



# BEARING & TOOL CENTRE



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## Our Sister Concern : RELIEF SERVICE CENTRE

Repairs, Removal of Jaw Error, Bore Gauge Extension, Instrument Modifications & Spares

### Quotation

3	Outside Micrometer	Least count 0.001 inch
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Range-mm	W	C	D %	0 - 1	1 - 2	2 - 3	3- 4	4 - 5	5 - 6	6 - 7	7 - 8	8 - 12
<b>Insize Rs.</b>	12	Y		1443	1621	1793	1994	2508	2841			
<b>Code (3203)</b>				<b>1A</b>	<b>2A</b>	<b>3A</b>	<b>4A</b>	<b>5A</b>	<b>6A</b>			
<b>Catalog On page</b>				2	2	2	2	2	2			
<b>Aerospace Rs.</b>		N	10	350	500	650	910	1170	1290			10250
<b>M &amp; W Rs.</b>	6	N		1000	1150	1300	1400	1650	1850	2200	2500	
<b>Code</b>				<b>OM 1</b>	<b>OM 2</b>	<b>OM 3</b>	<b>OM 4</b>	<b>OM 5</b>	<b>OM 6</b>	<b>OM 7</b>	<b>OM 8</b>	
<b>Catalog On Page</b>				7	7	7	7	7	7	7	7	
<b>Baker Rs.</b>	12	Y	15	1500	1990	2140	2360	2850	3210	3920	4720	14280
<b>Code</b>				<b>INC 1</b>	<b>INC 2</b>	<b>INC 3</b>	<b>INC 4</b>	<b>INC 5</b>	<b>INC 6</b>	<b>INC 7</b>	<b>INC 8</b>	<b>INC 12</b>
<b>Catalog On Page</b>				3	3	3	3	3	3	3	3	3
<b>Mitutoyo Rs.</b>	12	N	5	2513	3197	3665	3990	4800	5250			
<b>Code (103)</b>				<b>177</b>	<b>178</b>	<b>179</b>	<b>180</b>	<b>181</b>	<b>182</b>			
<b>Catalog On Page</b>				4	4	4	4	4	4			

**Note:- Aerospace item once sold will not be taken back even if it is Faulty.**

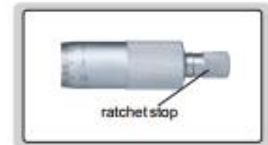
\*\*\* W – Warranty , C – Certificate , D- Discount

### Terms & Conditions –

- Goods offered - Subject to Prior Sale
- Price Validity: "15 Days from Date of Quotation"
- C.S.T 2% extra against form C. Otherwise 5% without form C For Out of Gujarat Sales only.
- VAT 5% extra for Sales within Gujarat. Prices Ex-Godown Ahmedabad.
- Payment against Proforma Invoice, Packing, Forwarding & Freight extra.
- **Bank Detail** – Kotak Mahindra Bank Ltd.
- **Branch** – Shivranjini
- **Bank IFSC Code** - KKBK 0000 810
- **Bank Account No.** 08102 00000 2689
- Note - While making payment online do mention your Company's name.
- TIN NO 24070901229 , CST No. 24570901229
- We are looking forward to your valued orders.

# INSIZE MAKE

## OUTSIDE MICROMETER



- Graduation: metric 0.01mm  
imperial 0.0001"
- Carbide measuring faces
- Meet DIN863
- Supplied with setting standards(except 0-25mm and 0-1")

### Metric(ratchet stop type) (mm)

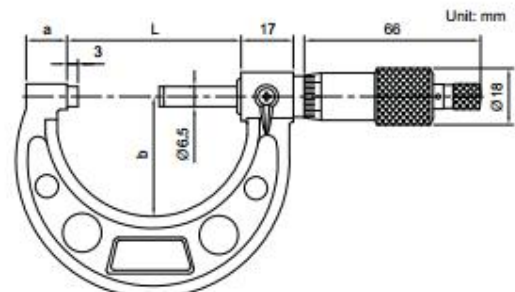
Code	Range	Accuracy	L	a	b
3203-25A	0-25mm	4 $\mu$ m	32	9	28
3203-50A	25-50mm	4 $\mu$ m	57	14	38
3203-75A	50-75mm	5 $\mu$ m	82	15	49
3203-100A	75-100mm	5 $\mu$ m	107	15	60
3203-125A	100-125mm	6 $\mu$ m	133	16.5	73
3203-150A	125-150mm	6 $\mu$ m	158	16.5	85
3203-175A	150-175mm	7 $\mu$ m	183	19.4	104
3203-200A	175-200mm	7 $\mu$ m	209	19.4	117
3203-225A	200-225mm	8 $\mu$ m	234	19.4	130
3203-250A	225-250mm	8 $\mu$ m	260	19.4	142
3203-275A	250-275mm	9 $\mu$ m	285	19.4	155
3203-300A	275-300mm	9 $\mu$ m	310	19.4	168

### Metric(ratchet thimble type) (mm)

Code	Range	Accuracy	L	a	b
3203-25FA	0-25mm	4 $\mu$ m	32	9	28
3203-50FA	25-50mm	4 $\mu$ m	57	14	38

### Imperial(ratchet stop type) (mm)

Code	Range	Accuracy	L	a	b
3203-1A	0-1"	0.00015"	32	9	28
3203-2A	1-2"	0.00015"	57	14	38
3203-3A	2-3"	0.0002"	82	15	49
3203-4A	3-4"	0.0002"	107	15	60
3203-5A	4-5"	0.00025"	133	16.5	73
3203-6A	5-6"	0.00025"	158	16.5	85



### Metric micrometer set (ratchet stop type)

Code	Range	Micrometers included
3203-753A	0-75mm	3203-25A, 3203-50A, 3203-75A
3203-1004A	0-100mm	3203-25A, 3203-50A, 3203-75A, 3203-100A
3203-1506A	0-150mm	3203-25A, 3203-50A, 3203-75A, 3203-100A, 3203-125A, 3203-150A
3203-3006A	150-300mm	3203-175A, 3203-200A, 3203-225A, 3203-250A, 3203-275A, 3203-300A
3203-3012A	0-300mm	3203-25A, 3203-50A, 3203-75A, 3203-100A, 3203-125A, 3203-150A, 3203-175A, 3203-200A, 3203-225A, 3203-250A, 3203-275A, 3203-300A

# BAKER MAKE



## EXTERNAL MICROMETERS

INCH MICROMETERS

ASME B89.1.13-2013

TYPE	RANGE	READING	₹
INC1	0 - 1"	0.001"	1500
INC2	1 - 2"	0.001"	1990
INC3	2 - 3"	0.001"	2140
INC4	3 - 4"	0.001"	2360
INC5	4 - 5"	0.001"	2850
INC6	5 - 6"	0.001"	3210
INC7	6 - 7"	0.001"	3920
INC8	7 - 8"	0.001"	4720
INC12	8 - 12"	0.001"	14280
INC16	12 - 16"	0.001"	22200
INC20	16 - 20"	0.001"	24770
INE24	20 - 24"	0.001"	32060
INE28	24 - 28"	0.001"	35630
INE32	28 - 32"	0.001"	42280
INF36	32 - 36"	0.001"	47950
INE40	36 - 40"	0.001"	56750



# MITUTOYO MAKE

## Outside Micrometers

### SERIES 103

#### FEATURES

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



103-137



(Refer to the page 9 for details.)

#### Technical Data

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

#### SPECIFICATIONS

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

(Models with a range up to 1000mm are available.)

\*0.001mm reading is obtained with vernier.

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

\*0.001mm reading is obtained with vernier.

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

(Models with a range up to 40" are available.)

\*.0001" reading is obtained with vernier.

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

\*.0001" reading is obtained with vernier.

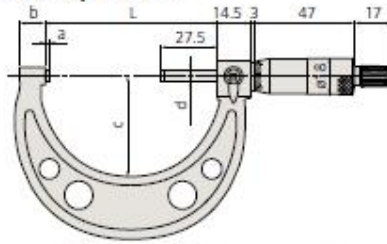
Metric Micrometer set		
Range	Order No.	Assortment of micrometers
0 - 75mm (3 pcs./set)	103-927-10	103-137, 103-138, 103-139-10, 2 micrometer standards
0 - 150mm (6 pcs./set)	103-913-31	102-701*, 103-138, 103-139-10, 103-140-10, 103-141-10, 103-142-10, 5 micrometer standards
150 - 300mm (6 pcs./set)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

\*Ratchet thimble micrometer

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

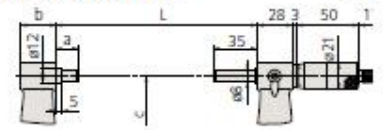
## DIMENSION AND MASS

### Models up to 300mm



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

### Models over 300mm



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

# Outside Micrometers

## SERIES 101

### FEATURES

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



### SPECIFICATIONS

#### Metric With ratchet stop

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

\*0.001mm reading is obtained with vernier.

#### Inch With ratchet stop

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

\*.0001" reading is obtained with vernier.

#### Inch With friction thimble

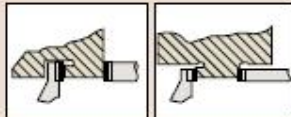
Range	Order No.	Accuracy
0 - 1"	101-109	±.0001"
	101-117*	±.0001"
1" - 2"	101-110	±.0001"
	101-118*	±.0001"

\*.0001" reading is obtained with vernier.

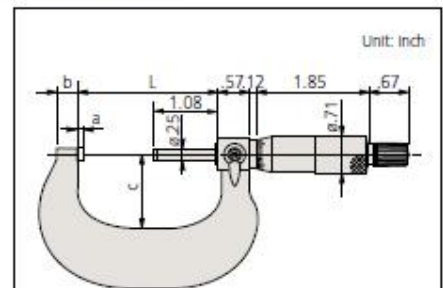
### Technical Data

Accuracy: Refer to the list of specifications.  
 Graduation: 0.01mm, 0.001mm, .001" or .0001"  
 Flatness: 0.6µm  
 Parallelism: 1.3µm (.00005") for models up to 15mm  
 .00008" for models up to 3"  
 .00012" for models over 3"

Measuring faces: Carbide tipped



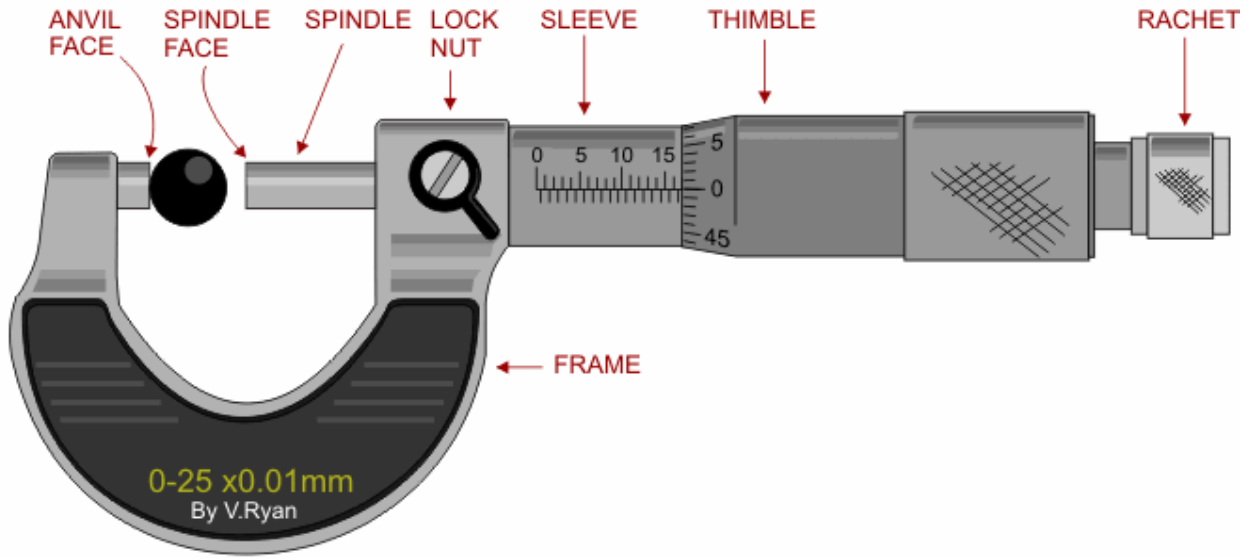
### DIMENSION



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

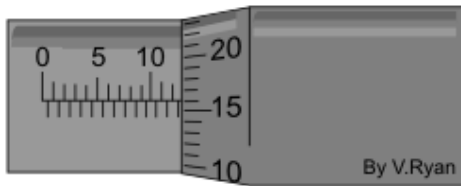
Note: The shape of the thimble changes on the model with friction thimble.

The micrometer is a precision measuring instrument, used by engineers. Each revolution of the ratchet moves the spindle face 0.5mm towards the anvil face. The object to be measured is placed between the anvil face and the spindle face. The ratchet is turned clockwise until the object is ‘trapped’ between these two surfaces and the ratchet makes a ‘clicking’ noise. This means that the ratchet cannot be tightened any more and the measurement can be read.

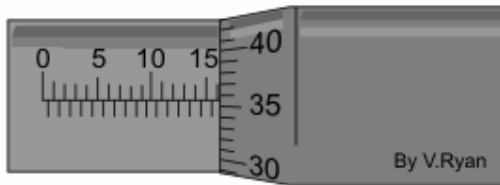


Using the first example seen below:

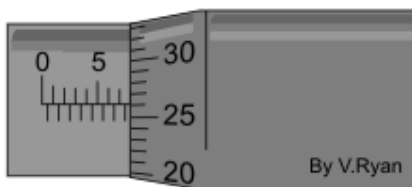
1. Read the scale on the sleeve. The example clearly shows 12 mm divisions.
  2. Still reading the scale on the sleeve, a further ½ mm (0.5) measurement can be seen on the bottom half of the scale. The measurement now reads 12.5mm.
  3. Finally, the thimble scale shows 16 full divisions (these are hundredths of a mm).
- The final measurement is  $12.5\text{mm} + 0.16\text{mm} = 12.66$



SLEEVE READS FULL mm = 12.00  
 SLEEVE READS ½ mm = 0.50  
 THIMBLE READS = 0.16  
**TOTAL MEASUREMENT = 12.66mm**



SLEEVE READS FULL mm = 16.00  
 SLEEVE READS ½ mm = 0  
 THIMBLE READS = 0.355  
**TOTAL MEASUREMENT = 16.355mm**



SLEEVE READS FULL mm = 7.00  
 SLEEVE READS ½ mm = 0.50  
 THIMBLE READS = 0.26  
**TOTAL MEASUREMENT = 7.76mm**

# M&W MAKE

## Outside Micrometer



( 0.001" )

CODE	RANGE	PRICE
OM 1	0-1"	1,000/-
OM 2	1-2"	1,150/-
OM 3	2-3"	1,300/-
OM 4	3-4"	1,400/-
OM 5	4-5"	1,650/-
OM 6	5-6"	1,850/-
OM 7	6-7"	2,200/-
OM 8	7-8"	2,500/-