

Mitutoyo



MEASURING INSTRUMENTS CATALOG



Micrometer

The origin of Mitutoyo's trustworthy brand of small tool instruments

Outside Micrometers SERIES 103

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



Technical Data

- Parallelism:
($2+R/100$) μm , $R=\text{max, range (mm)}$
[$0.00008+0.00004 (R/4)$] in, $R=\text{max, range (inch)}$
fraction rounded down
- Standard accessories: Reference bar, 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)

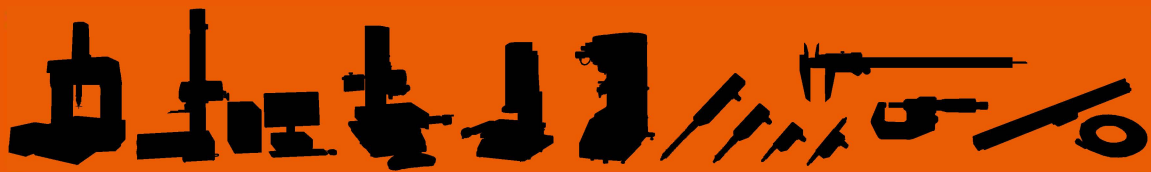
Metric	With ratchet stop				
Order No.	Range (mm)	Graduation (mm)	Maximum permissible error J_{MPE} (μm)	Measuring force (N)	Flatness (μm)
103-129	0 - 25	0.001	± 2	5 - 10	0.6
103-130	25 - 50	0.001			
103-139-10	50 - 75	0.001			
103-140-10	75 - 100	0.01	± 3	5 - 10	0.6
103-141-10	100 - 125				
103-142-10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

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

Metric	With ratchet stop				
Order No.	Range (mm)	Graduation (mm)	Maximum permissible error J_{MPE} (μm)	Measuring force (N)	Flatness (μm)
103-137	0 - 25	0.01	± 2	5 - 10	0.6
103-138	25 - 50	0.01			

Inch	With friction thimble				
Order No.	Range (in)	Graduation (in)	Maximum permissible error J_{MPE} (in)	Measuring force (N)	Flatness (in)
103-135	0 - 1	0.0001	± 0.0001	5 - 10	0.00024
103-136	1 - 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 MORE INFORMATION PLEASE CONTACT:



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