PROPRIETARY INSPECTION CERTIFICATE

Measurement example





103-913-40
- Range: 0 - 150 mm (6 pcs./set)
- Models included: **103-137**, **103-138**, **103-139**, **103-140**, **103-141**, **103-142**, 5 micrometer standards



103-914-40
- Range: 0 - 300 mm (12 pcs./set)
- Models included: **103-137**, **103-138**, **103-139**, **103-140**, **103-141**, **103-142**, **103-143**, **103-144**, **103-145**, **103-146**, **103-147**, **103-148** 11 micrometer standards



103-915
- Range: 150 - 300 mm (6 pcs./set)
- Models included: **103-143**, **103-144**, **103-145**, **103-146**, **103-147**, **103-148**, 6 micrometer standards

103-927-10
- Range: 0 - 75 mm (3 pcs./set)
- Models included: **103-137**, **103-138**, **103-139-10**

103-913-50
- Range: 50 - 150 mm (6 pcs./set)
- Models included: **103-137**, **103-138**, **103-139-10**, **103-140-10**, **103-141-10**, **103-142-10**

103-914-50
- Range: 50 - 300 mm (12 pcs./set)
- Models included: **103-137**, **103-138**, **103-139-10**, **103-140-10**, **103-141-10**, **103-142-10**, **103-143-10**, **103-144-10**, **103-145-10**, **103-146-10**, **103-147-10**, **103-148-10**

103-915-10
- Range: 150 - 300 mm (6 pcs./set)
- Models included: **103-143-10**, **103-144-10**, **103-145-10**, **103-146-10**, **103-147-10**, **103-148-10**

Outside Micrometers SERIES 103

- This is a simple, classic analog micrometer that represents the roots of our company's foundation.
- Measuring faces: Carbide tipped
- Equipped with Ratchet Stop for constant measuring force.



103-137



103-139-10

Metric With ratchet stop

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

Metric With ratchet stop

Code No.	Range (mm)	Measuring force (N)	Graduation (mm)	MPE*1 *2 (µm)	Flatness (µm)	Parallelism (µm)
103-137	0 - 25	5 - 10	0.01	±2	0.6	2
103-138	25 - 50					
103-255	50 - 75		0.001	±3		3
103-256	75 - 100					
103-257	100 - 125					
103-258	125 - 150					

- 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 13-10.

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Mitutoyo

Micrometer

Inch With ratchet stop

Code No.	Range (in)	Measuring force (N)	Graduation (in)	MPE*1 (in)	Flatness (in)	Parallelism (in)
103-177	0 - 1	5 - 10	0.001	±0.0001	0.000024	0.00008
103-131			0.0001			
103-178	1 - 2		0.001			
103-132			0.0001			
103-179	2 - 3		0.001			
103-180	3 - 4			±0.00015		0.00012
103-181	4 - 5					
103-182	5 - 6					
103-183	6 - 7			±0.0002		0.00016
103-184	7 - 8					
103-185	8 - 9					
103-186	9 - 10			±0.00025		
103-187	10 - 11					
103-188	11 - 12					0.0002
103-189	12 - 13	10 - 15		±0.0003	0.00004	
103-190	13 - 14					
103-191	14 - 15					
103-192	15 - 16			±0.00035		0.00024
103-193	16 - 17					
103-194	17 - 18					
103-195	18 - 19			±0.0004		0.00028
103-196	19 - 20					
103-197	20 - 21					
103-198	21 - 22			±0.00045		
103-199	22 - 23					
103-200	23 - 24			±0.0005		0.00032
103-201	24 - 25					
103-202	25 - 26					
103-203	26 - 27			±0.00055		0.00036
103-204	27 - 28					
103-205	28 - 29					
103-206	29 - 30					
103-207	30 - 31			±0.0006		0.0004
103-208	31 - 32					
103-209	32 - 33					
103-210	33 - 34			±0.00065		
103-211	34 - 35					
103-212	35 - 36					0.00044
103-213	36 - 37			±0.0007		
103-214	37 - 38					
103-215	38 - 39					
103-216	39 - 40			±0.00075		0.00048
103-259	0 - 1	5 - 10	0.0001	±0.0001	0.000024	0.00008
103-217	2 - 3			±0.00015		0.00012
103-218	3 - 4					
103-219	4 - 5					
103-220	5 - 6					
103-221	6 - 7			±0.0002		0.00016
103-222	7 - 8					
103-223	8 - 9					
103-224	9 - 10			±0.00025		
103-225	10 - 11					
103-226	11 - 12					0.0002

Inch With friction thimble

Code No.	Range (in)	Measuring force (N)	Graduation (in)	MPE*1 *2(in)	Flatness (in)	Parallelism (in)
103-135	0 - 1	5 - 10	0.0001	±0.0001	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 13-10.



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

103-907-40
- Range: 0 - 6 in (6 pcs./set)
- Models included: **103-135**, **103-136**, **103-217**, **103-218**, **103-219**, **103-220**

103-908-40
- Range: 0 - 12 in (12 pcs./set)
- Models included: **103-135**, **103-136**, **103-217**, **103-218**, **103-219**, **103-220**, **103-221**, **103-222**, **103-223**, **103-224**, **103-225**, **103-226**

103-909
- Range: 6 - 12 in (6 pcs./set)
- Models included: **103-221**, **103-222**, **103-223**, **103-224**, **103-225**, **103-226**

103-929
- Range: 0 - 3 in (3 pcs./set)
- Models included: **103-177**, **103-178**, **103-179**

103-930
- Range: 0 - 4 in (4 pcs./set)
- Models included: **103-177**, **103-178**, **103-179**, **103-180**

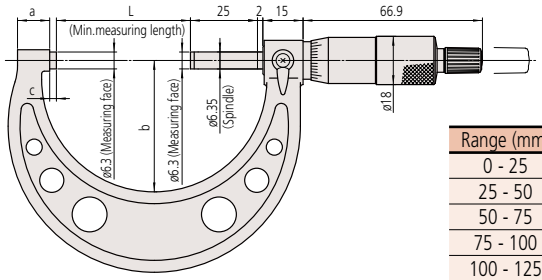
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Outside Micrometers
SERIES 103

DIMENSIONS

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

Unit: mm

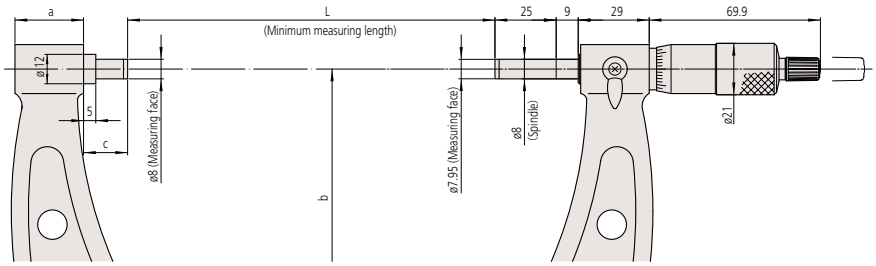


Range (mm)	L	a	b	c
0 - 25	0	9	28	2.5
25 - 50	25	10	38	
50 - 75	50	12	49	
75 - 100	75	14	60	
100 - 125	100	16.7	79	5.3
125 - 150	125	18.8	94	5.7
150 - 175	150	19.1	106	6.1
175 - 200	175	18.2	118	6.3
200 - 225	200	16.8	130	6.7
225 - 250	225	18	143	5.5
250 - 275	250		156	6.5
275 - 300	275		169	

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

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