

External micrometers



The everyday reference

Like calipers, the external micrometer is generally found on the tables of workshops around the world. A true reference in metrology, this instrument is a «must» for those who want to equip themselves with an easy-to-use tool.

Without compromising the stability of the instrument, the weight of the TESA micrometer is reduced to a minimum in order to make it easier to handle, especially when measuring with one hand. The functional shape of the instrument, the smooth running of the micrometer screw, the secure locking and the friction ratchet also contribute to this.

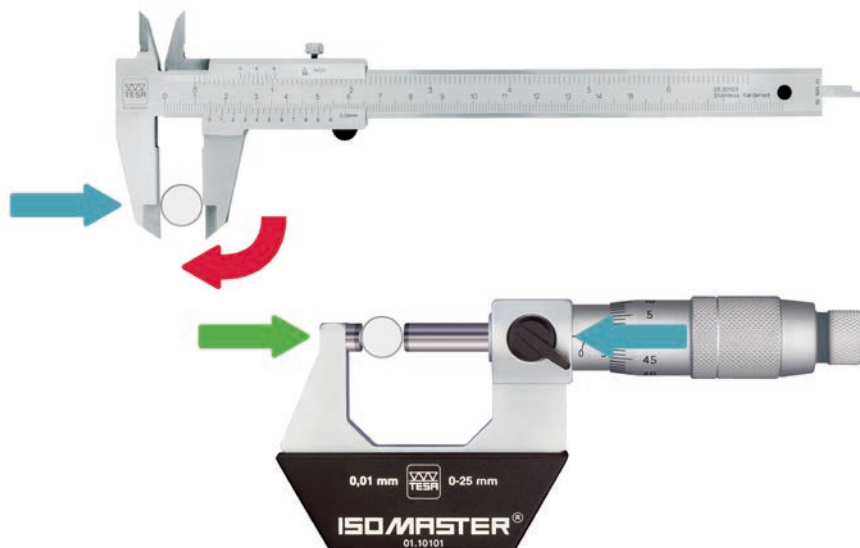
The robustness of the micrometer ensures that its accuracy is maintained over time.



An instrument based on the Abbe principle

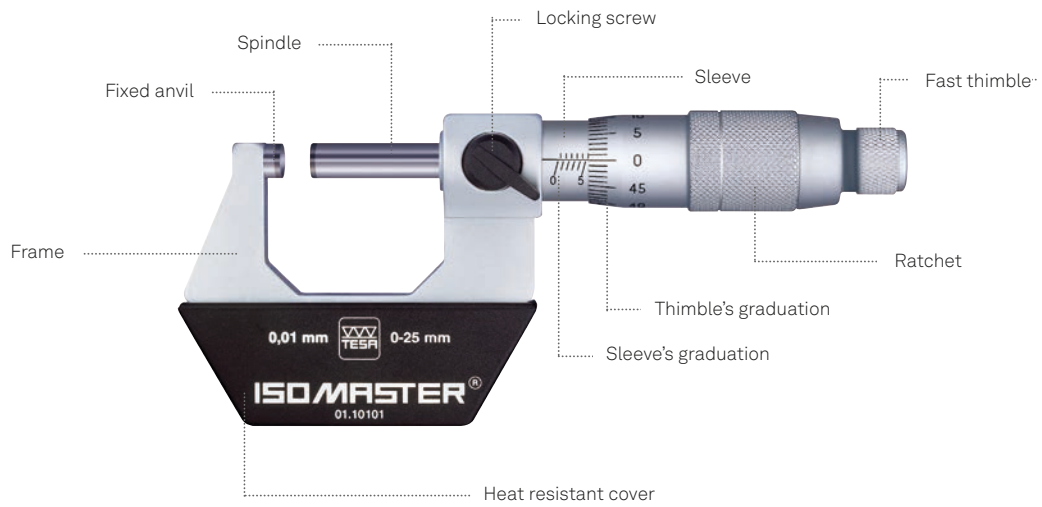
Unlike calipers, micrometers have an axial configuration corresponding to the Abbe principle. By having the measurement as well as the reading at the same level, on a single axis, they allow much more accurate measurements than other types of standard instruments on the market.

When a measuring force (blue) is applied to the part to be measured, a torque (red) is created on the caliper slide, creating a bias in the measurement results. On a micrometer, a force (green) opposite to the measuring force is created on the same axis as the measuring force. This state guarantees a better accuracy.



External micrometers

Vernier external micrometer



Digital external micrometer

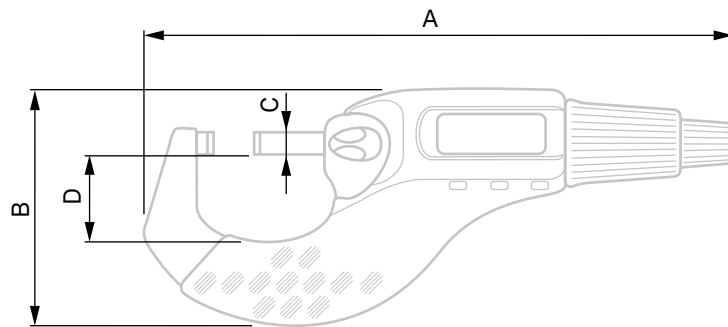


Digital models


06030030

Standard	DIN 863 T1
Resolution	0,001 mm / .00005 in
Zero	Floating
Material	Inserts: tungsten carbide
Thread pitch	0,5 mm
Degree of protection	IP54 IP40 (with opto-RS232)
Display	LCD Digit size: 7 mm
Power supply	CR2032 button battery
Data output(s)	With or without opto-RS232
Function(s)	Standby after 10 min Display locking (except EASY)
Autonomy	2'000 ÷ 4'000 hours
Measuring force	≤ 10 N
Included in delivery	Battery (1x) Measuring report Declaration of conformity

Digital external micrometers



Part number	Measuring range mm	Measuring range in	Max. perm. errors μm	Max. perm. parallelism error μm	Data output	Degree of protection	A mm	B mm	C mm	D mm
06030010	0 ÷ 30	0 ÷ 1.2	4	2		IP40	163	66	Ø 6,5	22
06030020	0 ÷ 30	0 ÷ 1.2	4	2		IP54	163	66	Ø 6,5	22
06030021	25 ÷ 50	1 ÷ 2	4	2		IP54	189	72	Ø 6,5	26
06030022	50 ÷ 75	2 ÷ 3	5	3		IP54	216	91	Ø 6,5	41
06030023	75 ÷ 100	3 ÷ 4	5	3		IP54	245	108	Ø 6,5	52
06030030	0 ÷ 30	0 ÷ 1.2	4	2	Opto-RS232	IP54	163	66	Ø 6,5	22
06030031	25 ÷ 50	1 ÷ 2	4	2	Opto-RS232	IP54	189	72	Ø 6,5	26
06030032	50 ÷ 75	2 ÷ 3	5	3	Opto-RS232	IP54	216	91	Ø 6,5	41
06030033	75 ÷ 100	3 ÷ 4	5	3	Opto-RS232	IP54	245	108	Ø 6,5	52
06030071	100 ÷ 125	4 ÷ 5	6	3	Opto-RS232	IP54	272	140	Ø 8	76
06030072	125 ÷ 150	5 ÷ 6	6	3	Opto-RS232	IP54	298	155	Ø 8	89
06030073	150 ÷ 175	6 ÷ 7	7	4	Opto-RS232	IP54	323	171	Ø 8	102
06030074	175 ÷ 200	7 ÷ 8	7	4	Opto-RS232	IP54	349	187	Ø 8	114
06030075	200 ÷ 225	8 ÷ 9	8	4	Opto-RS232	IP54	373	201	Ø 8	127
06030076	225 ÷ 250	9 ÷ 10	8	4	Opto-RS232	IP54	399	220	Ø 8	140
06030077	250 ÷ 275	10 ÷ 11	9	5	Opto-RS232	IP54	425	239	Ø 8	152
06030078	275 ÷ 300	11 ÷ 12	9	5	Opto-RS232	IP54	451	258	Ø 8	165

Accessories

Part number	Designation
DATA-VIEWER	Free data acquisition software
04981002	STAT-EXPRESS software
04981001	DATA-DIRECT software
04760183	TLC-BLE Bluetooth® emitter + USB dongle receiver + 1,5 m extension cable set
04760184	TLC-BLE Bluetooth® emitter
04760185	USB receiver + 1,5 m extension cable
04760178	Opto-RS232 to TLC adapter
00160201	Micrometer stand with 16 mm clamp aperture
072110123	Micrometer stand with 20 mm clamp aperture
04761062	Opto-RS232 to USB cable, duplex, 2 m
04761049	Opto-RS232 to Sub-D 9p/f cable, duplex, 2 m
04761046	Opto-RS232 to Sub-D 9p/f cable, simplex, 2 m
S47010022	Opto-RS232 to Sub-D 9p/f cable, simplex, 5 m
02510000	Set of optical flats, 12 ÷ 12,375 mm
02510100	Set of optical flats, 27 ÷ 27,335 mm
02510200	Set of optical flats, 52 ÷ 52,335 mm
02510300	Set of optical flats, 77 ÷ 77,335 mm

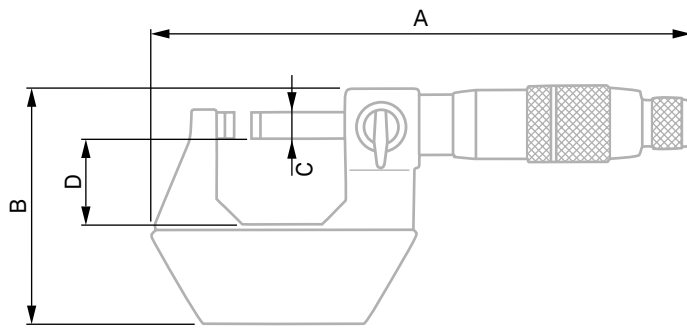
Vernier models, metric



00110101

Standard	DIN 863 T1 / NF E 11-095
Resolution	0,01 mm
Material	Inserts: tungsten carbide
Measuring force	≤ 10 N
Included in delivery	Measurement report Declaration of conformity

Analogue external micrometers



Part number	Measuring range mm	Travel / revolution mm	Max. perm. errors μm	Max. perm. parallelism error μm	A mm	B mm	C mm	D mm
00110101	0 ÷ 25	0,5	4	2	127	56	Ø 6,5	21
00110102	25 ÷ 50	0,5	4	2	155	64	Ø 6,5	26
00110103	50 ÷ 75	0,5	5	3	181	83	Ø 6,5	41
00110104	75 ÷ 100	0,5	5	3	209	99	Ø 6,5	52

Accessories

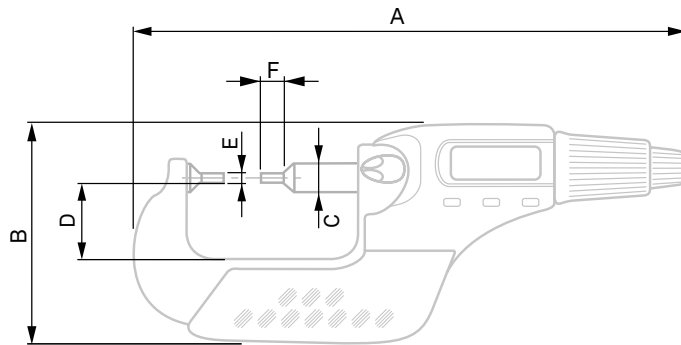
Part number	Designation
00160201	Micrometer stand with 16 mm clamp aperture
072110123	Micrometer stand with 20 mm clamp aperture
02510000	Set of optical flats, 12 ÷ 12,375 mm
02510100	Set of optical flats, 27 ÷ 27,335 mm
02510200	Set of optical flats, 52 ÷ 52,335 mm
02510300	Set of optical flats, 77 ÷ 77,335 mm

Digital models with fine inserts


06030034

Standard	DIN 863 T3
Resolution	0,001 mm / .00005 in
Zero	Floating
Material	Inserts: tungsten carbide
Thread pitch	0,5 mm
Degree of protection	IP54 IP40 (with opto-RS232)
Display	LCD Digit size: 7 mm
Power supply	CR2032 button battery
Data output(s)	Opto-RS232
Function(s)	Standby after 10 min Display locking
Autonomy	2'000 ÷ 4'000 hours
Measuring force	≤ 10 N
Included in delivery	Battery (1x) Measuring report Declaration of conformity

Special external micrometers



Part number	Measuring range mm	Measuring range in	Max. perm. errors μm	Max. perm. parallelism error μm	Data output	Degree of protection	A mm	B mm	C mm	D mm	E mm	F mm
06030034	0 ÷ 30	0 ÷ 1.2	4	2	Opto-RS232	IP54	189	72	Ø 6,5	28	Ø 2	5

Accessories

Part number	Designation
DATA-VIEWER	Free data acquisition software
04981002	STAT-EXPRESS software
04981001	DATA-DIRECT software
04760183	TLC-BLE Bluetooth® emitter + USB dongle receiver + 1,5 m extension cable set
04760184	TLC-BLE Bluetooth® emitter
04760185	USB receiver + 1,5 m extension cable
04760178	Opto-RS232 to TLC adapter
00160201	Micrometer stand with 16 mm clamp aperture
072110123	Micrometer stand with 20 mm clamp aperture
04761062	Opto-RS232 to USB cable, duplex, 2 m
04761049	Opto-RS232 to Sub-D 9p/f cable, duplex, 2 m
04761046	Opto-RS232 to Sub-D 9p/f cable, simplex, 2 m
S47010022	Opto-RS232 to Sub-D 9p/f cable, simplex, 5 m

Micrometer supports

For external micrometers up to 300 mm and other instruments



00160201

Part number	Designation
00160201	Micrometer stand with 16 mm clamp aperture
072110123	Micrometer stand with 20 mm clamp aperture

Guide collars for setting standards

Facilitate the positioning of adjustment standards



Part number	Designation
02140103	Guide collars, 100 ÷ 175 mm
02140108	Guide collars, 200 ÷ 1475 mm

Accessories for external micrometers

Setting standards, metric



Part number	Designation
02140001	Setting standard, 25 mm
02140002	Setting standard, 50 mm
02140003	Setting standard, 75 mm
02140004	Setting standard, 100 mm
02140005	Setting standard, 125 mm
02140006	Setting standard, 150 mm
02140007	Setting standard, 175 mm
02140008	Setting standard, 200 mm
02140009	Setting standard, 225 mm
02140010	Setting standard, 250 mm
02140011	Setting standard, 275 mm
02140012	Setting standard, 300 mm

Optical flats with two parallel faces

- APPLICATION
 - For checking the flatness and parallelism of the measuring faces of external micrometers and similar instruments
- TESTING PROCESS
 - The difference in length of the interference lenses corresponds to one quarter or one third of the micrometer screw pitch (0,5 mm) respectively



Part number	Designation
02510000	Set of optical flats, 12 ÷ 12,375 mm
02510100	Set of optical flats, 27 ÷ 27,335 mm
02510200	Set of optical flats, 52 ÷ 52,335 mm
02510300	Set of optical flats, 77 ÷ 77,335 mm
02510001	Optical flat, 12 mm
02510002	Optical flat, 12,125 mm
02510003	Optical flat, 12,25 mm
02510004	Optical flat, 12,375 mm
02510101	Optical flat, 27 mm
02510102	Optical flat, 27,165 mm
02510103	Optical flat, 27,335 mm
02510201	Optical flat, 52 mm
02510202	Optical flat, 52,165 mm
02510203	Optical flat, 52,335 mm
02510301	Optical flat, 77 mm
02510302	Optical flat, 77,165 mm
02510303	Optical flat, 77,335 mm

External micrometers sets

Set of digital external micrometers



Part number	Designation
06030029	Set of 3 digital external micrometers, 0 ÷ 75 mm, MICROMASTER RS IP54

Set of vernier external micrometers, metric



Part number	Designation
00110113	Set of 4 vernier external micrometers, 0 ÷ 100 mm, ISOMASTER

Tools sets, metric


00531007

Family	Part number	Model	Dimension mm	Resolution mm															
					00530020	00511005	00511002	00511006	00511003	00531004	00511009	00511015	S0531004	00511016	00531007	00511013	00511012	00510033	00511004
Calipers	00510008	Universal dial model Serie 2 mm/t	150	0,02	1	1	1												
	075115821	Universal dial model Serie 1 mm/t	150	0,02				1	1										
	00530319	Universal digital model Serie TWIN-CAL IP67	150	0,01						1	1	1							
	00530320	Universal digital model Serie TWIN-CAL IP67	150	0,01									1	1					1
	00530094	Universal digital model Serie TWIN-CAL	150	0,01										1					
	00530140	Universal digital model Serie TESA-CAL IP67	150	0,01											1	1			
	00510070	Universal vernier model	150	0,02													1	1	1
Internal micrometers	06030010	Digital model MICROMASTER EASY	0 ÷ 30	0,001										1	1	1			
	06030020	Digital model MICROMASTER	0 ÷ 30	0,001					1			1							
	00110101	Vernier model ISOMASTER	0 ÷ 25	0,01	1	1	1	1	1		1	1	1			1	1	1	1
	00110102	Vernier model ISOMASTER	25 ÷ 50	0,01															1
Accessories	00560013	Depth foot			1					1		1	1	1	1	1	1		
	-	Flexible stainless steel rule	150			1	1	1	1		1	1	1			1	1	1	
	-	Flexible stainless steel rule	200															1	
	-	Bevelled edge steel squares	100 x 70			1	1	1	1		1	1	1			1	1	1	
	-	Try square, class 0	75 x 50															1	
	-	Radius gauge concav/convex	R1 ÷ R7				1	1			1	1						1	
	-	Thread pitch gauges, metric/Withworth					1	1			1	1						1	
	-	Metal scriber					1	1			1	1						1	
	-	Setting standard for external micrometers	25																1

Tools sets



00530319



00510070



00530320



00510008



00530094



075115821



00530140



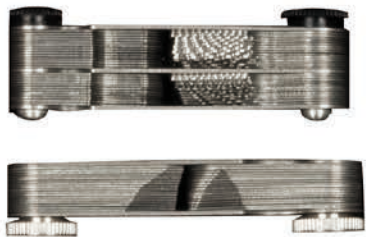
00110101



06030010



06030020



00560013



