

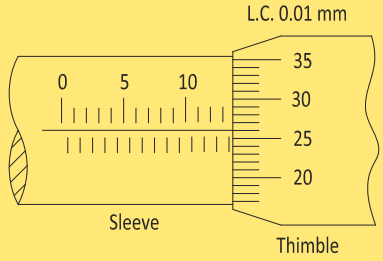


MICROMETERS

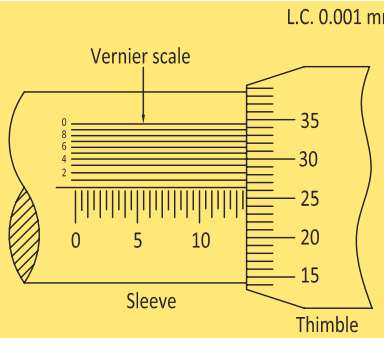
HOW TO READ A MICROMETER ?

Metric Micrometer

One full turn of the thimble moves the spindle axially by 0.5 mm. On the sleeve, the 1 mm divisions are above the datum line and the 0.5 mm divisions are below the datum line. The thimble has fifty divisions; each division of the thimble scale equals 0.01 mm (0.5 mm divided by 50).



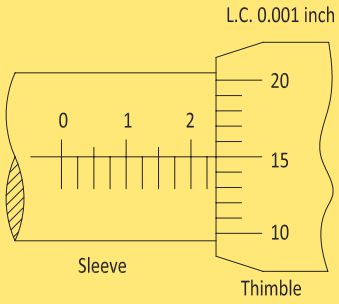
Sleeve reading 13.5 mm
Thimble reading 0.26 mm
Total reading 13.76 mm



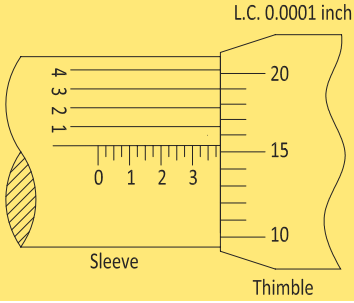
Sleeve reading 13.5 mm
Thimble reading 0.26 mm
Vernier reading 0.004 mm
Total reading 13.764 mm

Inch Micrometer

The main scale is divided into tenths of an inch (0.100 in) and each main division is subdivided into 4 equal parts, each division representing 0.025 in (0.1 divided by 4). One complete turn of the thimble, moves the spindle axially twenty five thousandths of an inch. The thimble has twenty five graduations, each graduation representing one thousandth of an inch.



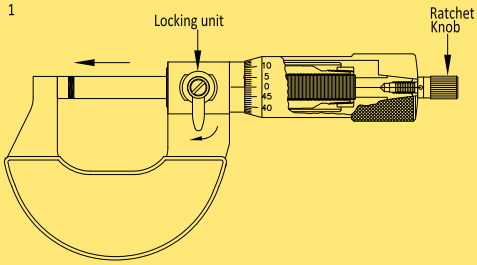
2 main 0.100 divisions	0.200 in
1 sub-division 0.025 in	0.025 in
15 thimble divisions	0.015 in
Total reading	0.240 in



3 main 0.100 divisions	0.300 in
3 sub-division 0.025 in	0.075 in
15 thimble divisions	0.015 in
Vernier reading	0.0003 in
Total reading	0.3903 in

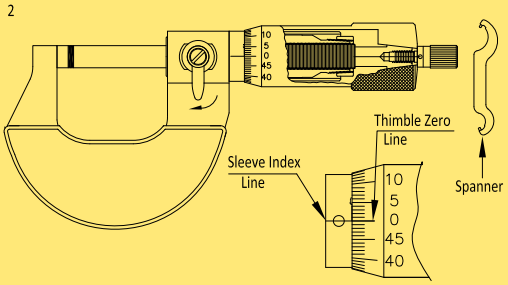
ZERO SETTING PROCEDURE

1



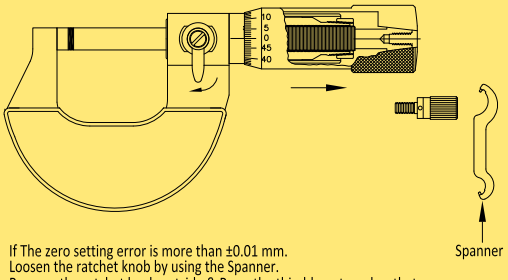
Clean the Measuring faces thoroughly.Use RATCHET KNOB to flush or bridge the measuring faces with each other (or with the faces of setting gauge for above 25 mm) & lock the SPINDLE by LOCKING UNIT & read the value.

2



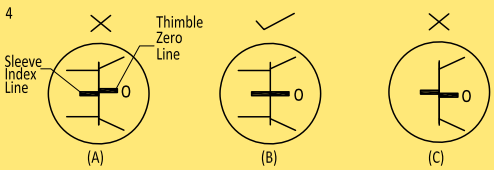
If The zero setting error is about or less than ±0.01 mm.
Insert the spanner key into the hole on the sleeve on the opposite side of the index line, and rotate the sleeve to align the index line with the thimble zero line.

3



If The zero setting error is more than ±0.01 mm.
Loosen the ratchet knob by using the Spanner.
Remove the ratchet knob outside & Press the thimble outward so that it can freely move, then align the thimble zero line with the sleeve index line.
Lock the ratchet knob by using the Spanner at the original position to secure the thimble.

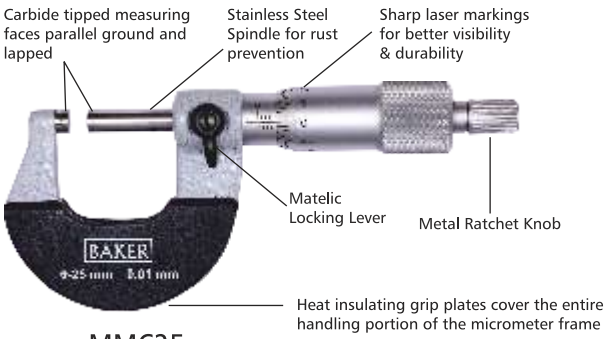
4



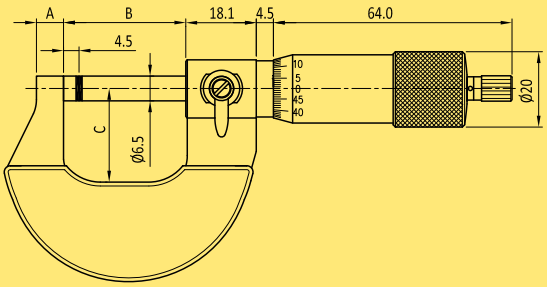
If Zero not set properly like fig.(B) then repeat the procedure.

External Micrometer

RANGE: 0-200 mm/0-8”



MMC25



6MMC150



4MMC100



SET OF 6 MICROMETERS (0-150 mm/ 0-6”)

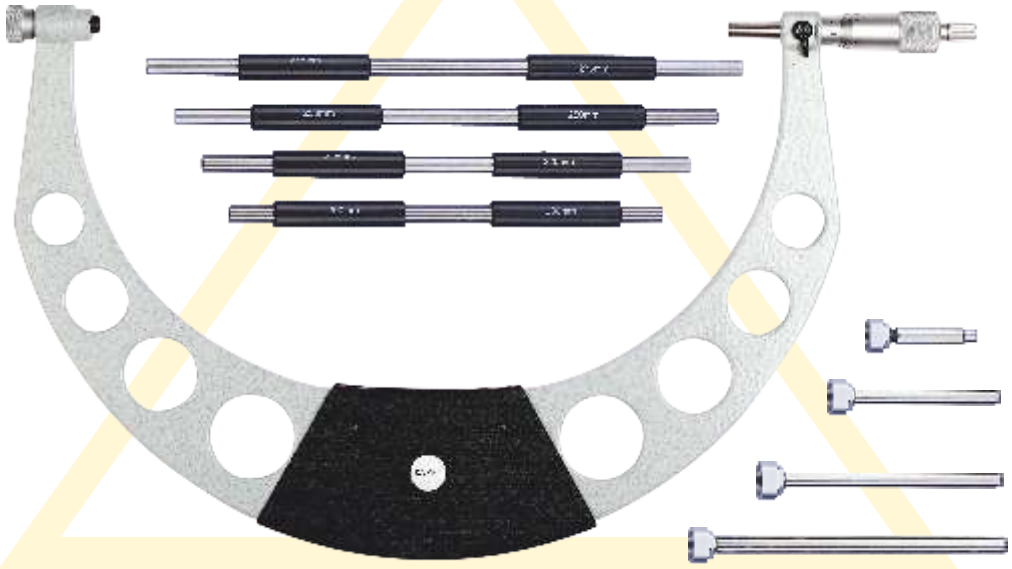
SET OF 4 MICROMETERS (0-100 mm/ 0-4”)

Measuring Range mm	Reading mm	Type	A mm	B mm	C mm	Measuring Range inch	Reading inch	Type
0-25	0.01	MMC25	7.1	32.5	25.5	0-1	0.001	INC1
	0.001	MMC25-1					0.0001	INC1-1
25-50	0.01	MMC50	7.1	57.5	30.5	1-2	0.001	INC2
	0.001	MMC50-1					0.0001	INC2-1
50-75	0.01	MMC75	8	83	45	2-3	0.001	INC3
	0.001	MMC75-1					0.0001	INC3-1
75-100	0.01	MMC100	8	108	58	3-4	0.001	INC4
	0.001	MMC100-1					0.0001	INC4-1
100-125	0.01	MMC125	8	133	67.5	4-5	0.001	INC5
	0.001	MMC125-1					0.0001	INC5-1
125-150	0.01	MMC150	8	158	82	5-6	0.001	INC6
	0.001	MMC150-1					0.0001	INC6-1
150-175	0.01	MMC175	8	183	93	6-7	0.001	INC7
175-200	0.01	MMC200	8	208	108	7-8	0.001	INC8
Set of Micrometers								
0 -100 (Set of 4)	0.01	4MMC100	-			0-4 (Set of 4)	0.001	4INC4
	0.001	4MMC100-1					0.0001	4INC4-1
0 -150 (Set of 6)	0.01	6MMC150	-			0-6 (Set of 6)	0.001	6INC6
	0.001	6MMC150-1					0.0001	6INC6-1

FEATURES

- Specification : IS, DIN, ASME & JIS
- Robust design withstands toughest workshop conditions
- Stainless steel spindle for rust prevention
- Measuring faces : Carbide tipped, micro lapped
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Heat Insulation grip plates cover the entire handling portion of the micrometer frame
- Metal spindle locking lever
- Delivered : Box, setting standard (from 25 mm upward), wrench, certificate of inspection

EXTERNAL MICROMETER WITH INTERCHANGEABLE ANVILS

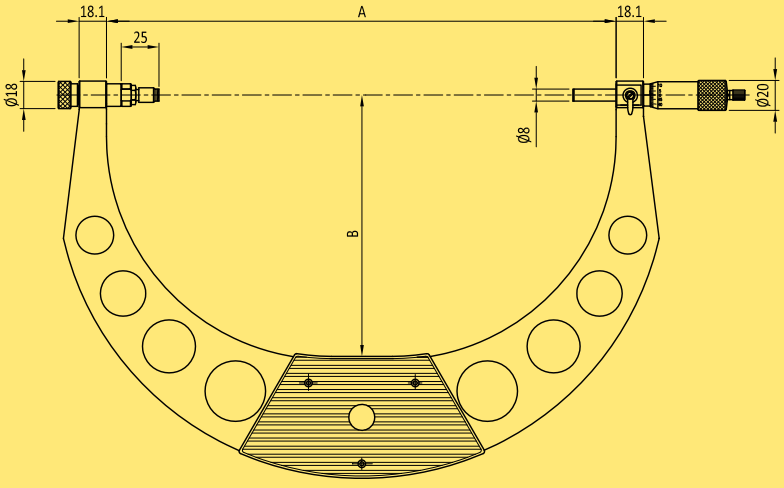


MMI200-300

Measuring Range mm	Reading mm	Type	A mm	B mm	Measuring Range inch	Reading inch	Type	Number Of Setting Standards	Number Of Interchangeable Anvils	Weight grams
0-100	0.01	MMI0-100	133	70	0-4	0.001	INI0-4	3	4	600
	0.001	MMI0-100-1				0.0001	INI0-4-1	3	4	
0-150	0.01	MMI0-150	183	95	0-6	0.001	INI0-6	5	6	850
	0.001	MMI0-150-1				0.0001	INI0-6-1	5	6	
150-300	0.01	MMI150-300	337	175	6-12	0.001	INI6-12	6	6	1700
	0.001	MMI150-300-1				0.0001	INI6-12-1	6	6	
200-300	0.01	MMI200-300	337	175	8-12	0.001	INI8-12	4	4	1700
	0.001	MMI200-300-1				0.0001	INI8-12-1	4	4	
*300-400	0.01	MMI300-400	437	225	12-16	0.001	INI12-16	4	4	2500
*400-500	0.01	MMI400-500	537	275	16-20	0.001	INI16-20	4	4	3000

NOTE:-

- *External Micrometer above Range 300 mm & 12 Inch, supplied without insulation grip plates
- Setting Standards - up to 300 mm & 12 inch - Both Ends Flat Face
  Above 300 mm & 12 inch - Both Ends Spherical



FEATURES

- Interchangeable anvils
- Robust design withstands toughest workshop conditions
- Stainless steel spindle (Ø8.0 mm, pitch 0.5mm & stroke 25 mm) for rust prevention
- Measuring faces : Carbide tipped, micro lapped spindle
  : Carbide tipped, micro lapped anvils
- Measuring force : 5 to 15 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Metal spindle locking lever
- Delivered : Box, setting standard (refer table), wrench, setting standard holding sleeves over 300 mm, certificate of inspection



EXTERNAL MICROMETER WITH ADD ON EXTENSION ANVIL



MME700-800

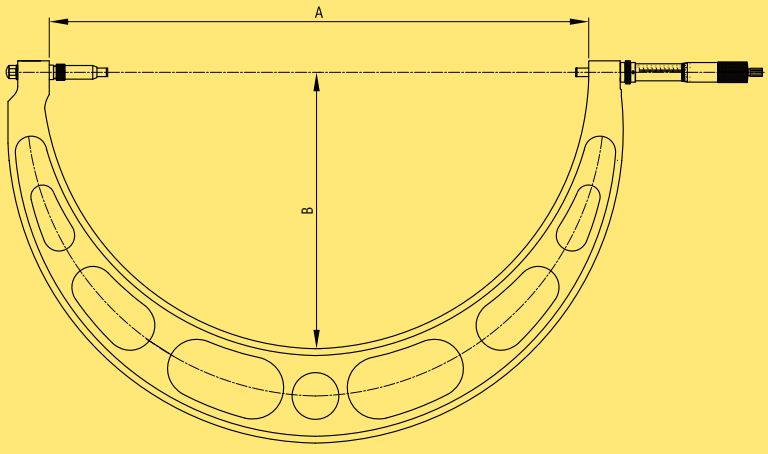
Measuring Range mm	Reading mm	Type	A mm	B mm	Measuring Range inch	Reading inch	Type	Number Of Setting Standards	Number Of Extension Anvil	Weight grams
500-600	0.01	MME500-600	644	325	20-24	0.001	INE20-24	1	1	3700
600-700	0.01	MME600-700	745	375	24-28	0.001	INE24-28	1	1	4300
700-800	0.01	MME700-800	846	425	28-32	0.001	INE28-32	1	1	4600
800-900	0.01	MME800-900	948	475	32-36	0.001	INE32-36	1	1	5600
900-1000	0.01	MME900-1000	1050	525	36-40	0.001	INE36-40	1	1	6800

NOTE:-

- Setting Standards - Both End Spherical

FEATURES

- Sturdy & light-weight Aluminum frame
- Stainless steel spindle (Ø10.0 mm, pitch 1.0 mm & stroke 50 mm) for rust prevention
- Measuring faces : Carbide tipped, micro lapped spindle
  : Carbide tipped, micro lapped anvil & add on extension
- Measuring force : 5 -15 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Delivered : Box, setting standard (refer table), add on extension, wrench, setting standard holding sleeve and certificate of inspection

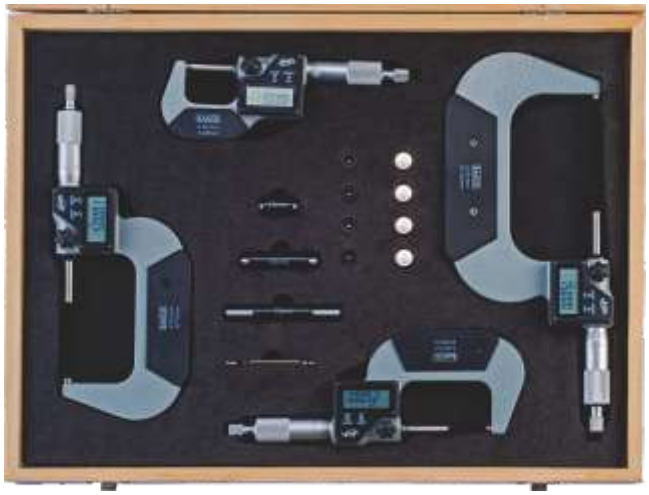


Digital External Micrometer

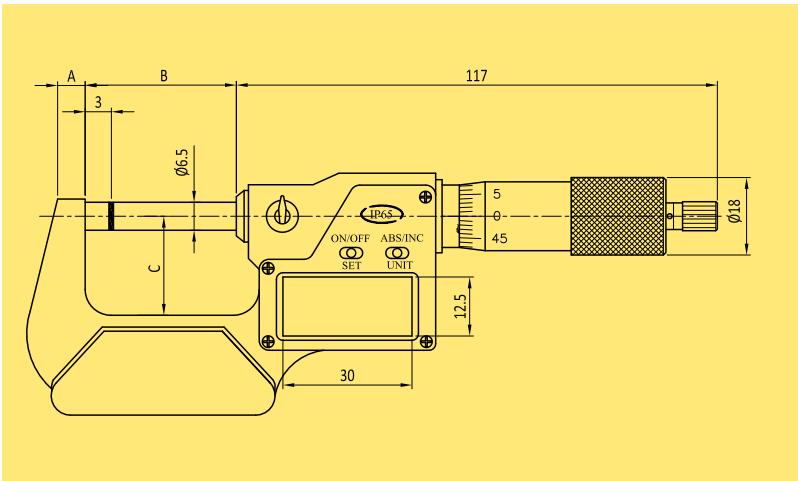
RANGE 0-200 mm/0-8"



DMM25



4DMM100
SET OF 4 DIGITAL MICROMETERS (0-100 mm/0-4")



FEATURES

- Protection level IP65 against dust & water (coolant proof)
- Stainless steel spindle for rust prevention
- mm / inch conversion
- Auto power off
- SR44 battery
- Absolute & incremental measuring mode
- Easy operations with 2 buttons
- Measuring faces : Carbide tipped, micro lapped
- Measuring force : 5 -10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Delivered : Box, setting standard (from 25 mm upward), 1 battery, ball attachment, wrench, certificate of inspection

MEASURING RANGE	READING	TYPE	TYPE (With Data Out Put)	A mm	B mm	C mm
0-25 mm / 0-1"	0.001 mm / 0.00005"	DMM25	DMM25-1	6.5	31	25
25-50 mm / 1-2"		DMM50	DMM50-1	8.5	56	32
50-75 mm / 2-3"		DMM75	DMM75-1	8.5	81.5	44.5
75-100 mm / 3-4"		DMM100	DMM100-1	8.5	106	57
100-125 mm / 4-5"		DMM125		17	133	82
125-150 mm / 5-6"		DMM150		17	158	82
150-175 mm / 6-7"		DMM175		19.5	183	95
175-200 mm / 7-8"		DMM200		19.5	209	107
Set of Micrometers						
0-100 mm / 0-4" (Set of 4)		4DMM100				

DATA OUTPUT FEATURES
USB compatible data output interface
Can be connected to PC through SPC cable P1502 and data can be transferred by switch P1601

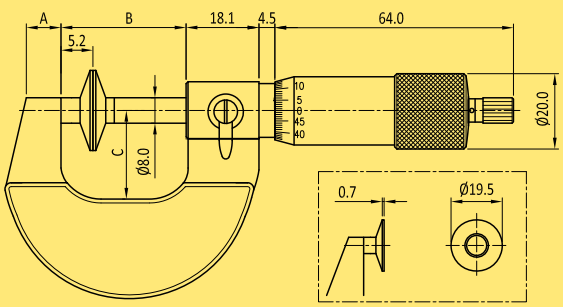
Special External Micrometer



DISC: ROTATING



MMC25-D





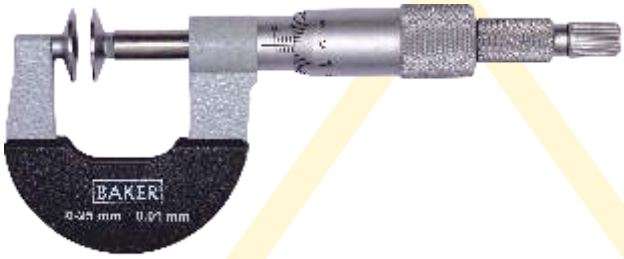
Measuring Range mm	Reading mm	Type	A mm	B mm	C mm	Measuring Range inch	Reading inch	Type
0 -25	0.01	MMC25-D	10	36	29	0 -1	0.001	INC1-D
25-50		MMC50-D	7.1	61.5	31	1-2		INC2-D
50-75		MMC75-D	8	87	45.5	2-3		INC3-D
75-100		MMC100-D	5.9	110	57.5	3-4		INC4-D

FEATURES

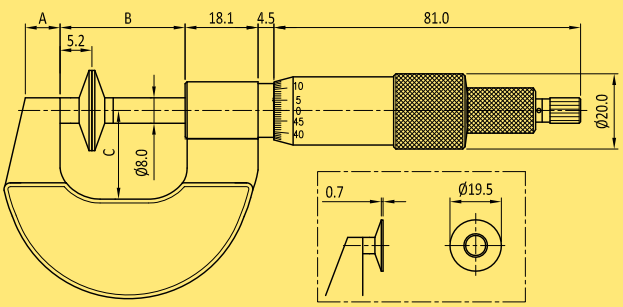
- Robust design withstands toughest workshop conditions
- Stainless steel spindle (Ø8.0 mm, pitch 0.5mm & stroke 25 mm) for rust prevention
- Measuring faces : Hardened steel
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Heat Insulation grip plates cover the entire handling portion of the micrometer frame
- Metal spindle locking lever
- Delivered : Box, setting standard (from 25 mm upward), wrench, certificate of inspection

Application
For measuring root tangent length of spur & helical gears, recess distances etc

DISC: NON-ROTATING



MMC25-ND





Measuring Range mm	Reading mm	Type	A mm	B mm	C mm	Measuring Range inch	Reading inch	Type
0 -25	0.01	MMC25-ND	10	36	29	0 -1	0.001	INC1-ND
25 - 50		MMC50-ND	7.1	61.5	31	1 - 2		INC2-ND
50 -75		MMC75-ND	8	87	45.5	2 - 3		INC3-ND
75 -100		MMC100-ND	5.9	110	57.5	3 - 4		INC4-ND

FEATURES

- Robust design withstands toughest workshop conditions
- Stainless steel spindle (Ø8.0 mm, pitch 0.5mm & stroke 25 mm) for rust prevention
- Measuring faces : Hardened steel
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Heat Insulation grip plates cover the entire handling portion of the micrometer frame
- Metal spindle locking lever
- Delivered : Box, setting standard (from 25 mm upward), wrench, certificate of inspection

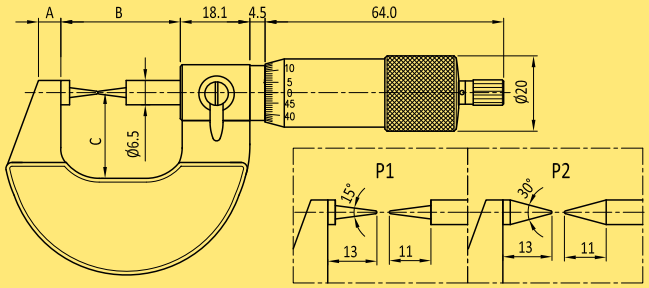
Application
For measuring thickness of paper, felt, rubber, fabric etc

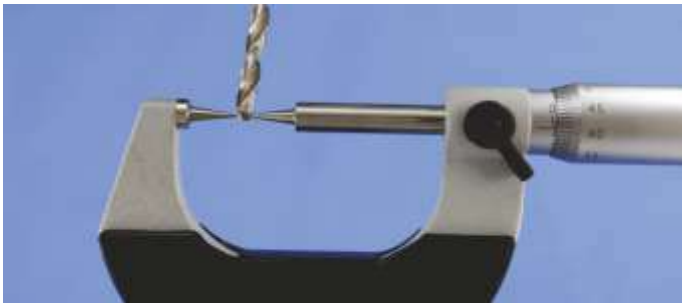
Special External Micrometer

POINT



MMC25-P2





Measuring Range mm	Reading mm	Point Angle	Type	A mm	B mm	C mm	Measuring Range inch	Reading inch	Type
0 -25	0.01	15°	MMC25-P1	7.1	57.5	30.5	0 -1	0.001	INC1-P1
		30°	MMC25-P2						INC1-P2
25-50		15°	MMC50-P1	8	83	45	1-2		INC2-P1
		30°	MMC50-P2						INC2-P2
50-75		15°	MMC75-P1	8	108	58	2-3		INC3-P1
		30°	MMC75-P2						INC3-P2
75-100		15°	MMC100-P1	8	133	67.5	3-4		INC4-P1
		30°	MMC100-P2						INC4-P2

FEATURES

- Robust design withstands toughest workshop conditions
- Stainless steel spindle for rust prevention
- Measuring faces : 15° & 30° hardened steel points having radius 0.3 mm approximately
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Heat Insulation grip plates cover the entire handling portion of the micrometer frame
- Metal spindle locking lever
- Delivered : Box, setting standard (from 25 mm upward), wrench, certificate of inspection

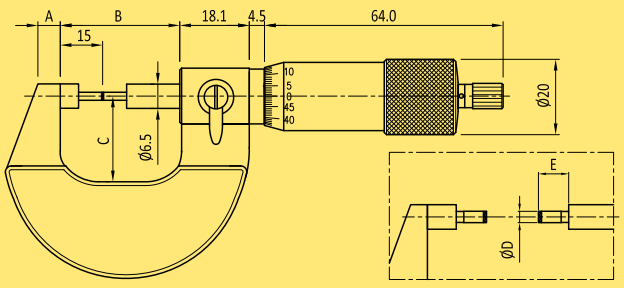
Application

For measuring web thickness of drills, small grooves, keyways

SPLINE



MMC25-S3





Measuring Range mm	Reading mm	Type	A mm	B mm	C mm	D mm	E mm	Measuring Range inch	Reading inch	Type
0 -25	0.01	MMC25-S2	7.1	57.5	30.5	2	5	0 -1	0.001	INC1-S2
		MMC25-S3				3	8			INC1-S3
25-50		MMC50-S3	8	83	45	3	8	1-2		INC2-S3
50-75		MMC75-S3	8	108	58	3	8	2-3		INC3-S3
75-100		MMC100-S3	8	133	67.5	3	8	3-4		INC4-S3

FEATURES

- Robust design withstands toughest workshop conditions
- Stainless steel spindle for rust prevention
- Measuring faces : Carbide tipped, micro lapped available in two types Ø 2 x 5 mm & Ø 3 x 8 mm
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Heat Insulation grip plates cover the entire handling portion of the micrometer frame
- Metal spindle locking lever
- Delivered : Box, setting standard (from 25 mm upward), wrench, certificate of inspection

Application

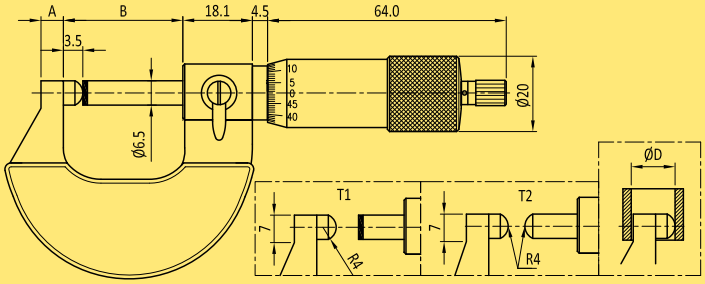
For measuring recessess, grooves, Splines, Slots, Keyways & small parts in precision work

Special External Micrometer

TUBE



MMC25-T1 MMC25-T2





Measuring Range mm	Reading mm	Type	A mm	B mm	Min. Ø D mm	Measuring Range inch	Reading inch	Type
0 -25	0.01	MMC25-T1	5.5	32.5	9.5	0-1	0.001	INC1-T1
		MMC25-T2						INC1-T2
25-50		MMC50-T1	6	57.5	10	1-2		INC2-T1
		MMC50-T2						INC2-T2
50-75		MMC75-T1	8	83	12	2-3		INC3-T1
		MMC75-T2						INC3-T2
75-100		MMC100-T1	8	108	12	3-4		INC4-T1
		MMC100-T2						INC4-T2

NOTE-
Carbide measuring faces available on request

FEATURES

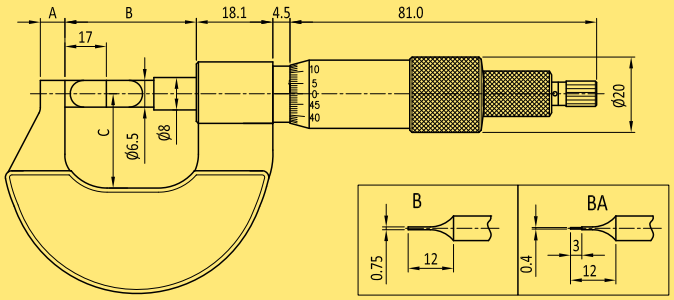
- Robust design withstands toughest workshop conditions
- Stainless steel spindle for rust prevention
- Measuring faces : Hardened steel availabl in two types:
  T1 – one end spherical
  T2 – both ends spherical
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Heat Insulation grip plates cover the entire handling portion of the micrometer frame
- Metal spindle locking lever
- Delivered : Box, setting standard (from 25 mm upward), wrench, certificate of inspection

Application
For measuring curved surfaces & wall thickness of tubes, rings, bearings etc

BLADE



MMC25-B





Measuring Range mm	Reading mm	Type	A mm	B mm	C mm	Measuring Range inch	Reading inch	Type
0 -25	0.01	MMC25-B	7.1	57.5	30.5	0-1	0.001	INC1-B
		MMC25-BA						INC1-BA
25-50		MMC50-B	8	83	45	1-2		INC2-B
		MMC50-BA						INC2-BA
50-75		MMC75-B	8	108	58	2-3		INC3-B
		MMC75-BA						INC3-BA
75-100		MMC100-B	8	133	67.5	3-4		INC4-B
		MMC100-BA						INC4-BA

NOTE-
B-Blade Thickness 0.75 mm
BA-Blade Thickness 0.40 mm
Measuring Range : 100 to 200 mm & Carbide measuring faces available on request

FEATURES

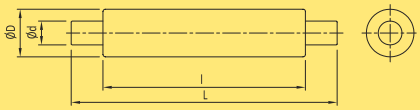
- Robust design withstands toughest workshop conditions
- Stainless steel spindle for rust prevention
- Measuring faces : Hardened steel
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Heat Insulation grip plates cover the entire handling portion of the micrometer frame
- Metal spindle locking lever
- Delivered : Box, setting standard (from 25 mm upward), wrench, certificate of inspection

Application
For measuring small grooves on shaft dia., keyways and other hard to reach geometries / profiles

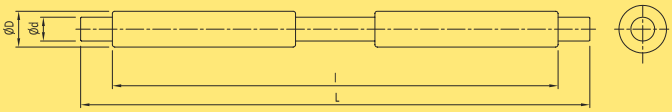
Setting Standard, Depth Micrometer

FOR EXTERNAL MICROMETER





25mm-150mm & 1inch-6inch



175mm - 275mm & 7inches - 11inches

METRIC

Length (L) mm	Tolerance µm	l mm	Diameter (Ød) mm	Diameter (ØD) mm
25	± 1.5	20	7	11
50	± 2.0	40	7	11
75	± 2.5	40	7	11
100	± 3.0	60	8	12
125	± 3.5	60	8	12
150	± 4.0	60	8	12
175	± 4.5	135	8	12
200	± 5.0	160	8	12
225	± 5.5	160	8	12
250	± 6.0	180	8	12
275	± 6.5	195	8	12

INCH

Length (L) inch	Tolerance inch	l inch	Diameter (Ød) inch	Diameter (ØD) inch
1	± 0.00005	0.79	0.27	0.43
2	± 0.0001	1.65	0.27	0.43
3	± 0.0001	1.65	0.27	0.43
4	± 0.0001	2.45	0.31	0.47
5	± 0.00015	2.45	0.31	0.47
6	± 0.00015	2.45	0.31	0.47
7	± 0.00015	5.31	0.31	0.47
8	± 0.00015	6.31	0.31	0.47
9	± 0.0002	6.31	0.31	0.47
10	± 0.0002	7.15	0.31	0.47
11	± 0.0002	7.67	0.31	0.47

FEATURES

- Hardened, ground & lapped measuring faces
- Flat type measuring faces
- Measuring faces flatness 0.3 µm

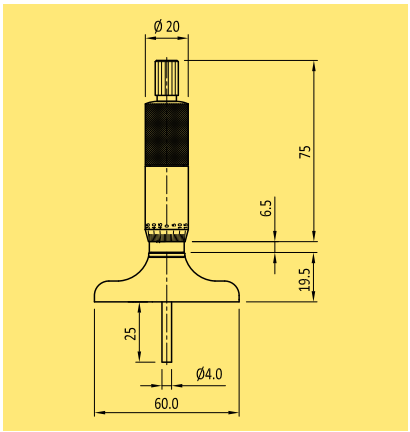
DEPTH

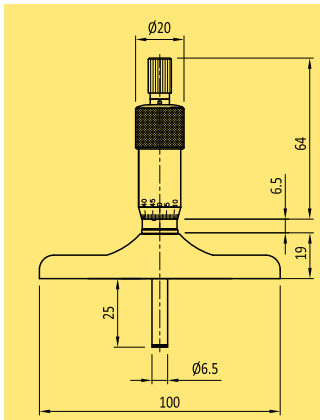


MMC100-DM60



MMC25-DM100





Measuring Range mm	Reading mm	Type	Measuring Range inch	Reading inch	Type
0-25	0.01	MMC25-DM60	0-1	0.001	INC1-DM60
	0.001	MMC25-1DM60		0.0001	INC1-1DM60
	0.01	MMC25-DM100		0.001	INC1-DM100
	0.001	MMC25-1DM100		0.0001	INC1-1DM100
	0.01	MMC25-DM60S		0.001	INC1-DM60S
	0.001	MMC25-1DM60S		0.0001	INC1-1DM60S
	0.01	MMC25-DM100S		0.001	INC1-DM100S
	0.001	MMC25-1DM100S		0.0001	INC1-1DM100S
0-100	0.01	MMC100-DM60	0-4	0.001	INC4-DM60
	0.01	MMC100-DM100		0.001	INC4-DM100
0-150	0.01	MMC150-DM60	0-6	0.001	INC6-DM60
	0.01	MMC150-DM100		0.001	INC6-DM100

FEATURES

- Robust design withstands toughest workshop conditions
- Base : Hardened, ground and lapped
- Stainless steel spindle for rust prevention
- Spindle Measuring faces:
  carbide tipped, micro lapped (range 0-25 mm & 0- 1 inch)
  Hardened steel, ground and lapped (range 0-100 mm & 0-4") & (0-150 mm & 0-6")
- Range (0-100 mm & 0-4") & (0-150 & 0-6") available with interchangeable rods
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Delivered : Box, wrench, certificate of inspection

Application

For Measuring depth of steps, shoulders etc

Internal Micrometer & Micrometer Stand

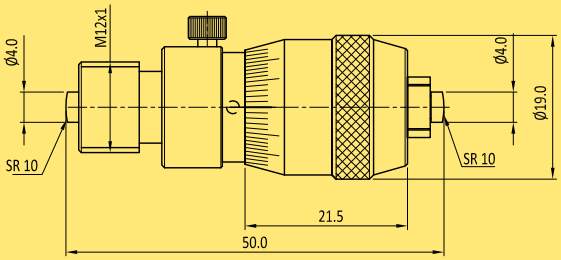


TUBULAR INTERNAL MICROMETER WITH EXTENSIONS

This is an extension rod type inside micrometer.
Interchangeable cylindrical extensions are spring-loaded in a protective sleeve with carbide tipped microlapped measuring faces



Measuring Range mm	Reading mm	Type	Extension Rods
50-150	0.01	MMT150	3 [13 mm, 25 mm 50 mm]
50-300		MMT300	5 [13 mm, 25 mm 50 mm (2 Nos.), 100 mm]
50-500		MMT500	6 [13 mm, 25 mm 50 mm (2 Nos.), 100 mm, 200 mm]
50-1000		MMT1000	8 [13 mm, 25 mm 50 mm (2 Nos.), 100 mm, 200 mm (2 Nos.), 300 mm]
50-1500		MMT1500	10 [13 mm, 25 mm 50 mm (2 Nos.), 100 mm, 200 mm (3 Nos.), 300 mm (2 Nos.)]

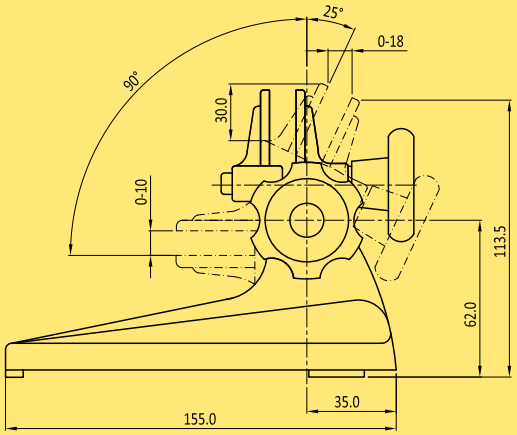


SPECIFICATIONS

- Robust design withstands toughest workshop conditions
- Accuracy : ±(3+n+L/50)μm
  n = Number of extensions
  L = Maximum measuring range (mm)
- Measuring span : 13 mm
- Graduation : 0.010 mm
- Stainless steel spindle for rust prevention (pitch 0.5 mm)
- Measuring faces : carbide tipped, micro lapped
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Delivered : Box, wrench, certificate of inspection

MICROMETER STAND





SPECIFICATIONS

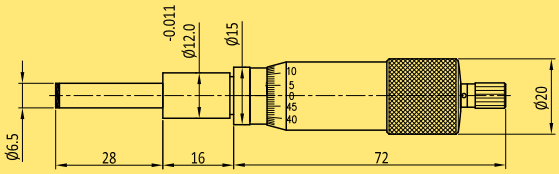
- This stand keeps both hand free for operating the micrometer and positioning the workpiece.
- Useful for batch or mass type measurements in manufacturing and in quality assurance
- Suitable for micrometers up to 100 mm/4”
- Adjustable angle type

ROTATING SPINDLE



MM25-HP

Plain holding Ø12.0 mm

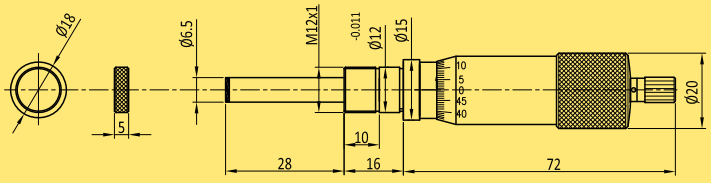


Measuring Range mm	Reading mm	Type	Measuring Range inch	Reading inch	Type
0 -25	0.01	MM25-HP	0-1	0.001	IN1-HP
	0.001	MM25-1HP		0.0001	IN1-1HP



MM25-HT

Threaded holding ØM12x1



Measuring Range mm	Reading mm	Type	Measuring Range inch	Reading inch	Type
0 -25	0.01	MM25-HT	0-1	0.001	IN1-HT
	0.001	MM25-1HT		0.0001	IN1-1HT

FEATURES

- Stainless steel spindle for rust prevention
- Measuring faces : carbide tipped, micro lapped
- Measuring force : 5 to 10 N
- Metal ratchet stop for consistent measuring force
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Delivered : Plastic container &certificate of inspection

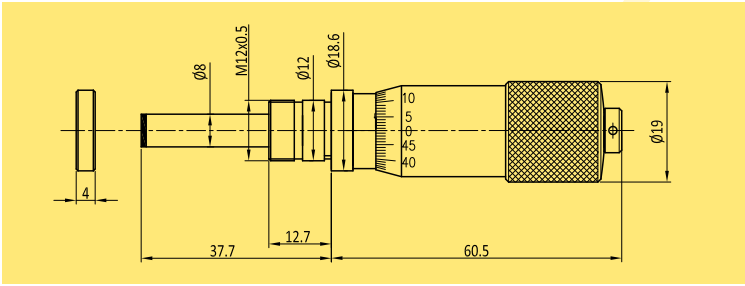
NON-ROTATING SPINDLE

Differential Head (Extra fine feed) type

It is a differential mechanism micrometer head (extra fine feed) with a non-rotating spindle.
Differential travel allows ultra-fine, sensitive movement

Range : 0-1 mm
Reading : 0.001 mm
Spindle End : Flat (Carbide Tipped), micro lapped





FEATURES

- Stainless steel spindle for rust prevention
- Measuring faces : carbide tipped, micro lapped
- Scale : Sleeve and thimble dull chrome plated
- Sharp Laser marking for better visibility & durability
- Delivered : Plastic container & certificate of inspection



Micrometer heads with Non-rotating spindle

CUSTOMIZED MICROMETER HEAD

- **We also manufacture Micrometer Heads as per customer requirements with rotating / non-rotating spindles.**

