave
06ADV380E	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

Series 227

- Constant and low measuring force mechanism in the thimble.
- Adjustable measuring force to suit various kinds of workpiece.
- Speedy spindle feed of 10 mm/rev.
- With non-rotating spindle and disc-shaped measuring surfaces.
- Suitable for measuring felt, rubber, cardboard, fabric etc.

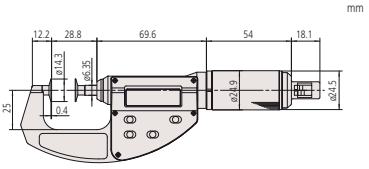
227-221

Metric

Quickmike type adjustable measuring force

No.	Range	Accuracy	Measuring force (N) settings	Measuring force accuracy (N) (1)	Measuring surface ø mm	Mass g
227-221	0-15 mm	±4 µm	0,5; 1,0; 1,5; 2,0; 2,5	0,1 + (for setting/10)	14.3	300
227-222	0-15 mm	±4 µm	2; 4; 6; 8; 10	0,4 + (for setting/10)	14.3	300

(1) Only valid for instrument orientation within 3 degrees of horizontal when measuring (gravitational influence).



Functions	Series 227
Data Output	●
ORIGIN	●
ZERO/ABS	●
ON/OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications
Resolution	0,001 mm
Flatness	1 µm
Parallelism	3 µm
Frame	Enamelled
Measurable module	0.4-3
Measuring direction	Horizontal
Delivered	Including box, screwdriver, 1 battery

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
06ADV380E	Signal cable 2 m USB
02AZD790E	Signal cable U-Wave

Consumable spares

No.	Description
938882	Battery SR44

The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Disc Micrometer non-rotating spindle type

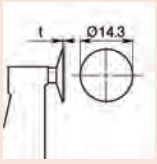
Series 169

- With non-rotating spindle and disc-shaped measuring surfaces.
- Suitable for measuring felt, rubber, cardboard, fabric etc.

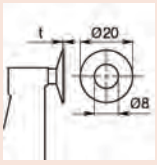
169-201

Specifications

Accuracy	Refer to the list of specifications.
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	1 µm/0.00004"
Parallelism	4 µm/0.00016 for models up to 50 mm/2" 6 µm/0.00024" for models over 50 mm/2"
Frame	Enamelled
Measuring spindle	Spindle pitch 0,5 mm
Measuring force	5-10 N
Delivered	Including box, key



With circular measuring surfaces
169-101/103



With annular measuring surfaces
169-20X

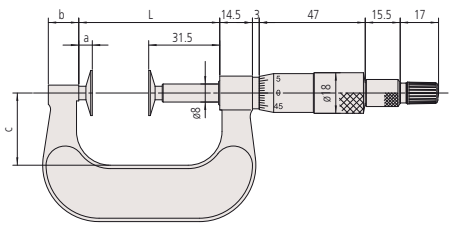
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
169-101	0-25 mm	±4 µm	37.5	6	13.5	25	230
169-201	0-25 mm	±4 µm	37.5	6	13.5	25	230
169-202*	25-50 mm	±4 µm	62.5	6	13.5	32	280
169-205*	50-75 mm	±6 µm	87	5.5	13	49	315
169-207*	75-100 mm	±6 µm	112	5.5	13	63	400

Inch

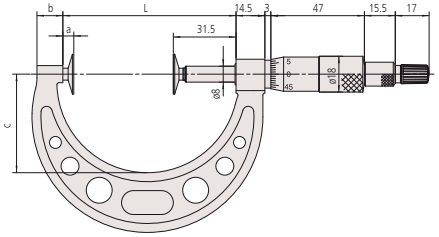
No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
169-103*	0-1"	±0.0002"	37.5	6	13	25	230
169-203	0-1"	±0.0002"	37.5	6	13	25	230
169-204*	1-2"	±0.0002"	62.5	6	13.5	32	280
169-206*	2-3"	±0.0003"	87	5.5	13	49	315
169-208*	3-4"	±0.0003"	112	5.5	13	63	400

mm



Models up to 50 mm

mm



Models over 50 mm

Digimatic Spline Micrometer

Series 331

Special Purpose Micrometer

- Features stepped measuring surfaces.
- Suitable for measuring grooves, splined shafts, etc.

331-251

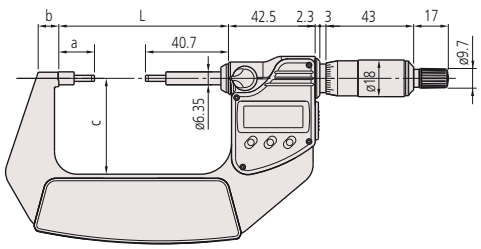
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
331-251	0-25 mm	±2 µm	58.2	17.5	7.3	32	A	330
331-261	0-25 mm	±2 µm	58.2	17.5	7.3	32	B	330
331-252	25-50 mm	±2 µm	83.2	17.5	10.1	47	A	470
331-262	25-50 mm	±2 µm	83.2	17.5	10.1	47	B	470
331-253	50-75 mm	±2 µm	108.2	17.5	11.5	60	A	625
331-263	50-75 mm	±2 µm	108.2	17.5	11.5	60	B	625
331-254	75-100 mm	±3 µm	132.8	20.3	16.7	76	A	565
331-264	75-100 mm	±3 µm	132.8	20.3	16.7	76	B	565

Inch/Metric

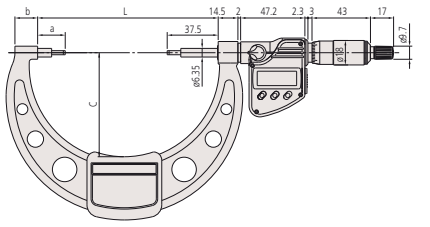
No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
331-351	0-25 mm/0-1"	±2 µm/0.0001"	58.2	17.5	7.3	32	A	330
331-361*	0-25 mm/0-1"	±2 µm/0.0001"	58.2	17.5	7.3	32	B	330
331-352*	25-50 mm/1-2"	±2 µm/0.0001"	83.2	17.5	10.1	47	A	470
331-362*	25-50 mm/1-2"	±2 µm/0.0001"	83.2	17.5	10.1	47	B	470
331-353*	50-75 mm/2-3"	±2 µm/0.0001"	108.2	17.5	11.5	60	A	625
331-363*	50-75 mm/2-3"	±2 µm/0.0001"	108.2	17.5	11.5	60	B	625
331-354*	75-100 mm/3-4"	±3 µm/0.00015"	132.8	20.3	16.7	76	A	565
331-364*	75-100 mm/3-4"	±3 µm/0.00015"	132.8	20.3	16.7	76	B	565

mm



0-75 mm

mm



75-100 mm

Functions	Series 331
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

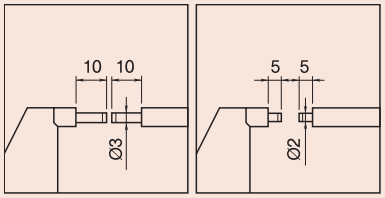
Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,3µm/0.000012"
Parallelism	(2+L/100) µm, L = max. range (mm) [0.00008" + 0.00004 (L/4)]" L = max. range (inch)
Measuring surfaces	Carbide tipped, micro-lap finish, stepped
Frame	Enamelled
Measuring spindle	ø6,35 mm, Spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44



Type A (ø3 mm) / Type B (ø2 mm)

Spline Micrometer

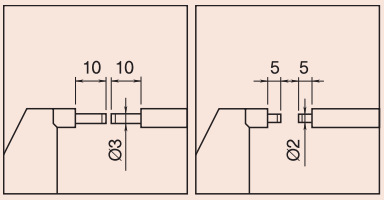
Series 111

Special Purpose Micrometer

- With stepped measuring surfaces.
- Suitable for measuring grooves, splined shafts, recesses, shaped parts, etc.

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm, 0.001" or 0.0001"
Scales	Thimble and sleeve satin chrome finish ø18 mm
Flatness	0,3 µm/0.000012"
Parallelism	(2+L/100) µm, L = max. range (mm) [0.00008"+0.00004(L/4)]" L = max. range (inch)
Measuring surfaces	Carbide tipped, micro-lap finish, stepped
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key



Type A (ø3 mm) / Type B (ø2 mm)

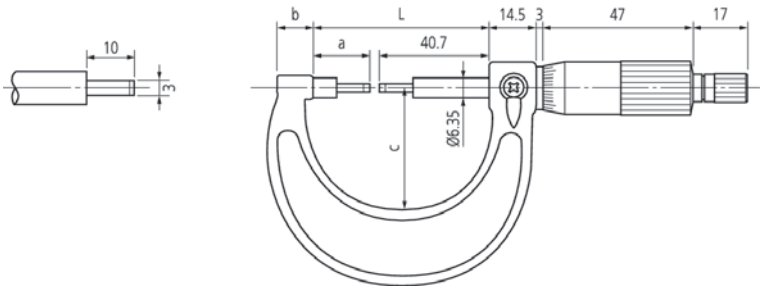
111-115

Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
111-115	0-25 mm	±3 µm	55.3	17.8	10	38	A	205
111-215	0-25 mm	±3 µm	55.3	17.8	10	38	B	205
111-116	25-50 mm	±3 µm	80.3	17.8	12	49	A	305
111-117	50-75 mm	±3 µm	105.3	17.8	14	60	A	370
111-118	75-100 mm	±4 µm	132.8	20.3	17	79	A	500
111-119*	100-125 mm	±4 µm	158.2	20.7	19	94	A	655
111-120*	125-150 mm	±4 µm	183.6	21.1	20	106	A	710
111-121*	150-175 mm	±5 µm	208.8	21.3	19	118	A	900
111-122*	175-200 mm	±5 µm	234.2	21.7	18	130	A	1,040
111-123*	200-225 mm	±5 µm					A	1,245
111-124*	225-250 mm	±6 µm					A	1,395
111-125*	250-275 mm	±6 µm					A	1,555
111-126*	275-300 mm	±6 µm					A	1,975

Inch

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
111-166	0-1"	±0.00015"	55.3	17.8	10	38	A	205



Digimatic Tube Micrometer

Series 395

Special Purpose Micrometer

- Suitable for measurements involving curved surfaces such as wall thickness of tubes, bearings, rings, etc.

395-251

Metric — Model with spherical anvil

No.	Range	Accuracy	a mm	b mm	c mm	d mm	Anvil/Tip	Remarks	Mass g
395-251	0-25 mm	±2 µm	59.8	9.6	9	25	A	D: 15 mm	270
395-252	25-50 mm	±2 µm	70.3	10	9.8	32	A	D: 15 mm	330
395-253	50-75 mm	±2 µm	91.9	12.6	47		A	D: 19 mm	470
395-254	75-100 mm	±3 µm	112.9	14	60		A	D: 20 mm	625

Metric — Model with two spherical anvils

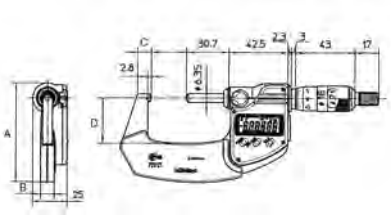
No.	Range	Accuracy	a mm	b mm	c mm	d mm	Anvil/Tip	Remarks	Mass g
395-271	0-25 mm	±2 µm	59.8	9.6	9	25	B	D: 15 mm	270
395-272	25-50 mm	±2 µm	70.3	10	9.8	32	B	D: 15 mm	330
395-273	50-75 mm	±2 µm	91.9	12.6	47		B	D: 19 mm	470
395-274*	75-100 mm	±3 µm	112.9	14	60		B	D: 20 mm	625

Inch/Metric — Model with spherical anvil

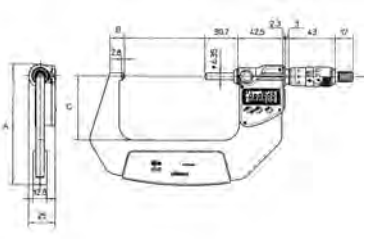
No.	Range	Accuracy	a mm	b mm	c mm	d mm	Anvil/Tip	Remarks	Mass g
395-351	0-25 mm/0-1"	±2 µm/0.0001"	59.8	9.6	9	25	A	D: 0.59"	270
395-352*	25-50 mm/1-2"	±2 µm/0.0001"	70.3	10	9.8	32	A	D: 0.59"	330
395-353*	50-75 mm/2-3"	±2 µm/0.0001"	91.9	12.6	47		A	D: 0.75"	470
395-354*	75-100 mm/3-4"	±3 µm/0.00015"	112.9	14	60		A	D: 0.79"	625

Inch/Metric — Model with two spherical anvils

No.	Range	Accuracy	a mm	b mm	c mm	d mm	Anvil/Tip	Remarks	Mass g
395-371	0-25 mm/0-1"	±2 µm/0.0001"	59.8	9.6	9	25	B	D: 0.59"	270
395-372	25-50 mm/1-2"	±2 µm/0.0001"	70.3	10	9.8	32	B	D: 0.59"	330
395-373*	50-75 mm/2-3"	±2 µm/0.0001"	91.9	12.6	47		B	D: 0.75"	470
395-374*	75-100 mm/3-4"	±3 µm/0.00015"	112.9	14	60		B	D: 0.79"	625



0-50 mm



50-100 mm

Functions	Series 395
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

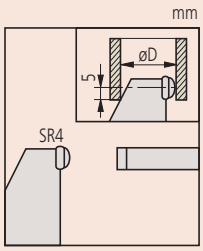
Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,6 µm/0.000024"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6.35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

Optional accessories

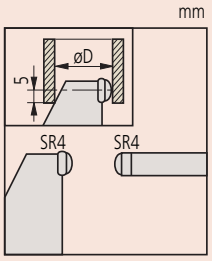
No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44



Type A
0-25 mm + 25-50 mm



Type B
D15 mm
50-75 mm - D19 mm
75-100 mm - D20 mm

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* Please contact Mitutoyo for more information on delivery times.

Digimatic Tube Micrometer

Series 395

IP65

Special Purpose Micrometer

- Suitable for measurements involving curved surfaces such as wall thickness of tubes, bearings, rings, etc.

Functions	Series 395
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,6 µm/0.000024"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6.35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	3-8 N
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

395-261

395-262

395-263

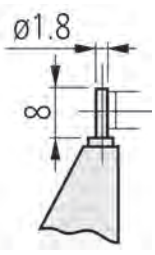
395-264

Metric

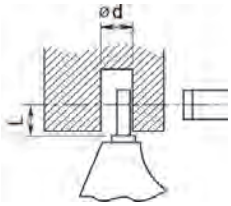
No.	Range	Accuracy	L mm	d mm	Anvil/Tip	Mass g
395-261	0-25 mm	±3 µm	4	2	A	270
395-262	0-25 mm	±3 µm	4	3.6	B	270
395-263	0-25 mm	±3 µm	12	4.8	C	310
395-264	0-25 mm	±3 µm	22	8.2	D	310

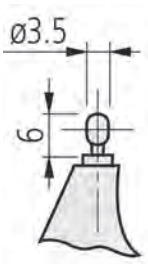
Inch/Metric

No.	Range	Accuracy	L mm	d mm	Anvil/Tip	Mass g
395-362*	0-25 mm/0-1"	±3 µm/0.00015"	4	3.6	B	270
395-363*	0-25 mm/0-1"	±3 µm/0.00015"	12	4.8	C	310
395-364*	0-25 mm/0-1"	±3 µm/0.00015"	22	8.2	D	310

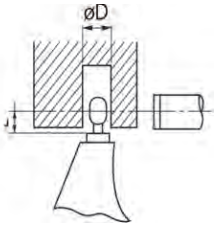


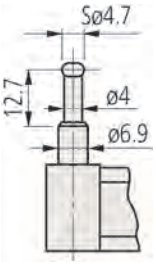
Type A



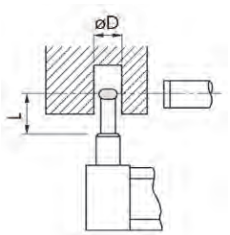


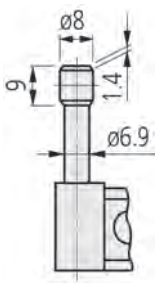
Type B



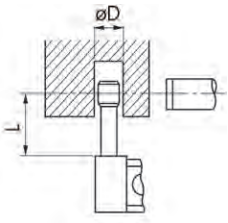


Type C





Type D



Tube Micrometer

Series 115

Outside Micrometer Special version

- For measurements of all curved surfaces and wall thickness of tubes, bearings, rings, etc.

115-215

Metric — Model with spherical anvil

No.	Range	Accuracy	D mm	Mass g
115-115	0-25 mm	±3 µm	10	180
115-116	25-50 mm	±3 µm	11	240
115-117	50-75 mm	±3 µm	17	315
115-118	75-100 mm	±4 µm	18	375

Metric — Model with spherical anvil and spindle face

No.	Range	Accuracy	D mm	Mass g
115-215	0-25 mm	±3 µm	10	180
115-216	25-50 mm	±3 µm	11	240
115-217	50-75 mm	±3 µm	17	315
115-218	75-100 mm	±4 µm	18	375

Metric — Model with cylindrical anvil

No.	Range	Accuracy	L mm	D mm	Remarks	Mass g
115-302	0-25 mm	±3 µm	4	2	Type A	180
115-308*	0-25 mm	±3 µm	4	3.6	Type B	180
115-315*	0-25 mm	±3 µm	12	4.8	Type C	180
115-316*	0-25 mm	±3 µm	22	8.2	Type D	180
115-303*	25-50 mm	±3 µm	4	2	Type A	240
115-309*	25-50 mm	±3 µm	4	3.6	Type B	240

Inch — Model with spherical anvil

No.	Range	Accuracy	D"	Mass g
115-153	0-1"	±0.00015"	0.4	180

Inch — Model with spherical anvil and spindle face

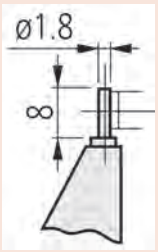
No.	Range	Accuracy	D"	Mass g
115-253	0-1"	±0.00015"	0.4	180
115-242*	1-2"	±0.00015"	0.44	240
115-243*	2-3"	±0.00015"	0.67	315

Inch — Model with cylindrical anvil

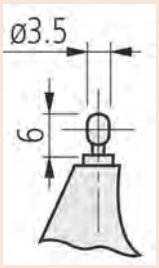
No.	Range	Accuracy	L mm	D mm	Remarks	Mass g
115-305*	0-1"	±0.00015"	4	2	Type A	180
115-313*	0-1"	±0.00015"	12	4.8	Type C	180
115-314*	0-1"	±0.00015"	22	8.2	Type D	180

Specifications

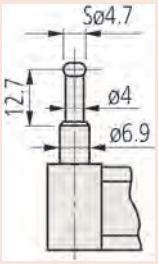
Accuracy	Refer to the list of specifications
Graduation	0,01 mm, 0.001" or 0.0001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,6 µm/0.000024"
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key



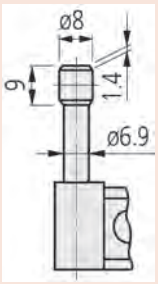
Type A (Pin)



Type B (Spherical)



Tyoe C (Cylindrical)



Type D (Cylindrical)

Digimatic Point Micrometer

Series 342

Special Purpose Micrometer

- Features pointed anvil and spindle, with a choice of included angle, ending in small-radius contact points.
- Suitable for measuring grooves, steps, etc.

Functions	Series 342
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
Low voltage alarm	●

Specifications

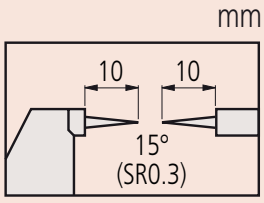
Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring surfaces	Hardened and precision ground, conical spindle and anvil, measuring point radius 0,3 mm
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

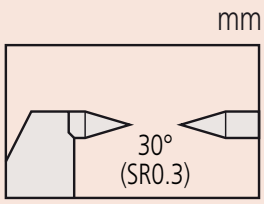
Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44





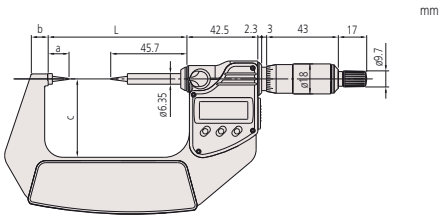
342-251

Metric

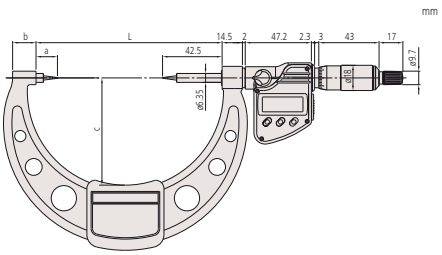
No.	Range	Accuracy	L mm	a mm	b mm	c mm	Point	Mass g
342-251	0-25 mm	±2 µm	58.2	12.5	7.3	32	15°	330
342-261	0-25 mm	±2 µm	58.2	12.5	7.3	32	30°	330
342-252	25-50 mm	±2 µm	83.2	12.5	10.1	47	15°	470
342-262*	25-50 mm	±2 µm	83.2	12.5	10.1	47	30°	470
342-253	50-75 mm	±2 µm	108.2	12.5	11.5	60	15°	625
342-263	50-75 mm	±2 µm	108.2	12.5	11.5	60	30°	625
342-254*	75-100 mm	±3 µm	132.8	10	16.7	76	15°	565
342-264	75-100 mm	±3 µm	132.8	10	16.7	76	30°	565

Inch/Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Point	Mass g
342-351	0-25 mm/0-1"	±2 µm/0.0001"	58.2	12.5	7.3	32	15°	330
342-361	0-25 mm/0-1"	±2 µm/0.0001"	58.2	12.5	7.3	32	30°	330
342-352*	25-50 mm/1-2"	±2 µm/0.0001"	83.2	12.5	10.1	47	15°	470
342-362	25-50 mm/1-2"	±2 µm/0.0001"	83.2	12.5	10.1	47	30°	470
342-353*	50-75 mm/2-3"	±2 µm/0.0001"	108.2	12.5	11.5	60	15°	625
342-363*	50-75 mm/2-3"	±2 µm/0.0001"	108.8	12.5	11.5	60	30°	625
342-354*	75-100 mm/3-4"	±3 µm/0.00015"	132.8	15.3	16.7	76	15°	565
342-364*	75-100 mm/3-4"	±3 µm/0.00015"	132.8	15.3	16.7	76	30°	565



Models up to 75 mm



Models over 75 mm

Point Micrometer

Series 112

Special Purpose Micrometer

- Features pointed anvil and spindle, with a choice of included angle, ending in small-radius contact points.
- Suitable for measuring grooves, steps, etc.

112-201

Specifications

Accuracy	0-75 mm ±3 µm 75-100 mm ±4 µm Inch ±0.00015"
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish ø18 mm
Measuring surfaces	Carbide-tipped, pointed spindle and anvil, measuring point radius 0,3 mm
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key

Metric — Carbide tip

No.	Range	L mm	a mm	b mm	c mm	Point	Mass g
112-165	0-25 mm	55.3	12.8	10	38	15°	205
112-213	0-25 mm	55.3	12.8	10	38	30°	205
112-166	25-50 mm	80.3	12.8	12	49	15°	305
112-214*	25-50 mm	80.3	12.8	12	49	30°	305
112-167	50-75 mm	105.3	12.8	14	60	15°	370
112-215*	50-75 mm	105.3	12.8	14	60	30°	370
112-168	75-100 mm	132.8	15.3	17	79	15°	500
112-216*	75-100 mm	132.8	15.3	17	79	30°	500

Metric — Steel tip

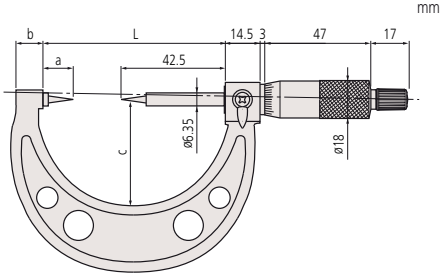
No.	Range	L mm	a mm	b mm	c mm	Point	Mass g
112-153	0-25 mm	55.3	12.8	10	38	15°	205
112-201	0-25 mm	55.3	12.8	10	38	30°	205
112-154	25-50 mm	80.3	12.8	12	49	15°	305
112-202	25-50 mm	80.3	12.8	12	49	30°	305
112-155*	50-75 mm	105.3	12.8	14	60	15°	370
112-203*	50-75 mm	105.3	12.8	14	60	30°	370
112-156*	75-100 mm	132.8	15.3	17	79	15°	500
112-204*	75-100 mm	132.8	15.3	17	79	30°	500

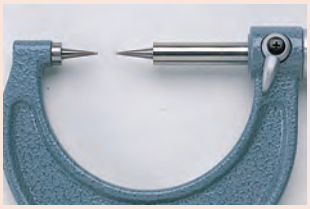
Inch — Carbide tip

No.	Range	L mm	a mm	b mm	c mm	Point	Mass g
112-189*	0-1"	55.3	12.8	10	38	15°	205
112-237	0-1"	55.3	12.8	10	38	30°	205
112-190*	1-2"	80.3	12.8	12	49	15°	305
112-238*	1-2"	80.3	12.8	12	49	30°	305
112-191*	2-3"	105.3	12.8	14	60	15°	370

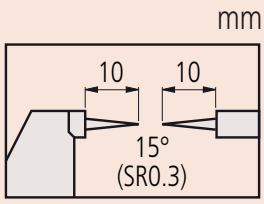
Inch — Steel tip

No.	Range	L mm	a mm	b mm	c mm	Point	Mass g
112-177	0-1"	55.3	12.8	10	38	15°	205
112-225	0-1"	55.3	12.8	10	38	30°	205
112-178*	1-2"	80.3	12.8	12	49	15°	305
112-226*	1-2"	80.3	12.8	12	49	30°	305

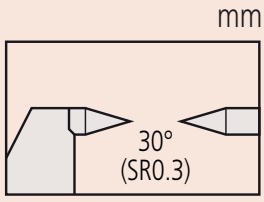




Type angle : 15°



Type angle : 30°



The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Digimatic Crimp Height Micrometer

Series 342

Special Purpose Micrometer

- Features a flat anvil and pointed spindle for measuring the crimped height of electrical contacts.

IP65 342-271 | ABSOLUTE 342-451 | IP54 342-451

Functions	Series 342 342-271 342-371	342-451
Data Output	●	●
ORIGIN	●	●
ZERO/ABS	●	●
ON/OFF		●
Auto Power OFF	●	
HOLD	●	●
Low voltage alarm	●	●

342-271

342-451

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring surfaces	Hardened and precision ground
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm with spindle lock (342-271/342-371) ø6,35 mm, spindle pitch 0,5/10 mm (342-451)
Measuring force	3-8 N 4-6 N (342-451)
Delivered	Including box, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
937387	Signal cable 1 m
965013	Signal cable 2 m
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB
02AZD790E	Signal cable U-Wave
06ADV380E	Signal cable 2 m USB

937387/965013/06ADV380E/02AZD790E only for 342-451

Consumable spares

No.	Description
938882	Battery SR44

Metric — Digital model

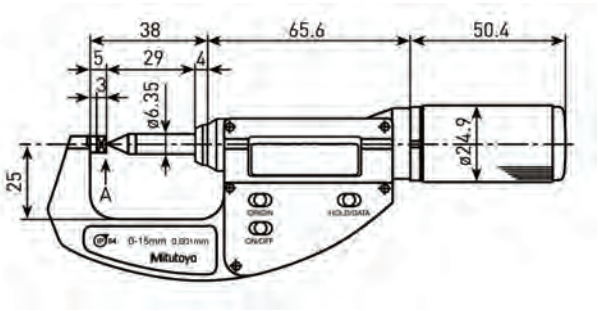
No.	Range	Accuracy	Mass g
342-271	0-20 mm	±3 µm	270

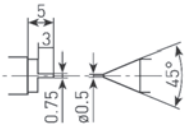
Metric — Quickmike type

No.	Range	Accuracy	Mass g
342-451	0-15 mm	±3 µm	275

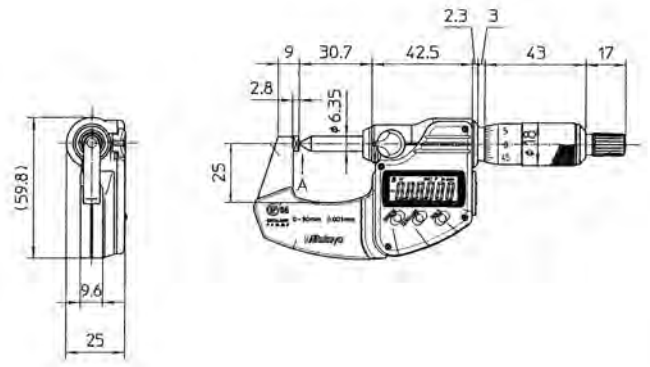
Inch/Metric — Digital model

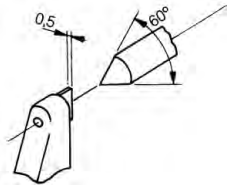
No.	Range	Accuracy	Mass g
342-371	0-20 mm/0-0.8"	±3 µm/0.00015"	270





342-451





342-271/342-371

Crimp Height Micrometer

Series 112

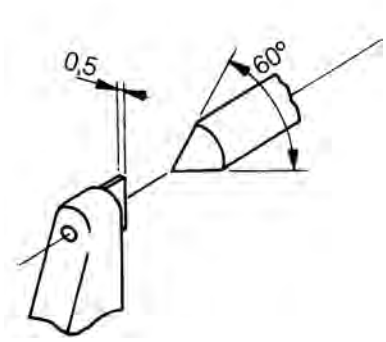
Special Purpose Micrometer

- Features a blade anvil and pointed spindle for measuring the crimped height of electrical contacts.

112-401

Metric

No.	Range	Accuracy	Mass g
112-401	0-25 mm	±3 µm	165



112-401

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring surfaces	Hardened and precision ground
Frame	Enamelled
Measuring spindle	ø6,35 mm, spndle pitch 0,5 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box

Digimatic Blade Micrometer

Series 422

Special Purpose Micrometer

- Anvil and spindle are blade-shaped for measuring the groove diameter of shafts, keyways, and other hard-to reach features.

Functions	Series 422
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

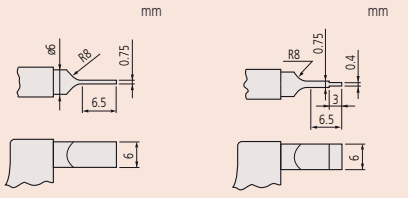
Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Parallelism	3 µm/0.00012" for models up to 75 mm/3" (3+L/100) µm for models over 75 mm, L = max. range (mm) 0.00016" for 4" models
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

Optional accessories

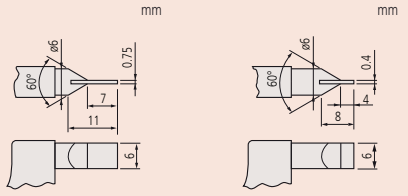
No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44



Type A | Type B



Type C (carbide-tipped) | Type D (carbide-tipped)

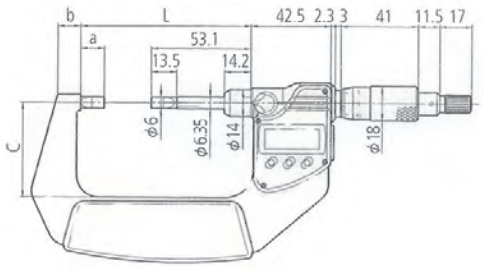
422-230

Metric

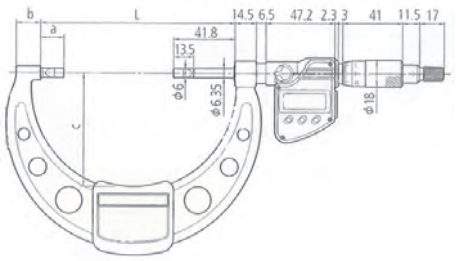
No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
422-230	0-25 mm	±3 µm	65.6	12.5	11	31	Type A	365
422-260	0-25 mm	±3 µm	65.6	12.5	11	31	Type B	365
422-270*	0-25 mm	±3 µm	65.6	12.5	11	31	Type C	365
422-271*	0-25 mm	±3 µm	65.6	12.5	11	31	Type D	365
422-231	25-50 mm	±3 µm	90.7	12.6	12.2	50	Type A	565
422-261	25-50 mm	±3 µm	90.7	12.6	12.2	50	Type B	565
422-232	50-75 mm	±3 µm	105.3	13.5	14.1	57	Type A	465
422-233	75-100 mm	±4 µm	132.8	16	16.7	76	Type A	580

Inch/Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
422-330	0-25 mm/0-1"	±3 µm/0.00015"	65.6	12.5	11	31	Type A	365
422-360*	0-25 mm/0-1"	±3 µm/0.00015"	65.6	12.5	11	31	Type B	365
422-370*	0-25 mm/0-1"	±3 µm/0.00015"	65.6	12.5	11	31	Type C	365
422-371*	0-25 mm/0-1"	±3 µm/0.00015"	65.6	12.5	11	31	Type D	365
422-331	25-50 mm/1-2"	±3 µm/0.00015"	90.7	12.6	12.2	50	Type A	565
422-361*	25-50 mm/1-2"	±3 µm/0.00015"	90.7	12.6	12.2	50	Type B	565
422-332	50-75 mm/2-3"	±3 µm/0.00015"	105.3	13.5	14.1	57	Type A	465
422-333*	75-100 mm/3-4"	±4 µm/0.0002"	132.8	16	16.7	76	Type A	580



0-50 mm



50-100 mm

Digimatic Blade Micrometer

Series 422

Special Purpose Micrometer

- Anvil and spindle are blade-shaped for measuring the groove diameter of shafts, keyways, ans other hard-to reach features.
- Non-rotating spindle and fast spindle feed of 10 mm/rev.

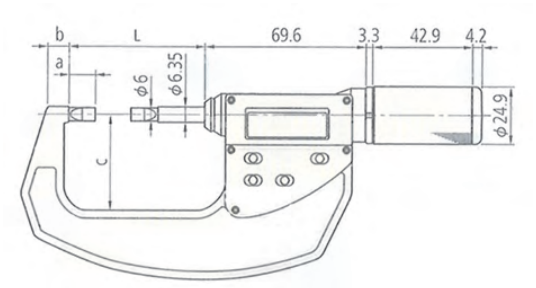
422-411

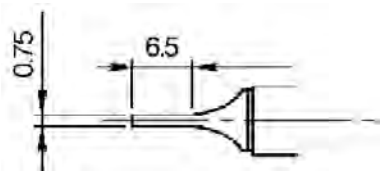
Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
422-411	0-30 mm	±3 µm	59.8	13.5	8.5	36	350
422-412	25-55 mm	±3 µm	84.8	13.5	10.3	47	490

Inch/Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Mass g
422-421*	0-30 mm/0-1.2"	±3 µm/0.00015"	59.8	13.5	8.5	36	350
422-422*	25-55 mm/1-2.2"	±3 µm/0.00015"	84.8	13.5	10.3	47	490





Functions	Series 422
Data Output	●
ORIGIN	●
ZERO/ABS	●
ON/OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Parallelism	3 µm/0.00012" for models up to 75 mm/3" (3+L/100) µm for models over 75 mm, L = max. range (mm) 0.00016" for 4" models
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 10 mm
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), 1 battery

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
02AZD790E	Signal cable U-Wave
06ADV380E	Signal cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

Blade Micrometer

Series 122

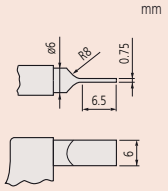
Special Purpose Micrometer

- Anvil and spindle are blade-shaped for measuring the groove diameter of shafts, keyways, and other hard-to reach features.
- Non-rotating spindle.

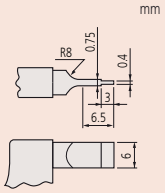
122-101

Specifications

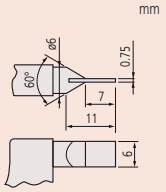
Accuracy	Refer to the list of specifications
Graduation	0,01 mm or 0.0001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Parallelism	3 µm/0.00012" for models up to 75 mm/ 3" (3+L/100) µm for models over 75 mm, L= max. range (mm) 0.00016" for 4" models
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm
Delivered	Including box, setting standard (from 25 mm upward), key



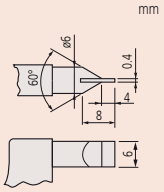
Type A



Type B



Type C (carbide-tipped)



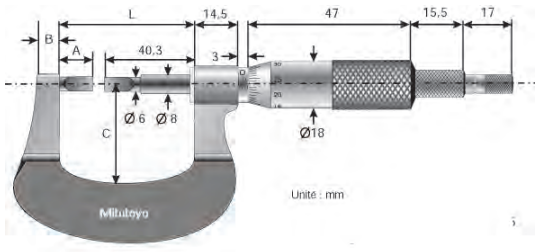
Type D (carbide-tipped)

Metric

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
122-101	0-25 mm	±3 µm	55.3	15	8	30	A	260
122-111	0-25 mm	±3 µm	55.3	15	8	30	B	260
122-161	0-25 mm	±3 µm	55.3	15	8	30	C	275
122-141	0-25 mm	±3 µm	55.3	15	8	30	D	275
122-102	25-50 mm	±3 µm	80.3	15	12	49	A	300
122-112	25-50 mm	±3 µm	80.3	15	12	49	B	300
122-162	25-50 mm	±3 µm	80.3	15	12	49	C	315
122-142	25-50 mm	±3 µm	80.3	15	12	49	D	315
122-103	50-75 mm	±3 µm	105.3	15	13	60	A	360
122-104	75-100 mm	±4 µm	132.8	17.5	17	79	A	525
122-105	100-125 mm	±4 µm	158.2	17.9	19	94	A	670
122-106	125-150 mm	±4 µm	183.6	18.3	20	106	A	775
122-107	150-175 mm	±5 µm	208.8	18.5	19	118	A	950
122-108	175-200 mm	±5 µm	234.2	18.9	19	118	A	1,140
122-109	200-225 mm	±5 µm	258	17.7	18	143	A	1,300
122-110*	225-250 mm	±6 µm	284	18.7	18	156	A	1,450
122-115*	250-275 mm	±6 µm	309	18.7	18	169	A	1,600
122-116*	275-300 mm	±6 µm	334	18.7	18	181	A	2,020

Inch

No.	Range	Accuracy	L mm	a mm	b mm	c mm	Anvil/Tip	Mass g
122-125	0-1"	±0.00015"	55.3	15	8	30	A	260
122-135*	0-1"	±0.00015"	55.3	15	8	30	B	260
122-151*	0-1"	±0.00015"	55.3	15	8	30	D	275
122-126	1-2"	±0.00015"	80.3	15	12	49	A	300
122-127	2-3"	±0.00015"	105.3	15	13	60	A	410
122-128	3-4"	±0.0002"	132.8	17.5	17	79	A	550



Digimatic V-Anvil Micrometer

Series 314

- For measurements on 3-fluted taps, drills, reamers, etc.
- V-anvils with a centreline groove are available for measuring the pitch diameter of taps by the single-wire method.

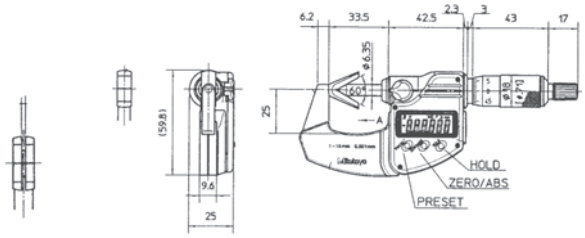
314-251-10

Metric

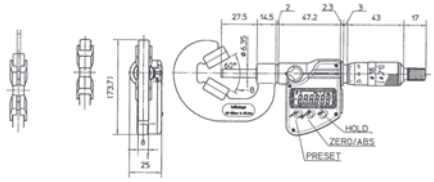
No.	Range	Accuracy	Remarks	Mass g
314-251-10	1-15 mm	±4 µm	with groove	275
314-261-10	1-15 mm	±4 µm	-	275
314-252-10	10-25 mm	±4 µm	with groove	410
314-262-10	10-25 mm	±4 µm	-	410
314-253-10	25-40 mm	±5 µm	-	465

Inch/Metric

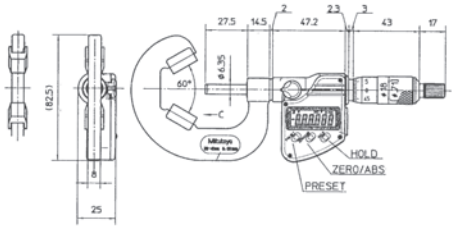
No.	Range	Accuracy	Remarks	Mass g
314-351-10*	1-15 mm/0.05-0.6"	±4 µm/0.0002"	with groove	275
314-361-10*	1-15 mm/0.05-0.6"	±4 µm/0.0002"	-	275
314-352-10*	10-25 mm/0.4-1"	±4 µm/0.0002"	with groove	410
314-362-10*	10-25 mm/0.4-1"	±4 µm/0.0002"	-	410
314-353-10*	25-40 mm/1-1.6"	±5 µm/0.00025"	-	465



314-251-10/314-351-10 1-15 mm/0.05-0.6"



314-252-10/314-352-10 10-25 mm/0.4-1"



25-40 mm/1-1.6"

Functions	Series 314
Data Output	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
2 x PRESET	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0,00005"
Scales	Thimble and sleeve satin chrome finish, ø 18 mm
Flatness	3 µm
Parallelism	(3+L/75) µm
Measuring surfaces	Prism angle 60°
Frame	Enamelled
Measuring spindle	ø 6,35 mm, spindle pitch 0,75 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard, key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button

Consumable spares

No.	Description
938882	Battery SR44

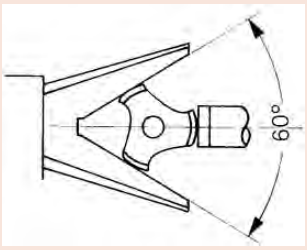
V-Anvil Micrometer

Series 114

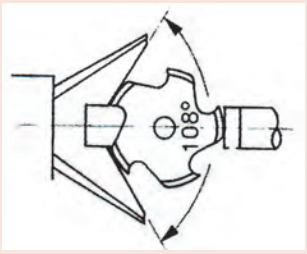
- For measurements on 3- or 5-fluted taps, drills, reamers, etc.
- V-anvils with a centreline groove are available for measuring the pitch diameter of taps by the single-wire method.

Specifications

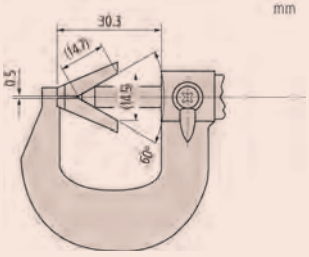
Accuracy	Refer to the list of specifications
Graduation	0,01 mm, 0.001" or 0.0001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring surfaces	Prism angle 60°
Frame	Enamelled
Measuring spindle	ø6,35 mm, with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard, key



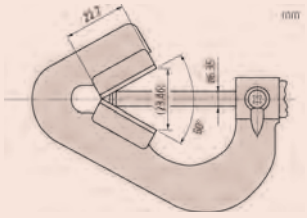
For 3-flute cutting tools



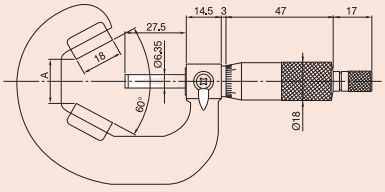
For 5-flute cutting tools



114-101



114-204



114-102 to 114-107

114-102

114-121

Metric For 3-flute cutting tools

No.	Range	Accuracy	a mm	Remarks	Setting standard	Mass g
114-101	1-15 mm	±4 µm	0.5	with groove	167-327 ø 5	120
114-161	1-15 mm	±4 µm	0.5	-	167-327 ø 5	120
114-204	2.3-25 mm (1)	±4 µm	0.5	-	167-327 ø 5	290
114-102	10-25 mm	±4 µm	6.2	with groove	167-328 ø 10	280
114-162	10-25 mm	±4 µm	6.2	-	167-329 ø 25	280
114-103	25-40 mm	±5 µm	19.14	-	167-329 ø 25	400
114-104	40-55 mm	±6 µm	32.13	-	167-330 ø 40	465
114-105	55-70 mm	±6 µm	45.12	-	167-331 ø 55	675
114-106	70-85 mm	±7 µm	58.11	-	167-332 ø 70	910
114-107	85-100 mm	±7 µm	71.1	-	167-333 ø 85	1,160

(1) Carbide-tipped anvil

Metric For 5-flute cutting tools

No.	Range	Accuracy	Remarks	Setting standard	Mass g
114-121	5-25 mm	±4 µm	with groove	167-327 ø 5	255
114-165	5-25 mm	±4 µm	-	167-328 ø 10	255
114-137	2.3-25 mm (1)	±4 µm	-	167-327 ø 5	220
114-122	25-45 mm	±5 µm	-	167-329 ø 25	400
114-123*	45-65 mm	±6 µm	-	167-331 ø 55	540
114-124	65-85 mm	±7 µm	-	167-332 ø 70	760

(1) Carbide-tipped anvil

Inch For 3-flute cutting tools

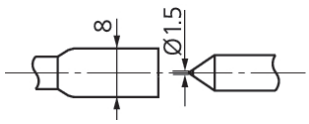
No.	Range	Accuracy	a mm	Remarks	Setting standard	Mass g
114-163*	0.05-0.6"	±0.0002"	0.5	-	167-327 ø 5	120
114-202*	0.09-1" (1)	±0.0002"	6.2	-	167-327 ø 5	290
114-113*	1-1.6"	±0.00025"	19.14	-	167-329 ø 25	400
114-114*	1.6-2.2"	±0.0003"		-	167-330 ø 40	465

(1) Carbide-tipped anvil

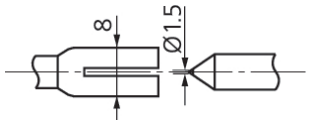
Inch For 5-flute cutting tools

No.	Range	Accuracy	a mm	Remarks	Setting standard	Mass g
114-135*	0.09-1" (1)	±0.0002"	6.2	-	167-327 ø 5	220

(1) Carbide-tipped anvil



Plain anvil model



Grooved anvil model

Can Seam Micrometer

Series 147

Special Purpose Micrometer

- Designed to measure the width, height and depth of can seams.
- Three types are available (for steel, aluminium and spray cans).

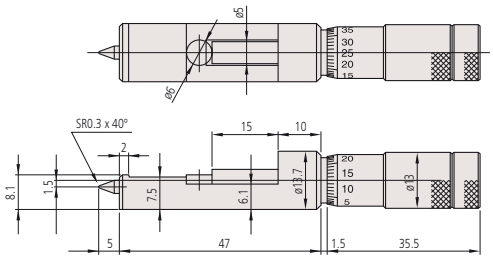
Metric

No.	Range	Remarks	Mass g
147-103	0-13 mm	For steel cans	65
147-105	0-13 mm	For aluminium cans	65
147-202	0-13 mm	For spray cans	65

Inch

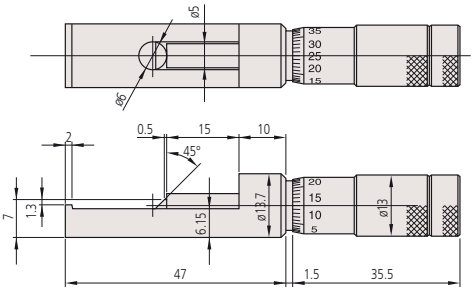
No.	Range	Remarks	Mass g
147-104*	0-0.5"	For steel cans	65
147-106*	0-0.5"	For aluminium cans	65
147-201	0-0.5"	For spray cans	65

147-103



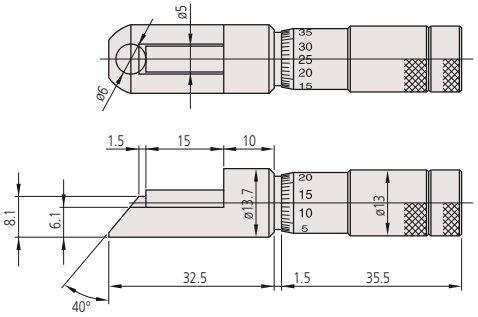
147-103 / 147-104

147-105



147-105 / 147-106

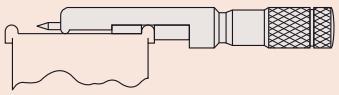
147-202



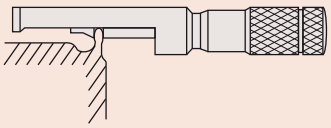
147-202 / 147-201

Specifications

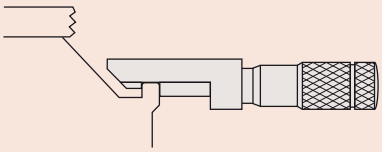
Accuracy	±3 µm/0.00015"
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Delivered	Including box, key



147-103 / 147-104
For steel cans



147-105 / 147-106
For aluminium cans



147-202 / 147-201
For spray cans

Wire Micrometer

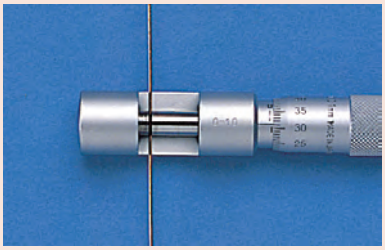
Series 147

Special Purpose Micrometer

- Designed for measuring wire thickness.
- Also used to measure the diameter of small balls.

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm or 0.0001"
Scales	Thimble and sleeve satin chrome finish
Flatness	0,6 µm/0.000024"
Parallelism	1,3 µm/0.00005'"
Measuring surfaces	Carbide tipped, micro-lap finish
Measuring spindle	Spindle pitch 0,5 mm
Measuring force	5-10 N
Delivered	Including box, key



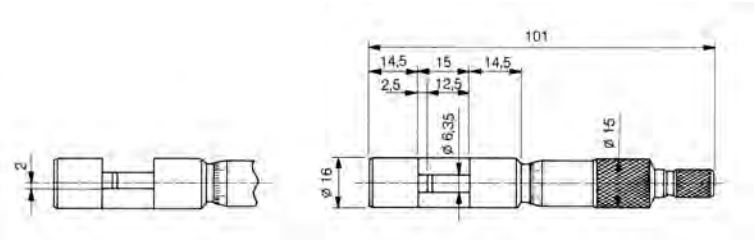
147-401

Metric

No.	Range	Accuracy	Mass g
147-401	0-10 mm	±3 µm	65

Inch

No.	Range	Accuracy	Mass g
147-402*	0-0.4"	±0.00015"	65



Digimatic Micrometer interchangeable anvil type

Series 317

Special Purpose Micrometer

- Designed to accept interchangeable anvils shaped for specific tasks.
- For measuring wall thickness of tubes as well as openings and slots from edge to edge and features in hard-to-reach locations.

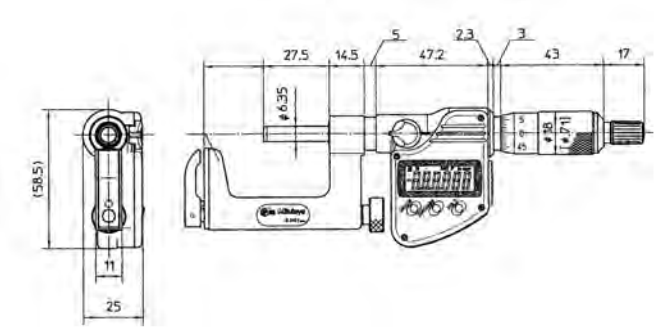
317-251

Metric

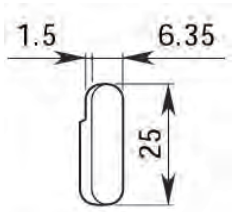
No.	Range	Accuracy	Anvils included	Mass g
317-251	0-25 mm	±4 µm	201217, 201216	400
317-252	25-50 mm	±4 µm	201379, 201216	490

Inch/Metric

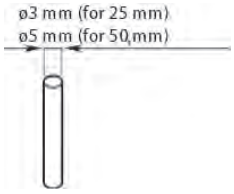
No.	Range	Accuracy	Anvils included	Mass g
317-351	0-25 mm/0-1"	±4 µm/0.0002"	201217, 201216	400
317-352*	25-50 mm/1-2"	±4 µm/0.0002"	201379, 201216	490



201218
V-anvil



201216
Flat anvil



201217
201379
Cylindrical anvil

Functions	Series 317
Data Output	●
ORIGIN	●
ZERO/ABS	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm/0.00005"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB
201218	V-anvil
950758	Round platten (only for measuring range 0-25 mm)
950759	Round platten (only for measuring range 25-50 mm)

Consumable spares

No.	Description
201216	Flat anvil
201217	Cylindrical anvil ø3 mm
201379	Cylindrical anvil ø5 mm
938882	Battery SR44

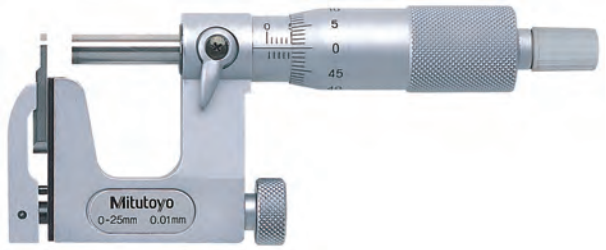
950758

Micrometer interchangeable anvil type

Series 117

Special Purpose Micrometer

- Designed to accept interchangeable anvils shaped for specific tasks.
- For measuring wall thickness of tubes as well as openings and slots from edge to edge and features in hard-to-reach locations.



117-101

Specifications

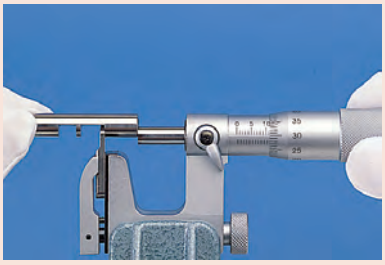
Accuracy	Refer to the list of specifications
Graduation	0,01 mm or 0.0001"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box, setting standard (from 25 mm upward), key

Optional accessories

No.	Description
201218	V-anvil
950758	Round platten (only for measuring range 0-25 mm)
950759	Round platten (only for measuring range 25-50 mm)

Consumable spares

No.	Description
201216	Flat anvil
201217	Cylindrical anvil ø3 mm
201379	Cylindrical anvil ø5 mm

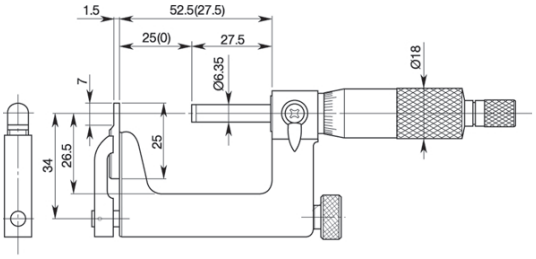


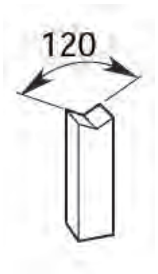
Metric

No.	Range	Accuracy	Anvils included	Mass g
117-101	0-25 mm	±4 µm	201217, 201216	255
117-102	25-50 mm	±4 µm	201379, 201216	320

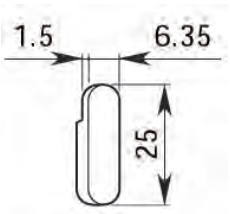
Inch

No.	Range	Accuracy	Anvils included	Mass g
117-107	0-1"	±0.0002"	201217, 201216	255
117-108*	1-2"	±0.0002"	201379, 201216	320

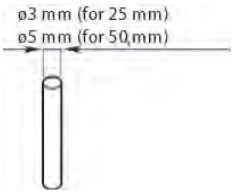




201218
V-anvil



201216
Flat anvil



201217
201379
Cylindrical anvil

Limit Micrometer

Series 113

Special Purpose Micrometer

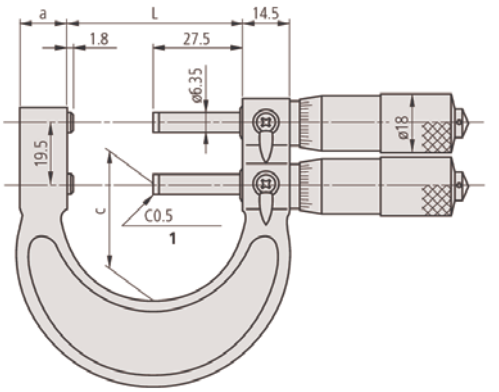
- Designed for use as a GO/±NG gauge by setting to the upper and lower limits of dimension.

113-102

Metric

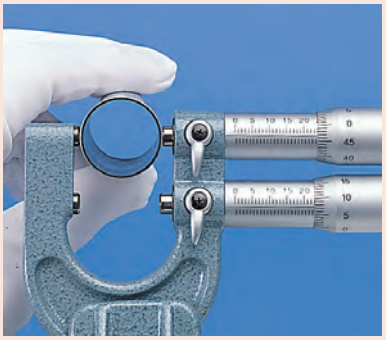
No.	Range	Accuracy	L mm	a mm	c mm	Mass g
113-102	0-25 mm	±3 µm	29.3	15	23	340
113-103	25-50 mm	±3 µm	54.3	15	37	380

mm



Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,6 µm
Parallelism	(3+L/100) µm, L = max. range (mm)
Measuring surfaces	Carbide tipped with chamfer micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm with spindle lock
Delivered	Including box, setting standard (from 25 mm upward), key



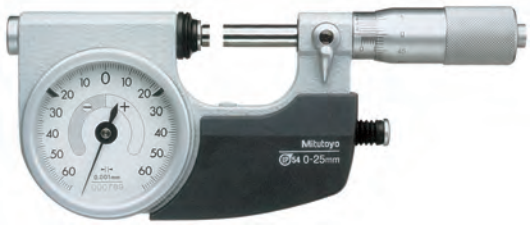
Indicating Micrometer

Series 510

IP54

Special Purpose Micrometer

- A self-setting micrometer gauge suitable for rapid measurement of workpieces, especially cylindrical, in batch or mass production situations when an indication of where a measurement falls within the tolerance band is desirable.
- Large dial indicator for easy reading.
- Tolerance markers for GO/NG measurements.
- Easy-to-operate retracting button.



510-121

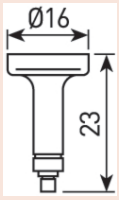
Specifications

Graduation	0,001 mm or 0.0001"
Dial indication accuracy	1 µm/0.00005"
Dispersion of indication	0,4 µm/0.00002"
Micrometer accuracy	3 µm
Dial reading	0,001 mm or 0.00005"
Scales	Thimble and sleeve satin chrome finish
Flatness	0,3 µm/0.000012"
Parallelism	0,6 µm/0.000024" for models up to 50 mm/2" 1 µm/0.00004" for models over 50 mm/2"
Measuring surfaces	Carbide tipped, micro-lap finish
Measuring force	5-10 N
Spindle feed error	3 µm/0.00015"
Delivered	Including box, setting standard (from 25 mm upward), key

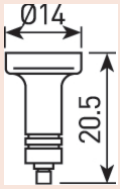
Optional accessories

No.	Description
04AZA124	ø16 mm workpiece stop
04AZA125	ø14 mm workpiece stop
04AZA126	ø14 mm workpiece stop

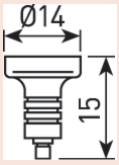
Measuring range	N°	Diameter range of workpiece supported A	B	C
mm		ø mm	ø mm	ø mm
0-25	510-121	-	4-16	15-25
25-50	510-122	25-37	30-42	41-50
50-75	510-123	50-61	54-66	65-75
75-100	510-124	75-87	80-92	91-100



04AZA124 Workpiece stop A



04AZA125 Workpiece stop B



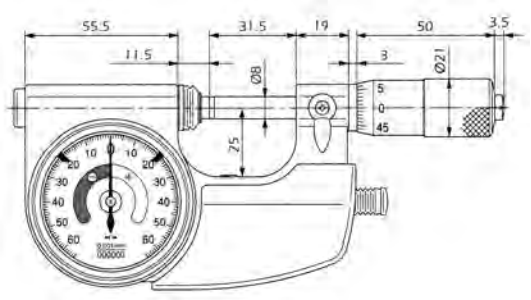
04AZA126 Workpiece stop C

Metric

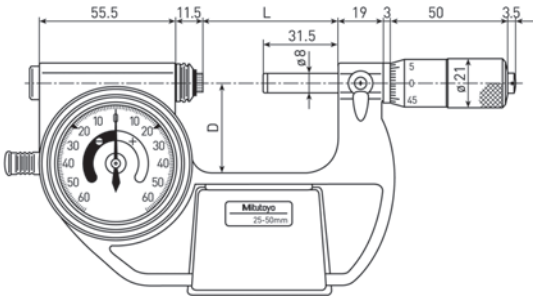
No.	Range	Indicating range	Operating button	L mm	d mm	Mass g
510-121	0-25 mm	±0,060 mm	Right			520
510-141	0-25 mm	±0,060 mm	Left			520
510-122	25-50 mm	±0,060 mm	Left	38	56	670
510-123	50-75 mm	±0,060 mm	Left	50	81	820
510-124	75-100 mm	±0,060 mm	Left	63	106	970

Inch

No.	Range	Indicating range	Operating button	L mm	d mm	Mass g
510-131	0-1"	±0.0023"	Right			520
510-151*	0-1"	±0.0023"	Left			520
510-132*	1-2"	±0.0023"	Left	38	56	670
510-133*	2-3"	±0.0023"	Left	50	81	820
510-134*	3-4"	±0.0023"	Left	63	106	970



0-25 mm



25-100 mm

Indicating Snap Gauge

Series 523

- Built-in dial gauge with tolerance markers for convenient gauging.
- Suitable for rapid inspection of workpieces, especially cylindrical, in batch or mass production situations when an indication of where a measurment falls within the tolerance band is desirable.
- Settable with external length standards such as block gauges.
- Easy-to-operate retracting button.

523-121

Specifications

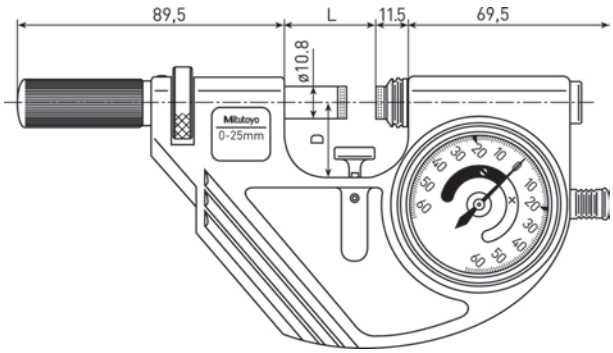
Dial indication accuracy	1 µm/0.00005"
Dispersion of indication	0,4 µm/0.00002"
Dial reading	0,001 mm or 0.00005"
Flatness	0,3 µm/0.000012"
Parallelism	0,6 µm/0.000024" for models up to 50 mm/2" 1 µm/0.00004" for models over 50 mm/2"
Measuring surfaces	Carbide tipped, micro-lap finish
Measuring force	5-10 N
Delivered	Including box, workpiece rest

Metric

No.	Range	Indicating range	L mm	d mm	Mass g
523-121	0-25 mm	±0,060 mm	31	25	740
523-122	25-50 mm	±0,060 mm	56	35	840
523-123	50-75 mm	±0,060 mm	81	47.5	950
523-124	75-100 mm	±0,060 mm	106	60	1,080

Inch

No.	Range	Indicating range	L mm	d mm	Mass g
523-131	0-1"	±0.0023"	31	25	740
523-132	1-2"	±0.0023"	56	35	840
523-133	2-3"	±0.0023"	81	47.5	950
523-134*	3-4"	±0.0023"	106	60	1,080



The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Snap Gauge

Series 523

- Designed to mount an indicator to suit the measurement application.
- Suitable for rapid inspection of workpieces, especially cylindrical, in batch or mass production situations when an indicaton of where a measurement falls within the tolerance band is desirable.
- Settable with external length standards such as block gauges.
- Easy-to-operate retracting button.

Specifications

Flatness	0,3 µm/0.000012"
Parallelism	0,6 µm/0.000024" for models up to 50 mm/2" 1 µm/0.00004" for models over 50 mm/2"
Measuring surfaces	Carbide tipped, micro-lap finish, ø10,8 mm
Measuring force	5-10 N
Delivered	Including box, workpiece rest
Optional accessories	See dial gauges section

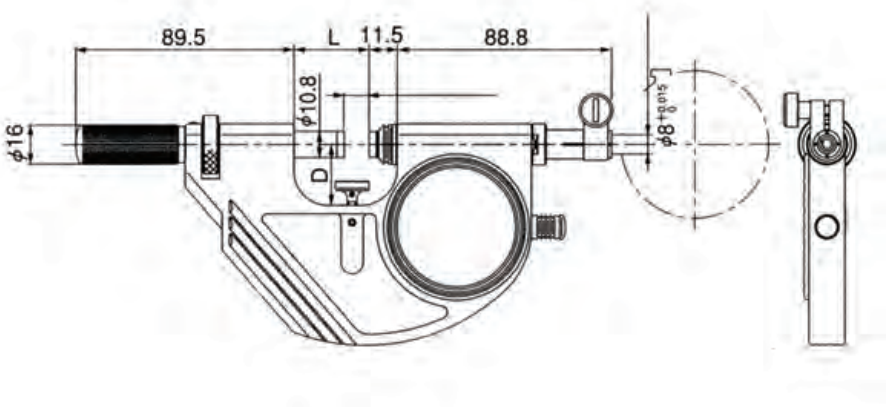
523-141

Metric

No.	Range	Anvil movement	Error limits (transmission element) µm	L mm	d mm	Mass g
523-141	0-25 mm	2 mm	0,4	31	25	710
523-142	25-50 mm	2 mm	0,4	56	35	810
523-143	50-75 mm	2 mm	0,4	81	47.5	920
523-144	75-100 mm	2 mm	0,4	106	60	1,050

Inch

No.	Range	Anvil movement	Error limits (transmission element) µm	L mm	d mm	Mass g
523-151*	0-1"	0.078"	0,4	31	25	710
523-152*	1-2"	0.078"	0,4	56	35	810
523-153*	2-3"	0.078"	0,4	81	47.5	920



Dial Gauge Micrometer

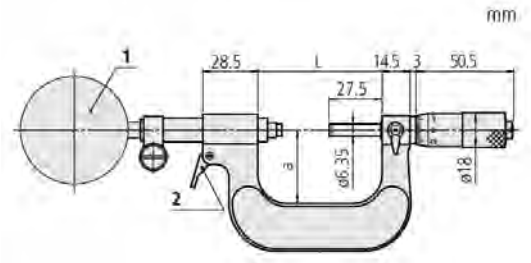
Series 107

- Designed to mount a standard dial indicator for direct GO/NG judgement for mass-produced parts.
- Anvil retracting trigger for rapid measurement.

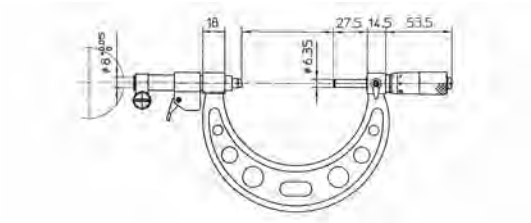
107-201 with optional dial indicator

Metric

No.	Range	Accuracy	L mm	a mm	Mass g
107-201	0-25 mm	±2 µm	39.5	30	480
107-202*	25-50 mm	±2 µm	64.5	38	520
107-203*	50-75 mm	±2 µm	90	45	585
107-204*	75-100 mm	±3 µm	115.6	65	630
107-205	100-125 mm	±3 µm	140.6	79	725
107-206*	125-150 mm	±3 µm	165.6	93	810
107-207	150-175 mm	±4 µm	190.5	105	1,050
107-208*	175-200 mm	±4 µm	215.5	120	1,170



1 : Dial indicator
2 : retracting trigger
107-201/202



107-203 to 107-208

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Flatness	0,6 µm
Parallelism	(2+L/100) µm, L = max. range (mm)
Measuring surfaces	Carbide tipped, micro-lap finish
Frame	Enamelled
Measuring spindle	ø6,35 mm, spindle pitch 0,5 mm, with spindle lock
Measuring force	5-10 N
Anvil movement	Retracting range : 3 mm
Delivered	Including box, setting standard (from 25 mm upward), key

Optional
See dial indicators section

Dial Snap Gauges

Series 201

- Adjustable snap gauges allow for quick and accurate measurement of all kinds of outside diameters up to 300 mm.
- GO/NG evaluations can also be carried out with great ease.

Specifications

Accuracy	Refer to the list of specifications
Parallelism	5 µm/0.00025" or less
Recommended dial indicator (optional)	2046SB (0,01 mm reading), 2109SB-10 (0,001 mm reading)
Anvil retracting stroke	2 mm/0.078"
Anvil positioning range	25 mm/1"
Anvil flatness	1 µm/0.00004"
Measuring force	15N±3N
Delivered	Including hand guard

Micro lapped carbide surfaces
Easy-moving anvil : 2 mm
Large measuring surfaces
Adjustable bit stop
Suitable for dial indicators wirth ø8 mm stem

Optional accessories

No.	Description
2972	Analogue Dial Indicator
21DZA000	Protector for analogue dial indicator

201-101 with holder 156-101 and dial indicator

Delivered without dial indicator and without holder

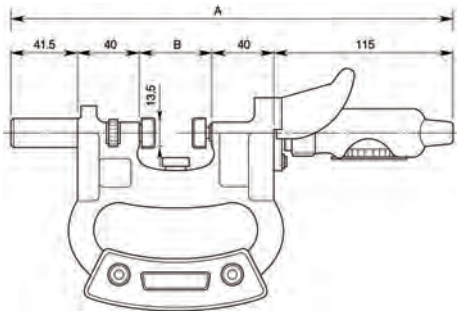
201-101 with optional indicator 543-250B

Metric

No.	Range	A mm	B mm	Mass g
201-101	0-25 mm	277	42	680
201-102	25-50 mm	302	67	730
201-103	50-75 mm	328	93	780
201-104	75-100 mm	353	118	870
201-105	100-125 mm	379	144	950
201-106	125-150 mm	404	169	1,000
201-107	150-175 mm	429	194	1,100
201-108	175-200 mm	455	220	1,200
201-109	200-225 mm	480	245	1,340
201-110	225-250 mm	506	271	1,540
201-111	250-275 mm	531	296	1,750
201-112	275-300 mm	556	321	2,050

Inch

No.	Range	A mm	B mm	Mass g
201-151*	0-1"	277	42	680
201-152*	1-2"	302	67	730
201-153*	2-3"	328	93	780
201-154*	3-4"	353	118	870
201-155*	4-5"	379	144	950
201-156*	5-6"	404	169	1,000
201-157*	6-7"	429	194	1,100
201-158	7-8"	455	220	1,200
201-159*	8-9"	480	245	1,340
201-160*	9-10"	506	271	1,540
201-161*	10-11"	531	296	1,750
201-162*	11-12"	556	321	2,050



Internal Groove Micrometer

Series 146

- Designed to measure the width and location of grooves cut into bore walls.
- Non-rotating spindle models available.

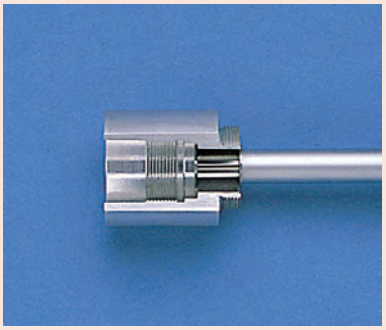
146-122

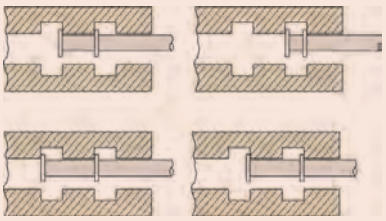
146-221

146-222

Specifications

Accuracy	±10 µm/0.0004"
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Parallelism	10 µm/0.0004"
Measuring surfaces	Hardened
Measuring spindle	Spindle pitch 0,5 mm
Measuring force	5-10 N
Ratchet	Can be used in both directions
Delivered	Including box, key





Metric — Rotating spindle type

No.	Range Outside	Range Inside	Diameter of measuring plate	Thickness of measuring plate	l mm	Mass g
146-121	0-25 mm	1.6-26.5 mm	6.35 mm	0.75 mm		135
146-122	0-25 mm	1.6-26.5 mm	12.70 mm	0.75 mm	103.3	185
146-123	25-50 mm	26.5-51.5 mm	12.70 mm	0.75 mm	78.3	175
146-124	50-75 mm	51.5-76.5 mm	12.70 mm	0.75 mm	53.3	165
146-125*	75-100 mm	76.5-101.5 mm	12.70 mm	0.75 mm	28.3	160

Metric — Non-rotating spindle type

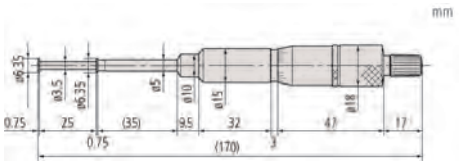
No.	Range Outside	Range Inside	Diameter of measuring plate	Thickness of measuring plate	L mm	l mm	Mass g
146-221	0-25 mm	1.6-26.5 mm	6.35 mm	0.75 mm			135
146-222	0-25 mm	1.6-26.5 mm	12.70 mm	0.75 mm	25	115	185
146-223	25-50 mm	26.5-51.5 mm	12.70 mm	0.75 mm	50	90	175
146-224	50-75 mm	51.5-76.5 mm	12.70 mm	0.75 mm	75	65	165
146-225*	75-100 mm	76.5-101.5 mm	12.70 mm	0.75 mm	100	40	160

Inch — Rotating spindle type

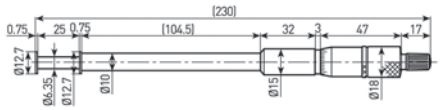
No.	Range Outside	Range Inside	Diameter of measuring plate	Thickness of measuring plate	l mm	Mass g
146-131	0-1"	0.055-1.05"	0.25"	0.025"		135
146-132	0-1"	0.055-4.05"	0.5"	0.025"	103.3	185
146-133*	1-2"	1.05-2.05"	0.5"	0.025"	78.3	175
146-134*	2-3"	2.05-3.05"	0.5"	0.025"	53.3	165
146-135*	3-4"	3.05-4.05"	0.5"	0.025"	28.3	160

Inch — Non-rotating spindle type

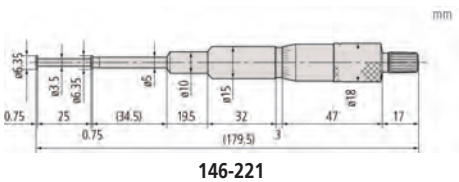
No.	Range Outside	Range Inside	Diameter of measuring plate	Thickness of measuring plate	L mm	l mm	Mass g
146-231*	0-1"	0.055-1.05"	0.25"	0.025"			135
146-232*	0-1"	0.055-1.05"	0.5"	0.025"	25	115	185
146-233*	1-2"	1.05-2.05"	0.5"	0.025"	50	90	175
146-234*	2-3"	2.05-3.05"	0.5"	0.025"	75	65	165
146-235*	3-4"	3.05-4.05"	0.5"	0.025"	100	40	160



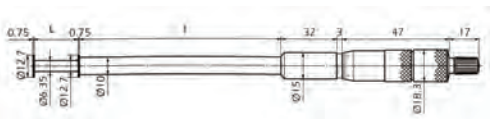
146-121



146-122/146-125



146-221



146-222/146-225

The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Micrometer Setting Standards ≤ 1000 mm

Specifications

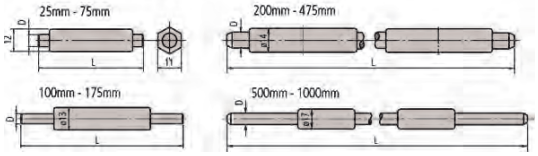
Accuracy	Refer to the list of specifications (Tolerance on deviation of measured central length from nominal at 20'C.)
Flatness	0,3 µm
Parallelism	2 µm
Measuring surfaces	Micro-lap finish

Series 167

- Designed for the accurate setting of outside micrometers at one end or the other of the measuring range.

167-108

167-103



Metric

No.	Length (L)	Diameter (D)	Accuracy
167-101	25 mm	6.35 mm	±1.5 µm
167-102	50 mm	6.35 mm	±2.0 µm
167-103	75 mm	6.35 mm	±2.5 µm
167-104	100 mm	7.9 mm	±3.0 µm
167-105	125 mm	7.9 mm	±3.5 µm
167-106	150 mm	7.9 mm	±4.0 µm
167-107	175 mm	7.9 mm	±4.5 µm
167-108	200 mm	9.4 mm	±5.0 µm
167-109	225 mm	9.4 mm	±5.5 µm
167-110	250 mm	9.4 mm	±6.0 µm
167-111	275 mm	9.4 mm	±6.5 µm
167-112	300 mm	9.4 mm	±7.0 µm
167-113	325 mm	9.4 mm	±7.5 µm
167-114	350 mm	9.4 mm	±8.0 µm
167-115	375 mm	9.4 mm	±8.5 µm
167-116	400 mm	9.4 mm	±9.0 µm
167-117	425 mm	9.4 mm	±9.5 µm
167-118	450 mm	9.4 mm	±10.0 µm
167-119	475 mm	9.4 mm	±10.5 µm
167-120	500 mm	11.9 mm	±11.0 µm
167-121	525 mm	11.9 mm	±11.5 µm
167-122	550 mm	11.9 mm	±12.0 µm
167-123	575 mm	11.9 mm	±12.5 µm
167-124	600 mm	11.9 mm	±13.0 µm
167-125	625 mm	11.9 mm	±13.5 µm
167-126	650 mm	11.9 mm	±14.0 µm
167-127	675 mm	11.9 mm	±14.5 µm
167-128	700 mm	11.9 mm	±15.0 µm
167-129*	725 mm	11.9 mm	±15.5 µm
167-130	750 mm	11.9 mm	±16.0 µm
167-131	775 mm	11.9 mm	±16.5 µm
167-132	800 mm	11.9 mm	±17.0 µm
167-133	825 mm	11.9 mm	±17.5 µm
167-134	850 mm	11.9 mm	±18.0 µm
167-135	875 mm	11.9 mm	±18.5 µm
167-136	900 mm	11.9 mm	±19.0 µm
167-137	925 mm	11.9 mm	±19.5 µm
167-138*	950 mm	11.9 mm	±20.0 µm
167-139	975 mm	11.9 mm	±20.5 µm
167-140	1000 mm	11.9 mm	±21.0 µm

Metric Sets

No.	Length (L)	Number of standards
167-902	25-125 mm	5
167-903	25-275 mm	11

Micrometer Setting Standards > 1000 mm

Series 167

- Designed for the accurate setting of outside micrometers at one end or the other of the measuring range.

Metric

No.	Length (L)	Diameter (D)
167-365	1025 mm	11.9 mm
167-366	1050 mm	11.9 mm
167-367	1075 mm	11.9 mm
167-368	1100 mm	11.9 mm
167-369*	1125 mm	11.9 mm
167-370	1150 mm	11.9 mm
167-371*	1175 mm	11.9 mm
167-372*	1200 mm	11.9 mm
167-373	1225 mm	11.9 mm
167-374*	1250 mm	11.9 mm
167-375	1275 mm	11.9 mm
167-376	1300 mm	11.9 mm
167-377	1325 mm	11.9 mm
167-378*	1350 mm	11.9 mm
167-379	1375 mm	11.9 mm
167-380	1400 mm	11.9 mm
167-381	1425 mm	11.9 mm
167-382*	1450 mm	11.9 mm
167-383*	1475 mm	11.9 mm
167-384	1500 mm	11.9 mm
167-385*	1525 mm	11.9 mm
167-386*	1550 mm	11.9 mm
167-387	1575 mm	11.9 mm
167-388*	1600 mm	11.9 mm
167-389*	1625 mm	11.9 mm
167-390*	1650 mm	11.9 mm
167-391*	1675 mm	11.9 mm
167-392	1700 mm	11.9 mm
167-393*	1725 mm	11.9 mm
167-394*	1750 mm	11.9 mm
167-395*	1775 mm	11.9 mm
167-396*	1800 mm	11.9 mm
167-397*	1825 mm	11.9 mm
167-398*	1850 mm	11.9 mm
167-399*	1875 mm	11.9 mm
167-400	1900 mm	11.9 mm
167-401*	1925 mm	11.9 mm
167-402	1950 mm	11.9 mm
167-403*	1975 mm	11.9 mm
167-404	2000 mm	11.9 mm

Specifications

Accuracy	±(1+L/50) µm
Flatness	0,3 µm
Parallelism	2 µm
Measuring surfaces	Micro-lap finish

Micrometer Setting Standards Inch

Specifications

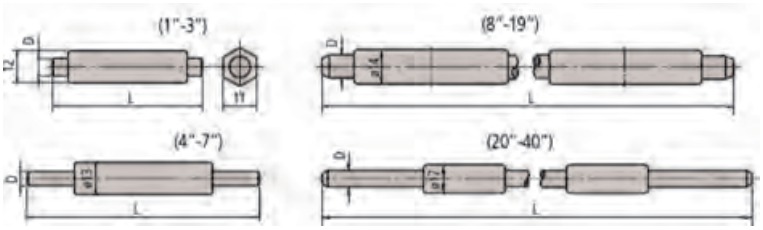
Accuracy	Refer to the list of specifications (Tolerance on deviation of measured central length from nominal at 20'C.)
Flatness	0,3 µm
Parallelism	2 µm
Measuring surfaces	Micro-lap finish

Series 167

- Designed for the accurate setting of outside micrometers at one end or the other of the measuring range.

Inch

No.	Length (L)	Diameter (D)	Accuracy
167-141	1"	0.25"	±0.00005"
167-142	2"	0.25"	±0.0001"
167-143	3"	0.25"	±0.0001"
167-144	4"	0.31"	±0.0001"
167-145	5"	0.31"	±0.00015"
167-146	6"	0.31"	±0.00015"
167-147	7"	0.31"	±0.00015"
167-148	8"	0.37"	±0.00015"
167-149	9"	0.37"	±0.0002"
167-150	10"	0.37"	±0.0002"
167-151	11"	0.37"	±0.0002"
167-152*	12"	0.37"	±0.00025"
167-153	13"	0.37"	±0.00025"
167-154*	14"	0.37"	±0.00025"
167-155*	15"	0.37"	±0.00025"
167-156	16"	0.37"	±0.00025"
167-157*	17"	0.37"	±0.00025"
167-158*	18"	0.37"	±0.00025"
167-159	19"	0.37"	±0.0003"
167-160*	20"	0.47"	±0.0003"
167-161*	21"	0.47"	±0.0003"
167-162*	22"	0.47"	±0.0003"
167-163*	23"	0.47"	±0.0003"
167-164*	24"	0.47"	±0.0003"
167-165*	25"	0.47"	±0.00035"
167-166*	26"	0.47"	±0.00035"
167-167*	27"	0.47"	±0.00035"
167-168*	28"	0.47"	±0.00035"
167-169*	29"	0.47"	±0.00035"
167-170*	30"	0.47"	±0.00035"
167-171*	31"	0.47"	±0.00035"
167-172*	32"	0.47"	±0.00035"
167-173*	33"	0.47"	±0.00035"
167-174*	34"	0.47"	±0.00035"
167-175*	35"	0.47"	±0.00035"
167-176*	36"	0.47"	±0.00035"
167-177*	37"	0.47"	±0.0004"
167-178*	38"	0.47"	±0.0004"
167-179*	39"	0.47"	±0.0004"
167-180*	40"	0.47"	±0.0004"



Standards for Screw Thread Micrometers

Series 167

- Specially designed for the accurate setting of Screw Thread Micrometers.

Specifications

Accuracy Refer to the list of specifications

Metric — Angle 55°

No.	Length	Accuracy
167-272	25 mm	±4 µm
167-273	50 mm	±5 µm
167-274	75 mm	±6 µm
167-275	100 mm	±7 µm
167-276	125 mm	±8 µm
167-277*	150 mm	±9 µm
167-278	175 mm	±10 µm
167-279	200 mm	±11 µm
167-280*	225 mm	±12 µm
167-281	250 mm	±13 µm
167-282*	275 mm	±14 µm

Metric — Angle 60°

No.	Length	Accuracy
167-261	25 mm	±4 µm
167-262	50 mm	±5 µm
167-263	75 mm	±6 µm
167-264	100 mm	±7 µm
167-265	125 mm	±8 µm
167-266	150 mm	±9 µm
167-267	175 mm	±10 µm
167-268*	200 mm	±11 µm
167-269*	225 mm	±12 µm
167-270*	250 mm	±13 µm
167-271	275 mm	±14 µm

Inch — Angle 55°

No.	Length	Accuracy
167-283*	1"	±0.00015"
167-284*	2"	±0.0002"
167-285*	3"	±0.00025"
167-286*	4"	±0.0003"
167-287*	5"	±0.0004"

Inch — Angle 60°

No.	Length	Accuracy
167-294*	1"	±0.00015"
167-295*	2"	±0.0002"
167-296*	3"	±0.00025"
167-297*	4"	±0.0003"
167-298*	5"	±0.0004"

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* Please contact Mitutoyo for more information on delivery times.

Setting Standards for V-Anvil Micrometers

Specifications

Accuracy Refer to the list of specifications

Series 167

- Designed for the accurate setting of V-anvil micrometers.

167-329

Metric

No.	Diameter	Accuracy
167-327	5 mm	±2 μm
167-328	10 mm	±2 μm
167-329	25 mm	±2 μm
167-330*	40 mm	±3 μm
167-331*	55 mm	±3 μm
167-332	70 mm	±3 μm
167-333	85 mm	±3 μm

Inch

No.	Diameter	Accuracy
167-337*	0.2"	±0.0001"
167-338*	0.4"	±0.0001"
167-339*	1"	±0.0001"
167-340*	1.6"	±0.00015"
167-341*	2.2"	±0.00015"
167-342*	2.8"	±0.00015"
167-343*	3.4"	±0.00015"

3-Wire units

Series 313

- The measuring wires are hardened and precision lapped. They are placed onto spindle and anvil of an outside micrometer.
- The three-wire measuring process is applied to determine the pitch diameter of threads and is considered as one of the most accurate measuring procedures for this application.

313-101

Wire in set

No.	Support diameter
313-101	6.35

Details of N° 313-101
Wire delivered by pair for ø 6,35

No.	Measuring wire ø mm
952131	0.17
952132	0.195
952133	0.22
952134	0.25
952135	0.29
952136	0.335
952137	0.39
952138	0.455
952139	0.53
952140	0.62
952141	0.725
952142	0.895
952143	1.1
952144	1.35
952145	1.65
952146	2.05
952147	2.55
952148	3.2

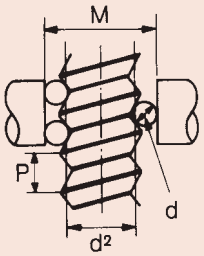
ø Nominal	Thread pitch P	Pitch ø d2	Measuring wire ø dD	Measurement over wire M	(M-d2)
M 1	0,25	0,838	0,170	1,133	0,295
M 1,2	0,25	1,038	0,170	1,332	0,294
M 1,4	0,30	1,205	0,170	1,456	0,251
M 1,7	0,35	1,473	0,220	1,831	0,358
M 2	0,40	1,740	0,250	2,145	0,405
M 2,3	0,40	2,040	0,250	2,444	0,404
M 2,6	0,45	2,308	0,290	2,789	0,481
M 3	0,50	2,675	0,290	3,113	0,438
M 3,5	0,60	3,110	0,335	3,596	0,486
M 4	0,70	3,545	0,455	4,305	0,760
M 5	0,80	4,480	0,455	5,153	0,673
M 6	1,00	5,350	0,620	6,346	0,996
M 8	1,25	7,188	0,725	8,282	1,094
M 10	1,50	9,026	0,895	10,414	1,388
M 12	1,75	10,863	1,100	12,650	1,787

ø Nominal	Thread pitch P	Pitch ø d2	Measuring wire ø dD	Measurement over wire M	(M-d2)
M 14	2,00	12,701	1,350	15,021	2,320
M 16	2,00	14,701	1,350	17,021	2,320
M 20	2,50	18,376	1,650	21,163	2,787
M 22	2,50	20,376	1,650	23,163	2,787
M 24	3,00	22,051	2,050	25,606	3,555
M 27	3,00	25,051	2,050	28,605	3,554
M 30	3,50	27,727	2,050	30,848	3,121
M 33	3,50	30,727	2,050	33,848	3,121
M 36	4,00	33,402	2,550	37,591	4,189
M 39	4,00	36,402	2,550	40,590	4,188
M 42	4,50	39,077	2,550	42,832	3,755
M 45	4,50	42,077	2,550	45,832	3,755
M 48	5,00	44,752	3,200	50,025	5,273
M 52	5,00	48,752	3,200	54,024	5,272
M 56	5,50	52,428	3,200	57,267	4,839
M 60	5,50	56,428	3,200	61,267	4,839

Specifications

Roundness of wires	0,5 µm
Cylindricity of wires	1 µm
Hardness of wires	63-66 HRC
Accuracy of wire diameter	±2 µm
Tolerance of measuring wires	±1 µm
Contents	18 pairs of wires ø 0,170 mm up to ø 3,200 mm (313-101)
Delivered	Including wooden box (313-101)

9521XX

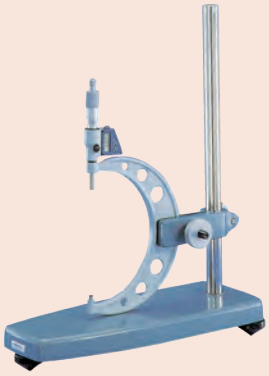


P = thread pitch
d_0 = measuring wire Ø
d_2 = pitch diameter
M = theoretical dimension at measuring pressure δ
α = pitch angle
δ = Correction factor

$$M = d_2 + \frac{d_0}{\sin\frac{\alpha}{2}} - \frac{P}{2\tan\frac{\alpha}{2}} + d_0 + \delta$$

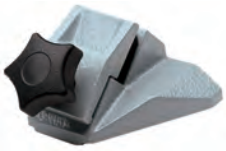
$$\delta = \frac{d_0}{2} \cdot \frac{P^2}{\pi^2} \cdot \frac{\cos\frac{\alpha}{2} \cdot \cot\frac{\alpha}{2}}{d_2^2}$$

Micrometer Stands



Series 156

- Keeps both hands free for operating the micrometer and positioning the workpiece.
- Designed for batch or mass production measurements in manufacturing and quality assurance.

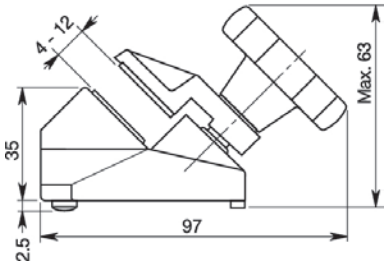


156-105-10

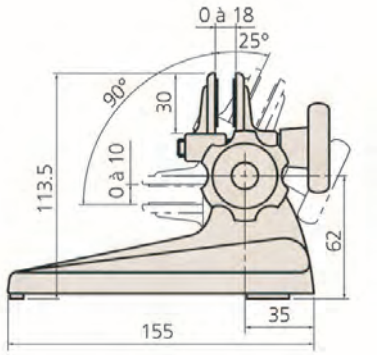
156-101-10

156-102

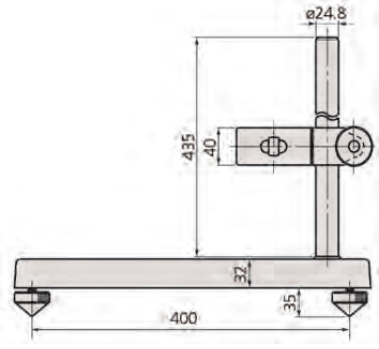
No.	Micrometer ranges	Remarks	Mass g
156-105-10	0-50 mm (0-2")	Fixed angle type 45°	700
156-101-10	Up to 100 mm (4")	Adjustable angle type	1,210
156-102	100-300 mm (5-12")	Vertical type	9,000
156-103*	300-1000 mm (12-40")	Vertical type	8,500



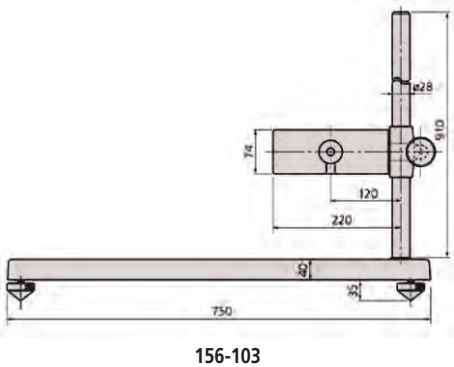
156-105-10



156-101-10



156-102



156-103

Colour Coded Ratchets and Speeders

Micrometer accessories

Colour-coded ratchets

Colour-coded speeders for Ratchet Thimble Micrometer series 102-7XX and Quantumike

Colour-coded ratchets for analogue micrometer 0-300 mm

No.	Color
985056	Black
985061	Red
985081	Blue
985071	Yellow
985076	Green
985066	Brown
04GZA239	Grey

Colour-coded speeders for series 293

No.	Color
04GZA241	Grey

Colour-coded ratchets for analogue micrometer 300-1000 mm

No.	Color
04GZA243	Grey

Colour-coded speeders for series 102-7XX and Quantumike

No.	Color
04AAB208	Grey
04GAA899	Black
04GAA900	Red
04GAA901	Yellow
04GAA902	Green
04GAA903	Blue

Micrometer Oil

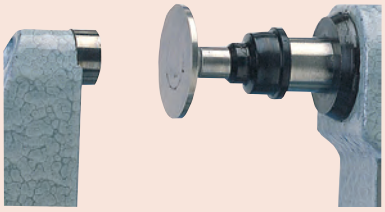
Micrometer accessory

207000

No.	Mass g
207000	30

Specifications

Tip length	10 mm ±5 µm



208066

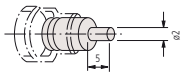
Spindle attachment tips

Micrometer accessories

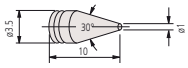
- For use on a micrometer spindle to provide economical adaptation for particular measurement applications.
- To mount on micrometer anvils ø 6,35 mm.
- Available individually.

208062 208063 208064 208065 208066

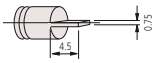
No.	Omschrijving
208062	Spline
208063	Spherical
208064	Knife edge
208065	Knife edge
208066	Tray



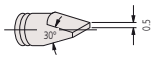
208062



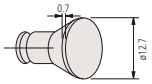
208063



208064



208065



208066

Ball attachment

Micrometer accessories

- Ball attachment to fit micrometer anvils (ø 6,35 mm only)

101468E

Sample application

Metric

No.	ø ball
101468M*	5 mm

Inch

No.	ø ball
101468E*	0.2"

Optical parallels

Series 157

- Designed to inspect the measuring faces of micrometers for parallelism and flatness by optical interference.
- Each set consists of 4 sizes designed for testing at each quarter revolution.

157-903

Specifications

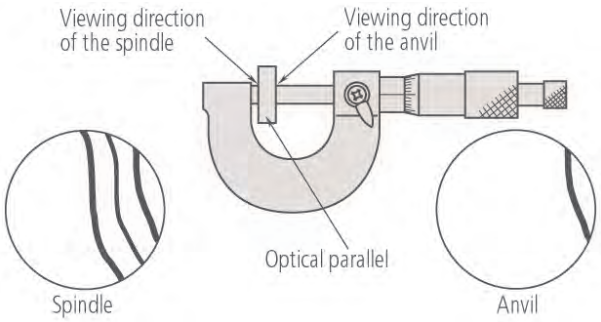
Flatness	0,1 µm
Parallelism	0,2 µm
Diameter	30 mm

Metric

No.	Contents	Range of micrometer to be checked	Sizes of parallels included in set
157-903	157-101 157-102 157-103 157-104	0-25 mm	12 mm 12.12 mm 12.25 mm 12.37 mm
157-904	157-105 157-106 157-107 157-108	25-50 mm	25 mm 25.12 mm 25.25 mm 25.37 mm

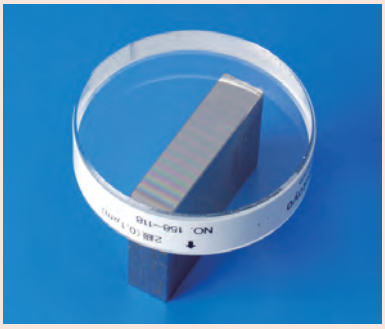
Inch

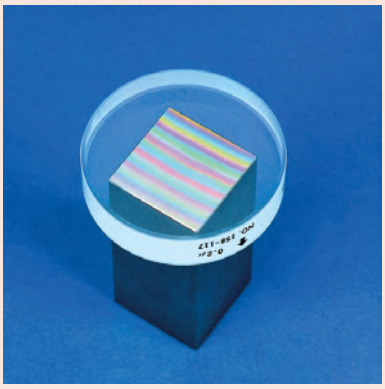
No.	Range of micrometer to be checked	Sizes of parallels included in set
157-901*	0-1"	0.5" 0.5062" 0.5125" 0.5187"
157-902*	1-2"	1" 1.0062" 1.0125" 1.0187"



Testing a micrometer for flatness and parallelism of anvil and spindle faces : flatness is indicated by straightness and regular spacing of interference fringes, and parallelism by how many fringes are visible.

Optical flats





Series 158

- The essential tool for testing flatness of reflective surfaces such as gauge blocks, setting standards, etc, by the method of optical interference.

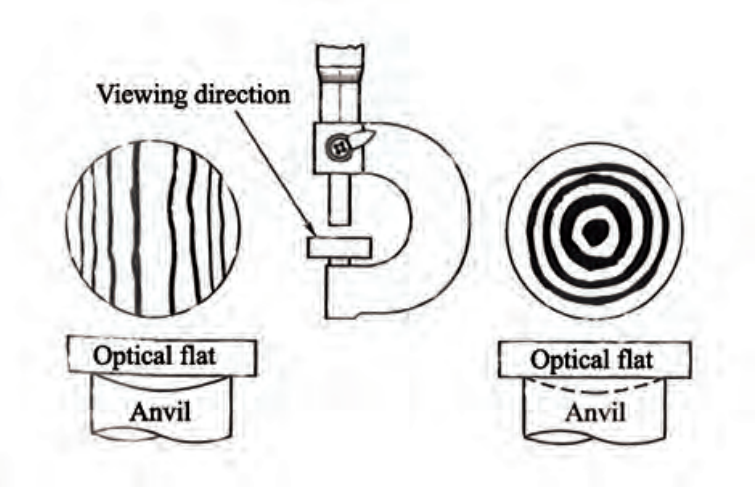
158-118

Metric

No.	Flatness grade	Diameter/Thickness
158-117*	0,2 µm	45 mm/12 mm
158-119*	0,2 µm	60 mm/15 mm
158-118	0,1 µm	45 mm/12 mm
158-120	0,1 µm	60 mm/15 mm

Inch

No.	Flatness grade	Diameter/Thickness
158-121	0.000008"	1.8"/0.5"
158-122	0.000004"	1.8"/0.5"
158-123	0.000008"	2.4"/0.6"
158-124*	0.000004"	2.4"/0.6"



Digimatic Caliper Jaw Inside Micrometer

Series 345

- Measuring surfaces in carbide, micro-lap finish.

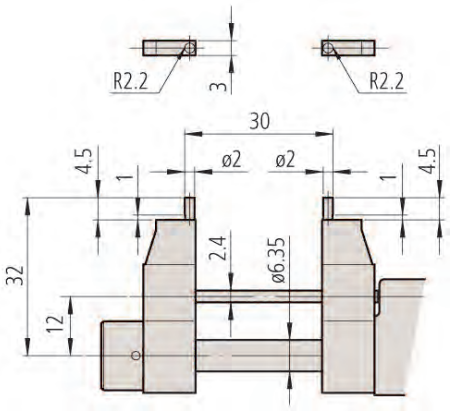
345-250-10

Metric

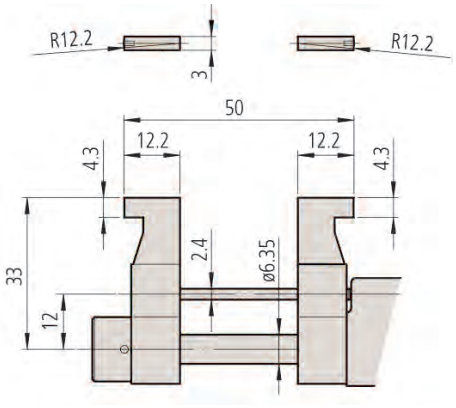
No.	Range	Accuracy	Mass g
345-250-10	5-30 mm	±5 µm	305
345-251-10	25-50 mm	±6 µm	310

Inch/Metric

No.	Range	Accuracy	Mass g
345-350-10*	0.2-1.2"	±0.00025"	305
345-351-10*	1-2"	±0.0003"	310



345-250-10



345-251-10

Functions	Series 345
Data Output	●
2 Preset	●
Auto Power OFF	●
DATA/HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm or 0,001 mm / 0.00005", LCD display
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring spindle	Spindle pitch 0,5 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box, key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button

Consumable spares

No.	Description
938882	Battery SR44

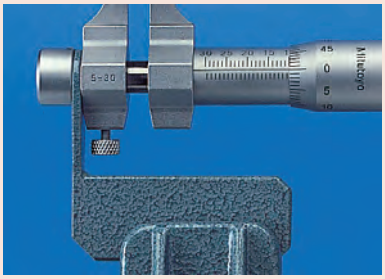
Caliper Jaw Inside Micrometer

Series 145

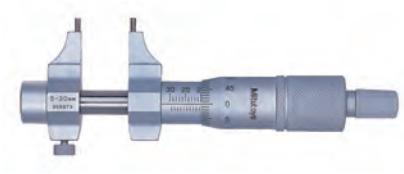
- Measuring jaws are offset to enable inside measurements to be made.
- Measuring surfaces in carbide, micro-lap finish.

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,001 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring spindle	Spindle pitch 0,5 mm with spindle lock
Measuring force	5-10 N
Delivered	Including box, key



For 145-185, 145-186, 145-193, 145-194



145-185

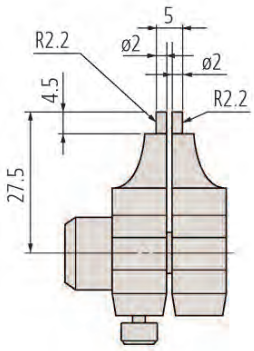
145-187

Metric

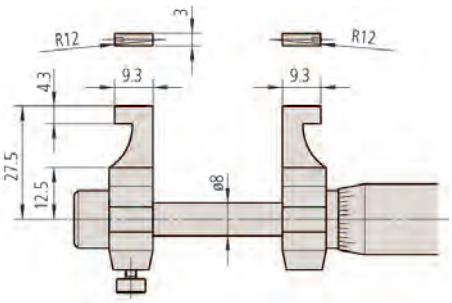
No.	Range	Accuracy	Mass g
145-185	5-30 mm	±5 µm	130
145-186	25-50 mm	±6 µm	140
145-187	50-75 mm	±7 µm	160
145-188	75-100 mm	±8 µm	180
145-189	100-125 mm	±9 µm	210
145-190	125-150 mm	±9 µm	230
145-191	150-175 mm	±10 µm	250
145-192	175-200 mm	±10 µm	270
145-217*	200-225 mm	±11 µm	310
145-218*	225-250 mm	±11 µm	330
145-219*	250-275 mm	±12 µm	350
145-220*	275-300 mm	±12 µm	370

Inch

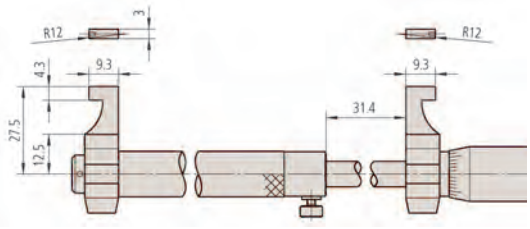
No.	Range	Accuracy	Mass g
145-193	0.2-1.2"	±0.00025"	130
145-194	1-2"	±0.0003"	140
145-195*	2-3"	±0.00035"	160
145-196*	3-4"	±0.0004"	180



145-185



145-186



50 mm or more

Inside Micrometer

Series 133

Tubular Inside Micrometer

Lightweight design due to tubular construction.

133-147

Metric

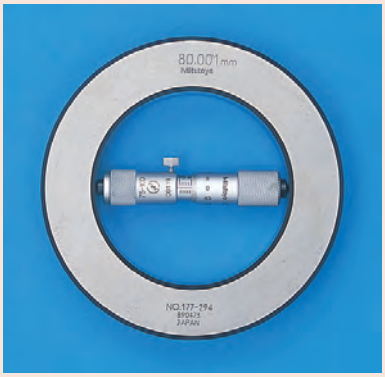
No.	Range	Accuracy	L mm	a mm	b mm	Mass g
133-143	50-75 mm	±3 µm				50
133-144	75-100 mm	±4 µm				75
133-145	100-125 mm	±5 µm	100	5	3	130
133-146	125-150 mm	±5 µm	125	5	3	160
133-147	150-175 mm	±5 µm	150	18	15	170
133-148	175-200 mm	±5 µm	175	18	15	180
133-149	200-225 mm	±5 µm	200	18	15	200
133-150	225-250 mm	±6 µm	225	18	15	210
133-151	250-275 mm	±6 µm	250	18	15	235
133-152	275-300 mm	±6 µm	275	18	15	245
133-153	300-325 mm	±7 µm	300	18	15	265
133-154	325-350 mm	±7 µm	325	18	15	285
133-155	350-375 mm	±7 µm	350	18	15	300
133-156	375-400 mm	±8 µm	375	18	15	315
133-157	400-425 mm	±8 µm	400	18	15	330
133-158*	425-450 mm	±8 µm	425	18	15	340
133-159*	450-475 mm	±9 µm	450	18	15	360
133-160*	475-500 mm	±9 µm	475	18	15	370
133-161*	500-525 mm	±9 µm	500	18	15	390
133-162*	525-550 mm	±10 µm	525	18	15	400
133-163*	550-575 mm	±10 µm	550	18	15	410
133-164*	575-600 mm	±10 µm	575	18	15	415
133-165*	600-625 mm	±11 µm	600	18	15	430
133-166*	625-650 mm	±11 µm	625	18	15	450
133-167*	650-675 mm	±11 µm	650	18	15	470
133-168*	675-700 mm	±12 µm	675	18	15	480
133-169*	700-725 mm	±12 µm	700	18	15	500
133-170*	725-750 mm	±12 µm	725	18	15	510
133-171	750-775 mm	±13 µm	750	18	15	520
133-172*	775-800 mm	±13 µm	775	18	15	540
133-173*	800-825 mm	±13 µm	800	18	15	555
133-174*	825-850 mm	±14 µm	825	18	15	570
133-175*	850-875 mm	±14 µm	850	18	15	590
133-176*	875-900 mm	±14 µm	875	18	15	600
133-177*	900-925 mm	±15 µm	900	18	15	620
133-178*	925-950 mm	±15 µm	925	18	15	630
133-179*	950-975 mm	±15 µm	950	18	15	650
133-180*	975-1000 mm	±16 µm	975	18	15	670

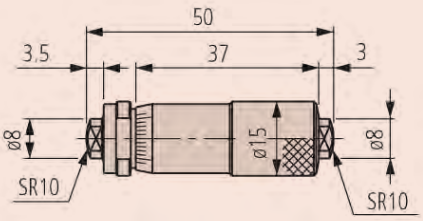
Inch

No.	Range	Accuracy	Mass g
133-223*	2-3"	±0.00015"	50
133-224*	3-4"	±0.0002"	75
133-225*	4-5"	±0.00025"	130
133-226*	5-6"	±0.00025"	160
133-227*	6-7"	±0.00025"	170
133-228*	7-8"	±0.00025"	180
133-229*	8-9"	±0.00025"	200
133-230*	9-10"	±0.0003"	210
133-231*	10-11"	±0.0003"	235
133-232*	11-12"	±0.0003"	245

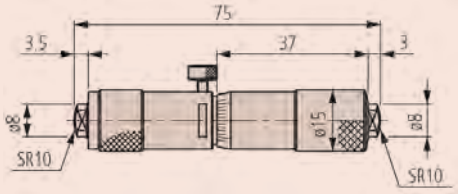
Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, Ø18 mm
Measuring surfaces	Carbide tipped, crown lapped
Measuring spindle	Spindle pitch 0,5 mm with spindle lock
Delivered	Including box, insulation (from 100 mm), key





133-143



133-144

From 100 mm to 1000 mm

The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Inside Micrometer

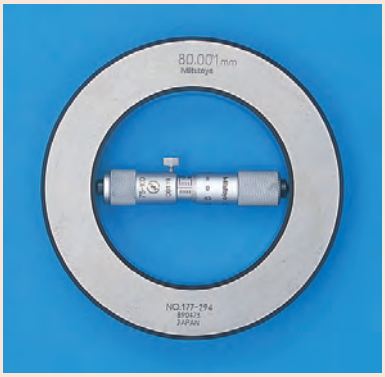
Series 133

Tubular Inside Micrometer

Lightweight design due to tubular construction.

Specifications

Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, Ø18 mm
Measuring surfaces	Carbide tipped, crown lapped
Measuring spindle	Spindle pitch 0,5 mm with spindle lock
Delivered	Including box, insulation (from 100 mm), key



133-902

Metric — Micrometer set

No.	Range	Models included	Mass g
133-901	50-150 mm	133-143/44/45/46	415
133-902	50-300 mm	133-143/44/45/46/47/48/49/50/51/52	1,655

Inch — Micrometer set

No.	Range	Models included	Mass g
133-903*	2-6"	133-223/24/25/26	420
133-904*	2-12"	133-223/24/25/26/27/28/29/30/31/32	620

Inside Micrometer

Series 337

- Digimatic type, with data output.
- Measuring surfaces in carbide.

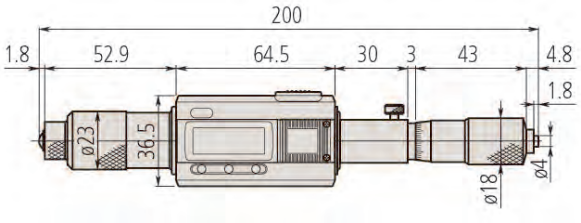
337-301

Metric

No.	Range	Extension rods	Mass g
337-301	200-1000 mm	6 (25, 50, 100 (2 pcs.), 200, 300 mm)	1,040
337-302	200-1500 mm	7 (25, 50, 100, 200, 300 (3 pcs.))	1,410

Inch/Metric

No.	Range	Extension rods	Mass g
337-303*	8-40"	6 (1, 2, 4 (2 pcs.), 8, 12")	1,040
337-304*	8-60"	7 (1, 2, 4, 8, 12" (3 pcs.))	1,410



Micrometer Head for series 337

Functions	Series 337
Data Output	●
ZERO/ABS	●
2 Preset	●
Auto Power OFF	●
DATA/HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	±(3+n+L/50) µm (1) Excluding quantizing error ±[0.00015+0.00005n+0.00005 (L/2)]" (1)n = Number of rod or pipe, L = Maximum measuring length (mm)
Resolution	0,001 mm or 0,001 mm / 0.0001", LCD display
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring spindle	Spindle pitch 0,5 mm
Measuring span	25 mm or 1"
Extension	ø12,5 mm
Delivered	Including box, key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button
337-101	Digimatic Tubular Inside Micrometer
Optional accessory for Inch	
337-102	Digimatic Tubular Inside Micrometer

Consumable spares

No.	Description
980521	Extension 25 mm
980523	Extension 50 mm
980525	Extension 100 mm
980529	Extension 200 mm
980531	Extension 300 mm
938882	Battery SR44

Inside Micrometer

Series 137

Extension Rod Type

137-205

137-011

Specifications

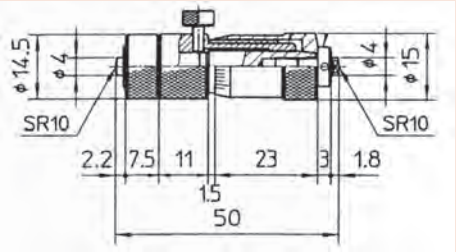
Accuracy	±(3+n+L/50) µm(¹) ±[0.00015+0.00005n+0.00005 (L/2)]" (¹)n = Number of rod, L = Maximum measuring length (mm)
Graduation	0,001 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø15 mm
Measuring spindle	Spindle pitch 0,5 mm
Measuring span	13 mm or 0.5"
Extension	ø12,5 mm
Delivered	Including box, key

Optional accessories

No.	Description
137-011	Inside Micrometer
137-013	Inside Micrometer with carbide measuring surface
Optional accessories for Inch	
137-012	Inside Micrometer
137-014	Inside Micrometer with carbide measuring surface

Consumable spares

No.	Description
980505	Extension 13 mm
980507	Extension 25 mm
980509	Extension 50 mm
980511	Extension 100 mm
980515	Extension 200 mm
980517	Extension 300 mm



Micrometer Head for series 137

Metric — Hardened

No.	Range	Extension rods	Mass g
137-201	50-150 mm	3 (13, 25, 50 mm)	145
137-202	50-300 mm	5 (13, 25, 50 (2 pcs.), 100 mm)	305
137-203	50-500 mm	6 (13, 25, 50 (2 pcs.), 100, 200 mm)	460
137-204	50-1000 mm	8 (13, 25, 50 (2 pcs.), 100, 200 (2 pcs.), 300 mm)	845
137-205	50-1500 mm	10 (13, 25, 50 (2 pcs.), 100, 200 (3 pcs.), 300 mm (2 pcs.))	1,225

Metric — With carbide measuring surface

No.	Range	Extension rods	Mass g
137-206	50-150 mm	3 (13, 25, 50 mm)	145
137-207	50-300 mm	5 (13, 25, 50 (2 pcs.), 100 mm)	305
137-208	50-500 mm	6 (13, 25, 50 (2 pcs.), 100, 200 mm)	460
137-209	50-1000 mm	8 (13, 25, 50 (2 pcs.), 100, 200 (2 pcs.), 300 mm)	845
137-210	50-1500 mm	10 (13, 25, 50 (2 pcs.) 100, 200 (3 pcs.), 300 mm (2 pcs.))	1,225

Inch — Hardened

No.	Range	Extension rods	Mass g
137-211*	2-6"	3 (0.5, 1, 2")	145
137-212	2-12"	5 (0.5, 1, 2 (2 pcs.), 4")	305
137-213	2-20"	6 (0.5, 1, 2 (2 pcs.), 4, 8")	460
137-214*	2-40"	8 (0.5, 1, 2 (2 pcs.), 4, 8 (2 pcs.), 12")	845
137-215*	2-60"	10 (0.5, 1, 2 (2 pcs.), 4, 8 (3 pcs.), 12" (2 pcs.))	1,225

Inch — With carbide measuring surface

No.	Range	Extension rods	Mass g
137-216*	2-6"	3 (0.5, 1, 2")	145
137-217*	2-12"	5 (0.5, 1, 2 (2 pcs.), 4")	305
137-218*	2-20"	6 (0.5, 1, 2 (2 pcs.), 4, 8")	460
137-219*	2-40"	8 (0.5, 1, 2 (2 pcs.), 4, 8 (2 pcs.), 12")	845
137-220*	2-60"	10 (0.5, 1, 2 (2 pcs.), 4, 8 (3 pcs.), 12" (2 pcs.))	1,225

Digimatic Inside Micrometer

Series 339

- Digimatic type with data output and extension tubes, with heat insulation.
- Measuring surfaces in carbide.

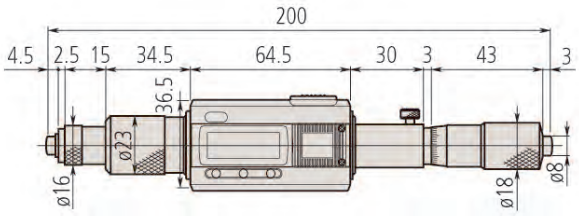
339-301

Metric

No.	Range	Extension rods	Mass g
339-301	200-1000 mm	5 (25, 50, 100, 200, 400 mm)	1,050
339-302	200-2000 mm	8 (25, 50, 100, 200 (2 pcs.), 400 mm (3 pcs.))	1,800

Inch/Metric

No.	Range	Extension rods	Mass g
339-303	8-40"	5 (1, 2, 4, 8, 16")	1,050
339-304	8-80"	8 (1, 2, 4, 8 (2 pcs.), 16" (3 pcs.))	1,800



Micrometer Head for series 339

Functions	Series 339
Data Output	●
ZERO/ABS	●
2 Preset	●
Auto Power OFF	●
DATA/HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	±(3+n+L/50) µm(¹) Excluding quantizing error ±[0.00015+0.00005n+0.00005 (L/2)]" (¹)n = Number of rod or pipe, L = Maximum measuring length (mm)
Resolution	0,001 mm or 0,001 mm / 0.0001", LCD display
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring spindle	Spindle pitch 0,5 mm
Measuring span	25 mm or 1"
Extension	ø17 mm
Delivered	Including box, key, 1 battery

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380E	Signal cable 2 m USB
02AZD790E	Signal cable U-Wave
339-101	Digimatic Tubular Inside Micrometers
Optional accessory for Inch	
339-102	Digimatic Tubular Inside Micrometers

Consumable spares

No.	Description
938882	Battery SR44
981003	Extension 25 mm
981005	Extension 50 mm
981007	Extension 100 mm
981009	Extension 200 mm
981011	Extension 400 mm

Inside Micrometer

Series 139

Extension Rod Type

139-177

139-001

Specifications

Accuracy	±(3+n+L/50) µm(1) ±[0.00015+0.00005n+0.00005 (L/2)]" (1)n = Number of rods, L = Maximum measuring length (mm)
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish, ø18 mm
Measuring surfaces	Carbide
Measuring spindle	Spindle pitch 0,5 mm
Measuring span	25 mm or 1"
Extension	ø17 mm
Delivered	Including box, key

Optional accessories

No.	Description
Optional accessories for 139-203/204	
139-003	Analogue inside micrometer for 139-203
139-005	Analogue inside micrometer for 139-204
Optional accessory for 139-173 to 139-177	
139-001	Analogue inside micrometer for 139-17x
Optional accessory for Inch	
139-002	Analogue inside micrometer for Inch

Consumable spares

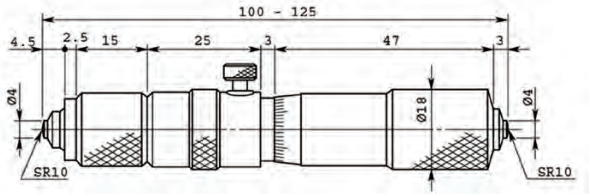
No.	Description
981003	Extension 25 mm
981005	Extension 50 mm
981007	Extension 100 mm
981009	Extension 200 mm
981011	Extension 400 mm

Metric

No.	Range	Extension rods	Mass g
139-173	100-500 mm	4 (25, 50, 100, 200 mm)	490
139-174	100-900 mm	5 (25, 50, 100, 200, 400 mm)	790
139-175	100-1300 mm	6 (25, 50, 100, 200, 400 mm (2 pcs.))	1,090
139-176	100-1700 mm	7 (25, 50, 100, 200, 400 mm (3 pcs.))	1,390
139-177	100-2100 mm	8 (25, 50, 100, 200, 400 mm (4 pcs.))	1,690
139-203	40-300 mm	8 (10, 20, 30, 60, 90, 110, 120, 130 mm)	240
139-204	100-1000 mm	10 (25, 50, 75, 150, 225, 300, 350, 400, 425, 450 mm)	770

Inch

No.	Range	Extension rods	Mass g
139-178	4-20"	4 (1, 2, 4, 8")	490
139-179	4-36"	5 (1, 2, 4, 8, 16")	790
139-180	4-52"	6 (1, 2, 4, 8, 16" (2 pcs.))	1,090
139-181	4-68"	7 (1, 2, 4, 8, 16" (3 pcs.))	1,390
139-182	4-84"	8 (1, 2, 4, 8, 16" (4 pcs.))	1,690

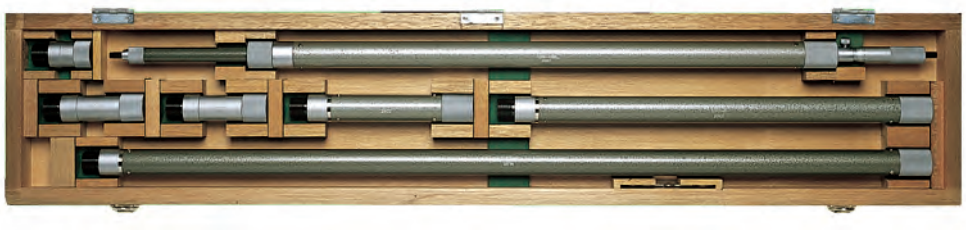


139-001

Inside Micrometer

Series 140

- Long range
- Extension Tube Type
- Measuring surfaces in carbide, micro-lap finish



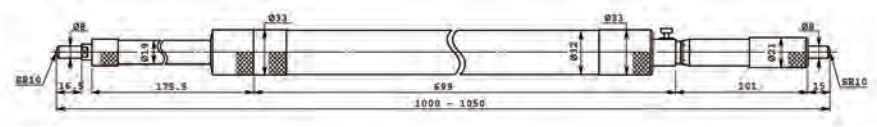
140-158

Metric

No.	Range	Extension rods	Mass g
140-157	1000-2000 mm	5 (50, 100 (2 pcs.) 200, 500 mm)	3,700
140-158	1000-3000 mm	6 (50, 100 (2 pcs.), 200, 500, 1000 mm)	5,200
140-159	1000-4000 mm	7 (50, 100 (2 pcs.), 200, 500, 1000 mm (2 pcs.))	6,700
140-160	1000-5000 mm	8 (50, 100 (2 pcs.) 200, 500, 1000 mm (3 pcs.))	8,260

Inch

No.	Range	Extension rods	Mass g
140-161*	40-80"	5 (2, 4, (2 pcs.), 8, 20")	3,900
140-162*	40-120"	6 (2, 4 (2 pcs.), 8, 20, 40")	5,400
140-163*	40-160"	7 (2, 4 (2 pcs.), 8, 20, 40" (2 pcs.))	7,200
140-164*	40-200"	8 (2, 4 (2 pcs.), 8, 20, 40" (3 pcs.))	9,000



Micrometer Head for series 140

Specifications

Accuracy	±(7+n+L/50) µm(1) ±[0.00035+0.00005n+0.00005 (L/50)]" (1)n = Number of rods, L = Maximum measuring length (mm)
Graduation	0,01 mm
Scales	Thimble and sleeve satin chrome finish, ø21 mm
Measuring spindle	Spindle pitch 0,5 mm
Measuring span	50 mm or 2"
Extension	ø32 mm
Delivered	Including box, key

Consumable spares

No.	Description
04GZA394	Extension 50 mm
04GZA396	Extension 100 mm
04GZA398	Extension 200 mm
04GZA400	Extension 500 mm
04GZA402	Extension 1000 mm

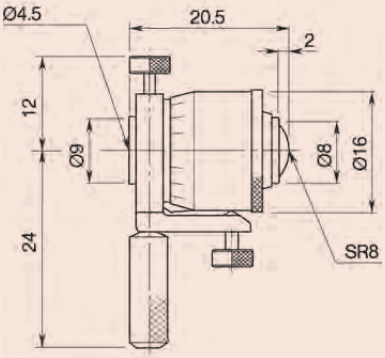
Inside Micrometer

Series 141

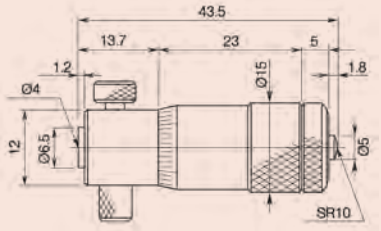
- Large range.
- Interchangeable measuring rods enable inside measurements up to 1000 mm / 40'.
- Practical handle to aid measuring deep bores included in sets up to 300 mm range.

Specifications

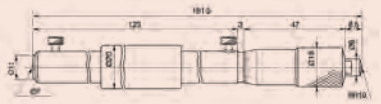
Accuracy	±(6+L/50) µm, L = Maximum measuring length (mm) ±[0.0003+0.00005 (L/2)]"
Graduation	0,01 mm or 0.001"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Hardened
Measuring spindle	Spindle pitch 0,5 mm with spindle lock
Delivered	Including box, key



141-001/003



141-025/027



141-009

141-101

When using one of the extension rods supplied

Metric

No.	Range	Head adjustment range	Measuring inserts	Extension case	Accessories: inside micrometer (standard in the set) No.	Mass g
141-001	25-32 mm	7 mm				20
141-101	25-50 mm	7 mm	2 (12 mm)	1 (6 mm)	141-001	60
141-025	50-63 mm	13 mm				40
141-205	50-200 mm	13 mm	3 (50 mm)	1 (12 mm)	141-025	125
141-206	50-300 mm	13 mm	5 (50 mm)	1 (12 mm)	141-025	275
141-009	200-225 mm	25 mm				220
141-117	200-500 mm	25 mm	3 (100 mm)	2 (25/50 mm)	141-009	520
141-118	200-1000 mm	25 mm	8 (100 mm)	2 (25/50 mm)	141-009	1,940

Metric With carbide measuring surface

No.	Range	Head adjustment range	Measuring inserts	Extension case	Accessories: inside micrometer (standard in the set) No.	Mass g
141-003	25-32 mm	7 mm				20
141-103	25-50 mm	7 mm	2 (12 mm)	1 (6 mm)	141-003	60
141-027	50-63 mm	13 mm				40
141-211*	50-200 mm	13 mm	3 (50 mm)	1 (12 mm)	141-027	125
141-212	50-300 mm	13 mm	5 (50 mm)	1 (12 mm)	141-027	275
141-011*	200-225 mm	25 mm				220

Inch

No.	Range	Head adjustment range	Remarks	Mass g
141-002*	1-1.25"	0.25"	-	20
141-102	1-2"	0.25"	With 2 rods	60
141-026*	2-2.5"	0.5"	-	275
141-208	2-8"	0.5"	With 3 rods	125
141-233	2-12"	0.5"	With 5 rods	275
141-010*	8-9"	1"	-	220
141-121	4-20"	1"	With 3 rods	520
141-122	4-40"	1"	With 8 rods	1,940

Inch With carbide measuring surface

No.	Range	Head adjustment range	Remarks	Mass g
141-004*	1-1.25"	0.25"	-	20
141-104*	1-2"	0.25"	With 2 rods	60
141-028	2-2.5"	0.5"	-	125
141-214*	2-8"	0.5"	With 3 rods	125
141-215*	2-12"	0.5"	With 5 rods	275
141-012*	8-9"	1"	-	220

Gauge Set

Series 154 - Small Hole Gauge Set

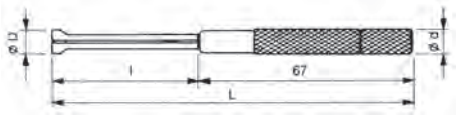
- Designed to be locked in position (with knurled lockscrew) and the diameter measured across the two lobes with a micrometer after withdrawal from the hole.

Metric

No.	Gauges included	Range	ø D mm	L	ø d mm	l mm	Mass g
154-902	154-101	3-5 mm	2.8-5.2	90	5.5	22.5	17
	154-102	5-7.5 mm	4.8-7.8	97.6	5.5	30	17
	154-103	7.5-10 mm	7.3-10.3	102.8	8.5	35	36
	154-104	10-13 mm	9.8-13.2	108	8.5	40	45

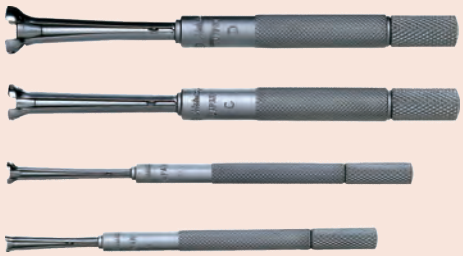
Inch

No.	Gauges included	Range	ø D mm	L	ø d mm	l mm	Mass g
154-901	154-105	0.125-0.2"	2.8-5.2	90	5.5	22.5	17
	154-106	0.2-0.3"	4.8-7.8	97.6	5.5	30	17
	154-107	0.3-0.4"	7.3-10.3	102.8	8.5	35	36
	154-108	0.4-0.5"	9.8-13.2	108	8.5	40	45



Specifications

Delivered Including plastic wallet



154-902

Series 155 - Telescopic Gauge Set

- Self-centering and satin chrome finish.
- Constant spring force on to the measuring surface. Locked in position by knurled lockscrew.

Metric

No.	Gauges included	Range	a mm	b mm	c mm	d mm	Mass g
155-905	155-127	8-12.7 mm	110	4	3	5	15
	155-128	12.7-19 mm	110	5	3.5	5.5	25
	155-129	19-32 mm	110	5	3.5	5.5	35
	155-130	35-54 mm	150	7.5	6	8	75
	155-131	54-90 mm	150	7.5	6	8	80
	155-132	90-150 mm	150	7.5	6	8	100

Inch

No.	Gauges included	Range	a mm	b mm	c mm	d mm	Mass g
155-903	155-121	0.313-0.5"	110	4	3	5	15
	155-122	0.5-0.75"	110	5	3.5	5.5	25
	155-123	0.75-1.25"	110	5	3.5	5.5	35
	155-124	1.25-2.125"	150	7.5	6	8	75
	155-125	2.125-3.5"	150	7.5	6	8	80
	155-126	3.5-6"	150	7.5	6	8	100

Specifications

Delivered Including plastic wallet

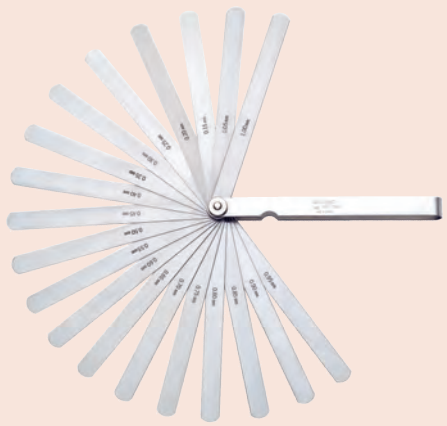
155-905

Series 184 - Thickness Gauge

- Size clearly stamped on each leaf.
- Leaves are easy to remove and can be individually locked open.

Metric

No.	Range	Number of leaves	Leaf length	Accuracy
184-304S	0.05-1.0 mm by 0.05 mm steps	20	150 mm	0.05 up to 0.15 mm : ±0.005 mm 0.20 up to 0.50 mm : ±0.012 mm 0.55 up to 1.00 mm : ±0.020 mm



184-304S

Bore Gauge for Extra Small Holes

Series 526

- A precision bore gauge for quick and accurate measurement of small hole diameters.
- The analogue indicator fitted to this instrument may be replaced by a customer-supplied Digimatic indicator if required.

Specifications

Accuracy	4 µm 6 µm for range 10-18 mm/0.4-0.7"
Repeatability	2 µm
Delivered	In box including plastic cover for Dial Indicator

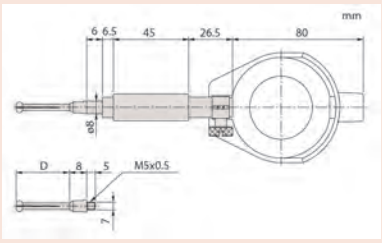
Optional accessories

No.	Description
543-264B	ABSOLUTE Digimatic Indicator with Min Hold function
215-120-10	Quick Stand 110 mm

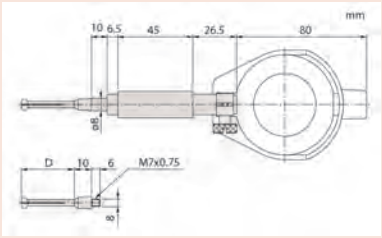
Setting rings are optional accessories. See Series 177 for details.

Quick stand (optional)
No. 215-120-10

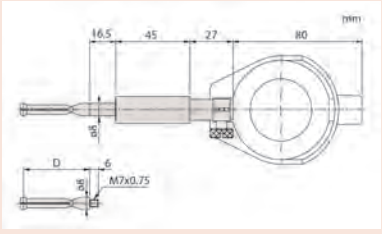
543-264B
(optional)



0,95 - 4 mm



3,7 - 7,3 mm



7 - 18 mm/0.3 - 0.7"

For details on indicators suitable for use with this instrument, refer to Dial Gauges section.

526-127

526-172-1

Plastic cover for
Dial Indicator including

Metric

No.	Range	No. Dial Indicator	Graduation	Number of measuring heads	Measuring Depth (D)
526-173-1	0,95-1,55 mm	2046SB	0,01 mm	5	11,5 mm
526-163-1*	1,5-4 mm	2046SB	0,01 mm	9	17,5-22,5 mm (1)
526-153-1*	3,7-7,3 mm	2046SB	0,01 mm	7	32 mm
526-126	7-10 mm	2046SB	0,01 mm	6	40-56 mm (2)
526-127	10-18 mm	2046SB	0,01 mm	8	62 mm
526-172-1	0,95-1,55 mm	2109SB-10	0,001 mm	5	11,5 mm
526-162-1*	1,5-4 mm	2109SB-10	0,001 mm	9	17,5-22,5 mm (1)
526-152-1*	3,7-7,3 mm	2109SB-10	0,001 mm	7	32 mm
526-124	7-10 mm	2109SB-10	0,001 mm	7	40-56 mm (2)
526-125	10-18 mm	2109SB-10	0,001 mm	8	62 mm

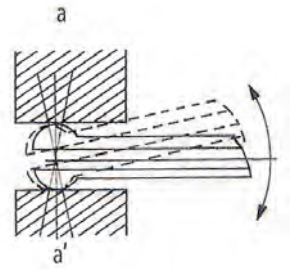
(1) Holes Ø ≤ 2,25 mm : measuring depth 17,5 mm / holes Ø > 2,25 mm : measuring depth 22,5 mm
(2) Holes Ø ≤ 8 mm : measuring depth 40 mm / holes Ø > 8 mm : measuring depth 56 mm

Inch

No.	Range	No. Dial Indicator	Graduation	Number of measuring heads	Measuring Depth (D)
526-122	0.3-0.4"	2923SB-10	0.0001"	6	2.2"
526-123	0.4-0.7"	2923SB-10	0.0001"	8	2.4"
526-119*	0.3-0.4"	2922SB	0.0005"	6	2.2"
526-120*	0.4-0.7"	2922SB	0.0005"	8	2.4"

Bore Gauge for Extra Small Holes

Series 526



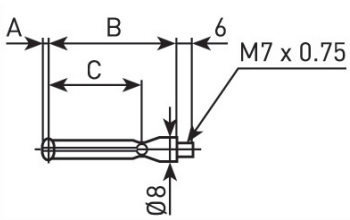
Positioning of Bore Gauges

Bore Gauges for small holes feature contact points with a large curvature so they can be easily positioned for measuring the true diameter (in the direction a - a') of a hole. Bore Gauges (except those for small holes) are designed for easy alignment with the axis of the diameter to be measured.

Replacement contact points for Series 526

Replacement contact points for
526-124 / 125 / 126 / 127

No.	Marking on the measuring head (engraved)	Range	A mm	B mm	C mm
102469	1	7-7,50 mm	1.8	40	29.2
102470	2	7,5-8 mm	1.8	40	29.2
102471	3	8-8,5 mm	1.8	40	29.2
102472	4	8,5-9 mm	1.8	40	29.2
102473	5	9-9,5 mm	1.8	40	29.2
102474	6	9,5-10 mm	1.8	40	29.2
102454	1	10-12 mm	2.1	46	38
102455	2	11-12 mm	2.7	46	38
102456	3	12-13 mm	2.7	46	38
102457	4	13-14 mm	2.7	46	38
102458	5	14-15 mm	2.7	46	38
102459	6	15-16 mm	2.7	46	38
102460	7	16-17 mm	2.7	46	38
102461	8	17-18 mm	2.7	46	38



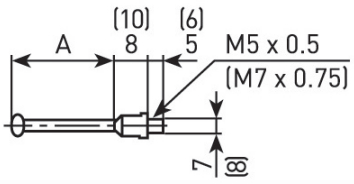
526-124 / 125 / 126 / 127

Replacement contact points for
526-152-1 / 153-1 / 162-1 / 172-1 / 173-1

No.	Marking on the measuring head (engraved)	Range	A mm
201414	1.0	0,95-1,15 mm	11.5
201415	1.1	1,07-1,25 mm	11.5
201416	1.2	1,17-1,35 mm	11.5
201417	1.3	1,27-1,45 mm	11.5
201418	1.4	1,37-1,55 mm	11.5
201419	1.75	1,50-1,90 mm	17.5
201420	2.0	1,80-2,20 mm	17.5
201421	2.25	2,05-2,45 mm	17.5
201422	2.5	2,25-2,75 mm	22.5
201423	2.75	2,50-3 mm	22.5
201424	3.0	2,75-3,25 mm	22.5
201425	3.25	3-3,50 mm	22.5
201426	3.5	3,25-3,75 mm	22.5
201427	3.75	3,50-4 mm	22.5
201428	4.0	3,70-4,30 mm	32
201429	4.5	4,20-4,80 mm	32
201430	5.0	4,70-5,30 mm	32
201431	5.5	5,20-5,80	32
201432	6.0	5,70-6,30 mm	32
201433	6.5	6,20-6,80 mm	32
201434	7.00	6,70-7,30 mm	32

0,95-1,15 mm

17-18 mm



526-162-1 / 163-1
526-172-1 / 173-1
( ) 526-152-1 / 153-1

Bore Gauge for Small Holes

Series 511

- The interchangeable anvils used on this gauge are made of high-grade tool steel.
- The dial indicator is fully protected by a rugged cover.

6 - 10mm

10 - 18.5mm

511-204

Specifications

Accuracy	5 µm
Repeatability	2 µm
Delivered	In box including plastic cover for Dial Indicator

Optional accessories

No.	Description
543-264B	ABSOLUTE Digimatic Indicator with Min Hold function

543-264B (optional)
See ABSOLUTE Digimatic Indicator ID-C for bore gauges later in this section for details.

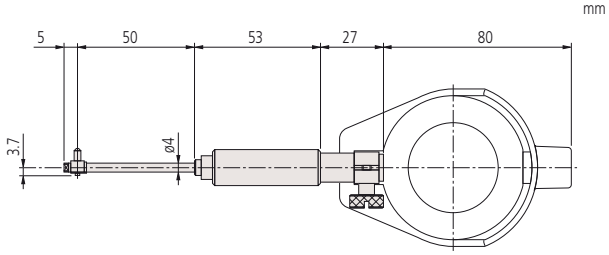
For details on indicators suitable for use with this instrument, refer to the Dial Gauges section.

Metric

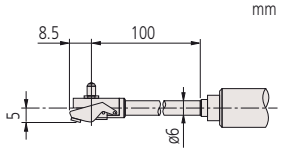
No.	Range	Graduation	No. Dial Indicator	Number of measuring heads	Measuring depth	Mass g
511-211	6-10 mm	0,01 mm	2046SB	9	50 mm	255
511-204	10-18,5 mm	0,01 mm	2046SB	9	100 mm	264
511-210	6-10 mm	0,001 mm	2109SB-10	9	50 mm	255
511-203	10-18,5 mm	0,001 mm	2109SB-10	9	100 mm	268

Inch

No.	Range	Graduation	No. Dial Indicator	Number of measuring heads	Measuring depth	Mass g
511-213*	0.24-0.4"	0.0005"	2922SB	9	2"	260
511-207*	0.4-0.74"	0.0005"	2922SB	9	4"	252
511-212*	0.24-0.4"	0.0001"	2923SB-10	9	2"	260
511-206	0.4-0.74"	0.0001"	2923SB-10	9	4"	278



6-10 mm/0.24-0.4"



10-18,5 mm/0.4-0.74"

Bore Gauge - Standard type

Series 511

- Now offers a longer plunger stroke while maintaining original accuracy. Interchangeable washers 0,5 mm thick (standard accessories) are supplied to enable setting in small steps.
- Contact points are carbide, ensuring high durability and wear resistance.
- Large grip reduces heat transfer from the operator by 50%.

511-713

Example of set

Plastic cover for Dial Indicator including

Metric

No.	Range	Graduation	No. Dial Indicator	Number of measuring heads	Measuring depth	Mass g
511-721	18-35 mm	0,001 mm	2109SB-10	9	100 mm	330
511-722	35-60 mm	0,001 mm	2109SB-10	6	150 mm	400
511-723	50-150 mm	0,001 mm	2109SB-10	11	150 mm	420
511-724	100-160 mm	0,001 mm	2109SB-10	13	150 mm	480
511-725	160-250 mm	0,001 mm	2109SB-10	6	250 mm	850
511-726	250-400 mm	0,001 mm	2109SB-10	5	250 mm	945
511-711	18-35 mm	0,01 mm	2046SB	9	100 mm	330
511-712	35-60 mm	0,01 mm	2046SB	6	150 mm	400
511-713	50-150 mm	0,01 mm	2046SB	11	150 mm	420
511-714	100-160 mm	0,01 mm	2046SB	13	150 mm	480
511-715	160-250 mm	0,01 mm	2046SB	6	250 mm	850
511-716	250-400 mm	0,01 mm	2046SB	5	250 mm	945

Inch

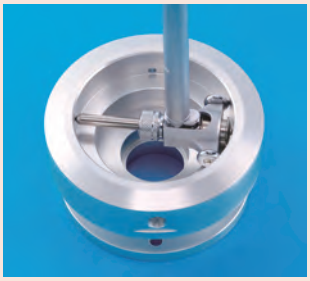
No.	Range	Graduation	No. Dial Indicator	Number of measuring heads	Measuring depth	Mass g
511-751	0.7-1.4"	0.0001"	2923SB-10	9	4"	330
511-752*	1.4-2.5"	0.0001"	2923SB-10	6	6"	400
511-753	2-6"	0.0001"	2923SB-10	11	6"	420
511-754	4-6.5"	0.0001"	2923SB-10	13	6"	480
511-755	6.5-10"	0.0001"	2923SB-10	6	10"	850
511-756	10-16"	0.0001"	2923SB-10	5	10"	945
511-741*	0.7-1.4"	0.0005"	2922SB	9	4"	330
511-742*	1.4-2.5"	0.0005"	2922SB	6	6"	400
511-743	2-6"	0.0005"	2922SB	11	6"	420
511-744*	4-6.5"	0.0005"	2922SB	13	6"	480
511-745	6.5-10"	0.0005"	2922SB	6	10"	850
511-746*	10-16"	0.0005"	2922SB	5	10"	945

Specifications

Accuracy	2 µm/0.00008"
Repeatability	0,5 µm/0.00002"
Delivered	In box including plastic cover for Dial Indicator

Optional accessories

No.	Description
543-264B	ABSOLUTE Digimatic Indicator with Min Hold function
953549	Extension 125 mm for range 18-35 mm/ 0.7-1.4"
953550	Extension 250 mm for range 18-35 mm/ 0.7-1.4"
953551	Extension 500 mm for range 18-35 mm/ 0.7-1.4"
953552	Extension 125 mm for range 35-160mm/ 1.4-6.5"
953553	Extension 250 mm for range 35-160mm/ 1.4-6.5"
953554	Extension 500 mm for range 35-160mm/ 1.4-6.5"
953555	Extension 750 mm for range 35-160mm/ 1.4-6.5"
953556	Extension 1000 mm for range 35-160mm/1.4-6.5"
953557	Extension 125 mm for range 160-800mm/6-32"
953558	Extension 500 mm for range 160-800mm/6-32"
953559	Extension 750 mm for range 160-800mm/6-32"
953560	Extension 1000 mm for range 160-800mm/6-32"
952361	Extension 250 mm for range 160-800mm/6-32"



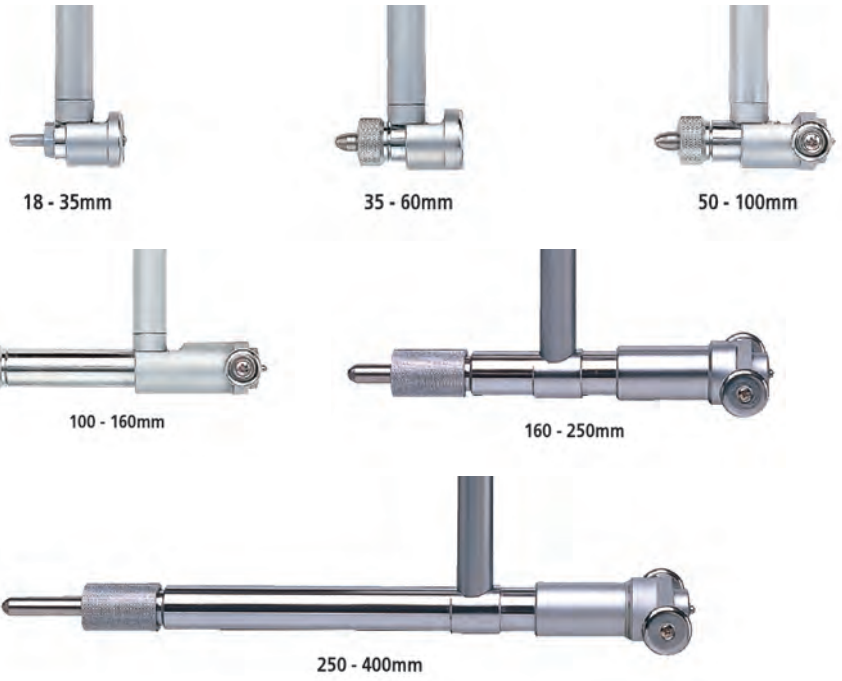
New grip improves accuracy during prolonged use

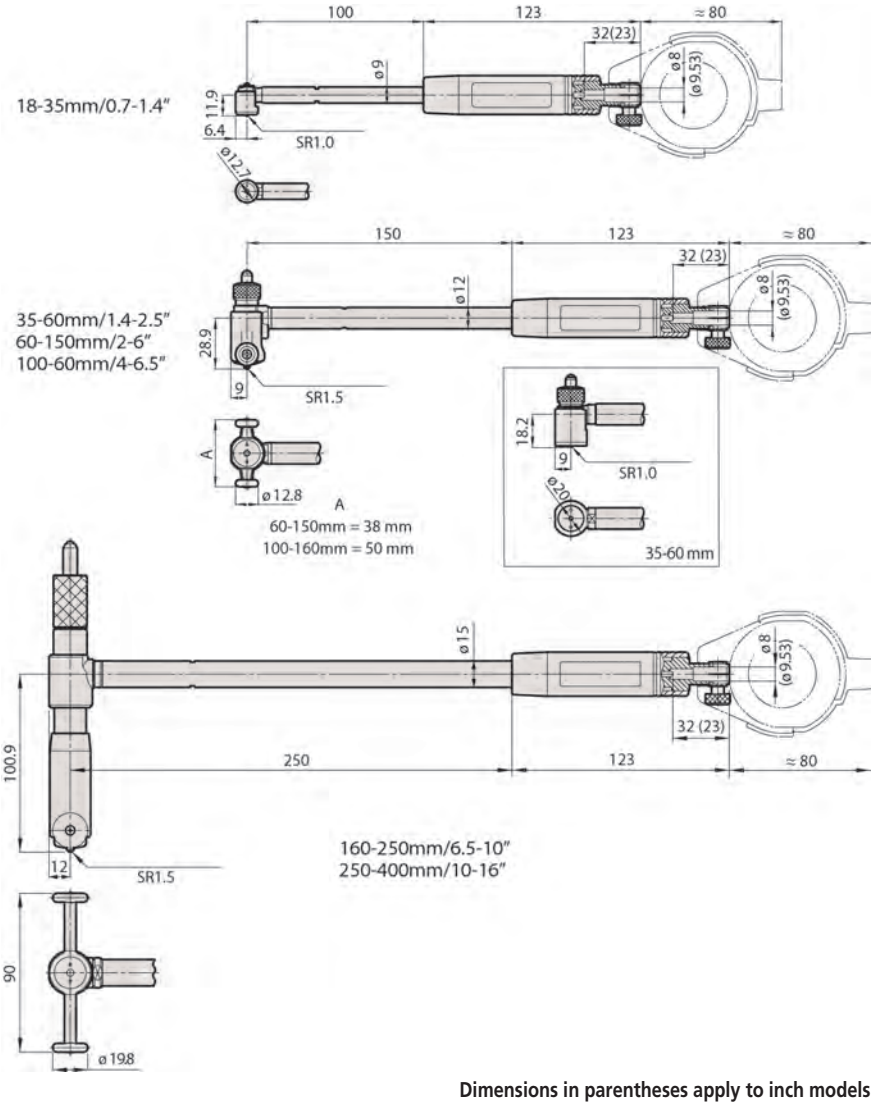
For details on indicators suitable for use with this instrument, refer to the Dial Gauges section.
For a description of replacement contact points, see the Spare Parts section at end of catalogue.

Bore Gauge - Standard type

Series 511

Example of measuring heads with different capacity.





Dimensions in parentheses apply to inch models

Bore Gauge - Standard type

Series 511

Bore gauge sets

511-921

Indicator 2046SB included in the set 511-921

Indicator 2109SB-10 included in the set 511-922

Indicator 543-264B included in the set 511-925

Metric

No.	Range	Graduation	No. Dial Indicator	Measuring depth
511-921	18-150 mm	0,01 mm	2046SB	100/150 mm
511-922	18-150 mm	0,001 mm	2109SB-10	100/150 mm
511-925	18-150 mm	0,001 mm	543-264B	100/150 mm

Inch

No.	Range	Graduation	No. Dial Indicator	Measuring depth
511-931*	0.7-6"	0.0001"	2922SB	4-6"
511-932	0.7-6"	0.0005"	2923SB-10	4-6"
511-935*	0.7-6"	0.0005"	543-266B	4-6"

Indicator 2922SB included in the set 511-931

Indicator 2923SB-10 included in the set 511-932

Specifications

Accuracy	2 µm/0.00008"
Repeatability	0,5 µm/0.00002"

Carbide-tipped anvils in sets

- For measuring range 50-150 mm (11 pcs)
21DZA232A : 50 mm
21DZA232B : 55 mm
21DZA232C : 60 mm
21DZA232D : 65 mm
21DZA232E : 70 mm
21DZA232F : 75 mm
21DZA232G : 80 mm
21DZA232H : 85 mm
21DZA232J : 90 mm
21DZA232L : 95 mm
21DZA232M : 100 mm
- For measuring range 35-60 mm (6 pcs)
21DZA232A : 35 mm
21DZA232B : 40 mm
21DZA232C : 45 mm
21DZA232D : 50 mm
21DZA232E : 55 mm
21DZA232F : 60 mm
- For measuring range 18-35 mm (9 pcs)
21DZA213A : 18 mm
21DZA213B : 20 mm
21DZA213C : 22 mm
21DZA213D : 24 mm
21DZA213E : 26 mm
21DZA213F : 28 mm
21DZA213G : 30 mm
21DZA213H : 32 mm
21DZA213J : 34 mm

Replacement washers in sets

- For measuring range 35-150 mm (4 pcs)
205457 : thickness 0,5 mm
205458 : thickness 1 mm
205459 : thickness 2 mm
205460 : thickness 3 mm
- For measuring range 18-35 mm (2 pcs)
205623 : thickness 0,5 mm
205624 : thickness 1 mm

Included in sets

102148 : spanner
102178 : sub-anvil 50 mm
21DZA000 : protector for indicator

For details on indicators suitable for use with this instrument, refer to the Dial Gauges section.

Bore Gauge with Micrometer Head

Series 511

- Carbide is used for the contact point ensuring high durability and wear resistance.
- Wide measuring range with sub-anvils.

Example of set

Plastic cover for Dial Indicator including

Specifications

Accuracy	2 µm/0.00008"
Repeatability	0,5 µm/0.00002"
Delivered	In box including plastic cover for Dial Indicator

Optional accessories

No.	Description
543-264B	ABSOLUTE Digimatic Indicator with Min Hold function
953552	Extension 125 mm for range 35-160mm/ 1.4-6.5"
953553	Extension 250 mm for range 35-160mm/ 1.4-6.5"
953554	Extension 500 mm for range 35-160mm/ 1.4-6.5"
953555	Extension 750 mm for range 35-160mm/ 1.4-6.5"
953556	Extension 1000 mm for range 35-160mm/1.4-6.5"
953557	Extension 125 mm for range 160-800mm/6-32"
953558	Extension 500 mm for range 160-800mm/6-32"
953559	Extension 750 mm for range 160-800mm/6-32"
953560	Extension 1000 mm for range 160-800mm/6-32"
952361	Extension 250 mm for range 160-800mm/6-32"

543-264B (optional)

For details on indicators suitable for use with this instrument, refer to the Dial Gauges section.
For a description of replacement contact points, see the Spare Parts section at end of catalogue.

Metric

No.	Range	Graduation	No. Dial Indicator	Range of the sub-anvil	Extension Rod	Measuring depth	Mass g
511-823*	60-100 mm	0,001 mm	2109SB-10	10 mm	10, 20 mm	100 mm	430
511-824	100-160 mm	0,001 mm	2109SB-10	13 mm	10, 20, 20 mm	150 mm	480
511-825	150-250 mm	0,001 mm	2109SB-10	25 mm	25, 50 mm	150 mm	850
511-826	250-400 mm	0,001 mm	2109SB-10	50 mm	50, 50 mm	150 mm	950
511-827	400-600 mm	0,001 mm	2109SB-10	50 mm	50, 100 mm	250 mm	1,270
511-828	600-800 mm	0,001 mm	2109SB-10	50 mm	50, 100 mm	250 mm	1,670
511-813	60-100 mm	0,01 mm	2046SB	10 mm	10, 20 mm	100 mm	430
511-814	100-160 mm	0,01 mm	2046SB	13 mm	10, 20, 20 mm	150 mm	480
511-815	150-250 mm	0,01 mm	2046SB	25 mm	25, 50 mm	150 mm	850
511-816	250-400 mm	0,01 mm	2046SB	50 mm	50, 50 mm	150 mm	950
511-817	400-600 mm	0,01 mm	2046SB	50 mm	50, 100 mm	250 mm	1,270
511-818	600-800 mm	0,01 mm	2046SB	50 mm	50, 100 mm	250 mm	1,670

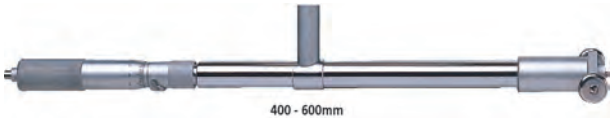
Inch

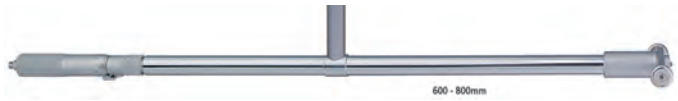
No.	Range	Graduation	No. Dial Indicator	Range of the sub-anvil	Extension Rod	Measuring depth	Mass g
511-853*	2.4-4"	0.0001"	2923SB-10	0.4"	0.4, 0.8"	4"	430
511-854*	4-6.4"	0.0001"	2923SB-10	0.5"	0.4, 0.8"	6"	480
511-855*	6-10"	0.0001"	2923SB-10	0.5"	0.4, 0.8, 2"	6"	850
511-856*	10-16"	0.0001"	2923SB-10	1"	1, 2"	6"	950
511-857*	16-24"	0.0001"	2923SB-10	2"	2, 4"	10"	1,270
511-858*	24-34"	0.0001"	2923SB-10	2"	2, 4"	10"	1,670
511-843*	2.4-4"	0.0005"	2922SB	0.4"	4, 8"	4"	430
511-844*	4-6.4"	0.0005"	2922SB	0.5"	0.4, 0.8"	6"	480
511-845*	6-10"	0.0005"	2922SB	0.5"	0.4, 0.8, 2"	6"	850
511-846*	10-16"	0.0005"	2922SB	1"	1, 2"	6"	950
511-847*	16-24"	0.0005"	2922SB	2"	2, 4"	10"	1,270
511-848*	24-34"	0.0005"	2922SB	2"	2, 4"	10"	1,670

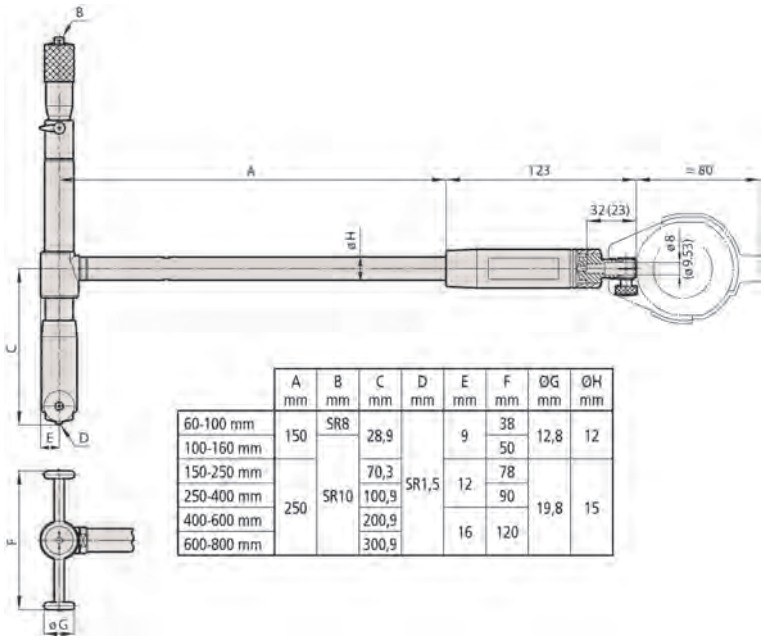
Bore Gauge with Micrometer Head

Series 511

Dimensions







	A mm	B mm	C mm	D mm	E mm	F mm	ØG mm	ØH mm
60-100 mm	150	SR8	28,9	SR1,5	9	38	12,8	12
100-160 mm		SR10				50		
150-250 mm	250		70,3		12	78	19,8	15
250-400 mm			100,9			90		
400-600 mm			200,9		16	120		
600-800 mm			300,9					

Dimensions in parentheses apply to inch models

Extension Rods

Accessories for Bore Gauges

- Extension rods (optional) are available to assist in deep-hole measurement.
- When several extension rods are joined together there is the possibility of small errors arising from the extra joints involved. Therefore it is good practice not to connect more than 2 rods to a bore gauge at any one time. If possible use a single, longer, extension rod rather than several short ones.
- Extension rods can be used up to 1,000 mm.
- If using an extension rod longer than 500 mm, use the bore gauge in the vertical orientation.
- Accuracy and satisfactory operation can be confirmed after connecting an extension rod.

Applicable Range	.125 mm/5"	.250 mm/10"	.500 mm/20"	.750 mm/30"	1000 mm/40"
	No.	**No.**	**No.**	**No.**	**No.**
.18-35 mm/0.7-1.4"	**953549**	**953550**	**953551**	—	—
.35-160 mm/1.4-6"	**953552**	**953553**	**953554**	**953555**	**953556**
150-800 mm/6-32"	**953557**	**952361**	**953558**	**953559**	**953560**

Specifications

Extension Rod Diameter
ø9 mm (range 18-35 mm/0.7-1.4")
ø12 mm (range 35-160 mm/1.4-6.5")
ø15 mm (range 150-800 mm/6-32")

Optional accessories

No.	Description
102148	Wrench for Bore Gauges (range ≤35 mm/1.4")
212556	Wrench for Bore Gauges (range ≥35 mm/1.4")

Bore Gauge - Short Leg Type

Series 511

- Compact and lightweight due to the short length below the grip.
- Interchangeable washers 0,5 mm thick (standard accesories) are supplied to enable setting in small steps.
- Large grip reduces heat transfer from the operator by 50%.

Specifications

Accuracy	2 µm/0.00008"
Repeatability	0,5 µm/0.00002"
Delivered	In box including plastic cover for Dial Indicator

Optional accessories

No.	Description
543-264B	ABSOLUTE Digimatic Indicator with Min Hold function

543-264B
(optional)

For details of indicators suitable for use with this instrument, refer to the Dial Gauges section.
For a description of replacement contact points, see the Spare Parts section at end of catalogue.

Example of set

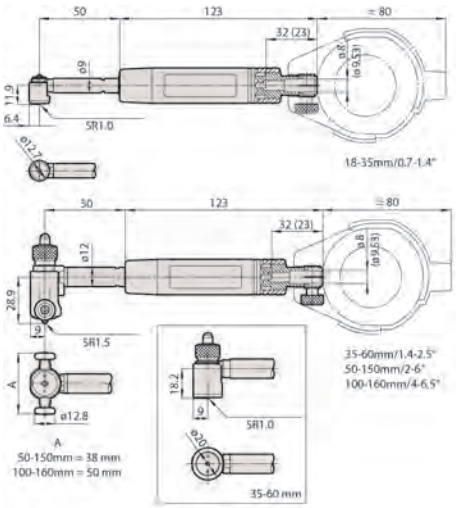
Plastic cover for
Dial Indicator including

Metric

No.	Range	Graduation	No. Dial Indicator	Number of measuring heads	Measuring depth	Mass g
511-771	18-35 mm	0,001 mm	2109SB-10	9	50 mm	320
511-772	35-60 mm	0,001 mm	2109SB-10	6	50 mm	380
511-773	50-150 mm	0,001 mm	2109SB-10	11	50 mm	400
511-774*	100-160 mm	0,001 mm	2109SB-10	13	50 mm	460
511-766	18-35 mm	0,01 mm	2046SB	9	50 mm	320
511-767	35-60 mm	0,01 mm	2046SB	6	50 mm	380
511-768	50-150 mm	0,01 mm	2046SB	11	50 mm	400
511-769*	100-160 mm	0,01 mm	2046SB	13	50 mm	460

Inch

No.	Range	Graduation	No. Dial Indicator	Number of measuring heads	Measuring depth	Mass g
511-791*	0.7-1.4"	0.0001"	2923SB-10	9	2"	320
511-792*	1.4-2.5"	0.0001"	2923SB-10	6	2"	380
511-793*	2-6"	0.0001"	2923SB-10	11	2"	400
511-794*	4-6.5"	0.0001"	2923SB-10	13	2"	460
511-786*	0.7-1.4"	0.0005"	2922SB	9	2"	320
511-787*	1.4-2.5"	0.0005"	2922SB	6	2"	380
511-788*	2-6"	0.0005"	2922SB	11	2"	400
511-789*	4-6.5"	0.0005"	2922SB	13	2"	460



Dimensions in parentheses apply to inch models

Bore Gauge for Blind Holes

Series 511

- Can measure ID close to the bottom of blind holes.

511-412

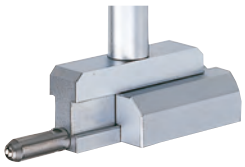
Metric

No.	Range	Graduation	No. Dial Indicator	Measuring depth	Mass g
511-411	15-35 mm	0,01 mm	2046SB	150 mm	735
511-412	35-60 mm	0,01 mm	2046SB	150 mm	760
511-413*	50-100 mm	0,01 mm	2046SB	150 mm	785
511-414	50-150 mm	0,01 mm	2046SB	150 mm	815
511-421	15-35 mm	0,001 mm	2109SB-10	150 mm	740
511-422	35-60 mm	0,001 mm	2109SB-10	150 mm	765
511-423	50-100 mm	0,001 mm	2109SB-10	150 mm	800
511-424	50-150 mm	0,001 mm	2109SB-10	150 mm	820

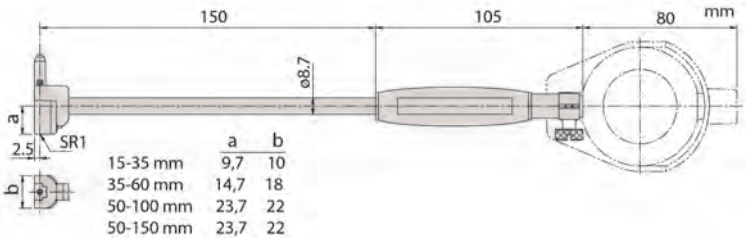
Inch

No.	Range	Graduation	No. Dial Indicator	Measuring depth	Mass g
511-431*	0.6-1.4"	0.0005"	2922SB	6"	730
511-432*	1.4-2.4"	0.0005"	2922SB	6"	755
511-433*	2-4"	0.0005"	2922SB	6"	780
511-434*	2-6"	0.0005"	2922SB	6"	810
511-441*	0.6-1.4"	0.0001"	2923SB-10	6"	740
511-442*	1.4-2.4"	0.0001"	2923SB-10	6"	765
511-443*	2-4"	0.0001"	2923SB-10	6"	800
511-444*	2-6"	0.0001"	2923SB-10	6"	820

15 - 35mm



50 - 100mm, 50 - 150mm



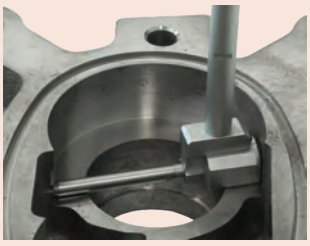
Specifications

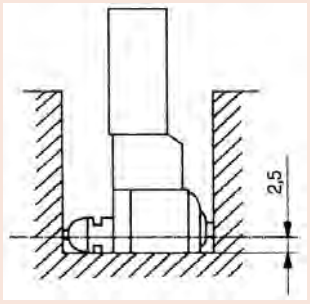
Accuracy	5 µm
Repeatability	2 µm
Delivered	In box including plastic cover for Dial Indicator

Optional accessories

No.	Description
543-264B	ABSOLUTE Digimatic Indicator with Min Hold function

543-264B
(optional)





For blind holes with minimum depth 2,5 mm

For details on indicators suitable for use with this instrument, refer to the Dial Gauges section.
For a description of replacement contact points, see the Spare Parts section at end of catalogue.

ABSOLUTE Digimatic Indicator ID-C for bore gauges

Functions	Series 543
PRESET (x3)	●
DATA/HOLD	●
Minimum Value Hold	●
GO/±NG judgement	●
Digimatic data output	●
ON/OFF	●

Series 543

Exclusively designed for ID measurement applications on bore gauges.

- Features a minimum value holding function that provides easy detection of true hole diameter.
- When using a bore gauge fitted with this indicator the reversal of the reading that occurs at the true diameter point, while oscillating the gauge, is detected and the corresponding value held in display by the Minimum Value Hold function.
- An analogue bar graph enhances usability by providing dial gauge "feel" to a measurement.

Specifications

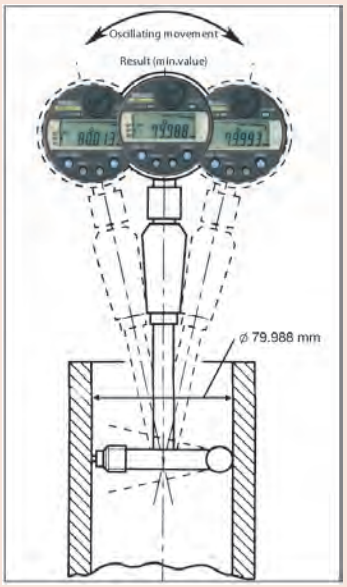
Accuracy	Refer to the list of specifications (excluding quantizing error)
LCD Display	6 digit Rotatable 330°
Scale type	ABSOLUTE electrostatic linear encoder
Max. slider speed	Unlimited
Measuring force	≤ 1,5 N
Stem dia.	8 mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point	Carbide ball, thread M 2.5 x 0.45 mm (ISO/JIS type) or 4-48 UNF (ANSI/AGD type)
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	2 batteries SR-44

Optional accessories

No.	Description
905338	Data cable 1 m
905409	Data cable 2 m
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

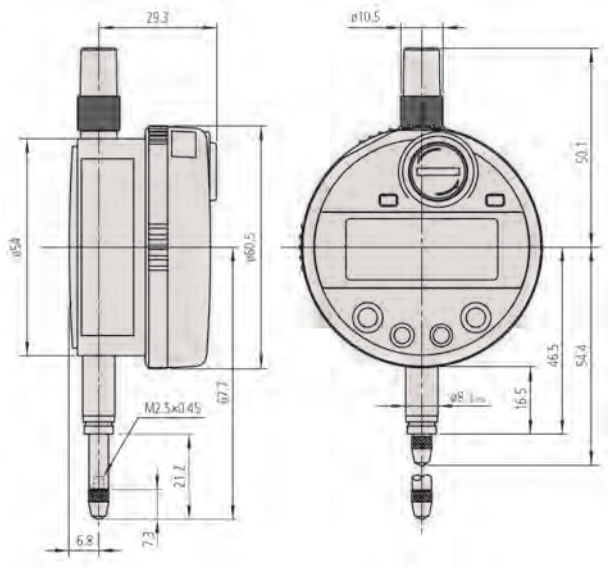
Consumable spares

No.	Description
938882	Battery SR44



Finding the true diameter (at reversal point) with a 2-point bore gauge

543-264B



ISO/JIS Type

Dimensions of the inch (ANSI/AGD Type) indicator partly differ from those of the metric (ISO/JIS Type) indicator.

Metric Plain backplate

No.	Resolution	Range	Accuracy	Mass g
543-264B	0,001 mm	12,7 mm	0,003 mm	160

Metric/Inch Plain backplate

No.	Resolution	Range	Accuracy	Mass g
543-265B*	0,001 mm/0.00005"	12,7 mm/0.5"	0,003 mm/0.0012"	160
543-267B*	0,001 mm/0.0001"	12,7 mm/0.5"	0,003 mm/0.0012"	160

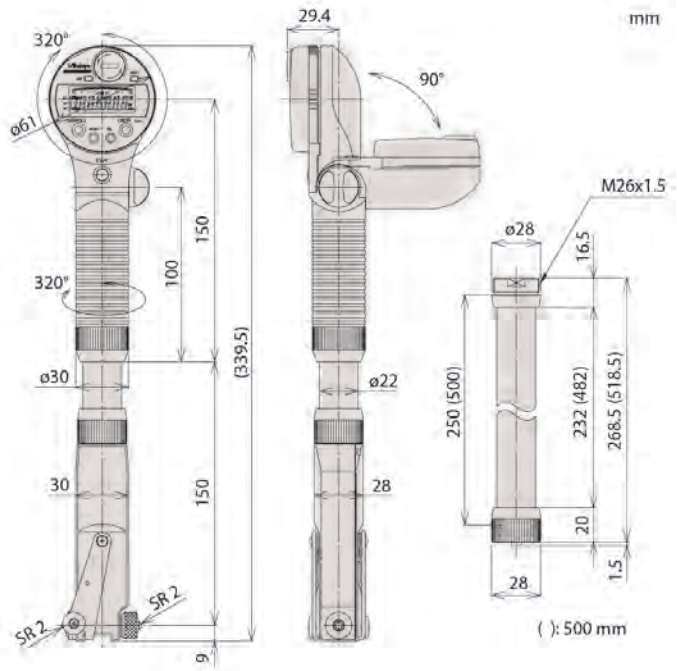
Inch/Metric Plain backplate - ANSI/AGD type

No.	Resolution	Range	Accuracy	Mass g
543-266B*	0,001 mm/0.00005"	12,7 mm/0.5"	0,003 mm/0.0012"	160

ABSOLUTE Digimatic Bore Gauge

Series 511

- Precision bore gauge for easy diameter measurement in deep bores without loss of accuracy. In addition to the digital display an analogue bar graph is provided to enhance usability by providing dial gauge "feel" to a measurement.
- Up to 3 sets of master values and upper/lower tolerance values can be memorised and recalled at the push of a button.
- GO/±NG judgement can be set, and up to 4 extension rods (250 or 500 mm) can be used.



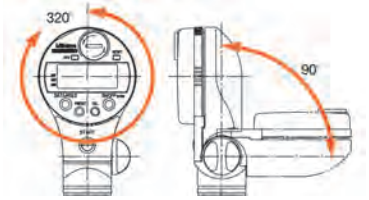
511-501

Metric

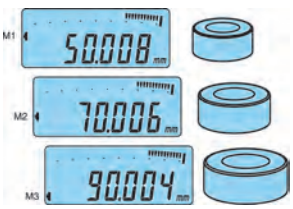
No.	Range	Number of measuring heads	Mass g
511-501	45-100 mm	12	500
511-502	100-160 mm	13	570

Inch

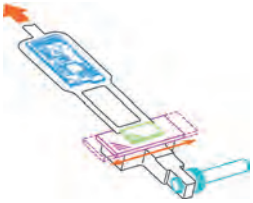
No.	Range	Number of measuring heads	Mass g
511-521	1.8-4"	12	500
511-522*	4-6.4"	13	570



The display can be rotated 320° and turned 90°. The handle can also be rotated 320°.



Up to 3 sets of reference values can be preset, including top/bottom tolerance limits.



Even during measurement with a 2 m extension the accuracy is guaranteed, as measured-value transmission is electronic.

Functions	Series 511
PRESET (x3)	●
DATA/HOLD	●
Minimum Value Hold	●
GO/±NG judgement	●
Digimatic data output	●
ON/OFF	●

Specifications

Accuracy	0,003 mm/0.00012"
Repeatability	±1 digit
Plunger stroke	1,2 mm/0.048"
Resolution	0,001 mm/0.00012"
Measuring Force	≤5 N
Display	LCD 6 digits, Minus symbol, Tolerance judgement display, Analogue display
Sampling Frequency	50 times/sec
Battery	2 batteries SR-44

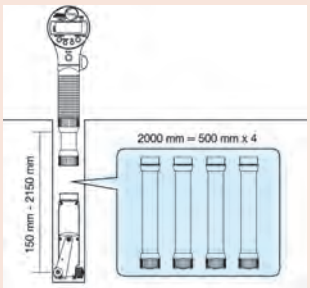
Optional accessories

No.	Description
905338	Data cable 1 m
905409	Data cable 2 m
21DZA081	Extension rod (500 mm)
21DZA089	Extension rod (250 mm)
02AZD790F	Data cable U-Wave
06ADV380F	Data cable 2 m USB

Consumable spares

No.	Description
938882	Battery SR44

The ABSOLUTE Digimatic Bore Gauge detects the minimum value (true diameter) and holds it automatically.



Four extension rods (500 mm each) connected together provide a 2 m extension.

Digimatic HOLTEST Bore Micrometer

Series 468

- Without setting rings or extensions.

Functions	Series 468
Data output	●
ZERO/ABS	●
2 PRESET	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	6-20 mm : ±2 µm / 0.0001" 20-100 mm : ±3 µm / 0.00015" - The given values require close contact of the measuring surfaces.
Resolution	0,001 mm, 0,001 mm / 0.00005" (models up to 4") or 0,001 mm / 0.0001" (models over 5")
Measuring pins	Titanium-coated tungsten carbide
Delivered	Including box, key, 1 battery

Optional accessories

No.	Description
156-101-10	Mount for outside micrometer 100 mm
04AZB157	Holder for outside micrometer
264-504-5D	Digimatic Mini-Processor
Cables	
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Consumable spares

No.	Description
938882	Battery SR44

156-101-10+
264-504-5D

04AZB517

Extension

468-161

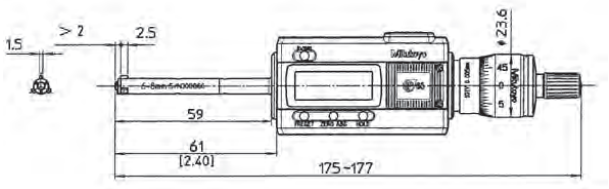
Titanium-coated measuring surfaces for durability

Metric

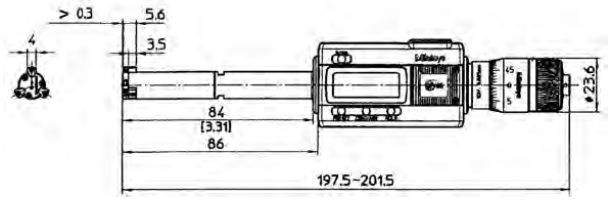
No.	Range	Mass g
468-161	6-8 mm	370
468-162	8-10 mm	370
468-163	10-12 mm	370
468-164	12-16 mm	400
468-165	16-20 mm	400
468-166	20-25 mm	470

Inch/Metric

No.	Range	Mass g
468-261	0.275-0.35"	370
468-262*	0.35-0.425"	370
468-263	0.425-0.5"	370
468-264	0.5-0.65"	400
468-265	0.65-0.8"	400
468-266	0.8-1"	470



468-161/162/163



468-164/165/166

The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Digimatic HOLTEST Bore Micrometer

Series 468

- Without setting rings or extensions.

468-168

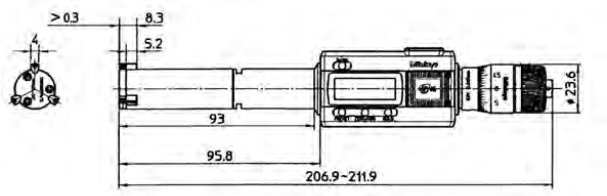
Titanium-coated measuring surfaces for durability

Metric

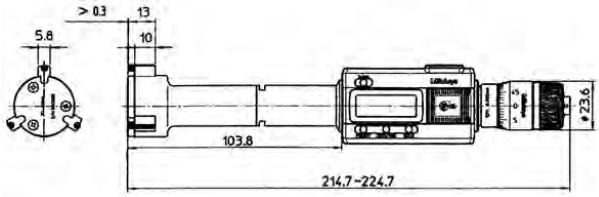
No.	Range	Mass g
468-167	25-30 mm	480
468-168	30-40 mm	480
468-169	40-50 mm	500
468-170	50-63 mm	620

Inch/Metric

No.	Range	Mass g
468-267	1-1.2"	480
468-268	1.2-1.6"	480
468-269	1.6-2"	500
468-270	2-2.5"	620



468-167/168



468-169/170

Functions	Series 468
Data output	●
ZERO/ABS	●
2 PRESET	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	20-100 mm : ±3 µm / 0.00015"
	- The given values require close contact of the measuring surfaces
Resolution	0,001 mm, 0,001 mm / 0.00005" (models up to 4") or 0,001 mm / 0.0001" (models over 5")
Measuring pins	Titanium-coated tungsten carbide
Measuring method	3-point method
Delivered	Including box, key, 1 battery

Optional accessories

No.	Description
156-101-10	Mount for outside micrometer 100 mm
04AZB157	Holder for outside micrometer
264-504-5D	Digimatic Mini-Processor
Cables	
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

156-101-10 + 264-504-5D

04AZB157

Extension

Digimatic HOLTEST Bore Micrometer

Series 468

- Without setting rings or extensions.

Functions	Series 468
Data output	●
ZERO/ABS	●
2 PRESET	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy	20-100 mm : ±3 µm / 0.00015" 100-300 mm : ±5 µm / 0.00025" - The given values require close contact of the measuring surfaces.
Resolution	0,001 mm, 0,001 mm/0.00005" (models up to 4") or 0,001 mm/0.0001" (models over 5")
Measuring pins	Titanium-coated tungsten carbide
Delivered	Including box, key, 1 battery

Optional accessories

No.	Description
156-101-10	Mount for outside micrometer 100 mm
04AZB157	Holder for outside micrometer
264-504-5D	Digimatic Mini-Processor
Cables	
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Extension

156-101-10 + 264-504-5D

04AZB157

468-174

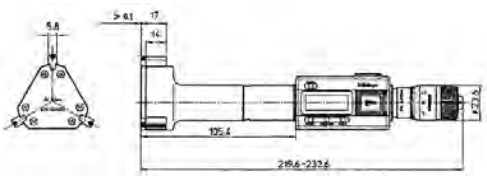
Titanium-coated contact surfaces for durability

Metric

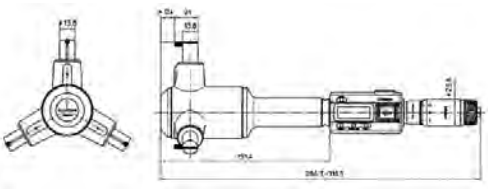
No.	Range	Mass g
468-171	62-75 mm	630
468-172	75-88 mm	960
468-173	87-100 mm	970
468-174	100-125 mm	940
468-175	125-150 mm	1,030
468-176	150-175 mm	1,120
468-177	175-200 mm	1,210
468-178	200-225 mm	1,300
468-179	225-250 mm	1,390
468-180	250-275 mm	1,480
468-181	275-300 mm	1,570

Inch/Metric

No.	Range	Mass g
468-271*	2.5-3"	630
468-272*	3-3.5"	960
468-273	3.5-4"	970
468-274*	4-5"	940
468-275*	5-6"	1,030
468-276*	6-7"	1,120
468-277*	7-8"	1,210
468-278*	8-9"	1,300
468-279*	9-10"	1,390
468-280*	10-11"	1,480
468-281*	11-12"	1,570



468-171/172/173/174



468-175/176/177/178/179/180/181

Digimatic HOLTEST Bore Micrometer

Series 468

- With setting ring and extensions.
- With Digimatic data output.

468-973

Titanium-coated measuring surfaces for durability

Functions	Series 468
Data output	●
ZERO/ABS	●
2 PRESET	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy
6-20 mm : ±2 µm / 0.0001"
20-100 mm : ±3 µm / 0.00015"
100-200 mm : ±5 µm/0.00025"

- The given value require close contact of the measuring surfaces.

Resolution 0,001 mm, 0,001 mm / 0.00005" (models up to 4")
or 0,001 mm / 0.0001" (models over 5")

Delivered Including box, key, 1 battery, setting ring Extension

Optional accessories

No.	Description
156-101-10	Mount for outside micrometer 100 mm
04AZB157	Holder for outside micrometer
Cables	
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Consumable spares

No.	Description
938882	Battery SR44

Metric

Measuring surfaces titanium-coated. Carbide taper and contact points.

No.	Range	Individual ranges	Setting rings included	Length of extensions	Mass g
468-971	6-12 mm	6-8, 8-10, 10-12 mm	ø8 mm (177-125) ø10 mm (177-126)	100 mm	420
468-972	12-20 mm	12-16, 16-20 mm	ø16 mm (177-177)	150 mm	560
468-973	20-50 mm	20-25, 25-30, 30-40, 40-50 mm	ø25 mm (177-139) ø40 mm (177-290)	150 mm	1,170
468-974	50-100 mm	50-63, 62-75, 75-88, 87-100 mm	ø62 mm (177-314) ø87 mm (177-318)	150 mm	2,420
468-975	100-200 mm	100-125, 125-150, 150-175, 175-200 mm	ø125 mm (177-298) ø175 mm (177-302)	150 mm	3,540

Inch/Metric

No.	Range	Individual ranges	Setting rings included	Length of extensions	Mass g
468-976	0.275-0.5"	0.275-0.35", 0.35-0.425", 0.425-0.5"	ø0.35", ø0.425"	100 mm	420
468-977	0.5-0.8"	0.5-0.65", 0.65-0.8"	ø0.35"	150 mm	560
468-978	0.8-2"	0.8-1", 1-1.2", 1.2-1.6", 1.6-2"	ø1", ø1.6"	150 mm	1,170
468-979	2-4"	2-2.5", 2.5-3", 3-3.5", 3.5-4"	ø2.5", ø3.5"	150 mm	2,420
468-980	4-8"	4-5", 5-6", 6-7", 7-8"	ø5", ø7"	150 mm	3,540

Digimatic HOLTEST Bore Micrometer

Functions	Series 468
Data output	●
ZERO/ABS	●
2 PRESET	●
Auto Power OFF	●
HOLD	●
Low voltage alarm	●
Function lock	●

Specifications

Accuracy 6-20 mm : ±2 µm / 0.0001"
20-100 mm : ±3 µm / 0.00015"

- The given values require close contact of the measuring surfaces.

Resolution 0,001 mm, 0,001 mm / 0.00005" (models up to 4")
or 0,001 mm / 0.0001" (models over 5")

Delivered Including box, key, 1 battery, setting ring

Optional accessories

No.	Description
156-101-10	Mount for outside micrometer 100 mm
04AZB157	Holder for outside micrometer
Cables	
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
06ADV380B	Signal cable 2 m USB
02AZD790B	Signal cable U-Wave with data button
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Consumable spares

No.	Description
938882	Battery SR44

Series 468

- With setting rings but without extensions.

468-983

Titanium-coated measuring surfaces for durability

Metric

Measuring surfaces titanium-coated. Carbide taper and contact points.

No.	Range	Individual ranges	Models included	Setting rings included	Mass g
468-981	6-12 mm	6-8, 8-10, 10-12 mm	468-161 / 468-162 / 468-163	ø8 mm (177-125) ø10 mm (177-126)	1,160
468-982	12-25 mm	12-16, 16-20, 20-25 mm	468-164 / 468-165 / 468-166	ø16 mm (177-177) ø20 mm (177-286)	1,290
468-983	25-50 mm	25-30, 30-40, 40-50 mm	468-167 / 468-168 / 468-169	ø30 mm (177-288) ø40 mm (177-290)	1,480
468-984	50-75 mm	50-63, 62-75 mm	468-170 / 468-171	ø62 mm (177-314)	1,270
468-985	75-100 mm	75-88, 87-100 mm	468-172 / 468-173	ø87 mm (177-318)	1,990

Inch/Metric

No.	Range	Individual ranges	Models included	Setting rings included	Mass g
468-986	0.275-0.5"	0.275-0.35", 0.35-0.425", 0.425-0.5"	468-261 / 468-262 / 468-263	ø0.35" (177-179) ø0.425" (177-283)	1,160
468-987	0.5-1"	0.5-0.65", 0.65-0.8", 0.8-1"	468-264 / 468-265 / 468-266	ø0.65" (177-182) ø0.8" (177-287)	1,290
468-988*	1-2"	1-1.2", 1.2-1.6",1.6-2"	468-267 / 468-268 / 468-269	ø1.2" (177-289) ø1.6" (177-291)	1,480
468-989	2-3"	2-2.5", 2.5-3"	468-270 / 468-271	ø2.5" (177-315)	1,270
468-990	3-4"	3-3.5", 3.5-4"	468-272 / 468-273	ø3.5" (177-319)	1,990

HOLTEST Bore Micrometer

Series 368

- Without setting rings or extensions.

368-001

368-168

368-174

Metric

No.	Range	L1 mm	L2 mm	Mass g
368-001	2-2,5 mm	12	93	88
368-002	2,5-3 mm	12	93	88
368-003	3-4 mm	22	93	91
368-004	4-5 mm	22	93	91
368-005	5-6 mm	22	93	91

Metric With titanium-coated measuring surfaces

No.	Range	Depth without extension mm	L mm	a mm	b mm	c mm	Mass g
368-161	6-8 mm	59	59	2		2.5	60
368-162	8-10 mm	59	59	2		2.5	60
368-163	10-12 mm	59	59	2		2.5	60
368-164	12-16 mm	80	82	0.3	5.6	3.5	150
368-165	16-20 mm	80	82	0.3	5.6	3.5	160
368-166	20-25 mm	90	94	0.3	8.3	5.2	260
368-167	25-30 mm	90	94	0.3	8.3	5.2	280
368-168	30-40 mm	98	102	0.3	13	10	290
368-169	40-50 mm	98	102	0.3	13	10	330
368-170	50-63 mm	105	105	0.3	17	14	440
368-171	62-75 mm	105	105	0.3	17	14	450
368-172	75-88 mm	105	105	0.3	17	14	570
368-173	87-100 mm	105	105	0.3	17	14	580
368-174	100-125 mm	158	161	12.4	21	13.8	1,030
368-175	125-150 mm	158	161	12.4	21	13.8	1,120
368-176	150-175 mm	158	161	12.4	21	13.8	1,210
368-177	175-200 mm	158	161	12.4	21	13.8	1,320
368-178	200-225 mm	158	161	12.4	21	13.8	1,430
368-179	225-250 mm	158	161	12.4	21	13.8	1,550
368-180	250-275 mm	158	161	12.4	21	13.8	1,700
368-181	275-300 mm	158	161	12.4	21	13.8	1,870

Specifications

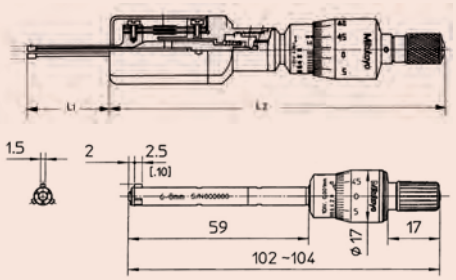
Accuracy	2-20 mm : ±2 µm 20-100 mm : ±3 µm 100-300 mm : ±5 µm
Graduation	Up to 12 mm : 0,001 mm Over 12 mm : 0,005 mm
Scales	Thimble and sleeve satin chrome finish, Up to 12 mm : ø17 mm Over 12 mm : ø23 mm
Measuring spindle	Spindle pitch 0,5 mm
Measuring method	2-6 mm : 2-point 6-300 mm : 3-point
Measuring-surface material	2-6 mm : Carbide 6-300 mm : Titanium coating (1700-2000Hv)
Delivered	Including box, key

Measuring surfaces titanium-coated or carbide. Carbide taper and contact points.

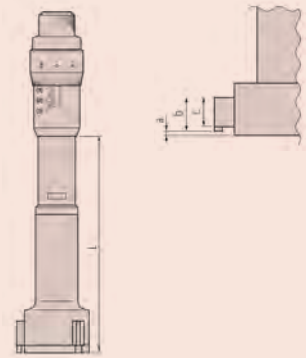
Optional accessories

No.	Description
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Except for 368-001/002/003/004/005



368-161/162/163



HOLTEST Bore Micrometer Inch

Series 368 Inch

Specifications

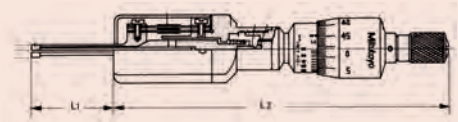
Accuracy	0.08-0.8" : 0.0001" 0.8-4" : 0.00015" 4-12" : 0.00025"
Graduation	Up to 0.5" : 0.0001" Over 0.5" : 0.0002"
Scales	Thimble and sleeve satin chrome finish, Up to 0.5" : ø17 mm Over 0.5" : ø23 mm
Measuring spindle	Spindle pitch 0,5 mm
Measuring method	0.08-0.28": 2-point 0.275-0.5" : 3-point
Measuring-surface material	0.08-0.28" : Carbide 0.275-0.5" : Titanium coating (1700-2000Hv)
Delivered	Including box, key

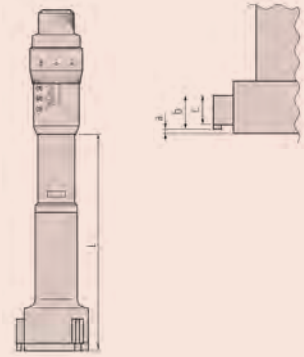
Measuring surfaces titanium-coated or carbide. Carbide taper and contact point.

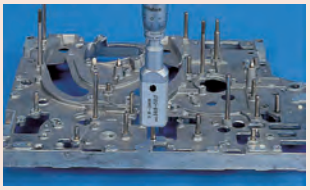
Optional accessories

No.	Description
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Except for 368-021/022/023/024/025/026







Inch

No.	Range	L1 mm	L2 mm	Mass g
368-021*	0.08-0.1"	12	93	88
368-022*	0.1-0.12"	12	93	88
368-023*	0.12-0.16"	22	93	91
368-024*	0.16-0.2"	22	93	91
368-025*	0.2-0.24"	22	93	91
368-026*	0.24-0.28"	22	93	91

Inch

With titanium-coated measuring surfaces

No.	Range	Depth without extension mm	L mm	a mm	b mm	c mm	Mass g
368-261*	0.275-0.35"	59	59	2		2.5	60
368-262*	0.35-0.425"	59	59	2		2.5	60
368-263*	0.425-0.5"	59	59	2		2.5	60
368-264*	0.5-0.65"	80	82	0.3	5.6	3.5	150
368-265*	0.65-0.8"	80	82	0.3	5.6	3.5	160
368-266*	0.8-1"	90	94	0.3	8.3	5.2	260
368-267*	1-1.2"	90	94	0.3	8.3	5.2	280
368-268*	1.2-1.6"	98	102	0.3	13	10	290
368-269*	1.6-2"	98	102	0.3	13	10	330
368-270*	2-2.5"	105	105	0.3	17	14	440
368-271*	2.5-3"	105	105	0.3	17	14	450
368-272*	3-3.5"	105	105	0.3	17	14	570
368-273*	3.5-4"	105	105	0.3	17	14	580
368-274*	4-5"	158	161	12.4	21	13.8	1,030
368-275*	5-6"	158	161	12.4	21	13.8	1,120
368-276*	6-7"	158	161	12.4	21	13.8	1,210
368-277*	7-8"	158	161	12.4	21	13.8	1,320
368-278*	8-9"	158	161	12.4	21	13.8	1,430
368-279*	9-10"	158	161	12.4	21	13.8	1,550
368-280*	10-11"	158	161	12.4	21	13.8	1,700
368-281*	11-12"	158	161	12.4	21	13.8	1,870

HOLTEST Bore Micrometer

Series 368

- Features spring-loaded contacts that allow for precise bore measurements from 2-200 mm. With setting rings and extensions except for models 368-906/07/26/27, which are supplied with setting rings only.

Metric

No.	Range	Individual ranges	Setting rings included	Models included	Mass g
368-906	2-3 mm	2-2.5, 2.5-3 mm	ø2.5 mm (177-208)	368-001 / 368-002	310
368-907	3-6 mm	3-4, 4-5, 5-6 mm	ø4 mm (177-204) ø5 mm (177-205)	368-003 / 368-004 / 368-005	505

Metric With titanium-coated measuring surfaces

No.	Range	Individual ranges	Setting rings included	Models included	Extension rod	Mass g
368-911	6-12 mm	6-8, 8-10, 10-12 mm	ø8 mm (177-125) ø10 mm (177-126)	368-161 / 368-162 / 368-163	952322	180
368-912	12-20 mm	12-16, 16-20 mm	ø16 mm (177-177)	368-164 / 368-165	952621	280
368-913	20-50 mm	20-25, 25-30, 30-40, 40-50 mm	ø25 mm (177-139) ø40 mm (177-290)	368-166 / 368-167 / 368-168 / 368-169	952622	960
368-914	50-100 mm	50-63, 62-75, 75-88, 87-100 mm	ø62 mm (177-314) ø87 mm (177-318)	368-170 / 368-171 / 368-172 / 368-173	952623	2,030
368-915	100-200 mm	100-125, 125-150, 150-175, 175-200 mm	ø125 mm (177-298) ø175 mm (177-302)	368-174 / 368-175 / 368-176 / 368-177	952623	4,680

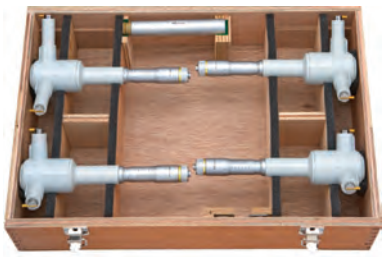
Inch

No.	Range	Individual ranges	Setting rings included	Models included	Mass g
368-926*	0.08-0.12"	0.08-0.1", 0.1-0.12"	ø0.1" (177-209)	368-021 / 368-022	310
368-927	0.12-0.28"	0.12-0.16", 0.16-0.2", 0.2-0.24", 0.24-0.28"	ø0.16 " (177-206) ø0.24" (177-207)	368-023 / 368-024 / 368-025	505

Inch With titanium-coated measuring surfaces

No.	Range	Individual ranges	Setting rings included	Models included	Mass g
368-916*	0.275-0.5"	0.275-0.35", 0.35-0.425", 0.425-0.5"	ø0.35" (177-179) ø0.5" (177-180)	368-261 / 368-262 / 368-263	180
368-917*	0.5-0.8"	0.5-0.65", 0.65-0.8"	ø0.65"	368-264 / 368-265	280
368-918*	0.8-2"	0.8-1", 1-1.2", 1.2-1.6", 1.6-2"	ø1" ø1.6"	368-266 / 368-267 / 368-268 / 368-269	960
368-919*	2-4"	2-2.5", 2.5-3", 3-3.5", 3.5-4"	ø2.5" ø3.5"	368-270 / 368-271 / 368-272 / 368-273	2,030
368-920*	4-8"	4-5", 5-6", 6-7", 7-8"	ø5" ø7"	368-274 / 368-275 / 368-276 / 368-277	4,680

368-914



368-915

Specifications

Accuracy	2-20 mm : 2 µm / 0.0001" 20-100 mm : 3 µm / 0.00015" 100-300 mm : 5 µm / 0.00025"
Graduation	0,001 mm, 0,005 mm (models over 12 mm) 0.0001" or 0.0002" (models over 0.5")
Scales	Thimble and sleeve satin chrome finish, Up to 12 mm : ø17 mm Over 12 mm : ø23 mm
Delivered	Including box, key

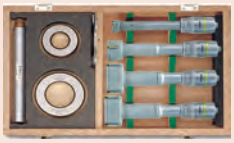
Measuring surfaces titanium-coated.
Carbide taper and contact points.
Except 368-906/07/26/27 carbide.

368-906

368-907

368-911

368-912



368-913

HOLTEST Bore Micrometer

Series 368

- Without setting rings or extensions.

Specifications

Accuracy	12-20 mm : ±2 µm / 0.0001" 20-100 mm : ±3 µm / 0.00015" 100-300 mm : ±5 µm / 0.00025"
Graduation	Up to 12 mm : 0,001 mm/0.0001" Over 12 mm : 0,005 mm/0.0002"
Scales	Thimble and sleeve satin chrome finish, Up to 12 mm : Ø17 mm Over 12 mm : Ø23 mm
Measuring spindle	Spindle pitch 0,5 mm
Measuring method	3-point
Delivered	Including box, key
	Measuring surfaces and tapers, hardened steel. Measuring surfaces and points are carbide-tipped.

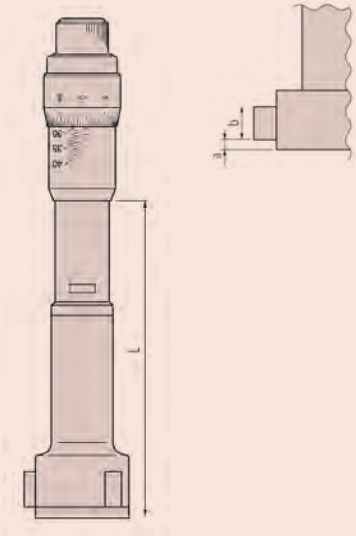
368-769

368-770

Optional accessories

No.	Description
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

368-774



Metric

No.	Range	Depth without extension mm	L mm	a mm	b mm	Mass g
368-764	12-16 mm	80	82	2.6	3.5	150
368-765	16-20 mm	80	82	2.6	3.5	150
368-766	20-25 mm	90	94	3.4	5.2	260
368-767	25-30 mm	90	94	3.4	5.2	280
368-768	30-40 mm	98	102	3.4	10	290
368-769	40-50 mm	98	102	3.4	10	330
368-770	50-63 mm	105	105	3.4	14	440
368-771	62-75 mm	105	105	3.4	14	450
368-772	75-88 mm	105	105	3.4	14	560
368-773	87-100 mm	105	105	3.4	14	570
368-774	100-125 mm	158	161	19.6	13.8	1,020
368-775	125-150 mm	158	161	19.6	13.8	1,110
368-776	150-175 mm	158	161	19.6	13.8	1,200
368-777	175-200 mm	158	161	19.6	13.8	1,300
368-778	200-225 mm	158	161	19.6	13.8	1,420
368-779	225-250 mm	158	161	19.6	13.8	1,540
368-780	250-275 mm	158	161	19.6	13.8	1,690
368-781	275-300 mm	158	161	19.6	13.8	1,860

Inch

No.	Range	Depth without extension mm	L mm	a mm	b mm	Mass g
368-864	0.5-0.65"	80	82	2.6	3.5	150
368-865	0.65-0.8"	80	82	2.6	3.5	150
368-866*	0.8-1"	90	94	3.4	5.2	260
368-867*	1-1.2"	90	94	3.4	5.2	280
368-868*	1.2-1.6"	98	102	3.4	10	290
368-869*	1.6-2"	98	102	3.4	10	330
368-870*	2-2.5"	105	105	3.4	14	440
368-871*	2.5-3"	105	105	3.4	14	450
368-872	3-3.5"	105	105	3.4	14	560
368-873*	3.5-4"	105	105	3.4	14	570
368-874*	4-5"	158	161	19.6	13.8	1,020
368-875	5-6"	158	161	19.6	13.8	1,110
368-876*	6-7"	158	161	19.6	13.8	1,200
368-877*	7-8"	158	161	19.6	13.8	1,300
368-878*	8-9"	158	161	19.6	13.8	1,420
368-879*	9-10"	158	161	19.6	13.8	1,540
368-880*	10-11"	158	161	19.6	13.8	1,690
368-881*	11-12"	158	161	19.6	13.8	1,860

HOLTEST Bore Micrometer

Series 368

- Analogue bore micrometer supplied in sets.
- Supplied with one or two setting rings and an extension to aid in measuring deep holes.

Metric

No.	Range	Individual ranges	Setting rings included	Models included	Extension rod	Mass g
368-991	12-20 mm	12-16, 16-20 mm	ø16 mm (177-177)	368-764 / 368-765	952621	310
368-992	20-50 mm	20-25, 25-30, 30-40, 40-50 mm	ø25 mm (177-139) ø40 mm (177-290)	368-766 / 368-767 368-768 / 368-769	952622	1,160
368-993	50-100 mm	50-63, 62-75, 75-88, 87-100 mm	ø62 mm (177-314) ø87 mm (177-318)	368-770 / 368-771 / 368-772 / 368-773	952623	2,020
368-994	100-200 mm	100-125, 125-150, 150-175, 175-200 mm	ø125 mm (177-298) ø175 mm (177-302)	368-774 / 368-775 / 368-776 / 368-777	952623	4,630

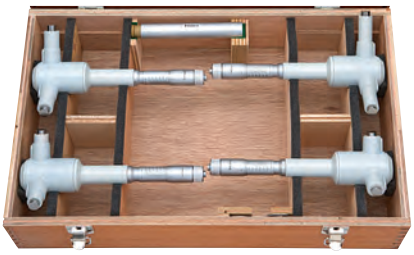
Inch

No.	Range	Individual ranges	Setting rings included	Remarks	Mass g
368-995	0.5-0.8"	0.5-0.65" , 0.65-0.8"	ø0.65"	With extension rod	260
368-996*	0.8-2"	0.8-1" , 1-1.2" , 1.2-1.6" , 1.6-2"	ø1" ø1.6"	With extension rod	960
368-997*	2-4"	2-2.5", 2.5-3", 3-3.5", 3.5-4"	ø2.5" ø3.5"	With extension rod	2,080
368-998*	4-8"	4-5" , 5-6" , 6-7" , 7-8"	ø5" ø7"	With extension rod	4,630

368-991

368-992

368-993



368-994

Specifications

Accuracy	12-20 mm : ±2 µm / 0.0001" 20-100 mm : ±3 µm / 0.00015" 100-300 mm : ±5 µm / 0.00025"
Graduation	Up to 12 mm : 0,001 mm/0.0001" Over 12 mm : 0,005 mm/0.0002"
Scales	Thimble and sleeve satin chrome finish, Up to 12 mm : Ø17 mm Over 12 mm : Ø23 mm
Delivered	Including box, key Measuring surfaces and tapers, hardened steel. Measuring surfaces and points are carbide-tipped.

Optional accessories

No.	Description
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Extension

ABSOLUTE BOREMATIC Bore Micrometer

Functions	Series 568
Data output	●
ZERO / ABS switching	●
PRESET function	●
Imput of tolerance limits	●
ON/OFF	●
DATA/HOLD	●

Series 568

- Features tolerance judgement and data hold functions.
- Provides Digimatic data output.

568-333-10

568-338-10

Titanium-coated measuring surfaces for durability

Specifications

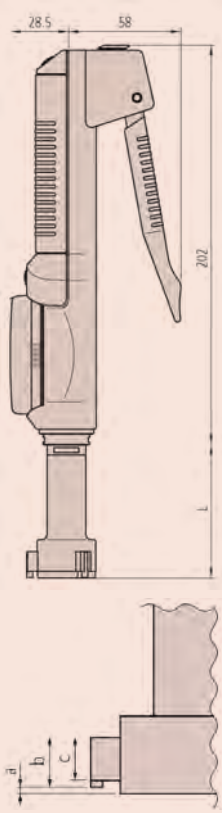
Accuracy	6-20 mm : ±5 µm / 0.00025" 20-125 mm : ±6 µm / 0.0003"
Resolution	0,001 mm or 0,001 mm / 0.00005"
Measuring pins	Titanium coated

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
02AZD790E	Signal cable U-Wave
06ADV380E	Signal cable 2 m USB
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Consumable spares

No.	Description
938882	Battery SR44



Metric

No.	Range	L mm	a mm	b mm	c mm	Mass g
568-331-10	6-8 mm	83	2		2.5	480
568-332-10	8-10 mm	83	2		2.5	485
568-333-10	10-12 mm	83	2		2.5	485
568-334-10	12-16 mm	53	0.3	5.6	3.5	475
568-335-10	16-20 mm	53	0.3	5.6	3.5	480
568-336-10	20-25 mm	59	0.3	8.3	5.2	540
568-337-10	25-30 mm	59	0.3	8.3	5.2	555
568-338-10	30-40 mm	67	0.3	13	10	565
568-339-10	40-50 mm	67	0.3	13	10	610
568-340-10	50-63 mm	75	0.3	17	14	730
568-346-10	50-75 mm	75	0.3	17	14	780
568-341-10*	62-75 mm	75	0.3	17	14	740
568-342-10*	75-88 mm	75	0.3	17	14	790
568-347-10	75-100 mm	75	0.3	17	14	850
568-343-10*	87-100 mm	75	0.3	17	14	800
568-344-10*	100-113 mm	75	0.3	17	14	900
568-348-10	100-125 mm	75	0.3	17	14	970
568-345-10*	112-125 mm	75	0.3	17	14	910

Inch/Metric

No.	Range	L mm	a mm	b mm	c mm	Mass g
568-431-10*	0.275-0.350"	83	2		2.5	480
568-432-10*	0.350-0.425"	83	2		2.5	485
568-433-10	0.425-0.500"	83	2		2.5	485
568-434-10*	0.50-0.65"	53	0.3	5.6	3.5	475
568-435-10*	0.65-0.80"	53	0.3	5.6	3.5	480
568-436-10	0.8-1.0"	59	0.3	8.3	5.2	540
568-437-10	1.0-1.2"	59	0.3	8.3	5.2	555
568-438-10	1.2-1.6"	67	0.3	13	10	565
568-439-10	1.6-2.0"	67	0.3	13	10	610
568-440-10	2.0-2.5"	75	0.3	17	14	730
568-441-10*	2.5-3.0"	75	0.3	17	14	740
568-442-10*	3.0-3.5"	75	0.3	17	14	790
568-443-10	3.5-4.0"	75	0.3	17	14	800
568-444-10*	4.0-4.5"	75	0.3	17	14	900
568-445-10*	4.5-5.0"	75	0.3	17	14	910

ABSOLUTE BOREMATIC Bore Micrometer

Series 568

- Interchangeable head type Digimatic bore micrometer supplied in a set consisting of a display unit and 3 or 4 heads to cover the measuring range.
- Setting rings included but without extensions.

568-971-10

568-973-10

Titanium-coated measuring surfaces for durability

Functions	Series 568
Data output	●
ZERO / ABS switching	●
PRESET function	●
Imput of tolerance limits	●
ON/OFF	●
DATA/HOLD	●

Specifications

Accuracy	0,005 mm (measuring range 6-20 mm) 0,006 mm (measuring range 20-125 mm)
Resolution	0,001 mm or 0,001 mm / 0.00005"
Measuring pins	Titanium coated

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
02AZD790E	Signal cable U-Wave
06ADV380E	Signal cable 2 m USB
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Consumable spares

No.	Description
938882	Battery SR44

Metric

No.	Range	Individual ranges	Setting rings included	Mass g
568-971-10	6-12 mm	6-8 mm 8-10 mm 10-12 mm	Ø8 mm (177-125) Ø10 mm (177-126)	530
568-972-10	12-25 mm	12-16 mm 16-20 mm 20-25 mm	Ø16 mm (177-177) Ø20 mm (177-286)	690
568-973-10	25-50 mm	25-30 mm 30-40 mm 40-50 mm	Ø30 mm (177-288) Ø40 mm (177-290)	930
568-974-10*	50-100 mm	50-63 mm 62-75 mm 75-88 mm 87-100 mm	Ø62 mm (177-314) Ø87 mm (177-318)	1,850
568-975-10	50-100 mm	50-63 mm 75-88 mm (62-75, 87-100 mm) (1)	Ø62 mm (177-314) Ø87 mm (177-318)	1,270

(1) Using interchangeable measuring pins

Inch

No.	Range	Individual ranges	Setting rings included	Mass g
568-976-10	0.275-0.5"	0.275-0.35" 0.35-0.425" 0.425-0.5"	Ø0.35" Ø0.425"	530
568-977-10	0.5-1"	0.5-0.65" 0.65-0.8" 0.8-1"	Ø0.65" (177-182) Ø0.8" (177-287)	690
568-978-10	1-2"	1-1.2" 1.2-1.6" 1.6-2"	Ø1.2" (177-289) Ø1.6" (177-291)	930
568-980-10*	2-4"	2-2.5" 3-3.5" (2.5-3" , 3.5-4") (1)	Ø2.5" (177-315) Ø3.5" (177-319)	1,850
568-979-10*	3-4"	2-2.5" 2.5-3" 3-3.5" 3.5-4"	Ø2.5" (177-315) Ø3.5" (177-319)	1,270

(1) Using interchangeable measuring pins

ABSOLUTE BOREMATIC Bore Micrometer

Functions	Series 568
Data output	●
ZERO / ABS switching	●
PRESET function	●
Imput of tolerance limits	●
ON/OFF	●
DATA/HOLD	●

Specifications

Accuracy	0,005 mm (measuring range 6-20 mm) 0,006 mm (measuring range 20-125 mm)
Resolution	0,001 mm or 0,001 mm / 0.00005"
Measuring pins	Titanium coated

Optional accessories

No.	Description
937387	Signal cable 1 m
965013	Signal cable 2 m
02AZD790E	Signal cable U-Wave
06ADV380E	Signal cable 2 m USB
Extensions	
952322	Extension 100 mm for 6-12 mm
952621	Extension 150 mm for 12-20 mm
952622	Extension 150 mm for 20-50 mm
952623	Extension 150 mm for 50-300 mm

Consumable spares

No.	Description
938882	Battery SR44

Series 568

- Individual Digimatic bore micrometers supplied in sets of 2 or 3 to cover the measuring range.
- Setting rings included but without extensions.

568-981-10

568-983-10

568-986-10

Titanium-coated measuring surfaces for durability

Metric

No.	Range	Individual ranges	Setting rings included	Mass g
568-981-10*	6-12 mm	6-8 mm 8-10 mm 10-12 mm	Ø8 mm Ø10 mm	1,450
568-982-10*	12-25 mm	12-16 mm 16-20 mm 20-25 mm	Ø16 mm (177-177) Ø20 mm (177-286)	1,520
568-983-10*	25-50 mm	25-30 mm 30-40 mm 40-50 mm	Ø30 mm (177-288) Ø40 mm (177-290)	1,750
568-984-10*	50-75 mm	50-63 mm 62-75 mm	Ø62 mm (177-314)	1,490
568-986-10*	50-100 mm	50-63 mm 75-88 mm (62-75, 87-100 mm) (1)	Ø62 mm (177-314) Ø87 mm (177-318)	1,680
568-985-10*	75-100 mm	75-88 mm 87-100 mm	Ø87 mm (177-318)	1,610

(1) Using interchangeable measuring pins

Inch

No.	Range	Individual ranges	Setting rings included	Mass g
568-987-10*	0.275-0.5"	0.275-0.35" 0.35-0.425" 0.425-0.5"	Ø0.35" Ø0.425"	1,450
568-988-10*	0.5-1"	0.5-0.65" 0.65-0.8" 0.8-1"	Ø0.65" (177-182) Ø0.8" (177-287)	1,520
568-989-10*	1-2"	1-1.2" 1.2-1.6" 1.6-2"	Ø1.2" (177-289) Ø1.6" (177-291)	1,750
568-990-10*	2-3"	2-2.5" 2.5-3"	Ø2.5" (177-315)	1,490
568-992-10*	2-4"	2-2.5" 3-3.5" (2.5-3", 3.5-4") (1)	Ø2.5" (177-315) Ø3.5" (177-319)	1,680
568-991-10*	3-4"	3-3.5" 3.5-4"	Ø3.5" (177-319)	1,610

(1) Using interchangeable measuring pins

Measuring heads for series 568

Series 568

1 : Measuring head
2 : Adapter
3 : Display unit Borematic

Display unit 568-012

Metric

No.	Range
04AZB136	6-8 mm
04AZB137	8-10 mm
04AZB138	10-12 mm
04AZA719	12-16 mm
04AZA720	16-20 mm
04AZA728	20-25 mm
04AZA729	25-30 mm
04AZA737	30-40 mm
04AZA738	40-50 mm
04AZA750	50-63 mm
04AZA935	50-75 mm
04AZA751	62-75 mm
04AZA752	75-88 mm
04AZA936	75-100 mm
04AZA753	87-100 mm
04AZA937	100-125 mm

Metric — Display unit Borematic

No.
568-012

Inch/Metric

No.	Range
04AZA721	12,7-16,51 mm/0.5-0.65"
04AZA722	16,51-20,32 mm/0.65-0.8"
04AZA730	20,32-25,4 mm/0.8-1"
04AZA731	25,4-30,48 mm/1-1.2"
04AZA739	30,48-40,64 mm/1.2-1.6"
04AZA740*	40,64-50,8 mm/1.6-2"
04AZA754	50,8-63,5 mm/2-2.5"
04AZA755	63,5-76,2 mm/2.5-3"
04AZA756*	76,2-88,9 mm/3-3.5"
04AZA757	88,9-101,6 mm/3.5-4"

Inch — Display unit Borematic

No.
568-013*

No.	Range
954595	6-12 mm
216556	12-20 mm
216557	20-50 mm
216558	50-125 mm

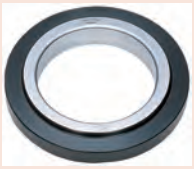
* Note : These adapters are necessary to adapt measuring heads to the Borematic display unit.

Setting Rings

Series 177

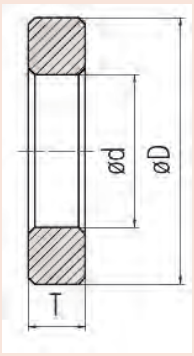
Specifications

Uncertainty in the diameter calibration value	±1.5 µm for ø1-100 mm ±2.5 µm for ø125-300 mm
Cylindricity	1.0 µm for ø1-60 mm 1.5 µm for ø62-90 mm 2.0 µm for ø100-150 mm 2.5 µm for ø175-225 mm 3.0 µm for ø250-300 mm

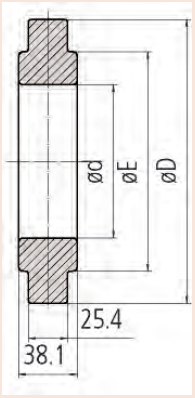


177-300

177-139



Type A



Type B

Standards used for setting inside and bore micrometers. Tolerance from nominal diameter is ±0.01 mm up to 45 mm, and ± 0.02 mm above. The calibrated diameter of each ring is marked on its upper face.

Metric

No.	Nominal size ød	øD mm	øE mm	T mm	Type	Material
177-220	1 mm	20		4	A	Steel
177-222	1.1 mm	20		4	A	Steel
177-225	1.2 mm	20		4	A	Steel
177-227	1.3 mm	20		4	A	Steel
177-230	1.4 mm	20		4	A	Steel
177-236	1.75 mm	25		5	A	Steel
177-239	2 mm	25		5	A	Steel
177-242	2.25 mm	25		5	A	Steel
177-208	2,5 mm	25		7	A	Steel
177-246	2.75 mm	25		7	A	Steel
177-248	3 mm	25		7	A	Steel
177-250	3.25 mm	25		7	A	Steel
177-252	3,5 mm	25		7	A	Steel
177-255	3.75 mm	25		7	A	Steel
177-204	4 mm	25		7	A	Steel
177-418*	4 mm	25		7	A	Ceramic
177-257	4.5 mm	25		7	A	Steel
177-205	5 mm	25		7	A	Steel
177-263	5.5 mm	25		7	A	Steel
177-267	6 mm	25		7	A	Steel
177-420	6 mm	25		7	A	Ceramic
177-271	6.5 mm	25		7	A	Steel
177-275	7 mm	25		7	A	Steel
177-125	8 mm	32		10	A	Steel
177-423	8 mm	32		10	A	Ceramic
177-126	10 mm	32		10	A	Steel
177-424	10 mm	32		10	A	Ceramic
177-284	12 mm	32		10	A	Steel
177-425	12 mm	32		10	A	Ceramic
177-132	14 mm	38		10	A	Steel
177-177	16 mm	45		10	A	Steel
177-427	16 mm	45		10	A	Ceramic
177-133	17 mm	45		10	A	Steel
177-286	20 mm	45		10	A	Steel
177-429	20 mm	45		10	A	Ceramic
177-139	25 mm	53		15	A	Steel
177-430	25 mm	53		15	A	Ceramic
177-288	30 mm	71		15	A	Steel
177-431	30 mm	71		15	A	Ceramic
177-140	35 mm	71		15	A	Steel
177-432	35 mm	71		15	A	Ceramic
177-290	40 mm	71		15	A	Steel
177-433	40 mm	71		15	A	Ceramic
177-178	45 mm	85		15	A	Steel
177-434	45 mm	85		15	A	Ceramic
177-146	50 mm	85		20	A	Steel
177-292	60 mm	112		20	A	Steel
177-314	62 mm	112		20	A	Steel
177-147	70 mm	112		20	A	Steel
177-316	75 mm	125		25	A	Steel
177-294	80 mm	125		25	A	Steel
177-318	87 mm	140		25	A	Steel
177-148	90 mm	140		25	A	Steel
177-296	100 mm	160		25	A	Steel
177-298	125 mm	210	168	38.1	B	Steel
177-300	150 mm	235	187	38.1	B	Steel
177-302	175 mm	260	215	38.1	B	Steel
177-304	200 mm	311	244	38.1	B	Steel
177-306	225 mm	337	264	38.1	B	Steel
177-308	250 mm	362	290	38.1	B	Steel
177-310	275 mm	413	321	38.1	B	Steel
177-312	300 mm	438	340	38.1	B	Steel

Setting Rings

Series 177

Inch

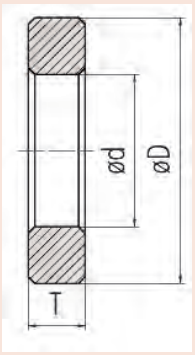
No.	Nominal size ød	øD mm	øE mm	T mm	Type	Material
177-209*	0.10"	0.98		0.28	A	Steel
177-206*	0.16"	0.98		0.28	A	Steel
177-518*	0.16"	0.98		0.28	A	Ceramic
177-207*	0.24"	0.98		0.28	A	Steel
177-520*	0.24"	0.98		0.28	A	Ceramic
177-281*	0.275"	0.98		0.28	A	Steel
177-522*	0.275"	0.98		0.28	A	Ceramic
177-179*	0.35"	1.26		0.39	A	Steel
177-523*	0.35"	1.26		0.39	A	Ceramic
177-283*	0.425"	1.26		0.39	A	Steel
177-524*	0.425"	1.26		0.39	A	Ceramic
177-180*	0.50"	1.26		0.39	A	Steel
177-525*	0.50"	1.26		0.39	A	Ceramic
177-181*	0.60"	1.5		0.39	A	Steel
177-182	0.65"	1.77		0.39	A	Steel
177-527*	0.65"	1.77		0.39	A	Ceramic
177-183*	0.70"	1.77		0.39	A	Steel
177-287	0.80"	1.77		0.39	A	Steel
177-529*	0.80"	1.77		0.39	A	Ceramic
177-184	1.0"	2.09		0.59	A	Steel
177-530*	1.0"	2.09		0.59	A	Ceramic
177-289*	1.2"	2.8		0.59	A	Steel
177-531*	1.2"	2.8		0.59	A	Ceramic
177-185*	1.4"	2.8		0.59	A	Steel
177-532*	1.4"	2.8		0.59	A	Ceramic
177-291*	1.6"	2.8		0.59	A	Steel
177-533*	1.6"	2.8		0.59	A	Ceramic
177-186*	1.8"	3.35		0.59	A	Steel
177-534*	1.8"	3.35		0.59	A	Ceramic
177-187*	2.0"	3.35		0.79	A	Steel
177-293*	2.4"	4.41		0.79	A	Steel
177-315	2.5"	4.41		0.79	A	Steel
177-188*	2.8"	4.41		0.79	A	Steel
177-317*	3.0"	4.92		0.98	A	Steel
177-295*	3.2"	4.92		0.98	A	Steel
177-319	3.5"	5.51		0.98	A	Steel
177-189*	3.6"	5.51		0.98	A	Steel
177-297*	4.0"	6.3		0.98	A	Steel
177-299*	5.0"	8.27	6.61	1.5	B	Steel
177-301*	6.0"	9.25	7.36	1.5	B	Steel
177-303*	7.0"	10.24	8.46	1.5	B	Steel
177-305*	8.0"	12.24	9.61	1.5	B	Steel
177-307*	9.0"	13.27	10.39	1.5	B	Steel
177-309*	10.0"	14.25	11.42	1.5	B	Steel
177-311*	11.0"	16.26	12.64	1.5	B	Steel
177-313*	12.0"	17.24	13.39	1.5	B	Steel

Specifications

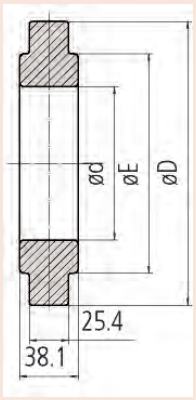
Uncertainty in the diameter calibration value	±0.00006" for ø0.1-4" ±0.00010" for ø5-12"
Cylindricity	0.00004" for ø0.1-2.4" 0.00006" for ø2.5-3.6" 0.00008" for ø4-6" 0.00010" for ø7-9" 0.00012" for ø10-12"

177-424

177-432

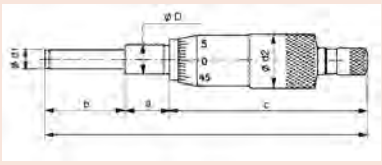


Type A

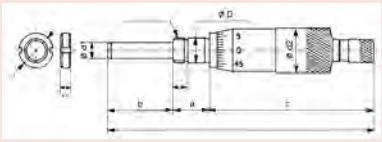


Type B

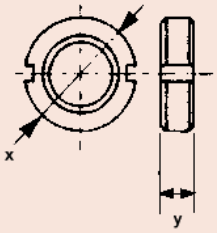
Micrometer Heads



Total length l = a + b + c



Total length l = a + b + c



Micrometer Head Selector

Stem w/ locknut No.	Plain stem No.	Range mm	1)	2)	4)	5)	6)	Grad. mm	øD	ød1	a	b	c	ød2	x	y
110-105.		0-1				●	●	0.001	12	8	12.7	25	62.5	21		
110-106.		0-1				●	●	0.0001	12	8	12.7	25	62.5	21		
110-107.		0-1	●			●	●	0.001	12	8	12.7	25	62.5	21		
110-108.		0-1	●			●	●	0.0001	12	8	12.7	25	62.5	21		
110-101.		0-2,5				●	●	0.001	12	8	12.7	25	70	21		
110-102.		0-2,5				●	●	0.0001	12	8	12.7	25	70	21		
148-216.	148-215.	0-5	●					0.02	3.5	2	5	6.5	20.5	6	5.5	1.8
	148-201.	0-6,5						0.01	6	3.5	6	9	21.7	9.3		
148-203.		0-6,5						0.01	6	3.5	7.5	7.5	21.7	9.3	8	3
148-302.	148-301.	0-6,5						0.01	9.5	6.35	9.5	9	23.5	15	14	4
148-304.	148-303.	0-6,5						0.01	9.5	6.35	9.5	9	23.5	20	14	4
148-306.	148-305.	0-6,5						0.01	9.5	6.35	9.5	9	23.5	29	14	4
148-221.	148-220.	0-6,5		●				0.01	6	3.5	15	9	22.5	9.3		
148-223.	148-222.	0-6,5		●				0.01	6	3.5	17	7.5	22.5	9.3		
148-319.	148-316. 148-318.	0-6,5		●				0.01	9.5	6.35	18.7	9	22.5	15		
148-207.	148-205.	0-6,5	●					0.01	6	3.5	7.5	7.5	21.7	9.3	8	3
148-323.	148-322.	0-6,5	●					0.01	9.5	6.35	9.5	9	23.5	15	14	4
148-143.	148-142.	0-6,5	●					0.002	9.5	5	9.5	14	31.5	13	14	4
148-343.	148-342.	0-6,5	●					0.002	9.5	6.35	9.5	9	23.5	15	14	4
148-243.	148-242.	0-6,5	●					0.002	6	3.5	6	9	21.9	9.3	8	3
148-317.		0-6.5		●				0.01	9.5	6.35	18.7	9	22.5	15		
152-283.		0-10					●	0.002	12	6.35	26	19	53	49	16	4
110-502.		0-13	●			●		0.0005	9.5	5	15	15	67.5	13		
148-133. 148-802.	148-132. 148-801.	0-13	●					0.01	9.5	5	9.5	17.5	31.5	13	14	4
	148-853.	0-13	●					0.01	9.5	5	9.5	15.5	37	13		
148-804.	148-803.	0-13	●	●				0.01	9.5	5	9.5	17.5	40	13	14	4
148-854.		0-13	●	●				0.01	9.5	5	9.5	15.5	45.5	13	14	4
	148-104.	0-13						0.001	9.5	5	9.5	17.5	31.5	13	14	4
148-103.		0-13						0.01	9.5	5	9.5	17.5	31.5	13	14	4
148-508.	148-503.	0-13						0.01	9.5	5	9.5	15.5	37	13	14	4
	148-513.	0-13						0.01	9.5	5	9.5	15.5	37	13		
148-308.	148-307.	0-13						0.01	9.5	6.35	9.5	15.5	30	15	14	4
148-310.	148-309.	0-13						0.01	9.5	6.35	9.5	15.5	30	20	14	4
148-312.	148-311.	0-13						0.01	9.5	6.35	9.5	15.5	30	29	14	4
148-120.	148-121.	0-13		●				0.01	9.5	5	9.5	17.5	40.1	13	14	4
148-504.	148-506.	0-13		●				0.01	9.5	5	9.5	15.5	45.6	13	14	4
148-151.	148-150.	0-13		●				9.5	12	5	18.7	17.5	31	13		
148-153.	148-152.	0-13		●			●	9.5	12	5	18.7	17.5	31	13		
149-131.	149-132.	0-15					●	0.01	9.5	6.35	15	17	43.5	15	14	4
	152-101.	0-15					●	0.01	12	8	16	18	60	30		
	153-101.	0-15				●	●	0.01	9.5	6.35	10	17	58.5	15.3		
149-184.	149-183.	0-15		●			●	0.01	9.5	6.35	9.5	17	49	15	14	4
149-802.	149-801.	0-15	●				●	0.01	9.5	6.35	15	17	43.5	15	14	4
150-189.	150-190.	0-25			●		●	0.001	10	6.35	15	27	67	18	14	4
151-221.	151-222.	0-25			●		●	0.001	12	8	29	34	70	21	16	4
150-191.	150-192.	0-25			●		●	0.01	10	6.35	15	27	67	18	14	4
151-223.	151-224.	0-25			●		●	0.01	12	8	29	34	70	21	16	4
150-195.	150-196.	0-25					●	0.01	10	6.35	15	27	54	18	14	4
	152-102.	0-25					●	0.01	12	8	16	28	69	30		
	152-332.	0-25					●	0.002	12	8	29	34	66	49		

1) Spherical measuring surface spindle 2) With spindle lock 4) With ratchet 5) With non-rotating 6) Carbide tipped

x and y apply to heads with clamp nut

Mitutoyo

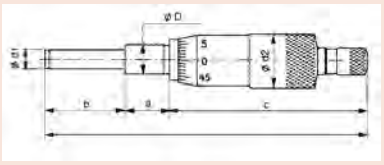
Micrometer Heads

Micrometer Head Selector

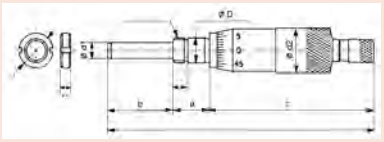
Stem w/ locknut No.	Plain stem No.	Range mm	1)	2)	3)	4)	5)	6)	7)	Grad. mm	øD	ød1	a	b	c	ød2	x	y
150-220.	**150-219.**	0-25						●		0.01	10	6.35	15	65	53.5	18	14	4
	153-203.	0-25					●	●		0.01	12	8	10	27	70.5	18		
	153-204.	0-25					●	●		0.001	12	8	10	27	71	18		
	153-301.	0-25					●	●		0.0005	18	8		28.6	31.8	85.5		
	153-201.	0-25				●	●	●		0.01	12	8	10	27	87.5	18		
	153-202.	0-25				●	●	●		0.001	12	8	10	27	88	18		
150-210.	**150-209.**	0-25		●		●		●		0.01	10	6.35	15	27	78.5	18	14	4
	250-301.	0-25		●		●		●		0.01	10	6.35	15	27	94	18		
350-252-10.	**350-251-10.**	0-25		●		●		●		0.001	10	6.35	15	27	114.5	18	14	4
350-272-20.	**350-271-10.**	0-25		●		●		●		0.001	12	6.35	16	27	113.5	18		
350-282-10.	**350-281-10.**	0-25		●		●		●		0.001	12	6.35	15	27	114.5	18	16	4
150-212.	**150-211.**	0-25		●				●		0.01	10	6.35	15	27	65	18	14	4
151-226.	**151-225.**	0-25		●				●		0.01	12	8	19	34.5	66	21	16	4
350-261-10.		0-25		●					●	0.001	12	6.35	14	38.7	101	18		
150-802.	**150-801.**	0-25	●			●		●		0.01	10	6.35	15	27	67	18	14	4
350-254-10.	**350-253-10.**	0-25	●	●		●				0.001	10	6.35	15	27	113.5	18	14	4
350-274-20.	**350-273-10.**	0-25	●	●		●				0.001	12	6.35	16	27	113.5	18	16	4
350-284-10.	**350-283-10.**	0-25	●	●		●				0.001	12	6.35	15	27	114.5	18	16	4
	152-348.	0-25-0			●			●		0.002	12	8	29	34	66	49		
	152-401.	0-25-0	●					●		0.001	18	8	14	41.7	84.3	49		
151-255.	**151-256.**	0-50				●		●		0.01	12	8	29	59	103	21	16	4
151-259.	**151-260.**	0-50						●		0.01	12	8	29	59	90	21	16	4
	152-103.	0-50						●		0.01	12	8	16	53	94	30		
	164-161.	0-50					●	●		0.001	18	11	14	65	143	49		
	197-101.	0-50					●	●		0.005	18	8	14	65	64	49		
	152-380.	0-50-0			●			●		0.002	12	8	29	34	66	49		
148-211.	**148-209.**	6,5-0			●					0.01	6	3.5	7.5	7.5	21.7	9	8	3
148-822.	**148-821.**	13-0			●					0.01	9.5	5	9.5	17.5	31.5	13	14	4
	148-863.	13-0			●					0.01	9.5	5	9.5	15.5	37	13		
148-824.	**148-823.**	13-0		●	●					0.01	9.5	5	9.5	17.5	40.1	13	16	4
	148-864.	13-0	●	●			●			0.01	9.5	5	9.5	15.5	45.6	13		
149-822.	**149-821.**	15-0			●			●		0.01	9.5	6.35	15	17	43.5	15	16	4
150-822.	**150-821.**	25-0			●	●		●		0.01	10	6.35	15	27	84	18	16	4

1) Spherical measuring surface 2) With spindle lock 3) Reverse reading 4) With ratchet 5) With non-rotating spindle 6) Carbide tipped 7) Non-rotating measuring surface

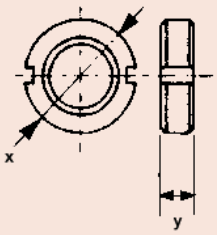
x and y apply to heads with clamp nut

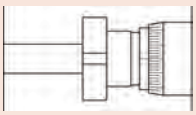


Total length l = a + b + c

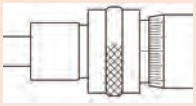


Total length l = a + b + c

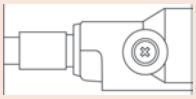




With clamp nut



With spindle lock



With spindle lock 250-301 / 350-2XX

With spherical measuring surfaces

With reverse reading

Digital Micrometer Heads

Functions	Series 164
Data output	●
ZERO/ABS	●
PRESET	●
Measurement direction switchable	●

Specifications

Accuracy	Refer to the list of specifications (excluding quantizing error)
Resolution	0,001 mm
Measuring surfaces	Carbide tipped
Power supply	2 batteries SR-44

Optional accessories

No.	Description
959149	Signal cable 1 m with data switch
959150	Signal cable 2 m with data switch
06ADV380C	Signal cable 2 m USB
02AZD790C	Signal cable for U-Wave with data switch

Consumable spares

No.	Description
938882	Battery SR44

Series 164

- Display and operating unit may be rotated by 330° for convenience.
- For integration into machinery and measuring instruments.
- Digital micrometer head with non-rotating spindle.
- Accurate and error free measurement.

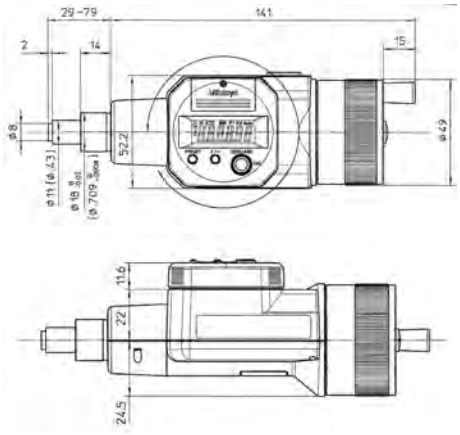
164-163

Metric

No.	Range	Accuracy	Stem dia.	Remarks	Mass g
164-163	0-50 mm	±3 µm	18 mm	Non-rotating spindle	500

Inch/Metric

No.	Range	Accuracy	Stem dia.	Remarks	Mass g
164-164	0-2"	±3 µm	18 mm	Non-rotating spindle	500



164-163

Digital Micrometer Heads

Series 350

- For integration into machinery and measuring instruments.
- Direct reading of clearly displayed measurement values in 0,001 mm steps.
- Accurate and error-free measuring.
- With rotating spindle.

350-251-10

Functions	Series 350
Data output	●
ZERO/ABS	●
2 X PRESET	●
Auto Power OFF	●
HOLD	●
Function lock	●

Specifications

Accuracy	±2 µm
Resolution	0,001 mm or 0,001 mm/0.00005"
Pitch	0,5 mm/rev.
Delivered	With battery SR-44

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

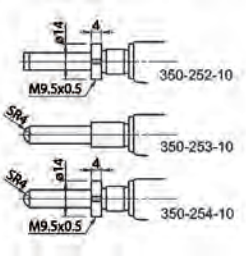
No.	Description
938882	Battery SR44

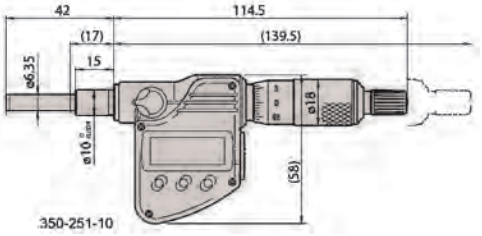
Metric

No.	Range	Stem dia.	Stem	Spindle end	Mass g
350-251-10	0-25 mm	10 mm	Plain	Flat (carbide tip)	230
350-252-10	0-25 mm	10 mm	w/ clamp nut	Flat (carbide tip)	230
350-253-10	0-25 mm	10 mm	Plain	Spherical (SR4)	230
350-254-10	0-25 mm	10 mm	w/ clamp nut	Spherical (SR4)	230

Inch/Metric

No.	Range	Stem dia.	Stem	Spindle end	Remarks	Mass g
350-351-10	0-25 mm/0-1"	10 mm/0.375"	Plain	Flat (carbide tip)		230
350-352-10	0-25 mm/0-1"	10 mm/0.375"	w/ clamp nut	Flat (carbide tip)		230
350-353-10*	0-25 mm/0-1"	10 mm/0.375"	Plain	Spherical (SR4)		230
350-354-10*	0-25 mm/0-1"	10 mm/0.375"	w/ clamp nut	Spherical (SR4)		230
350-357-10*	0-25 mm/0-1"	10 mm/0.375"	Plain	Spherical (SR4)	w/ non-rotating device	300





The prices listed are suggested retail prices (valid until 31st May 2012). Inch products and combined inch/metric products are generally intended for sale to the United Kingdom only. All products are intended to be sold to commercial customers. Therefore VAT is not included.
* Please contact Mitutoyo for more information on delivery times.

Digital Micrometer Heads

Functions	Series 350
Data output	●
ZERO/ABS	●
2 X PRESET	●
Auto Power OFF	●
HOLD	●
Function lock	●

Specifications

Accuracy	±2 µm/0.0001"
Resolution	0,001 mm or 0,001 mm/0.00005"
Pitch	0,5 mm/rev.
Delivered	With battery SR-44

Optional accessories

No.	Description
05CZA662	Signal cable 1 m with data button
05CZA663	Signal cable 2 m with data button
02AZD790B	Signal cable U-Wave with data button
06ADV380B	Signal cable 2 m USB

Consumable spares

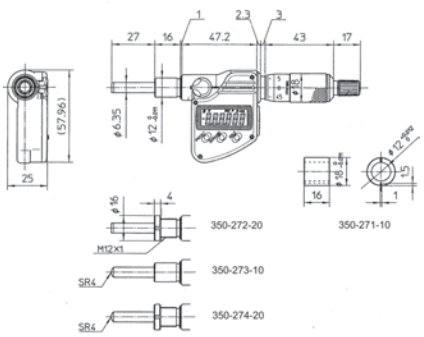
No.	Description
305307	Ring 12/18 mm
938882	Battery SR44

Series 350

IP65

- For integration into machinery and measuring instruments.
- Direct reading of clearly displayed measurement values in 0,001 mm steps.
- Accurate and error-free measuring.

350-271-10
IP65

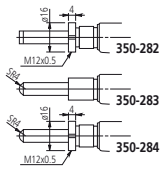


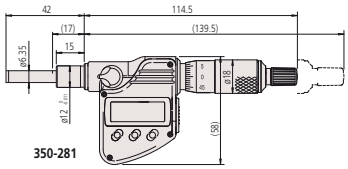
Metric

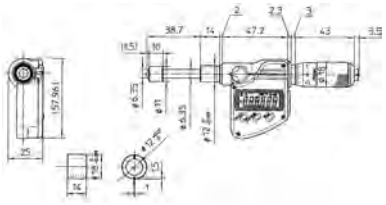
No.	Range	Stem dia.	Stem	Spindle end	Remarks	Mass g
350-271-10	0-25 mm	12 mm/18 mm	Plain	Flat (carbide tip)	IP65	300
350-272-20	0-25 mm	12 mm	w/ clamp nut	Flat (carbide tip)	-	300
350-273-10	0-25 mm	12 mm/18 mm	Plain	Spherical (SR4)	IP65	300
350-274-20	0-25 mm	12 mm	w/ clamp nut	Spherical (SR4)	-	300
350-281-10	0-25 mm	12 mm	Plain	Flat (carbide tip)	IP65	230
350-282-10	0-25 mm	12 mm	w/ clamp nut	Flat (carbide tip)	IP65	230
350-283-10*	0-25 mm	12 mm	Plain	Spherical (SR4)	IP65	230
350-284-10*	0-25 mm	12 mm	w/ clamp nut	Spherical (SR4)	IP65	230
350-261-10	0-25 mm	12 mm	Plain	Flat	IP65, w/ non-rotating device	305

Inch/Metric

No.	Range	Stem dia.	Stem	Spindle end	Remarks	Mass g
350-381-10*	0-25 mm/0-1"	12 mm/0.5"	Plain	Flat (carbide tip)	IP65	230
350-382-10	0-25 mm/0-1"	12 mm/0.5"	w/ clamp nut	Flat (carbide tip)	IP65	230
350-383-10*	0-25 mm/0-1"	12 mm/0.5"	Plain	Spherical (SR4)	IP65	230
350-384-10*	0-25 mm/0-1"	12 mm/0.5"	w/ clamp nut	Spherical (SR4)	IP65	230
350-361-10*	0-25 mm/0-1"	12 mm/0.5"	Plain	Flat	IP65, w/ non-rotating device	305







350-261-10

Micrometer Heads with counter

Series 250 - Digit counter type

Micrometer head with mechanical counter and ratchet.

250-301

Specifications

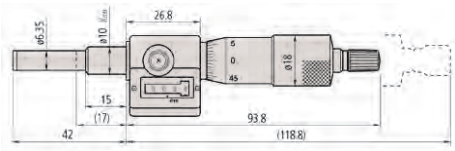
Graduation	0,01 mm or 0.0001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped
Measuring spindle	With spindle lock

Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
250-301	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	165

Inch

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
250-312	0-1"	±2 µm	0.375"	Plain	Flat (carbide tip)	165



250-301

Micro Jack

Series 7

- Used for accurate leveling of machines, surface plates, and other precision instruments.
- Easy adjustment under heavy load.

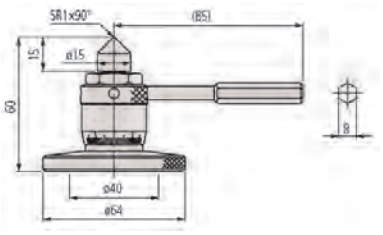
Specifications

Graduation	0,01mm

7850

Metric

No.	Range	Remarks	Mass g
7850	60-75 mm	Max. load : 400kg	400



7850

Micrometer Heads 5 or 6,5 mm

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,002 mm or 0,004 mm (**148-244, 148-245**)
Spindle pitch	0,1 mm
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Tool steel

Series 148 - Very fine spindle feed of 0,1 mm/rev

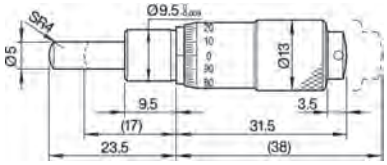
- Small size micrometer heads with extremely fine pitch of 0,1 mm making them suited to fine adjustment applications in scientific apparatus.

148-243

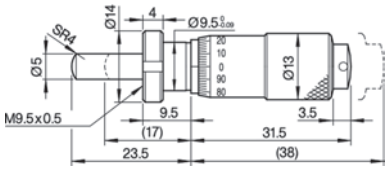
148-143

Metric

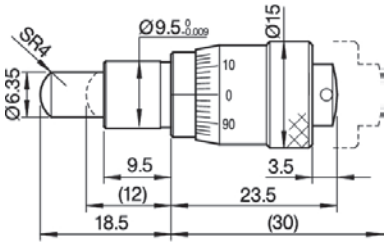
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
148-244*	0-5 mm	±5 µm	3,5 mm	Plain	Spherical (SR1.5)	4
148-245*	0-5 mm	±5 µm	3,5 mm	w/ clamp nut	Spherical (SR1.5)	5
148-142	0-6,5 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	31
148-143	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	34
148-342	0-6,5 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	29
148-343	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	31
148-242	0-6,5 mm	±5 µm	6 mm	Plain	Spherical (SR3)	10
148-243	0-6,5 mm	±5 µm	6 mm	w/ clamp nut	Spherical (SR3)	10



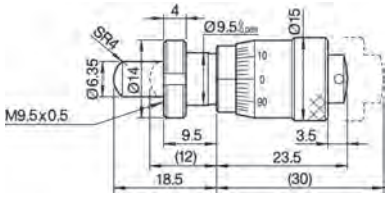
148-142



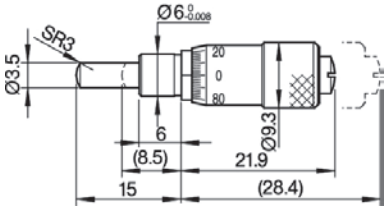
148-143



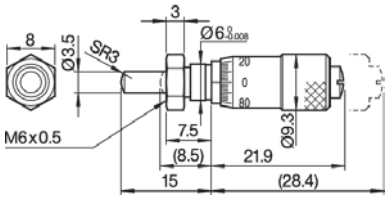
148-342



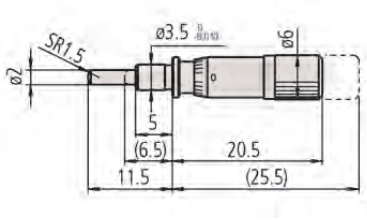
148-343



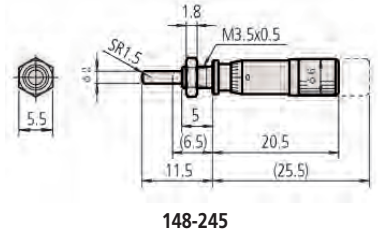
148-242



148-243



148-244



148-245

Micrometer Heads 5 or 6,5 mm

Series 148 - Ultra small

- Miniature micrometer heads for ease of incorporation into machines.

148-201

148-215

Specifications

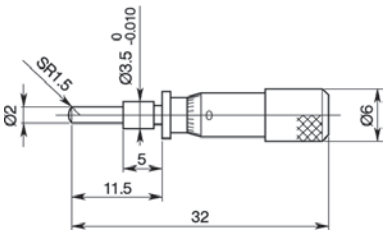
Accuracy	Refer to the list of specifications
Graduation	0,02 mm (148-215, 148-216), 0,01 mm or 0.001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Tool steel

Metric

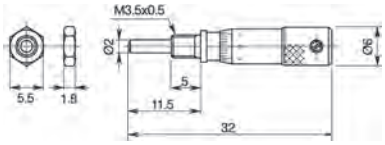
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
148-215	0-5 mm	±5 µm	3,5 mm	Plain	Spherical (SR1.5)	-	4
148-216	0-5 mm	±5 µm	3,5 mm	w/ clamp nut	Spherical (SR1.5)	-	5
148-201	0-6,5 mm	±5 µm	6 mm	Plain	Flat	-	10
148-203	0-6,5 mm	±5 µm	6 mm	w/ clamp nut	Flat	-	10
148-205	0-6,5 mm	±5 µm	6 mm	Plain	Spherical (SR3)	-	10
148-207	0-6,5 mm	±5 µm	6 mm	w/ clamp nut	Spherical (SR3)	-	10
148-209	6,5-0 mm	±5 µm	6 mm	Plain	Flat	Reverse reading	10
148-211	6,5-0 mm	±5 µm	6 mm	w/ clamp nut	Flat	Reverse reading	10

Inch

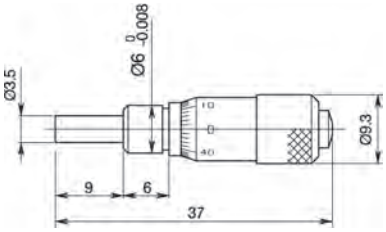
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
148-217*	0-0.2"	±0.00025"	0.156"	Plain	Spherical (SR1.5)	-	4
148-218*	0-0.2"	±0.00025"	0.156"	w/ clamp nut	Spherical (SR1.5)	-	5
148-202*	0-0.25"	±0.00025"	0.25"	Plain	Flat	-	10
148-204*	0-0.25"	±0.00025"	0.25"	w/ clamp nut	Flat	-	10
148-206*	0-0.25"	±0.00025"	0.25"	Plain	Spherical (SR3)	-	10
148-208*	0-0.25"	±0.00025"	0.25"	w/ clamp nut	Spherical (SR3)	-	10
148-210*	0.25-0"	±0.00025"	0.25"	Plain	Flat	Reverse reading	10
148-212*	0.25-0"	±0.00025"	0.25"	w/ clamp nut	Flat	Reverse reading	10



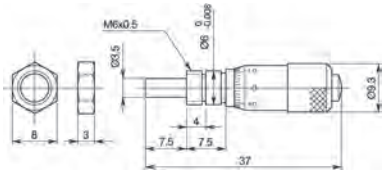
148-215



148-216



148-201



148-203

Micrometer Heads 6,5 or 13 mm

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm
Spindle pitch	0,25 mm
Scales	Thimble and sleeve satin chrome finish

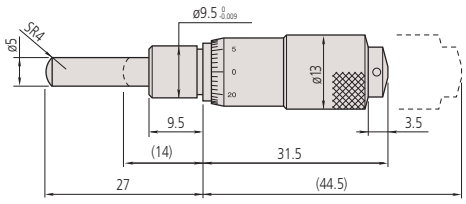
Series 148 - Fine spindle feed of 0,25 mm/rev

- Fine spindle feed of just 0,25 mm/rev for fine adjustment and positioning applications.

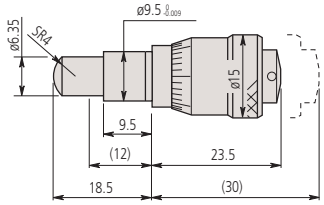
148-132

Metric

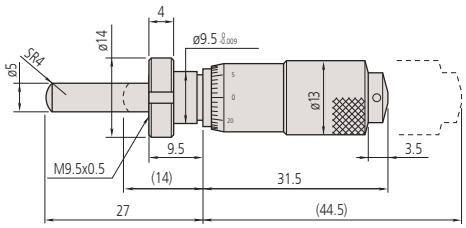
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
148-322	0-6,5 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	30
148-323*	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	35
148-132*	0-13 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	30
148-133*	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	35



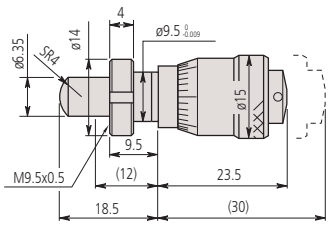
148-132 mm



148-322 mm



148-133 mm



148-323 mm

Micrometer Heads 6,5 or 13 mm

Series 148 - Large Thimble Diameter for Easy Reading

- Easy reading due to larger-than-standard thimbles. (Three thimble diameters are available.)

148-301

148-313

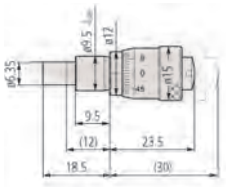
148-314

Metric

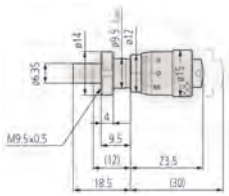
No.	Range	Accuracy	Stem ø	Stem	Spindle end	ø thimble	Mass g
148-301	0-6,5 mm	±2 µm	9,5 mm	Plain	Flat	15 mm	26
148-302	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	15 mm	26
148-303	0-6,5 mm	±2 µm	9,5 mm	Plain	Flat	20 mm	39
148-304	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	20 mm	39
148-305	0-6,5 mm	±2 µm	9,5 mm	Plain	Flat	29 mm	71
148-306	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	29 mm	71
148-313*	0-6,5 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	15 mm	29
148-314*	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	15 mm	32
148-307	0-13 mm	±2 µm	9,5 mm	Plain	Flat	15 mm	35
148-308	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	15 mm	35
148-309	0-13 mm	±2 µm	9,5 mm	Plain	Flat	20 mm	55
148-310	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	20 mm	55
148-311	0-13 mm	±2 µm	9,5 mm	Plain	Flat	29 mm	103
148-312	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	29 mm	103

Inch

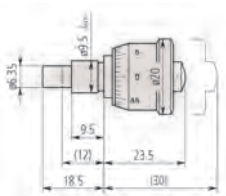
No.	Range	Accuracy	Stem ø	Stem	Spindle end	ø thimble	Mass g
148-351*	0-0.25"	±0.0001"	0.375"	Plain	Flat	0.59"	26
148-352*	0-0.25"	±0.0001"	0.375"	w/ clamp nut	Flat	0.59"	26
148-353*	0-0.25"	±0.0001"	0.375"	Plain	Flat	0.79"	39
148-354*	0-0.25"	±0.0001"	0.375"	w/ clamp nut	Flat	0.79"	39
148-355*	0-0.25"	±0.0001"	0.375"	Plain	Flat	1.14"	71
148-356*	0-0.25"	±0.0001"	0.375"	w/ clamp nut	Flat	1.14"	71
148-357*	0-0.5"	±0.0001"	0.375"	Plain	Flat	0.59"	35
148-358*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat	0.59"	35
148-359*	0-0.5"	±0.0001"	0.375"	Plain	Flat	0.79"	55
148-360*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat	0.79"	55
148-361*	0-0.5"	±0.0001"	0.375"	Plain	Flat	1.14"	103
148-362*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat	1.14"	103



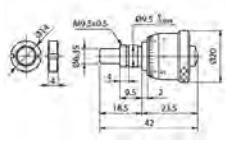
148-301



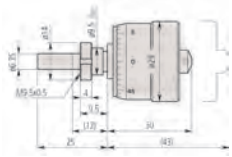
148-302



148-303



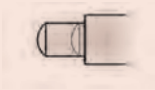
148-304



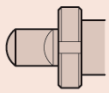
148-312

Specifications

Accuracy	Refer to the list of specifications
Graduation	0,01 mm or 0.001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Tool steel



148-313



148-314

148-303

148-305

For drawings not shown here, see beginning of chapter Micrometer Heads

Micrometer Heads 6,5 mm with spindle lock

Series 148 - Locking screw Type

- The spindle can be locked in any position with the knurled locking screw.


148-223

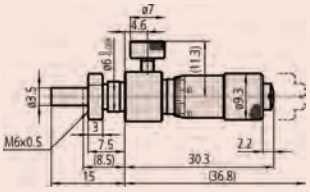

148-319

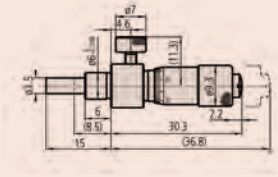

148-220

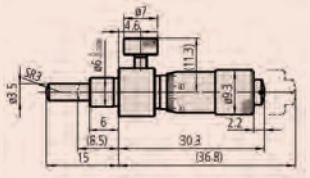

148-316

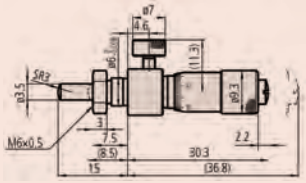
Specifications

Graduation	0,01 mm or 0.001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Tool steel


148-221


148-220


148-222

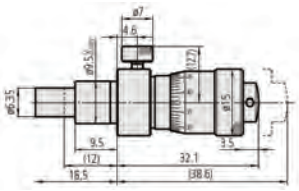

148-223

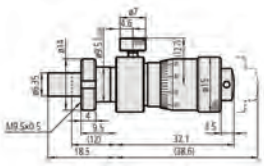
Metric

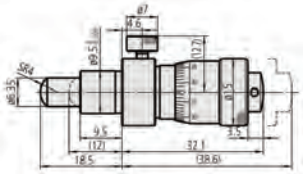
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
148-220	0-6,5 mm	±5 µm	6 mm	Plain	Flat	16
148-221*	0-6,5 mm	±5 µm	6 mm	w/ clamp nut	Flat	17
148-222	0-6,5 mm	±5 µm	6 mm	Plain	Spherical (SR3)	16
148-223	0-6,5 mm	±5 µm	6 mm	w/ clamp nut	Spherical (SR3)	17
148-316*	0-6,5 mm	±2 µm	9,5 mm	Plain	Flat	40
148-317*	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	43
148-318*	0-6,5 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	40
148-319*	0-6,5 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	43

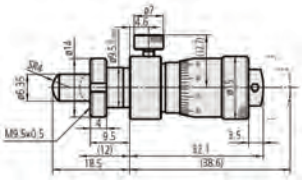
Inch

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
148-230*	0-0.25"	±0.00025"	0.25"	Plain	Flat	16
148-231*	0-0.25"	±0.00025"	0.25"	w/ clamp nut	Flat	17
148-232*	0-0.25"	±0.00025"	0.25"	Plain	Spherical (SR3)	16
148-233*	0-0.25"	±0.00025"	0.25"	w/ clamp nut	Spherical (SR3)	17
148-326*	0-0.25"	±0.0001"	0.375"	Plain	Flat	40
148-327*	0-0.25"	±0.0001"	0.375"	w/ clamp nut	Flat	43
148-328*	0-0.25"	±0.0001"	0.375"	Plain	Spherical (SR4)	40
148-329*	0-0.25"	±0.0001"	0.375"	w/ clamp nut	Spherical (SR4)	43


148-316


148-317


148-318


148-319

Micrometer Heads 13 mm

Series 148 - Locking screw Type

- The spindle can be locked in any position with the knurled locking screw.

148-150

148-153

Specifications

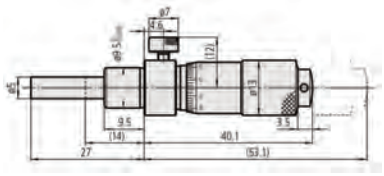
Graduation	0,01 mm or 0.001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Tool steel

Metric

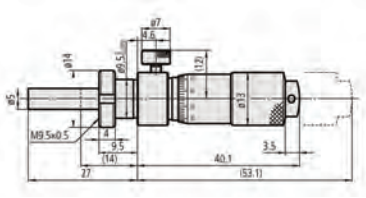
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
148-150	0-13 mm	±2 µm	9,5 mm	Plain	Flat	40
148-151	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	43
148-152	0-13 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	40
148-153	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	43

Inch

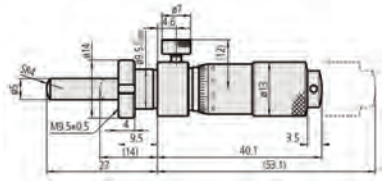
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Mass g
148-160*	0-0.5"	±0.0001"	0.375"	Plain	Flat	40
148-161*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat	43
148-162*	0-0.5"	±0.0001"	0.375"	Plain	Spherical (SR4)	40
148-163*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Spherical (SR4)	43



148-150



148-151



148-153

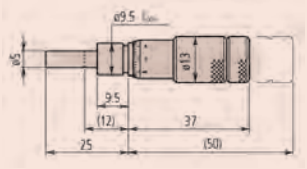
Micrometer Heads 13 mm

Specifications

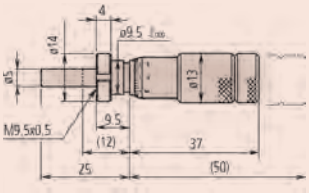
Accuracy	±2 µm/0.0001"
Graduation	0,01 mm or 0.001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Tool steel

148-503

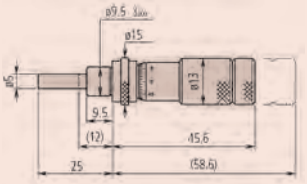
148-504



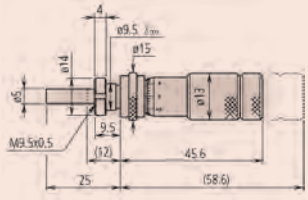
148-503



148-508



148-506



148-504

Series 148 - Standard type, small size with zero-adjustable thimble.

- Models with 13 mm / 0.5'' stroke
- Zero-setting by setscrew in the thimble.

Metric

No.	Range	Stem ø	Stem	Spindle end	Special features	Mass g
148-503	0-13 mm	9,5 mm	Plain	Flat	-	40
148-513	0-13 mm	9,5 mm	Plain	Flat	Stainless steel throughout	40
148-508	0-13 mm	9,5 mm	w/ clamp nut	Flat	-	50
148-853	0-13 mm	9,5 mm	Plain	Spherical (SR4)	-	40
148-518*	0-13 mm	9,5 mm	w/ clamp nut	Flat	Stainless steel throughout	50
148-858*	0-13 mm	9,5 mm	w/ clamp nut	Spherical (SR4)	-	50

Metric — With spindle lock

No.	Range	Stem ø	Stem	Spindle end	Mass g
148-506	0-13 mm	9,5 mm	Plain	Flat	60
148-504	0-13 mm	9,5 mm	w/ clamp nut	Flat	40
148-854	0-13 mm	9,5 mm	w/ clamp nut	Spherical (SR4)	40
148-856*	0-13 mm	9,5 mm	Plain	Spherical (SR4)	60

Metric — Reverse reading

No.	Range	Stem ø	Stem	Spindle end	Mass g
148-863	13-0 mm	9,5 mm	Plain	Flat	40
148-868*	13-0 mm	9,5 mm	w/ clamp nut	Flat	50

Metric — Reverse reading / with spindle lock

No.	Range	Stem ø	Stem	Spindle end	Mass g
148-864	13-0 mm	9,5 mm	w/ clamp nut	Flat	40
148-866*	13-0 mm	9,5 mm	Plain	Flat	60

Inch

No.	Range	Stem ø	Stem	Spindle end	Special features	Mass g
148-501*	0-0.5"	0.375"	Plain	Flat	-	40
148-511*	0-0.5"	0.375"	Plain	Flat	Stainless steel throughout	40
148-507*	0-0.5"	0.375"	w/ clamp nut	Flat	-	50
148-851*	0-0.5"	0.375"	Plain	Spherical (SR4)	-	40

Inch — With spindle lock

No.	Range	Stem ø	Stem	Spindle end	Mass g
148-505*	0-0.5"	0.375"	Plain	Flat	60
148-502	0-0.5"	0.375"	w/ clamp nut	Flat	40
148-852*	0-0.5"	0.375"	w/ clamp nut	Spherical (SR4)	40

Inch — Reverse reading

No.	Range	Stem ø	Stem	Spindle end	Mass g
148-861*	0.5-0"	0.375"	Plain	Flat	40

Inch — Reverse reading / with spindle lock

No.	Range	Stem ø	Stem	Spindle end	Mass g
148-862*	0.5-0"	0.375"	w/ clamp nut	Flat	40

Micrometer Heads 13 mm

Series 148 - Small standard type

- Standard version, small design with 13 mm measuring range.

148-104

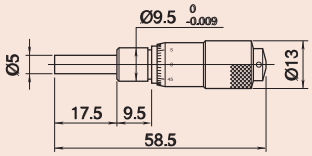
148-103

148-121

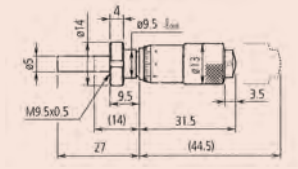
148-120

Specifications

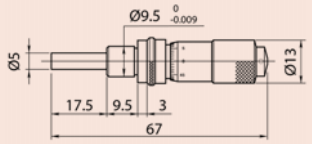
Graduation	0,01 mm or 0.001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Tool steel



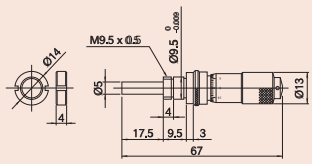
148-104



148-103



148-121



148-120

For drawings not shown here, see beginning of chapter Micrometer Heads

Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
148-104	0-13 mm	±2 µm	9,5 mm	Plain	Flat	-	35
148-103	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	-	40
148-801	0-13 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	-	35
148-802	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	-	40
148-821	13-0 mm	±2 µm	9,5 mm	Plain	Flat	Reverse reading	35
148-822	13-0 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	Reverse reading	40

Metric With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
148-121	0-13 mm	±2 µm	9,5 mm	Plain	Flat	-	50
148-120	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	-	50
148-803	0-13 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	-	50
148-804	0-13 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	-	50
148-823	13-0 mm	±2 µm	9,5 mm	Plain	Flat	Reverse reading	50
148-824	13-0 mm	±2 µm	9,5 mm	w/ clamp nut	Flat	Reverse reading	50

Inch

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
148-112	0-0.5"	±0.0001"	0.375"	Plain	Flat	-	35
148-111*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat	-	40
148-811*	0-0.5"	±0.0001"	0.375"	Plain	Spherical (SR4)	-	35
148-812*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Spherical (SR4)	-	40
148-831*	0.5-0"	±0.0001"	0.375"	Plain	Flat	Reverse reading	35
148-832*	0.5-0"	±0.0001"	0.375"	w/ clamp nut	Flat	Reverse reading	40

Inch With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
148-123*	0-0.5"	±0.0001"	0.375"	Plain	Flat	-	50
148-122	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat	-	50
148-813*	0-0.5"	±0.0001"	0.375"	Plain	Spherical (SR4)	-	50
148-814	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Spherical (SR4)	-	50
148-833*	0.5-0"	±0.0001"	0.375"	Plain	Flat	Reverse reading	50
148-834*	0.5-0"	±0.0001"	0.375"	w/ clamp nut	Flat	Reverse reading	50

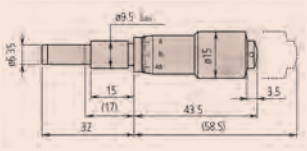
Micrometer Heads 15 mm

Series 149 - Small standard type with carbide-tipped spindle

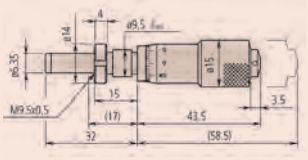
- Small micrometer head with 15 mm measuring range and tungsten carbide measuring surface.

Specifications

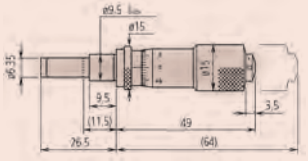
Graduation	0,01 mm or 0.001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped



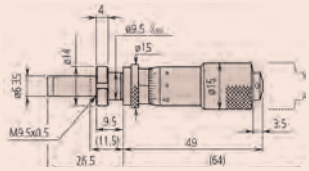
149-132



149-131



149-183



149-184

149-132

149-184

Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
149-132	0-15 mm	±2 µm	9,5 mm	Plain	Flat (carbide tip)	-	55
149-131	0-15 mm	±2 µm	9,5 mm	w/ clamp nut	Flat (carbide tip)	-	55
149-801	0-15 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	-	55
149-802	0-15 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	-	55
149-821*	15-0 mm	±2 µm	9,5 mm	Plain	Flat (carbide tip)	Reverse reading	55
149-822	15-0 mm	±2 µm	9,5 mm	w/ clamp nut	Flat (carbide tip)	Reverse reading	55

Metric — With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
149-183	0-15 mm	±2 µm	9,5 mm	Plain	Flat (carbide tip)	-	75
149-184	0-15 mm	±2 µm	9,5 mm	w/ clamp nut	Flat (carbide tip)	-	75

Metric — Specific models

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
149-803*	0-15 mm	±2 µm	9,5 mm	Plain	Spherical (SR4)	-	75
149-804*	0-15 mm	±2 µm	9,5 mm	w/ clamp nut	Spherical (SR4)	-	75
149-823*	0-15 mm	±2 µm	9,5 mm	Plain	Flat (carbide tip)	-	75
149-824*	0-15 mm	±2 µm	9,5 mm	w/ clamp nut	Flat (carbide tip)	-	75

Inch

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
149-148*	0-0.5"	±0.0001"	0.375"	Plain	Flat (carbide tip)	-	55
149-147*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	-	70
149-811*	0-0.5"	±0.0001"	0.375"	Plain	Spherical (SR4)	-	55
149-812*	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Spherical (SR4)	-	55
149-831*	0.5-0"	±0.0001"	0.375"	Plain	Flat (carbide tip)	Reverse reading	55
149-832*	0.5-0"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	Reverse reading	55

Inch — With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
149-185*	0-0.5"	±0.0001"	0.375"	Plain	Flat (carbide tip)	-	70
149-182	0-0.5"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	-	55

Micrometer Heads 25 mm

Series 150 - Medium-sized standard type

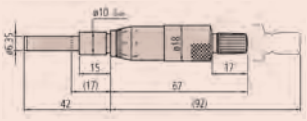
- Standard Micrometer head with 25 mm measuring range.
- Ratchet stop for constant measuring force.

150-801

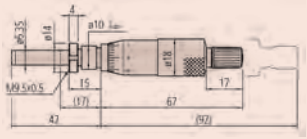
150-191

Specifications

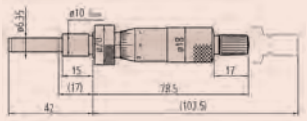
Graduation	0,01 mm
Spindle pitch	0,5 mm
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped



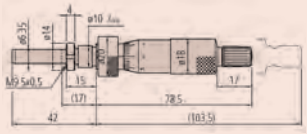
150-192



150-191



150-209



150-210

Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
150-192	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	-	90
150-191	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	-	90
150-801	0-25 mm	±2 µm	10 mm	Plain	Spherical (SR4)	-	90
150-802	0-25 mm	±2 µm	10 mm	w/ clamp nut	Spherical (SR4)	-	90
150-190	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	Graduation 0,001 mm	90
150-189	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	Graduation 0,001 mm	90
150-196	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	w/o ratchet stop	90
150-195	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	90
150-219*	0-25 mm	±2 µm	10 mm	Plain	Flat	Long spindle	105
150-220*	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat	Long spindle	105
150-821	25-0 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	Reverse reading	90
150-822	25-0 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	Reverse reading	90

Metric With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
150-209	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	-	125
150-211	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	w/o ratchet stop	115
150-210	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	-	125
150-212	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	115

Metric Specific models/With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
150-183*	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	-	125
150-184*	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	-	125

Metric Specific models

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
150-803*	0-25 mm	±2 µm	10 mm	Plain	Spherical (SR4)	-	125
150-804*	0-25 mm	±2 µm	10 mm	w/ clamp nut	Spherical (SR4)	-	125
150-823*	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	-	125
150-824*	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	-	125
150-223*	0-25 mm	±2 µm	10 mm	Plain	Flat (carbide tip)	-	135
150-224*	0-25 mm	±2 µm	10 mm	w/ clamp nut	Flat (carbide tip)	-	135

For drawings not shown here, see beginning of chapter Micrometer Heads

Inch Micrometer Heads 1"

Specifications

Graduation	0.0001"
Spindle pitch	0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped

Series 150 - Medium-sized standard type

- Standard Micrometer head with 1" measuring range.
- Ratchet stop for constant measuring force.

Inch

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
150-208*	0-1"	±0.0001"	0.375"	Plain	Flat (carbide tip)	-	90
150-207*	0-1"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	-	90
150-206*	0-1"	±0.0001"	0.375"	Plain	Flat (carbide tip)	Graduation 0.0001"	90
150-811*	0-1"	±0.0001"	0.375"	Plain	Spherical (SR4)	-	90
150-205*	0-1"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	Graduation 0.0001"	90
150-812	0-1"	±0.0001"	0.375"	w/ clamp nut	Spherical (SR4)	-	90
150-198*	0-1"	±0.0001"	0.375"	Plain	Flat (carbide tip)	w/o ratchet stop	90
150-197*	0-1"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	90
150-221*	0-1"	±0.0001"	0.375"	Plain	Flat	Long spindle	
150-222*	0-1"	±0.0001"	0.375"	w/ clamp nut	Flat	Long spindle	105
150-831*	1-0"	±0.0001"	0.375"	Plain	Flat (carbide tip)	Reverse reading	90
150-832	1-0"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	Reverse reading	90

Inch

With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
150-213*	0-1"	±0.0001"	0.375"	Plain	Flat (carbide tip)	-	125
150-214*	0-1"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	-	125
150-215*	0-1"	±0.0001"	0.375"	Plain	Flat (carbide tip)	Graduation 0.0001"	125
150-216*	0-1"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	Graduation 0.0001"	125
150-217*	0-1"	±0.0001"	0.375"	Plain	Flat (carbide tip)	w/o ratchet stop	115
150-218*	0-1"	±0.0001"	0.375"	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	115

Micrometer Heads 25 mm and 50 mm

Series 151 - Medium-sized standard type with 8 mm diameter spindle.

- Extremely sturdy micrometer head with/without ratchet and 8 mm spindle diameter.

151-224

151-223

151-255

151-256

Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
151-224	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	-	150
151-223	0-25 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	-	160
151-222	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	Graduation 0,001 mm	150
151-256	0-50 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	-	240
151-255	0-50 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	-	250
151-260	0-50 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	w/o ratchet stop	240
151-259	0-50 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	250

Metric — Specific models/With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
151-214*	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	-	165
151-213*	0-25 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	-	165
151-212*	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	Graduation 0,001 mm	165
151-211*	0-25 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	Graduation 0,001 mm	165

Metric — Specific models

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
151-227*	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	w/o ratchet stop	150
151-228*	0-25 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	160

Metric — With spindle lock

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
151-225	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	w/o ratchet stop	165
151-226	0-25 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	165

Inch

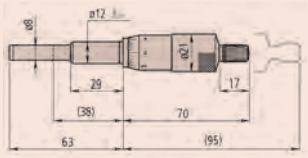
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
151-240*	0-1"	±0.0001"	0.5"	Plain	Flat (carbide tip)	-	150
151-239*	0-1"	±0.0001"	0.5"	w/ clamp nut	Flat (carbide tip)	-	160
151-238	0-1"	±0.0001"	0.5"	Plain	Flat (carbide tip)	Graduation 0.0001"	150
151-237*	0-1"	±0.0001"	0.5"	w/ clamp nut	Flat (carbide tip)	Graduation 0.0001"	160
151-272*	0-2"	±0.0001"	0.5"	Plain	Flat (carbide tip)	-	240
151-271*	0-2"	±0.0001"	0.5"	w/ clamp nut	Flat (carbide tip)	-	250

Inch — With spindle lock

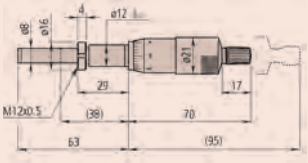
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
151-241*	0-1"	±0.0001"	0.5"	Plain	Flat (carbide tip)	w/o ratchet stop	165
151-242*	0-1"	±0.0001"	0.5"	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop	165
151-243*	0-1"	±0.0001"	0.5"	Plain	Flat (carbide tip)	w/o ratchet stop, graduation 0.0001"	165
151-244*	0-1"	±0.0001"	0.5"	w/ clamp nut	Flat (carbide tip)	w/o ratchet stop, graduation 0.0001"	165

Specifications

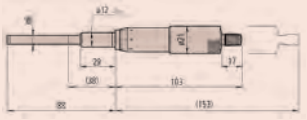
Graduation	0,01 mm or 0,001 mm 0.001" or 0.0001"
Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Fixture thickness for clamp nut	25,5 mm
Measuring surfaces	Carbide tipped



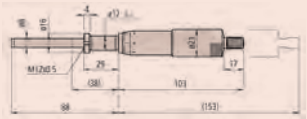
151-224



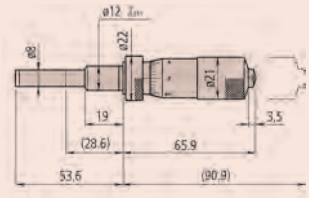
151-223



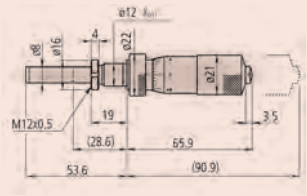
151-256



151-255



151-225



151-226

For drawings not shown here, see beginning of chapter Micrometer Heads

Micrometer Heads

Specifications

Graduation	0,002 mm or 0.0001"
Spindle pitch	0,5 mm or 0.025"
Scales	White anodized aluminium
Fixture thickness for clamp nut	22,5 mm
Measuring surfaces	Carbide tipped

Series 152 - Large thimble type for fine adjustment

- Micrometer head with 1 mm spindle pitch to simplify reading.
- Black and red scaling for both directions (152-348/380/372/388)
- The large scale drum allows fine graduation and very easy rotation.

152-283

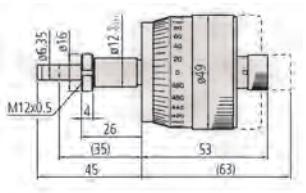
152-348

Metric

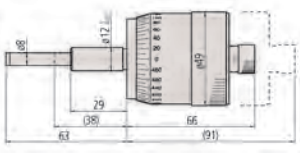
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
152-283	0-10 mm	±2 µm	12 mm	w/ clamp nut	Flat (carbide tip)	-	190
152-332*	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	-	310
152-348	0-25/25-0 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	Bidirectional graduation	310
152-380	0-50/50-0 mm	±4 µm	12 mm	Plain	Flat (carbide tip)	Bidirectional graduation	460

Inch

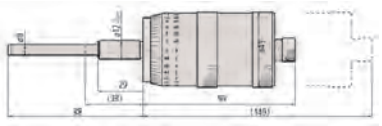
No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
152-372*	0-1/1-0"	±0.0001"	0.5"	Plain	Flat (carbide tip)	Bidirectional graduation	310
152-388*	0-2/2-0"	±0.0002"	0.5"	Plain	Flat (carbide tip)	Bidirectional graduation	420



152-283



152-332



152-380

Micrometer Heads

Series 152 - XY Stage type

- Micrometer head with rotating spindle, non-rotating measuring surface and bidirectional reading 152-390/389/392/391.
- Graduations for each direction engraved in a different colour (black or red).
- Measurement values can be read directly from the 100-step graduation thimble without the complication of having to consider 1/2 mm values, which simplifies reading and therefore reduces the chance of error.

152-390

Specifications

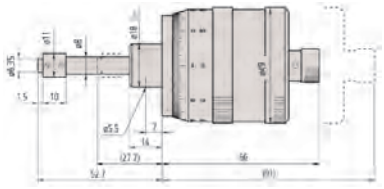
Spindle pitch	1 mm or 0.025"
Scales	White anodized aluminium
Measuring surfaces	Tool steel

Metric

No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Special features	Mass g
152-390	0-25/25-0 mm	±2 µm	0,005 mm	18 mm	Plain	Flat (hardened) with non-rotating device	For X-axis Bidirectional grad.	270
152-389	0-25/25-0 mm	±2 µm	0,005 mm	18 mm	Plain	Flat (hardened) with non-rotating device	For Y-axis Bidirectional grad.	270
152-402	0-25 mm	±2 µm	0,001 mm	18 mm	Plain	Spherical with carbide tip (SR10)	For X-axis	460
152-401	0-25 mm	±2 µm	0,001 mm	18 mm	Plain	Spherical with carbide tip (SR10)	For Y-axis	460

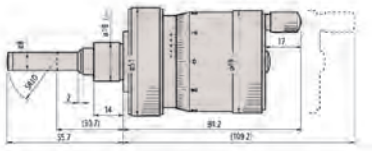
Inch

No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Special features	Mass g
152-392*	0-1/1-0"	±0.0001"	0.0001"	0.709"	Plain	Flat (hardened) with non-rotating device	For X-axis Bidirectional grad.	270
152-391*	0-1/1-0"	±0.0001"	0.0001"	0.709"	Plain	Flat (hardened) with non-rotating device	For Y-axis Bidirectional grad.	270



152-390

152-389



152-402

152-401

Micrometer Heads

Specifications

Graduation	0,01 mm
Spindle pitch	1 mm
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped

For drawings not shown here, see beginning of chapter Micrometer Heads

Series 152 - Quick spindle feed of 1mm/rev

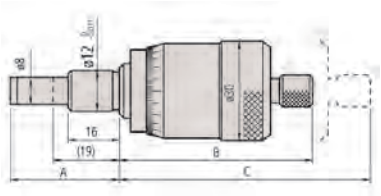
- Micrometer head with 1 mm spindle pitch to simplify reading.
- Measurement values can be read directly from the 100-step graduation thimble without the complication of having to consider 1/2 mm lines.

152-102

152-103

Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	A mm	B mm	C mm	Mass g
152-101	0-15 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	34	60	75	205
152-102	0-25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	44	69	94	230
152-103	0-50 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	69	94	144	355



152-101

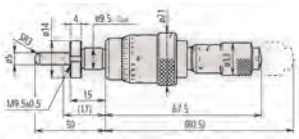
Micrometer Heads with non-rotating spindle

Series 110 - Differential screw translator (Extra-fine feed) type

- Micrometer head with ultra-fine rate of travel.
- With non-rotating spindle, especially suited for fine adjustments.
- The differential travel mechanism with double spindle enables ultra-sensitive travel of 0,05 mm/rev.
- A version with rotating spindle and large thimble scale is also available (110-502/110-504).
- Graduation 0,5 µm, especially suited for fine adjustments (110-502/110-504).
- 0,025 mm/rev, 0.001/rev fine feed (110-502/110-504).

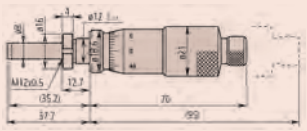
110-102

110-502

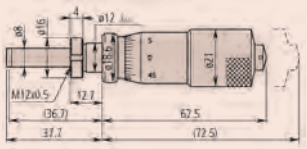


Specifications

Scales	Thimble and sleeve satin chrome finish
Fixture thickness for clamp nut	9,5 mm (11,5 mm : 110-502/110-504)
Measuring surfaces	Carbide tipped



110-101
110-102



110-105
110-106

For drawings not shown here, see beginning of chapter Micrometer Heads

Metric

No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Mass g
110-105*	0-1 mm	±3 µm	0,001 mm	12 mm	w/ clamp nut	Flat (carbide tip)	150
110-106	0-1 mm	±3 µm	0,0001 mm	12 mm	w/ clamp nut	Flat (carbide tip)	150
110-107	0-1 mm	±3 µm	0,001 mm	12 mm	w/ clamp nut	Spherical (SR10)	150
110-108	0-1 mm	±3 µm	0,0001 mm	12 mm	w/ clamp nut	Spherical (SR10)	150
110-101	0-2,5 mm	±5 µm	0,001 mm	12 mm	w/ clamp nut	Flat (carbide tip)	150
110-102	0-2,5 mm	±5 µm	0,0001 mm	12 mm	w/ clamp nut	Flat (carbide tip)	150
110-502	0-13 mm	±3 µm	0,0005 mm/0,2 mm	9,5 mm	w/ clamp nut	Spherical (SR3)	100

Inch

No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Mass g
110-115*	0-0.02"	±0.00015"	0.00005"	0.5"	w/ clamp nut	Flat (carbide tip)	150
110-116*	0-0.02"	±0.00015"	0.000005"	0.5"	w/ clamp nut	Flat (carbide tip)	150
110-117*	0-0.02"	±0.00015"	0.00005"	0.5"	w/ clamp nut	Spherical (SR10)	150
110-118*	0-0.02"	±0.00015"	0.000005"	0.5"	w/ clamp nut	Spherical (SR10)	150
110-111*	0-0.05"	±0.00025"	0.00005"	0.5"	w/ clamp nut	Flat (carbide tip)	150
110-112*	0-0.05"	±0.00025"	0.000005"	0.5"	w/ clamp nut	Flat (carbide tip)	150
110-504	0-0.5"	±0.00015"	0.00002"/0.006"	0.375"	w/ clamp nut	Spherical (SR3)	100

Micrometer Heads with non-rotating spindle

Specifications

Spindle pitch	0,5 mm or 0.025"
Scales	Thimble and sleeve satin chrome finish
Measuring surfaces	Carbide tipped

Series 153

153-101

153-203

153-201

Metric

No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Mass g
153-101	0-15 mm	±3 µm	0,01 mm	9,5 mm	Plain	Flat (carbide tip)	70
153-203	0-25 mm	±3 µm	0,01 mm	9,5 mm	Plain	Flat (carbide tip)	117
153-204	0-25 mm	±3 µm	0,001 mm	9,5 mm	Plain	Flat (carbide tip)	117

Metric With ratchet stop

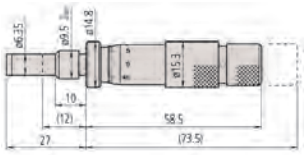
No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Mass g
153-201	0-25 mm	±3 µm	0,01 mm	9,5 mm	Plain	Flat (carbide tip)	122
153-202	0-25 mm	±3 µm	0,001 mm	9,5 mm	Plain	Flat (carbide tip)	122

Inch

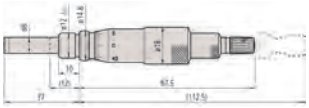
No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Mass g
153-108*	0-0.5"	±0.00015"	0.0001"	0.375"	Plain	Flat (carbide tip)	70
153-207*	0-1"	±0.00015"		0.375"	Plain	Flat (carbide tip)	117
153-208*	0-1"	±0.00015"	0.0001"	0.375"	Plain	Flat (carbide tip)	117

Inch With ratchet stop

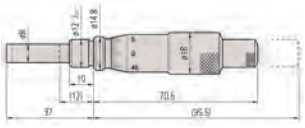
No.	Range	Accuracy	Graduation	Stem ø	Stem	Spindle end	Mass g
153-205*	0-1"	±0.00015"	0.001"	0.375"	Plain	Flat (carbide tip)	122
153-206	0-1"	±0.00015"	0.0001"	0.375"	Plain	Flat (carbide tip)	122



153-101



153-201 + 153-202



153-203 + 153-204

Micrometer Heads with non-rotating spindle

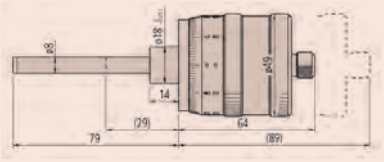
Series 197 - Non-rotating spindle and large thimble

- Micrometer Head with non-rotating spindle and 1 mm spindle pitch.
- Measurement values can be read directly from the 100-step graduation thimble without the complication of having to consider 1/2 mm values, which simplifies reading and therefore reduces the chance of error.
- The scale is set to zero by rotating the barrel.

197-101

Specifications

Graduation	0,005 mm or 0.0002"
Spindle pitch	1 mm or 0.05"
Scales	White anodized aluminium
Measuring surfaces	Carbide tipped



197-101

Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
197-101	0-50/50-0 mm	±5 µm	18 mm	Plain	Flat (carbide tip)	Bidirectional graduation	300

Inch

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
197-201	0-2/2-0"	±5 µm	0.709"	Plain	Flat (carbide tip)	Bidirectional graduation	300

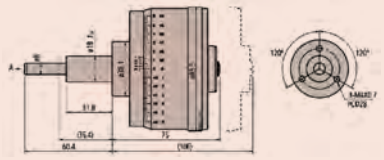
Series 153 - Fine graduation and high accuracy

- Extra-large-diameter micrometer head with non-rotating spindle.

153-301

Specifications

Graduation	0,0005 mm or 0.00001"
Spindle pitch	0,5 mm or 0.025"
Scales	White anodized aluminium
Measuring surfaces	Carbide tipped



153-301

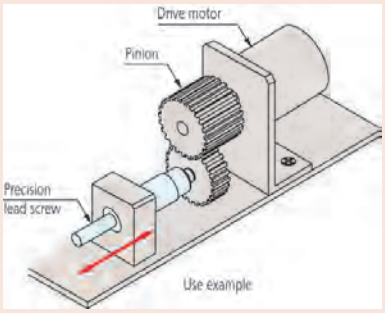
Metric

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
153-301	0-25/25-0 mm	±1 µm	18 mm	Plain	Flat (carbide tip)	Bidirectional graduation	750

Inch

No.	Range	Accuracy	Stem ø	Stem	Spindle end	Special features	Mass g
153-302*	0-1/1-0"	±0.00005"	0.709"	Plain	Flat (carbide tip)	Bidirectional graduation	750

Precision Leadscrews



- AS type: Flat spindle tip without clamp nut
- BS type: Spherical spindle tip with clamp nut

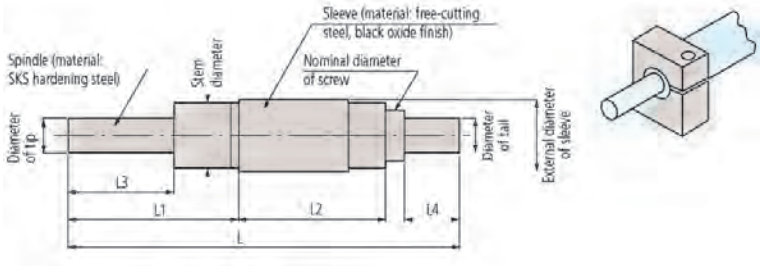
- Durability: 100-thousand operations are guaranteed (use condition : 4 kgf load; 2 kgf for AS-6.5 and BS-6.5)
- Main applications
  - Precision feed stages
  - Fine adjustment of optical elements (mirrors)
  - Fibre-optic centering devices
  - Various assembly and adjustment jigs

- Mitutoyo manufactures simple and less expensive precision leadscrews for precise positioning mechanisms and fine-feed mechanisms, in addition to standard micrometer heads.
- Mitutoyo also manufactures leadscrews with special specifications, such as 0,25 mm pitch, as well as those with the standard 0,5 mm feed pitch and with dimensions and form to meet customer's requirements.

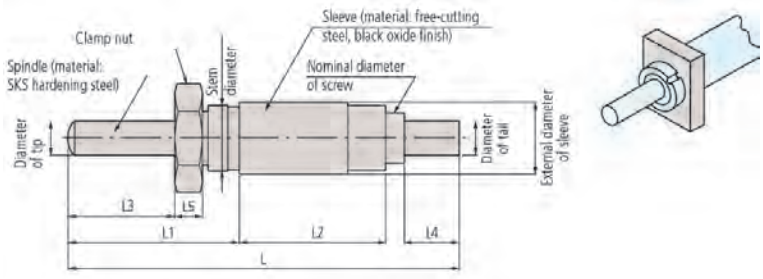
04AZA164 / 04AZA162 / 04AZA160 Precision Leadscrews Micrometer Head

Feed pitch 0,5 mm

Model	AS-6.5	BS-6.5	AS-13	BS-13	AS-25	BS-25
No.	**04AZA160***	**04AZA161***	**04AZA162***	**04AZA163***	**04AZA164***	**04AZA165***
Stroke	6.5 mm	6.5 mm	13 mm	13 mm	25 mm	25 mm
Feed accuracy	±5 µm	±5 µm	±2 µm	±2 µm	±2 µm	±2 µm
Stem diameter	ø 6 (+0/-0,008)	ø 6 (+0/-0,008)	ø 9.5 (+0/-0,009)	ø 9.5 (+0/-0,009)	ø 10 (+0/-0,009)	ø 10 (+0/-0,009)
Tip diameter	ø 3.5	ø 3.5	ø 5	ø 5	ø 6.35	ø 6.35
Tail diameter	ø 3 (+0/-0,01)	ø 3 (+0/-0,01)	ø 5 (+0/-0,012)	ø 5 (+0/-0,012)	ø 6 (+0/-0,015)	ø 6 (+0/-0,015)
Screw nominal diameter	M4.5 x 0.5	M4.5 x 0.5	M7.35 x 0.5	M7.35 x 0.5	M7.35 x 0.5	M7.35 x 0.5
Sleeve diameter	ø 7	ø 7	ø 10.5	ø 10.5	ø 12	ø 12
Measuring face	Hardened	Hardened	Hardened	Hardened	Carbide	Carbide
L mm	39	39	57.5	57.5	96.5	96.5
L1 mm	15	15	25	25	42	42
L2 mm	14.5	14.5	21.5	21.5	39.5	39.5
L3 mm	9	7.5	15.5	15.5	27	27
L4 mm	6	6	8	8	10	10
L5 mm	-	3	-	4	-	4
Mass g	10	11	27	30	61	64



Type AS : Plain stem type



Type BS : Threated stem with clamp nut type

Fixtures for Micrometer Heads

• Mitutoyo offers various types of fixture designed for micrometer heads to meet a wide range of applications. These fixtures are manufactured from nickel-plated cast iron.
• There are two types of fixture for micrometer heads, depending on whether or not the head has a plain stem or is a clamp nut type.

Fixtures for plain stem type micrometer heads

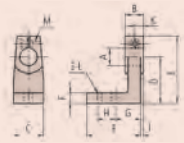
No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm
303560*	ø9.5	9	15	20	23	5	11	8	1.5	32.5	4.5
303569*	ø9.5	14.5	20	30	35	7	16	12	3.25	42.5	7.25
303579*	ø10	14.5	20	30	35	7	16	12	3.25	42.5	7.25
303564	ø9.5	9	30	42.5	4	15	10	15	4.5	ø3.4	M3x0.5
303573*	ø9.5	14.5	40	52.5	6	18	15	20	7.25	ø4.5	M3x0.5
303583*	ø10	14.5	40	52.5	6	18	15	20	7.25	ø4.5	M3x0.5
303562	ø9.5	9	15	20	40	3	30	15	ø3.4	M3x0.5	
303571*	ø9.5	14.5	15	22.5	60	5	40	20	ø4.5	M3x0.5	
303581*	ø10	14.5	15	22.5	60	5	40	20	ø4.5	M3x0.5	
303566*	ø9.5	9	15	15	25	8.5	7.5	10	10	32.5	4.5
303575*	ø9.5	14.5	15	20	40	8.5	10	20	15	40	7.25
303585*	ø10	14.5	15	20	40	8.5	10	20	15	40	7.25

No.	L mm	M mm
303560*	ø3.4	M3x0.5
303569*	ø4.5	M3x0.5
303579*	ø4.5	M3x0.5
303564		
303573*		
303583*		
303562		
303571*		
303581*		
303566*	ø3.4	M3x0.5
303575*	ø4.5	M3x0.5
303585*	ø4.5	M3x0.5

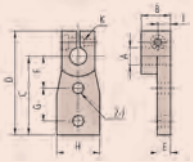
Fixtures for micrometer heads with clamp nut

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm
303559	ø9.5	6	15	20	24	5	11	8	0.5	27.5	ø3.4
303568*	ø9.5	11.5	20	30	35	7	16	12	1.75	40	ø4.5
303578*	ø10	11.5	20	30	35	7	16	12	1.75	40	ø4.5
303563*	ø9.5	6	30	37.5	4.5	15	10	15	ø3.4		
303572	ø9.5	11.5	40	50	6.5	18	15	20	ø4.5		
303582*	ø10	11.5	40	50	6.5	18	15	20	ø4.5		
303561	ø9.5	6	40	3.5	30	15	ø3.4				
303570*	ø9.5	11.5	60	5.5	40	20	ø4.5				
303580*	ø10	11.5	60	5.5	40	20	ø4.5				
303565*	ø9.5	6	ø15	15	25	8.5	7.5	10	10	27.5	ø3.4
303574	ø9.5	11.5	ø15	20	40	8.5	10	20	15	35	ø4.5
303584*	ø10	11.5	ø15	20	40	8.5	10	20	15	35	ø4.5

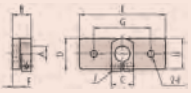
No.	L mm
303559	
303568*	
303578*	
303563*	
303572	
303582*	
303561	
303570*	
303580*	
303565*	0.75
303574	1.25
303584*	1.25



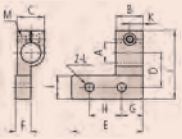
303560/69/79



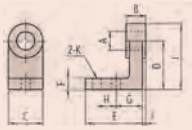
303564/73/83



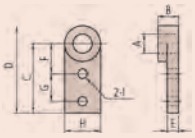
303562/71/81



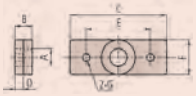
303566/75/85



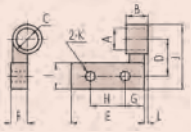
303559/68/78



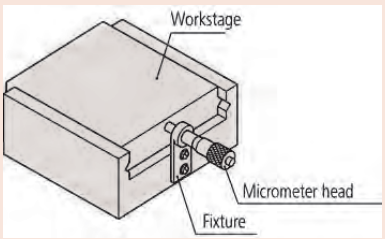
303563/72/82

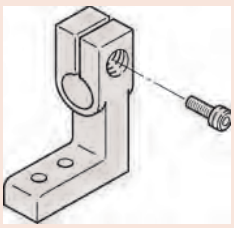


303561/70/80



303565/74/84

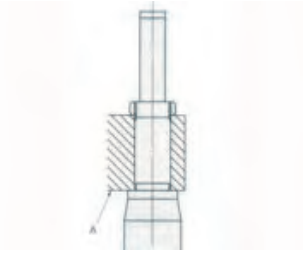




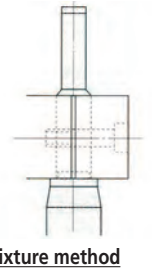
Note : Fixtures for use with plain stem type micrometer heads are split, and clamp the stem by tightening a socket head screw (M3x0.5x12 mm).

Fixture self-production guide

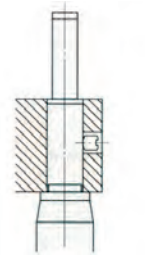
A micrometer head is clamped to a fixture by its stem. Although the three most popular clamping methods are shown on the right, Mitutoyo only recommends the Clamp Nut and Slotted Fixture methods for reasons of minimal risk of the clamping action affecting the spindle fit within the stem.



Clamp Nut method
Mounting hole machining tolerance:
To accept a ø9,5-10 mm stem: G7 (+0,005 to +0,020 mm)
To accept a ø12-18 mm stem: G7 (+0,006 to +0,024 mm)
Note: Ensure the face where the micrometer head locates on the fixture is perpendicularity to the mounting hole axis within the limit 0,16 mm in 6,5 mm



Slotted Fixture method
Mounting hole machining tolerance:
To accept a ø9,5-10 mm stem: G7 (+0,005 to +0,020 mm)
To accept a ø12-18 mm stem: G7 (+0,006 to +0,024 mm)
Note: Ensure the slot is free from burrs before inserting the head



Setscrew Clamp method
Mounting hole machining tolerance:
To accept a ø9,5-10 mm stem: H5 (+0,000 to +0,006 mm)
To accept a ø12-18 mm stem: H5 (+0,000 to +0,008 mm)
Notes:
1) Suitable set screw sizes are M3x0.5 or M4x0.7
2) The mounting hole should be countersunk 90° x 0.5 mm (or less) to receive the stem. When countersinking care should be taken to avoid stem deformation.

Maximum allowable loading

The maximum loading capacity of a micrometer head cannot be quantified since it varies according to the clamping method, type of load applied (static or dynamic) and the operating conditions (used as a feeding device or as a stop).
When the micrometer head is used as a measuring instrument Mitutoyo recommends keeping the loading limits as per the table on the right to maintain guaranteed accuracy (within 1 million manual rotations). The result of tests to determine the static load needed to cause catastrophic failure of the mounting or head (for small micrometer heads) is also given below for reference.

1. Maximum loading to maintain accuracy specification

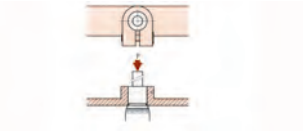
	Micrometer head	Maximum load
Standard type	0.5mm spindle pitch models	4 kgf / 2kgf*
Other types	0.1mm, 0.25mm spindle pitch models	2 kgf
	1.0mm spindle pitch models	6 kgf
	Ultra-small/Small size models	2 kgf
	Non-rotating spindle models	2 kgf
	Fine-feed models	2 kgf

* Ultra-small and small size models

2. Static loading test results
(148-104, 148-103)

Test conditions
After mounting micrometer heads by the three methods as described above, the test load (in direction 'P') was applied to each head using a properties of materials testing machine. As the test load was increased the load at the time when the micrometer head failed or was pushed out of the fixture was recorded.

Clamp nut method
The micrometer heads failed at 8.63 to 9.8 kN (880 to 1000 kgf) load.



Slotted fixture method
The micrometer heads were pushed out of the fixture at 0.69 to 0.98 kN (70 to 100 kgf) load.

Setscrew clamp method
The setscrew failed at 0.69 to 1.08 kN (70 to 110 kgf) load.