

Micrometer

Outside Micrometers SERIES 103

- Baked-enamel-finished frame.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



Measurement example



Metric With ratchet stop								
Order No.	Range (mm)	Graduation (mm)	MPE*1 (μm)	Measuring force (N)	Flatness (μm)	Parallelism (μm)		
103-129	0 - 25	0.001	±2	5 - 10	0.6	2		
103-130	25 - 50	0.001						
103-139-10	50 - 75	0.01	±3			10 - 15	1	3
103-140-10	75 - 100							
103-141-10	100 - 125							
103-142-10	125 - 150		±4					4
103-143-10	150 - 175							
103-144-10	175 - 200							
103-145-10	200 - 225		±5					5
103-146-10	225 - 250							
103-147-10	250 - 275							
103-148-10	275 - 300		±6					6
103-149	300 - 325							
103-150	325 - 350							
103-151	350 - 375	±7	7					
103-152	375 - 400							
103-153	400 - 425							
103-154	425 - 450	±8	8					
103-155	450 - 475							
103-156	475 - 500							
103-157	500 - 525	±9	9					
103-158	525 - 550							
103-159	550 - 575							
103-160	575 - 600	±10	10					
103-161	600 - 625							
103-162	625 - 650							
103-163	650 - 675	±11	11					
103-164	675 - 700							
103-165	700 - 725							
103-166	725 - 750	±12	12					
103-167	750 - 775							
103-168	775 - 800							
103-169	800 - 825	±13	11					
103-170	825 - 850							
103-171	850 - 875							
103-172	875 - 900	±14	12					
103-173	900 - 925							
103-174	925 - 950							
103-175	950 - 975	±15	12					
103-176	975 - 1000							

Metric With ratchet stop						
Order No.	Range (mm)	Graduation (mm)	MPE*1 *2 (μm)	Measuring force (N)	Flatness (μm)	Parallelism (μm)
103-137	0 - 25	0.01	±2	5 - 10	0.6	2
103-138	25 - 50	0.01				

• Standard accessories: Setting standard, 1 pc. (except for measuring range 0 to 25 mm (0 to 1 in) models), Spanner (301336), 1 pc. (for maximum measuring range up to 300 mm (12 in)), Spanner (200154), 1 pc. (for maximum measuring range 325 mm (13 in) or over)

*1 MPE: Maximum permissible error J_{MPE}

*2 Maximum permissible error of the indication measured by contacting the full measuring face with the object to be measured. J_{MPE} is a term specified by JIS B 7502: 2016 which has been prepared based on ISO 3611: 2010 with some modifications of the technical contents. The measurement method has not been changed from JIS B 7502: 1994. For details refer to page B-82.



103-904-10

- Range: 0 - 6 in (6 pcs./set)
- Models included: **103-177, 103-178, 103-179, 103-180, 103-181, 103-182**, 5 micrometer standards



103-905-10

- Range: 0 - 12 in (12 pcs./set)
- Models included: All micrometers of **103-904-10** and **103-906** in one set, 11 micrometer standards



103-906

- Range: 6 - 12 in (6 pcs./set)
- Models included: **103-183, 103-184, 103-185, 103-186, 103-187, 103-188**, 6 micrometer standards

Inch With ratchet stop							
Order No.	Range (in)	Graduation (in)	MPE* ¹ (in)	Measuring force (N)	Flatness (in)	Parallelism (in)	
103-177	0 - 1	0.001	±0.0001	5 - 10	0.000024	0.00008	
103-131		0.0001					
103-178	1 - 2	0.001					
103-132		0.0001					
103-179	2 - 3	0.001					±0.00015
103-180	3 - 4						
103-181	4 - 5						
103-182	5 - 6						
103-183	6 - 7						
103-184	7 - 8						±0.0002
103-185	8 - 9						
103-186	9 - 10		±0.00025				
103-187	10 - 11						
103-188	11 - 12		±0.0003	10 - 15	0.00004	0.0002	
103-189	12 - 13						
103-190	13 - 14						
103-191	14 - 15						
103-192	15 - 16						
103-193	16 - 17	±0.00035					
103-194	17 - 18						
103-195	18 - 19	±0.0004					
103-196	19 - 20						
103-197	20 - 21	±0.00045					
103-198	21 - 22						
103-199	22 - 23	±0.0005					
103-200	23 - 24						
103-201	24 - 25	±0.00055					
103-202	25 - 26						
103-203	26 - 27	±0.0006					
103-204	27 - 28						
103-205	28 - 29	±0.00065					
103-206	29 - 30						
103-207	30 - 31	±0.0007					
103-208	31 - 32						
103-209	32 - 33	±0.00075					
103-210	33 - 34						
103-211	34 - 35	0.00048					
103-212	35 - 36						
103-213	36 - 37	0.00044					
103-214	37 - 38						
103-215	38 - 39	0.00032					
103-216	39 - 40						

Inch With friction thimble						
Order No.	Range (in)	Graduation (in)	MPE* ¹ * ² (in)	Measuring force (N)	Flatness (in)	Parallelism (in)
103-135	0 - 1	0.0001	±0.0001	5 - 10	0.000024	0.00008
103-136	1 - 2					

- Standard accessories: Setting standard, 1 pc. (except for measuring range 0 to 25 mm (0 to 1 in) models)- (**301336**), 1 pc. (for maximum measuring range up to 300 mm (12 in)), Spanner (**200154**), 1 pc. (for maximum measuring range 325 mm (13 in) or over)

*1 MPE: Maximum permissible error J_{MPE}

*2 Maximum permissible error of the indication measured by contacting the full measuring face with the object to be measured. J_{MPE} is a term specified by JIS B 7502: 2016 which has been prepared based on ISO 3611: 2010 with some modifications of the technical contents. The measurement method has not been changed from JIS B 7502: 1994. For details refer to page B-82.

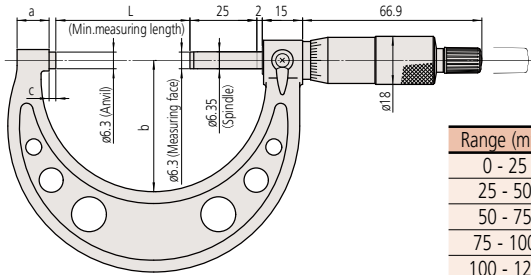
Micrometer

Outside Micrometers SERIES 103

DIMENSIONS

103-137 and 103-138, Models 75 mm to 300 mm

Unit: mm

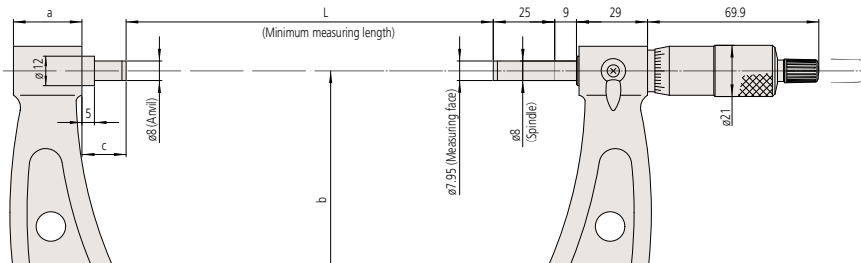


Range (mm)	L	a	b	c
0 - 25	0	9	28	2.5
25 - 50	25	10	38	
50 - 75	50	12	49	
75 - 100	75	14	60	
100 - 125	100	16.7	79	5.3
125 - 150	125	18.8	94	5.7
150 - 175	150	19.1	106	6.1
175 - 200	175	18.2	118	6.3
200 - 225	200	16.8	130	6.7
225 - 250	225	18	143	5.5
250 - 275	250		156	6.5
275 - 300	275		169	

DIMENSIONS

Models 325 mm to 1000 mm

Unit: mm



Range (mm)	L	a	b	c	
300 - 325	300	28	187	18	
325 - 350	325		199		
350 - 375	350		212		
375 - 400	375		224		
400 - 425	400		236		
425 - 450	425		248		
450 - 475	450		261		
475 - 500	475		273		
500 - 525	500		307		40
525 - 550	525				15
550 - 575	550		332		40
575 - 600	575				15
600 - 625	600		355		40
625 - 650	625				15

Range (mm)	L	a	b	c
650 - 675	650	28	382	40
675 - 700	675			15
700 - 725	700		405	40
725 - 750	725			15
750 - 775	750		430	40
775 - 800	775			15
800 - 825	800		455	40
825 - 850	825			15
850 - 875	850		480	40
875 - 900	875			15
900 - 925	900		505	40
925 - 950	925			15
950 - 975	950		530	40
975 - 1000	975			15