

D

Small Tool Instruments Calipers Height Gages Depth Gages



Digimatic Caliper



Digimatic Height Gages



Linear Height



Depth Gages



ABSOLUTE Digimatic Caliper



ABSOLUTE Coolant Proof Caliper



SuperCaliper



ABSOLUTE Digimatic Offset Caliper



Digimatic Height Gage

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Digimatic Height Gages

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Depth Gages

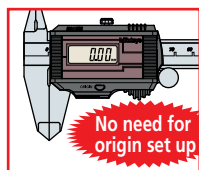
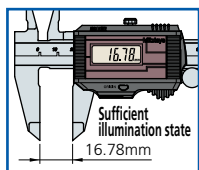
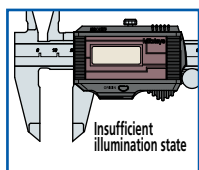
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Super Caliper-Solar Powered

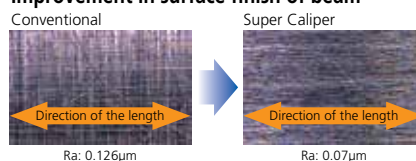
SERIES 500 — No battery or origin reset needed for IP67 Digital Caliper

FEATURES

- With no annoying origin restoration necessary, a measurement can be started any time and there is no restriction on operating speed.
- World's unique* solar-powered Super Caliper that is eco-friendly with no battery.
*According to Mitutoyo investigation in January, 2005
- The impact resistance of the display unit has been increased for improved usability in workshop conditions.
- IP67 protection assures waterproof reliability.
- This Super Caliper uses components that do not contain harmful substances and is compatible with RoHS Directives.
- Supplied in fitted plastic case.



Improvement in surface finish of beam



500-784

SPECIFICATIONS

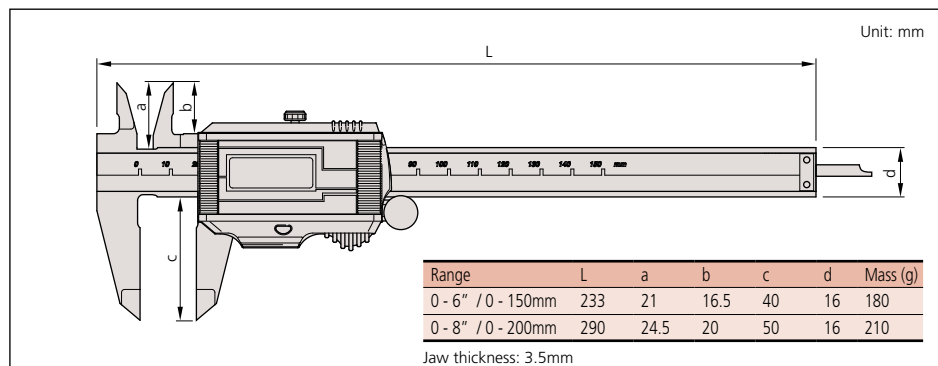
Metric			
Range	Order No.	Accuracy	Resolution
0 - 150mm	500-776	±0.02mm	0.01mm
0 - 150mm	500-774*	±0.02mm	0.01mm
0 - 200mm	500-777	±0.02mm	0.01mm
0 - 200mm	500-775*	±0.02mm	0.01mm

*Without SPC data output

Inch/Metric			
Range	Order No.	Accuracy	Resolution
0 - 6" / 0 - 150mm	500-786	±.001"	.0005" / 0.01mm
0 - 6" / 0 - 150mm	500-784*	±.001"	.0005" / 0.01mm
0 - 8" / 0 - 200mm	500-787	±.001"	.0005" / 0.01mm
0 - 8" / 0 - 200mm	500-785*	±.001"	.0005" / 0.01mm

*Without SPC data output

DIMENSIONS AND MASS



ABSOLUTE
Absolute System Patented by MITUTOYO

SPC



IP67



Technical Data

Accuracy: Refer to the list of specifications
 Resolution: .0005" / 0.01mm or 0.01mm
 Repeatability: .0005" / 0.01mm
 Display: LCD
 Length standard: ABSOLUTE electromagnetic induction linear encoder
 Max. response speed: Unlimited
 Battery: Solar battery*
 Dust/Water protection level: IP67
 *Can be used continuously above 60 lux ambient illumination.

Function

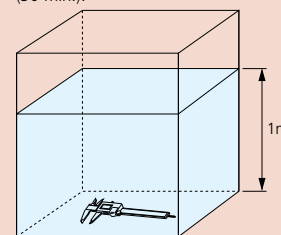
Origin-set, inch/mm conversion (on inch/metric models only)
 Alarm: Counting value composition error

Optional Accessories

05CZA624: SPC cable with data switch (40" / 1m)
05CZA625: SPC cable with data switch (80" / 2m)

IP67 protection level

Level 6: Dust-tight
 No ingress of dust.
 Level 7: Protected against the effects of temporary immersion in water.
 Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed 1 meter in water under standardized conditions of pressure and time (30 min.).



About the charge function (Super Caliper)

The minimum illumination required in the uncharged state is 60 lux. As shown in the table 'JIS Z 9110 Artificial Illumination Intensity Standard', this Super Caliper can be used without problems in a normal work environment.

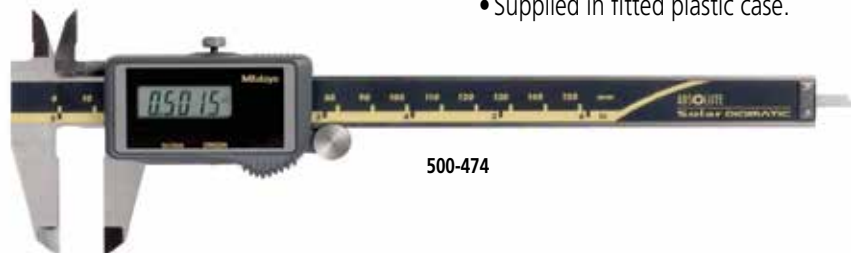
The charge function allows the operator to use this Super Caliper without interrupting work even if the ambient illumination is temporarily insufficient.

- In the fully charged state this Super Caliper can operate for approximately an hour in an environment of 50lux illumination (less than the minimum necessary illumination intensity).
- The time necessary for full charge differs, depending on the charging conditions. If this Super Caliper is left unused in an illumination of 500 lux (usual for manufacturing environments), it takes approximately one hour to reach full charge.

Mitutoyo's Absolute Solar Digimatic Caliper retains its origin point even the display turns off for the entire life of the caliper. At 60 Lux and up the ABSOLUTE solar caliper is turned on ready to start measurement.

FEATURES

- No more repeated zero setting caused by low light intensity.
- Hard-coated solar panel for increased durability.
- No fear for overspeed errors.
- With thumb roller.
- Supplied in fitted plastic case.



Technical Data

Accuracy: Refer to the list of specifications
 Resolution: .0005"/0.01mm or 0.01mm
 Repeatability: .0005" / 0.01mm
 Display: LCD
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed: Unlimited
 Battery: Solar battery*
 *Can be used continuously above 60 lux ambient illumination.

Function

Origin-set, Data hold, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Counting value composition error

Optional Accessories

- 959143:** Data hold unit (SPC output model only)
- 959149:** SPC cable with data switch (40" / 1m)
- 959150:** SPC cable with data switch (80" / 2m)

SPECIFICATIONS

Metric

Range	Order No.	Accuracy	Resolution	Remarks
0 - 100mm	500-443	±0.02mm	0.01mm	ø1.9mm round depth bar
0 - 100mm	500-453*	±0.02mm	0.01mm	ø1.9mm round depth bar
0 - 150mm	500-444	±0.02mm	0.01mm	
0 - 150mm	500-454*	±0.02mm	0.01mm	
0 - 200mm	500-445	±0.02mm	0.01mm	
0 - 200mm	500-455*	±0.02mm	0.01mm	

*without SPC data output

Inch/Metric

Range	Order No.	Accuracy	Resolution	Remarks
0 - 4" / 0 - 100mm	500-463	±.001"	.0005" / 0.01mm	.075" round depth bar
0 - 4" / 0 - 100mm	500-473*	±.001"	.0005" / 0.01mm	.075" round depth bar
0 - 6" / 0 - 150mm	500-464	±.001"	.0005" / 0.01mm	
0 - 6" / 0 - 150mm	500-474*	±.001"	.0005" / 0.01mm	
0 - 8" / 0 - 200mm	500-465	±.001"	.0005" / 0.01mm	
0 - 8" / 0 - 200mm	500-475*	±.001"	.0005" / 0.01mm	

*without SPC data output

DIMENSIONS AND MASS

Unit: mm

Range	L	a	b	c	Mass (g)
0 - 4" / 0 - 100mm	182	40	21	16.5	125
0 - 6" / 0 - 150mm	233	40	21	16.5	150
0 - 8" / 0 - 200mm	290	50	24.5	20	180

ABSOLUTE Coolant Proof Caliper

SERIES 500 — with Dust/Water Protection Conforming to IP67 Level

FEATURES

- Can be used in workshop conditions exposed to coolant, water, dust or oil.
- Easy to use - no need to wipe or clean the scale.
- Advanced design styling.
- Incorporates absolute measurement system.
- Automatic power-on/off.
- Data output function.
- With thumb roller.
- Supplied in fitted plastic case.



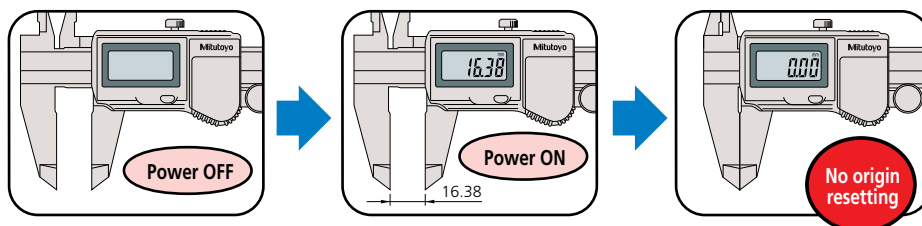
500-752-10



500-763-10



Built-in ABS (absolute) scale means that these calipers are ready to use immediately after power-on without origin resetting. It's as easy as vernier caliper measurements.



Certificate of inspection

CERTIFICATE OF INSPECTION / CERTIFICAT DE CONTROLE		Inspection result/Résultats				(GR)(P)
Product name/Désignation	Digimatic Caliper/Pied à coulisse Digimatic	Measuring length / Position de mesure	Permissible values / Erreur admissible	Instrumental error/Erreur	Internal/Internal	
Model No./Modèle	CD-15PB	∅ 4	+0.01	---	---	-0.01
Code No./Référence	500-752	60	-0.03	---	---	---
Serial No./No. de série	0489811	100	---	0.00	---	0.01
Measuring range/Capacité de mesure	0-150mm	150	---	0.20	---	0.01
Minimum indication/Résolution	0.01mm	190	±0.02	-0.01	---	0.00
Standard Temperature / Température de Référence	20°C	160	---	-0.01	---	0.00
QC Manager/Responsable Qualité Contrôle	<i>g. g. g.</i>	200	---	---	---	---
		∅ 0.16	+0.0005	---	---	---
			-0.0015	---	---	---
		0	---	---	---	---
		2	---	---	---	---
		4	---	---	---	---
		6	±0.0010	---	---	---
		8	---	---	---	---
			---	---	---	Unit:mm
			---	---	---	Unit:inch
			---	---	---	Unit:inch
Overall Judgment: Passed / Passé Conformité: conforme						
Mitutoyo Corporation						

Inspection standard: Mitutoyo standard
Based on JIS B 7507:1995 and JIS B 7506:1995
Traceable to NMI/JANIST by JCS No. 2030/JIST via 821058634.03.
PTB via 3745-PTB 02.4340-PTB 03



Technical Data

Accuracy: Refer to the list of specifications
Resolution: .0005"/0.01mm or 0.01mm
Repeatability: .0005"/0.01mm
Display: LCD
Length standard: ABSOLUTE electromagnetic induction linear encoder
Max. response speed: Unlimited
Battery: SR44 (1 pc./2 pcs*), 938882
Battery life: Approx. 3 years under normal use (1 year: over 12" / 300mm models)
Dust/Water protection level: IP67
*0 - 300mm model

Function

Origin-set, Zero-setting, Automatic power on/off, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error

Optional Accessories

05CZA624: SPC cable with data switch (40" / 1m)
05CZA625: SPC cable with data switch (80" / 2m)
Connecting cable for U-Wave-T
02AZD790A: SPC cable for U-Wave (160mm)



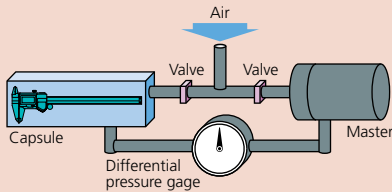
05CZA624



Measurement data output function is available with a water-resistant SPC cable.

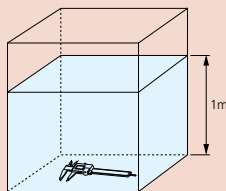
Air leakage detection system used for water-proof testing

Generally, air leakage tests are performed to evaluate water resistance. Testing begins by placing a measuring tool into the capsule. Next, air with equivalent pressure is supplied to the capsule and the master, then the valves are closed. If none of the air in the capsule seeps into the measuring tool, the capsule's air pressure will remain equal to that in the master, and the differential pressure gage will continue to point to the center. However, if some air does seep into the measuring tool, it will create an air pressure difference in the amount indicated by the differential pressure gage. Thus, detection of air pressure differences is used as a criterion for judging leakage. Every single unit of the ABS Coolant Proof calipers and Coolant Proof micrometer is tested this way for air leakage to help ensure product quality.



IP67 protection level

- Level 6: Dust-tight
No ingress of dust.
- Level 7: Protected against the effects of temporary immersion in water.
Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed 1 meter in water under standardized conditions of pressure and time (30 min.).



SPECIFICATIONS

Metric IP67 model

Range	Order No.	Accuracy	Resolution	Remarks
0-150mm	500-702-10*	+/-0.02mm	0.01mm	
0-150mm	500-712-10	+/-0.02mm	0.01mm	
0-150mm	500-719-10	+/-0.02mm	0.01mm	dia. 1.9mm rod depth bar
0-150mm	500-721-10	+/-0.02mm	0.01mm	carbide-tipped jaws for ID measurement
0-150mm	500-723-10	+/-0.02mm	0.01mm	carbide-tipped jaws for OD & ID measurement
0-200mm	500-703-10*	+/-0.02mm	0.01mm	
0-200mm	500-713-10	+/-0.02mm	0.01mm	
0-200mm	500-722-10	+/-0.02mm	0.01mm	carbide-tipped jaws for ID measurement
0-200mm	500-724-10	+/-0.02mm	0.01mm	carbide-tipped jaws for OD & ID measurement
0-300mm	500-704-10*	+/-0.03mm	0.01mm	
0-300mm	500-714-10	+/-0.03mm	0.01mm	

*without SPC data output

Inch/Metric IP67 model

Range	Order No.	Accuracy	Resolution	Remarks
0-6" / 0-150mm	500-752-10*	+/- .001"	.0005" / 0.01mm	
0-6" / 0-150mm	500-762-10	+/- .001"	.0005" / 0.01mm	
0-6" / 0-150mm	500-768-10*	+/- .001"	.0005" / 0.01mm	.075" rod depth bar
0-6" / 0-150mm	500-769-10	+/- .001"	.0005" / 0.01mm	.075" rod depth bar
0-6" / 0-150mm	500-731-10*	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD measurement
0-6" / 0-150mm	500-735-10	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD measurement
0-6" / 0-150mm	500-733-10*	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD & ID measurement
0-6" / 0-150mm	500-737-10	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD & ID measurement
0-8" / 0-200mm	500-753-10*	+/- .001"	.0005" / 0.01mm	
0-8" / 0-200mm	500-763-10	+/- .001"	.0005" / 0.01mm	
0-8" / 0-200mm	500-732-10*	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD measurement
0-8" / 0-200mm	500-736-10	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD measurement
0-8" / 0-200mm	500-734-10*	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD & ID measurement
0-8" / 0-200mm	500-738-10	+/- .001"	.0005" / 0.01mm	carbide-tipped jaws for OD & ID measurement
0-12" / 0-300mm	500-754-10*	+/- .0015"	.0005" / 0.01mm	
0-12" / 0-300mm	500-764-10	+/- .0015"	.0005" / 0.01mm	

*without SPC data output

DIMENSIONS AND MASS

Unit: mm

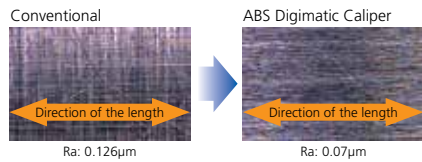
Range	L	a	b	c	e	Mass (g)
0-6" / 0-150mm	233	40	21	16.5	16	168
0-8" / 0-200mm	290	50	24.5	20	16	198
0-12" / 0-300mm	404	64	27.5	22	20	350

ABSOLUTE Digimatic Caliper

SERIES 500 — with Exclusive ABSOLUTE Encoder Technology

Mitutoyo's absolute Digimatic Caliper is the next generation of electronic calipers. It keeps track of its origin point once set. Whenever turned on, the large LCD screen displays the actual slider position ready to start measurement. No more repeated zero setting is necessary with the absolute encoder technology as well as no more care for overspeed errors.

High quality guide surface finish for smooth slider movement



FEATURES

- Large and clear LCD readout.
- The ZERO/ABS key allows the display to be Zero-Set at any slider position along the scale for incremental comparison measurements. This switch will also allow return to the absolute (ABS) coordinate and display of the true position from the origin point (usually jaws-closed point).
- Data Hold Unit (959143) is optional.
- Carbide-tipped jaw type calipers are also available.
- Thumb roller included only on calipers up to and including 12" or 300mm.
- Supplied in fitted plastic case. Except 40" / 1000mm supplied in wooden case.



The new Mitutoyo ABS Digimatic Caliper line with exclusive AOS sensor technology. The patented Advanced Onsite Sensor (AOS) offers improved measurement dependability by increasing resistance to harsh workshop conditions.



DIMENSIONS AND MASS

Unit: mm

Range	L	a	b	c	d	Mass (g)
0 - 4" / 0 - 100mm	182	40	21	16.5	16	143
0 - 6" / 0 - 150mm	233	40	21	16.5	16	168
0 - 8" / 0 - 200mm	290	50	24.5	20	16	198
0 - 12" / 0 - 300mm	403	64	27.5	22	20	350

Range	L	a	b	c	d	Mass (g)
0 - 18" / 0 - 450mm	630	90	47	38	25	1170
0 - 24" / 0 - 600mm	780	90	47	38	25	1350
0 - 40" / 0 - 1000mm	1240	130	61	50	32	3300

Technical Data

Accuracy: Refer to the list of specifications
 Resolution: .0005"/0.01mm or 0.01mm
 Repeatability: .0005"/0.01mm
 Display: LCD
 Length standard:
 ABSOLUTE electromagnetic induction type linear encoder (200mm and smaller models)
 ABSOLUTE electrostatic capacitance type linear encoder (300mm and larger models)
 Max. response speed: Unlimited
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 3.5 years under normal use

Function

Origin-set, Zero-setting, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

- 959143:** Data hold unit
- 959149:** SPC cable with data switch (40" / 1m)
- 959150:** SPC cable with data switch (80" / 2m)
- Connecting cable for **U-Wave-T**
- 02AZD790C:** SPC cable for **U-Wave** (160mm)

959143



959149



500-506-10

500-502-10

500-501-10

500-500-10

SPECIFICATIONS

Metric

Range	Order No.	Accuracy	Resolution	Remarks
0 - 100mm	500-150-30	±0.02mm	0.01mm	ø1.9mm rod depth bar
0 - 150mm	500-151-30	±0.02mm	0.01mm	—
0 - 150mm	500-154-30	±0.02mm	0.01mm	Carbide-tipped jaws for OD measurement
0 - 150mm	500-155-30	±0.02mm	0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 150mm	500-158-30	±0.02mm	0.01mm	ø1.9mm rod depth bar
0 - 200mm	500-152-30	±0.02mm	0.01mm	—
0 - 200mm	500-156-30	±0.02mm	0.01mm	Carbide-tipped jaws for OD measurement
0 - 200mm	500-157-30	±0.02mm	0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 300mm	500-153	±0.03mm	0.01mm	—
0 - 450mm	500-500-10	±0.05mm	0.01mm	Without Thumb Roller
0 - 600mm	500-501-10	±0.05mm	0.01mm	Without Thumb Roller
0 - 1000mm	500-502-10	±0.07mm	0.01mm	Without Thumb Roller

Inch/Metric

Range	Order No.	Accuracy	Resolution	Remarks
0 - 4" / 0 - 100mm	500-170-30	±.001"	.0005" / 0.01mm	.075" rod depth bar
0 - 4" / 0 - 100mm	500-195-30*	±.001"	.0005" / 0.01mm	.075" rod depth bar
0 - 6" / 0 - 150mm	500-171-30	±.001"	.0005" / 0.01mm	—
0 - 6" / 0 - 150mm	500-174-30	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD measurement
0 - 6" / 0 - 150mm	500-175-30	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 6" / 0 - 150mm	500-178-30	±.001"	.0005" / 0.01mm	.075" rod depth bar
0 - 6" / 0 - 150mm	500-196-30*	±.001"	.0005" / 0.01mm	—
0 - 6" / 0 - 150mm	500-159-30*	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD measurement
0 - 6" / 0 - 150mm	500-160-30*	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 8" / 0 - 200mm	500-172-30	±.001"	.0005" / 0.01mm	—
0 - 8" / 0 - 200mm	500-176-30	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD measurement
0 - 8" / 0 - 200mm	500-177-30	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 8" / 0 - 200mm	500-197-30*	±.001"	.0005" / 0.01mm	—
0 - 8" / 0 - 200mm	500-163-30*	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD measurement
0 - 8" / 0 - 200mm	500-164-30*	±.001"	.0005" / 0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 12" / 0 - 300mm	500-173	±.0015"	.0005" / 0.01mm	—
0 - 12" / 0 - 300mm	500-167	±.0015"	.0005" / 0.01mm	Carbide-tipped jaws for OD measurement
0 - 12" / 0 - 300mm	500-168	±.0015"	.0005" / 0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 12" / 0 - 300mm	500-193*	±.0015"	.0005" / 0.01mm	—
0 - 12" / 0 - 300mm	500-165*	±.0015"	.0005" / 0.01mm	Carbide-tipped jaws for OD measurement
0 - 12" / 0 - 300mm	500-166*	±.0015"	.0005" / 0.01mm	Carbide-tipped jaws for OD & ID measurement
0 - 18" / 0 - 450mm	500-505-10	±.002"	.0005" / 0.01mm	Without Thumb Roller
0 - 24" / 0 - 600mm	500-506-10	±.002"	.0005" / 0.01mm	Without Thumb Roller
0 - 40" / 0 - 1000mm	500-507-10	±.003"	.0005" / 0.01mm	Without Thumb Roller

*without SPC data output

Dial Caliper

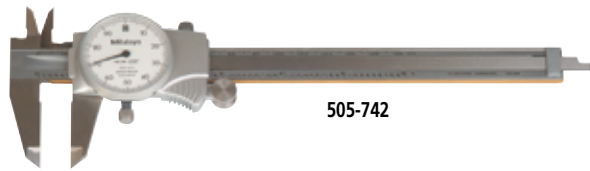
SERIES 505

FEATURES

- New designed dial movement for ultra smooth sliding and high shock protection.
- Improved finish on sliding surfaces for longevity.
- New face for easier readability.
- Removal of TiN coating on sliding surfaces without sacrificing wear life.
- Lock screw for dial bezel and for holding the sliding jaw position.
- Can measure OD, ID, depth, and steps.
- Models available with carbide-tipped OD and ID jaws.
- Supplied in fitted plastic case.



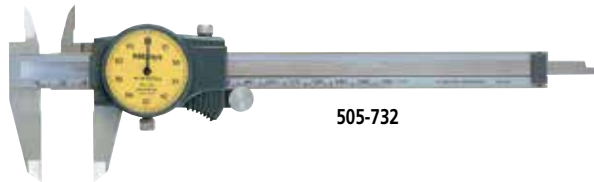
505-746



505-742



505-745



505-732



.100" per one revolution



.200" per one revolution



1mm per one revolution



2mm per one revolution

SPECIFICATIONS

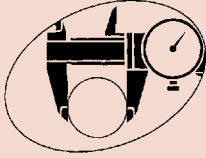
Metric 1mm Per One Revolution

Range	Order No.	Accuracy	Graduation	Remarks
0-150mm	505-732	+/-0.03mm	0.01mm	—
0-200mm	505-733	+/-0.03mm	0.01mm	—

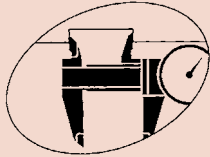
Metric 2mm Per One Revolution

Range	Order No.	Accuracy	Graduation	Remarks
0-150mm	505-730	+/-0.03mm	0.02mm	—
0-150mm	505-734	+/-0.03mm	0.02mm	Carbide-tipped jaws for OD measurement
0-150mm	505-735	+/-0.03mm	0.02mm	Carbide-tipped jaws for OD & ID measurement
0-200mm	505-731	+/-0.03mm	0.02mm	—
0-300mm	505-745	+/-0.04mm	0.02mm	—

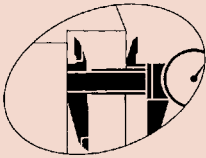
"Quadri" (4-way) Measurement



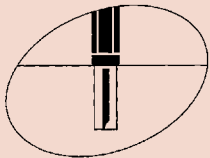
1. Outside measurement



2. Inside measurement



3. Step measurement



4. Depth measurement

SPECIFICATIONS

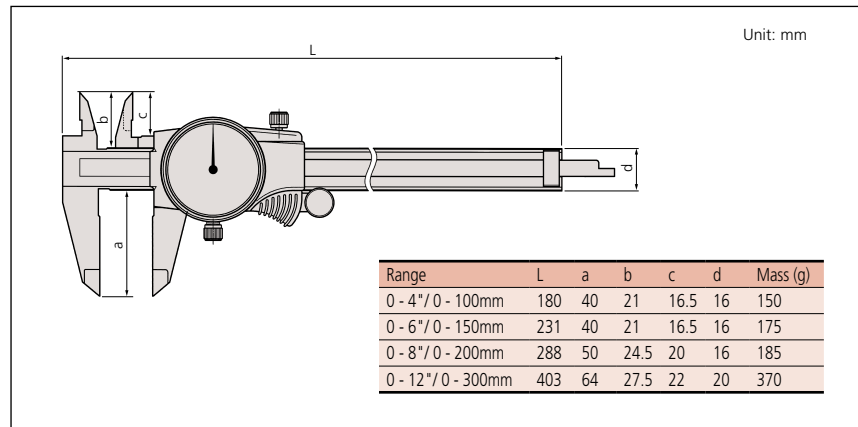
Inch .1" Per One Revolution

Range	Order No.	Accuracy	Graduation	Remarks
0-6"	505-742	+/- .001"	.001"	-
0-6"	505-742-51	+/- .001"	.001"	Blue Dial Face
0-6"	505-742-52	+/- .001"	.001"	Purple Dial Face
0-6"	505-742-53	+/- .001"	.001"	Green Dial Face
0-6"	505-745-54	+/- .001"	.001"	Red Dial Face
0-6"	505-745-55	+/- .001"	.001"	Orange Dial Face
0-6"	505-745-56	+/- .001"	.001"	Black Dial Face
0-6"	505-736	+/- .001"	.001"	Carbide-tipped jaws for OD measurement
0-6"	505-738	+/- .001"	.001"	Carbide-tipped jaws for OD & ID measurement
0-8"	505-743	+/- .002"	.001"	-
0-8"	505-737	+/- .002"	.001"	Carbide-tipped jaws for OD measurement
0-8"	505-739	+/- .002"	.001"	Carbide-tipped jaws for OD & ID measurement
0-12"	505-746	+/- .002"	.001"	—
0-12"	505-747	+/- .002"	.001"	Carbide-tipped jaws for OD measurement
0-12"	505-748	+/- .002"	.001"	Carbide-tipped jaws for OD & ID

Inch .2" Per One Revolution

Range	Order No.	Accuracy	Graduation	Remarks
0-6"	505-740	+/- .001"	.001"	—
0-6"	505-744	+/- .001"	.001"	Carbide-tipped jaws for OD measurement
0-8"	505-741	+/- .002"	.001"	—
0-12"	505-749	+/- .002"	.001"	—
0-12"	505-750	+/- .002"	.001"	Carbide-tipped jaws for OD measurement

DIMENSIONS AND MASS

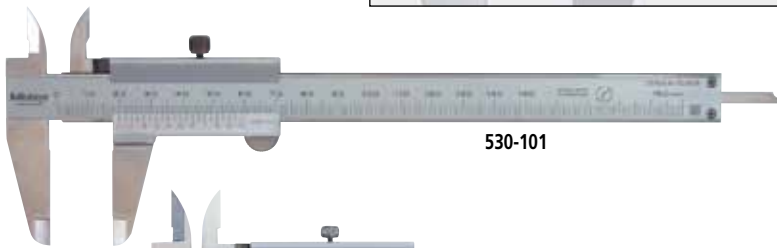
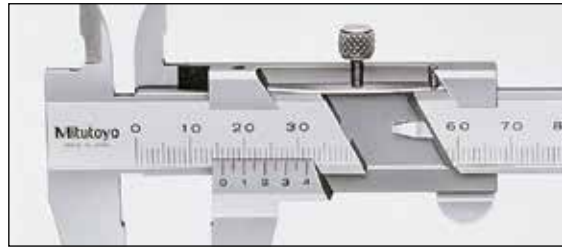
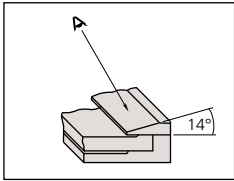


Vernier Caliper

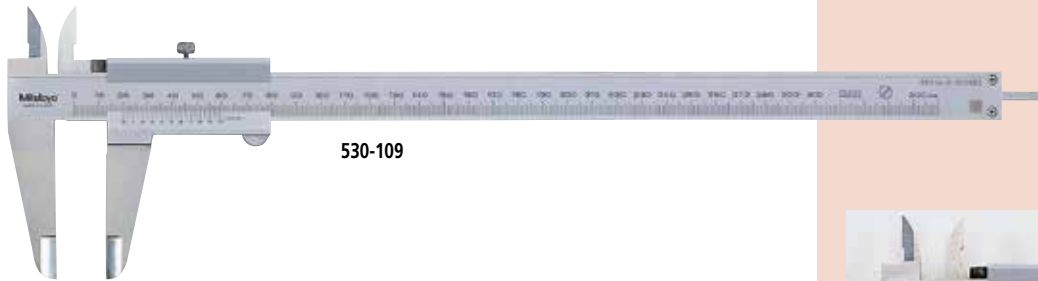
SERIES 530 — Standard Model

FEATURES

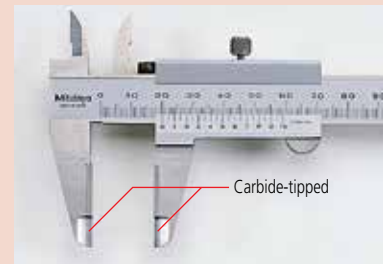
- Can measure OD (outside diameter), ID (inside diameter), depth, and steps.
- The small vernier face angle (14°) provides easy reading.
- Dual reading scales on vernier. (metric/inch and inch models only)
- Lock screw for holding the sliding jaw position.
- Carbide-tipped jaw type calipers are also available.
- Supplied with vinyl holster in fitted carton. Except 24" / 600mm models are carton only. 40" / 1000mm supplied in wooden case.



530-101

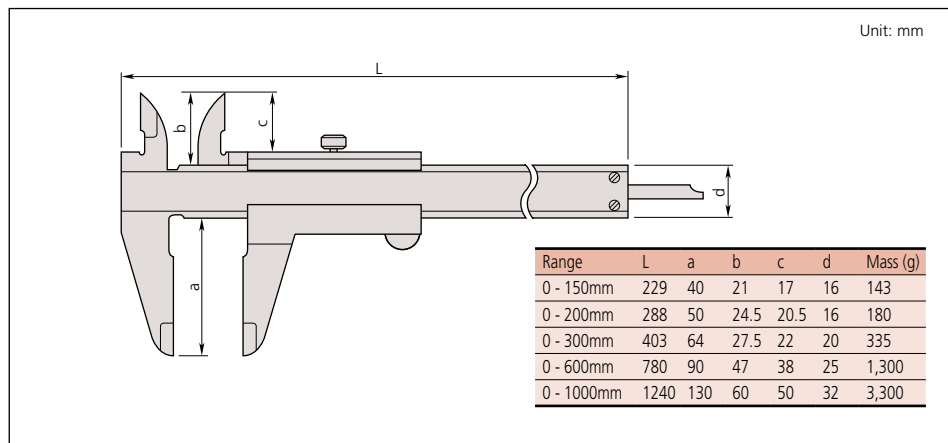


530-109



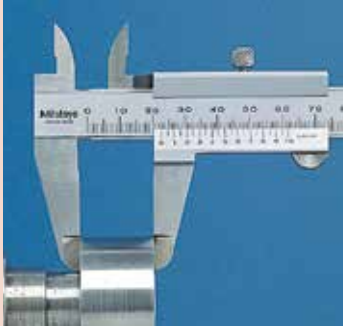
Carbide-tipped jaw type

DIMENSIONS AND MASS

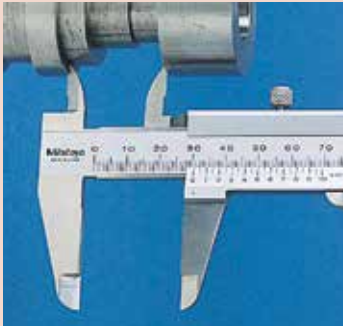


Round depth bar type

"Quadri" (4 way) Measurement Measurement Applications



OD measurement



ID measurement



Step measurement



Depth measurement

SPECIFICATIONS

Metric

Range	Order No.	Accuracy	Graduation	Remarks
0 - 150mm	530-102	±0.05mm	0.05mm	∅ 1.9mm Depth bar
0 - 150mm	530-101	±0.05mm	0.05mm	—
0 - 150mm	530-320	±0.05mm	0.05mm	Carbide-tipped jaws for OD measurement
0 - 150mm	530-335	±0.05mm	0.05mm	Carbide-tipped jaws for OD & ID measurement
0 - 150mm	530-122*	±0.03mm	0.02mm	High accuracy model
0 - 200mm	530-108	±0.05mm	0.05mm	—
0 - 200mm	530-321	±0.05mm	0.05mm	Carbide-tipped jaws for OD measurement
0 - 200mm	530-123*	±0.03mm	0.02mm	High accuracy model
0 - 300mm	530-109	±0.08mm	0.05mm	—
0 - 300mm	530-322	±0.08mm	0.05mm	Carbide-tipped jaws for OD measurement
0 - 300mm	530-124*	±0.04mm	0.02mm	High accuracy model: ±0.04mm
0 - 600mm	530-501**	±0.1mm	0.05mm	—
0 - 1000mm	530-502 **	±0.15mm	0.05mm	—

*Graduation: 0.02mm

**No depth measuring bar

Metric/Inch with metric/inch dual scale

Range	Order No.	Accuracy	Vernier Graduation		Remarks
			Lower Scale	Upper Scale	
0 - 150mm / 0 - 6"	530-104	±0.05mm	0.05mm	1/128"	—
0 - 150mm / 0 - 6"	530-316	±0.05mm	0.05mm	1/128"	—
0 - 150mm / 0 - 6"	530-312*	±0.03mm	0.02mm	.001"	High accuracy model
0 - 200mm / 0 - 8"	530-114	±0.05mm	0.05mm	1/128"	—
0 - 200mm / 0 - 8"	530-118*	±0.03mm	0.02mm	.001"	High accuracy model
0 - 300mm / 0 - 12"	530-115	±0.08mm	0.05mm	1/128"	—
0 - 300mm / 0 - 12"	530-119*	±0.04mm	0.02mm	.001"	High accuracy model

*Graduation: 0.02mm

Inch with inch/inch dual scale

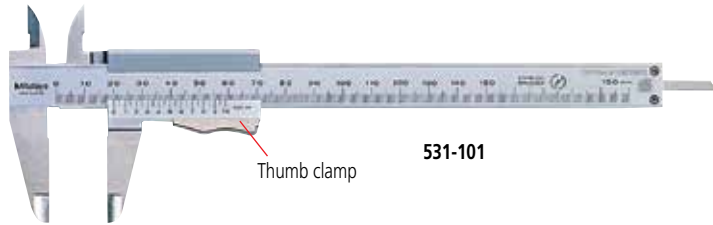
Range	Order No.	Accuracy	Vernier Graduation		Remarks
			Lower Scale	Upper Scale	
0 - 6"	530-105	±.0015"	.001"	1/128"	—
0 - 8"	530-116	±.0015"	.001"	1/128"	—

Vernier Caliper

SERIES 531 — with Thumb Clamp

FEATURES

- The slider moves only when the spring loaded thumb clamp is depressed.
- Can measure OD, ID, depth, and steps
- Supplied with vinyl holster in fitted carton.



531-101

Thumb clamp

SPECIFICATIONS

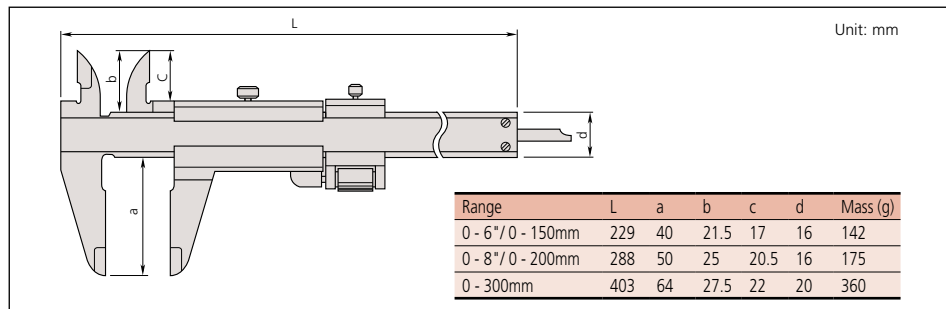
Metric

Range	Order No.	Accuracy	Graduation	Remarks
0 - 150mm	531-101	±0.05mm	0.05mm	—
0 - 200mm	531-102	±0.05mm	0.05mm	—
0 - 300mm	531-103	±0.08mm	0.05mm	—

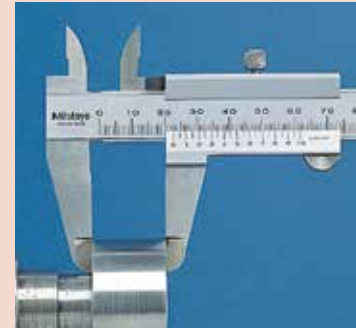
Metric/Inch with metric/inch dual scale

Range	Order No.	Accuracy	Graduation		Remarks
			Lower Scale	Upper Scale	
0 - 150mm / 0 - 6"	531-122	±0.05mm	0.05mm	1/128"	with inch/mm conversion label
0 - 150mm / 0 - 6"	531-128	±0.03mm	0.02mm	.001"	High accuracy model
0 - 200mm / 0 - 8"	531-108	±0.05mm	0.05mm	1/128"	—
0 - 200mm / 0 - 8"	531-129	±0.03mm	0.02mm	.001"	High accuracy model
0 - 300mm / 0 - 12"	531-109	±0.08mm	0.05mm	1/128"	—
0 - 300mm / 0 - 12"	531-112	±0.04mm	0.02mm	.001"	High accuracy model

DIMENSIONS AND MASS



"Quadri" (4 way) Measurement Measurement Applications



OD measurement



ID measurement



Step measurement

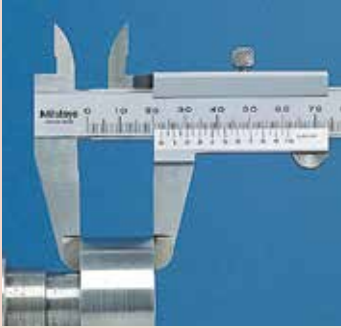


Depth measurement

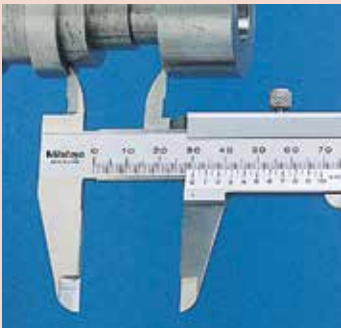
Vernier Caliper

SERIES 532 — with Fine Adjustment

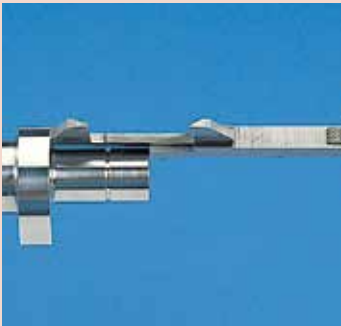
“Quadri” (4 way) Measurement Measurement Applications



OD measurement



ID measurement



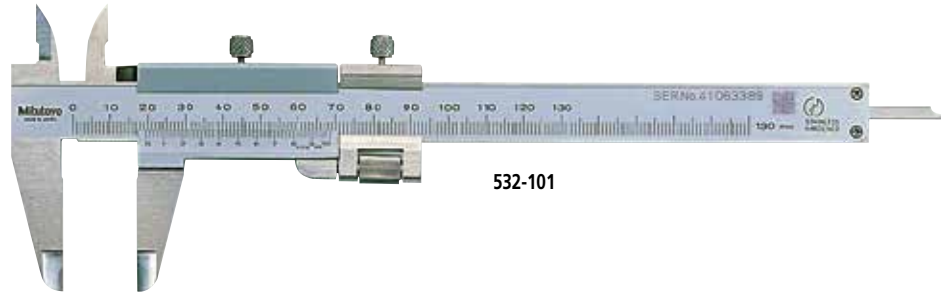
Step measurement



Depth measurement

FEATURES

- Provided with a fine-adjustment carriage to feed the slider finely.
- Can measure OD, ID, depth, and steps.
- Supplied with vinyl holster in fitted carton.

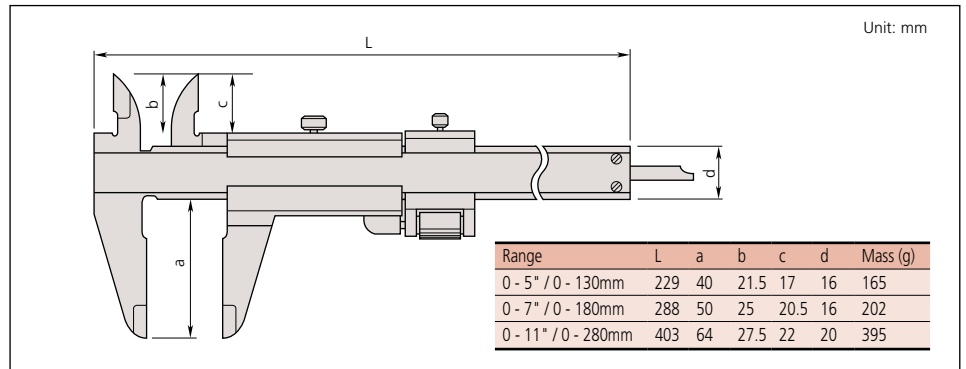


SPECIFICATIONS

Metric			
Range	Order No.	Accuracy	Graduation
0 - 130mm	532-101	±0.03mm	0.02mm
0 - 180mm	532-102	±0.03mm	0.02mm
0 - 280mm	532-103	±0.04mm	0.02mm

Metric/Inch with metric/inch dual scale				
Range	Order No.	Accuracy	Graduation	
			Lower Scale	Upper Scale
0 - 130mm / 0 - 5"	532-119	±0.03mm	0.02mm	.001"
0 - 180mm / 0 - 7"	532-120	±0.03mm	0.02mm	.001"
0 - 280mm / 0 - 11"	532-121	±0.04mm	0.02mm	.001"

DIMENSIONS AND MASS



Vernier Caliper

SERIES 160 — with Nib Style Jaws and Fine Adjustment

FEATURES

- The jaws have round measuring faces for accurate ID measurement.
- With fine adjustment carriage to feed the slider finely.
- Inside and outside measurements can be directly read from the upper and lower slider graduations, respectively.
- Supplied with vinyl holster in fitted carton. Except 12" / 300mm, 18" / 450mm and 24" / 600mm are fitted carton only. Over 24" / 600mm supplied in wooden case.



SPECIFICATIONS

Metric with metric/metric dual scale

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (10) - 300mm	160-127	±0.04mm	0.02mm	0.02mm	450
0 (20) - 450mm	160-128	±0.05mm	0.02mm	0.02mm	1,200
0 (20) - 600mm	160-101	±0.05mm	0.02mm	0.02mm	2,600
0 (20) - 1000mm	160-104	±0.07mm	0.02mm	0.02mm	3,500
0 (20) - 1500mm	160-110	±0.09mm	0.02mm	0.02mm	4,850
0 (20) - 2000mm	160-113	±0.12mm	0.02mm	0.02mm	10,200

*(): Minimum dimension in ID measurement

Metric/Inch with metric/inch dual scale

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (10) - 300mm / 0 (.3") - 12"	160-150	±0.04mm	0.02mm	.001"	450
0 (20) - 450mm / 0 (.5") - 18"	160-151	±0.05mm	0.02mm	.001"	1,200
0 (20) - 600mm / 0 (.5") - 24"	160-153	±0.05mm	0.02mm	.001"	1,400
0 (20) - 1000mm / 0 (1") - 40"	160-155	±0.07mm	0.02mm	.001"	3,500
0 (20) - 1500mm / 0 (1") - 60"	160-157	±0.09mm	0.02mm	.001"	4,850
0 (20) - 2000mm / 0 (1") - 80"	160-159	±0.12mm	0.02mm	.001"	10,200

*(): Minimum dimension in ID measurement

Inch with inch/inch dual scale

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (.3") - 12"	160-124	±.0015"	.001"	.001"	450
0 (.5") - 18"	160-116	±.002"	.001"	.001"	1,200
0 (.5") - 24"	160-102	±.002"	.001"	.001"	1,400
0 (1") - 40"	160-105	±.003"	.001"	.001"	3,500
0 (1") - 60"	160-111	±.004"	.001"	.001"	4,850
0 (1") - 80"	160-114	±.005"	.001"	.001"	10,200

*(): Minimum dimension in ID measurement

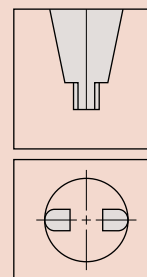
Inch/Metric with inch/metric dual scale

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (.3") - 12" / 0 (10) - 300mm	160-125	±.0015"	.001"	0.02mm	450
0 (.5") - 18" / 0 (20) - 450mm	160-119	±.002"	.001"	0.02mm	1,200
0 (.5") - 24" / 0 (20) - 600mm	160-103	±.002"	.001"	0.02mm	1,400
0 (1") - 40" / 0 (20) - 1000mm	160-106	±.003"	.001"	0.02mm	3,500
0 (1") - 60" / 0 (20) - 1500mm	160-112	±.004"	.001"	0.02mm	4,850
0 (1") - 80" / 0 (20) - 2000mm	160-115	±.005"	.001"	0.02mm	10,200

*(): Minimum dimension in ID measurement

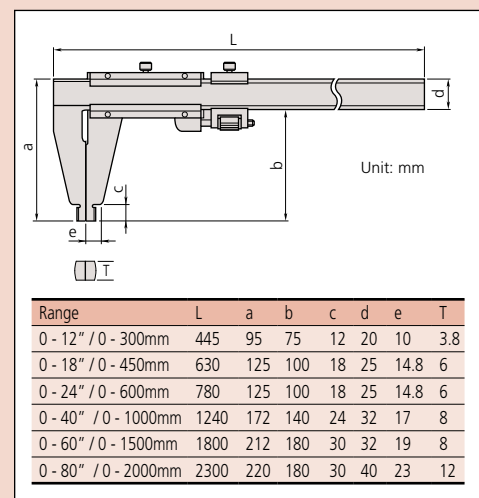
Technical Data

Accuracy: Refer to the list of specifications.
Graduation: Refer to the list of specifications.



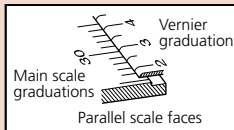
Round surface of jaws for accurate ID measurement

DIMENSIONS





ABSOLUTE
Absolute System Patented by MITUTOYO



Technical Data

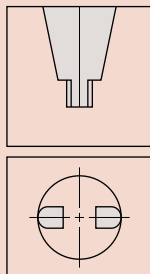
Accuracy: Refer to the list of specifications.
 Display*: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), **938882**
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Data output,
 inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

- 959143:** Data hold unit
- 959149:** SPC cable with data switch (40" / 1m)
- 959150:** SPC cable with data switch (80" / 2m)
- 05CZA624:** SPC cable with data switch (40" / 1m) for IP67 model
- 05CZA625:** SPC cable with data switch (80" / 2m) for IP67 model



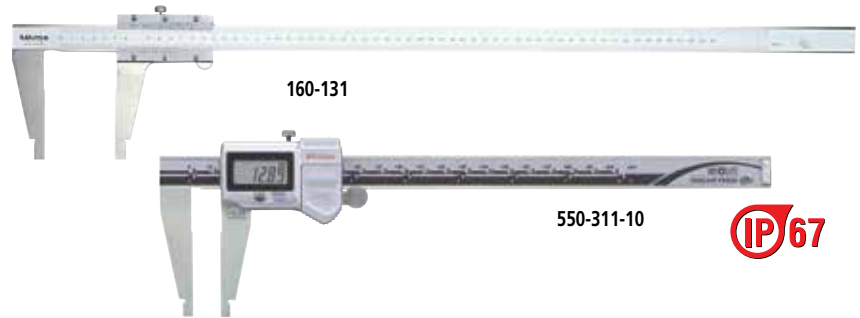
Round surface of jaws for accurate ID measurement

ABSOLUTE Digimatic & Vernier Caliper

SERIES 550, 160 — with Nib Style Jaws

FEATURES

- The rounded faces of the jaws are ideal for accurate ID (inside diameter) measurement.
- Inside and outside measurements can be directly read from the upper and lower slider graduations (Series 160).
- With fine-adjustment carriage type is available (Series 160).
- Parallax-free vernier scale type is available for easy and positive measurement (Series 160).
- With SPC output (Series 550).
- Supplied in fitted plastic case. Except 40" / 1000mm supplied in wooden case.



SPECIFICATIONS

Metric		Digital model			
Range*	Order No.	Accuracy	Resolution	Mass (g)	Remarks
0 (10) - 200mm	550-301-10	±0.03mm	0.01mm	180	IP67
0 (10) - 300mm	550-331-10	±0.03mm	0.01mm	380	w/ offset/preset function for easy ID measurement, IP67
0 (20) - 450mm	550-203-10**	±0.05mm	0.01mm	1,110	
0 (20) - 600mm	550-205-10**	±0.05mm	0.01mm	1,290	
0 (20) - 1000mm	550-207-10**	±0.07mm	0.01mm	3,350	

*(): Minimum dimension in ID measurement **Models are not IP67 rated

Inch/Metric		Digital model			
Range*	Order No.	Accuracy	Resolution	Mass (g)	Remarks
0 (.4") - 8" / 0 (10) - 200mm	550-311-10	±.001"	.0005" / 0.01mm	180	IP67
0 (.4") - 12" / 0 (10) - 300mm	550-341-10	±.0015"	.0005" / 0.01mm	380	w/ offset/preset function for easy ID measurement, IP67
0 (.5") - 18" / 0 (20) - 450mm	550-223-10**	±.002"	.0005" / 0.01mm	1,110	—
0 (.5") - 24" / 0 (20) - 600mm	550-225-10**	±.002"	.0005" / 0.01mm	1,290	—
0 (1") - 40" / 0 (20) - 1000mm	550-227-10**	±.003"	.0005" / 0.01mm	3,350	—

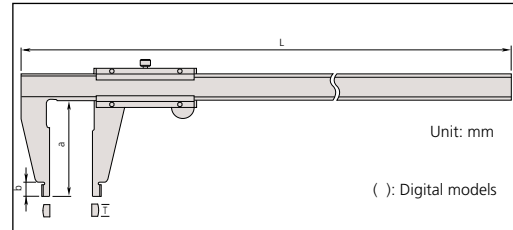
*(): Minimum dimension in ID measurement **Models are not IP67 rated

Metric		with metric/metric dual scale			
Range*	Order No.	Accuracy	Graduation	Mass (g)	Remarks
0 (20) - 450mm	160-130	±0.10mm	0.02mm	1,100	—
0 (20) - 600mm	160-131	±0.10mm	0.02mm	1,300	—
0 (20) - 1000mm	160-132	±0.15mm	0.02mm	3,350	—
0 (20) - 1500mm	160-133	±0.22mm	0.05mm	4,850	
0 (20) - 2000mm	160-134	±0.28mm	0.05mm	10,000	

*(): Minimum dimension in ID measurement

DIMENSIONS

Range	L	a	b	d	T
0 - 8" / 0 - 200mm	288 (290)	60	8	16	3
0 - 12" / 0 - 300mm	445	75	12	20	3.8
0 - 18" / 0 - 450mm	632	100	18	25	6
0 - 24" / 0 - 600mm	780	100	18	25	6
0 - 40" / 0 - 1000mm	1240	140	24	32	8
0 - 60" / 0 - 1500mm	1800	180	30	32	8
0 - 80" / 0 - 2000mm	2300	180	30	40	12



Long Jaw Vernier Caliper

SERIES 534

FEATURES

- Long jaws for measuring hard-to-reach features.
- Supplied in fitted wooden case.



SPECIFICATIONS

Metric with metric/metric dual scale without fine adjustment

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (10) - 300mm	534-109	±0.07mm	0.05mm	0.05mm	400
0 (20) - 500mm	534-110	±0.13mm	0.05mm	0.05mm	1,400

*(): Minimum dimension in ID measurement

Metric with metric/metric dual scale

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (10) - 300mm	534-113	±0.04mm	0.02mm	0.02mm	460
0 (20) - 500mm	534-114	±0.06mm	0.02mm	0.02mm	1,500
0 (20) - 750mm	534-115	±0.08mm	0.02mm	0.02mm	2,900
0 (20) - 1000mm	534-116	±0.10mm	0.02mm	0.02mm	3,500

*(): Minimum dimension in ID measurement

Metric/Inch with metric/inch dual scale

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (10) - 300mm / 0 (.3") - 12"	534-101	±0.07mm	0.05mm	1/128"	460
0 (10) - 300mm / 0 (.3") - 12"	534-105	±0.04mm	0.02mm	.001"	460
0 (20) - 500mm / 0 (.8") - 20"	534-102	±0.13mm	0.05mm	1/128"	1,500
0 (20) - 500mm / 0 (.8") - 20"	534-106	±0.06mm	0.02mm	.001"	1,500
0 (20) - 700mm / 0 (.8") - 30"	534-103	±0.16mm	0.05mm	1/128"	2,900
0 (20) - 700mm / 0 (.8") - 30"	534-107	±0.08mm	0.02mm	.001"	2,900
0 (20) - 1000mm / 0 (.8") - 40"	534-104	±0.20mm	0.05mm	1/128"	3,500
0 (20) - 1000mm / 0 (.8") - 40"	534-108	±0.10mm	0.02mm	.001"	3,500

*(): Minimum dimension in ID measurement

Inch with inch/inch dual scale

Range*	Order No.	Accuracy	Graduation		Mass (g)
			Lower Scale	Upper Scale	
0 (.3") - 12"	534-117	±.002"	.001"	.001"	400
0 (.8") - 20"	534-118	±.003"	.001"	.001"	1500
0 (.8") - 30"	534-119	±.004"	.001"	.001"	2900
0 (.8") - 40"	534-120	±.004"	.001"	.001"	3500

*(): Minimum dimension in ID measurement

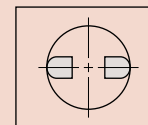
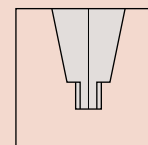
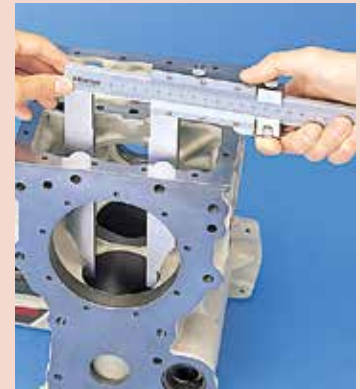
DIMENSIONS

Unit: mm

Range	L	a	b	c	d	e	T
0 - 12" / 0 - 300mm	445	110	90	12	20	7	3.8
0 - 20" / 0 - 500mm	682	225	200	18.5	25	12	6
0 - 30" / 0 - 750mm	995	232	200	18.5	32	12	8
0 - 40" / 0 - 1000mm	1230	232	200	18.5	32	12	8

Technical Data

Accuracy: Refer to the list of specifications.
 Graduation: Refer to the list of specifications.



Round surface of jaws for accurate CD measurement



Technical Data

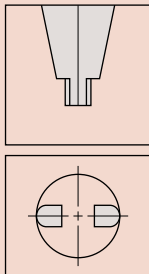
Accuracy: Refer to the list of specifications.
 Resolution: 0.01mm or .0005"/0.01mm
 Display: LCD
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed: Unlimited
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 3.5 years under normal use

Function of Digital Model

Origin-set, Zero-setting, Data output,
 inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

05CZA624: SPC cable with data switch (1m / 40") IP67
05CZA625: SPC cable with data switch (2m / 80") IP67



Round surface of jaws for accurate ID measurement

ABSOLUTE Digimatic Caliper

SERIES 551 — with Nib Style and Standard Jaws

FEATURES

- The rounded faces of the jaws are ideal for accurate ID (inside diameter) measurement.
- With SPC output.
- Supplied in fitted plastic holster in carton. 18" / 450mm and larger supplied wooden case.



SPECIFICATIONS

Metric Digital model

Range*	Order No.	Accuracy	Resolution	Mass (g)	Remarks
0 (10) - 200mm	551-301-10	±0.03mm	0.01mm	180	IP67
0 (10) - 300mm	551-331-10	±0.04mm	0.01mm	380	with offset/preset function for easy ID measurement, IP67
0 (20) - 500mm	551-204-10**	±0.06mm	0.01mm	1,060	—
0 (20) - 750mm	551-206-10**	±0.06mm	0.01mm	1,410	—
0 (20) - 1000mm	551-207-10**	±0.07mm	0.01mm	3,430	—

*(): Minimum dimension in ID measurement ** Models are not IP67 rated

Inch/Metric Digital model

Range*	Order No.	Accuracy	Resolution	Mass (g)	Remarks
0 (.4") - 8" / 0 (10) - 200mm	551-311-10	±.001"	.0005" / 0.01mm	180	IP67
0 (.4") - 12" / 0 (10) - 300mm	551-341-10	±.002"	.0005" / 0.01mm	380	w/ offset/preset function for easy ID measurement, IP67
0 (.5") - 20" / 0 (20) - 500mm	551-224-10**	±.0025"	.0005" / 0.01mm	1,060	—
0 (.5") - 30" / 0 (20) - 750mm	551-226-10**	±.0025"	.0005" / 0.01mm	1,410	—
0 (1") - 40" / 0 (20) - 1000mm	551-227-10**	±.003"	.0005" / 0.01mm	3,430	—

*(): Minimum dimension in ID measurement ** Models are not IP67 rated

DIMENSIONS

Series 551 Unit: mm

Range	a	b	c	d	R	T
0 - 8" / 0 - 200mm	60	43	8	30	5	3
0 - 12" / 0 - 300mm	90	68	10	40.1	5	3.8
0 - 20" / 0 - 500mm	150	115	15	56	10	6
0 - 30" / 0 - 750mm	150	115	15	56	10	8
0 - 40" / 0 - 1000mm	150	115	20	56	10	8

Digimatic Carbon Fiber Caliper

SERIES 552 — with optional jaw attachments

ABSOLUTE®
Absolute System Patented by MTUTOYO

FEATURES

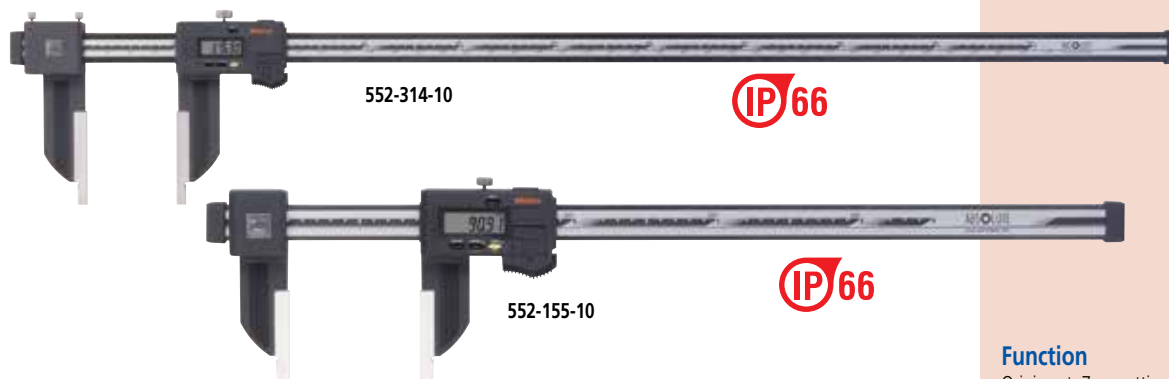
- Lightweight Digimatic Calipers that employ CFRP (Carbon Fiber Reinforced Plastics) in the beam and jaws.
- Highly durable and easy to handle.
- The range of applications can be expanded by using the optional attachments.
- Direct readout of ID measurements from the LCD. (Offset value can be set easily by pressing the Offset key.)
- Preset function for setting a desired starting point.
- With SPC data output.
- Special model available with ceramic jaws which are suitable for measuring abrasive and magnetic products.
- Supplied in fitted wooden case.

SPC

IP66

Technical Data

Accuracy: Refer to the list of specifications.
Resolution: .0005"/0.01mm or 0.01mm
Display: LCD
Length standard: Electrostatic capacitance type linear encoder
Max. response speed: unlimited
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 3,000 hours in continuous use



SPECIFICATIONS

Metric

Range*	Order No.	Accuracy	Resolution	Remarks
0(20)-450mm	552-302-10	+/-0.04mm	0.01mm	
0(20)-450mm	552-150-10	+/-0.06mm	0.01mm	long jaws 200mm
0(20)-450mm	552-155-10	+/-0.04mm	0.01mm	ceramic jaws
0(20)-600mm	552-303-10	+/-0.04mm	0.01mm	
0(20)-600mm	552-151-10	+/-0.06mm	0.01mm	long jaws 200mm
0(20)-600mm	552-156-10	+/-0.04mm	0.01mm	ceramic jaws
0(20)-1000mm	552-304-10	+/-0.05mm	0.01mm	
0(20)-1000mm	552-152-10	+/-0.07mm	0.01mm	long jaws 200mm
0(20)-1500mm	552-305-10	+/-0.09mm	0.01mm	
0(20)-1500mm	552-153-10	+/-0.11mm	0.01mm	long jaws 200mm
0(20)-2000mm	552-306-10	+/-0.12mm	0.01mm	
0(20)-2000mm	552-154-10	+/-0.14mm	0.01mm	long jaws 200mm

*(): Minimum dimension in ID measurement

Inch/Metric

Range*	Order No.	Accuracy	Resolution	Remarks
0(.5")-18"	552-312-10	+/- .002"	.0005"/0.01mm	
0(.5")-18"	552-160-10	+/- .0025"	.0005"/0.01mm	long jaws 7.9"
0(.5")-18"	552-165-10	+/- .002"	.0005"/0.01mm	ceramic jaws
0(.5")-24"	552-313-10	+/- .002"	.0005"/0.01mm	
0(.5")-24"	552-161-10	+/- .0025"	.0005"/0.01mm	long jaws 7.9"
0(.5")-24"	552-166-10	+/- .002"	.0005"/0.01mm	ceramic jaws
0(1")-40"	552-314-10	+/- .002"	.0005"/0.01mm	
0(1")-40"	552-162-10	+/- .003"	.0005"/0.01mm	long jaws 7.9"
0(1")-60"	552-315-10	+/- .004"	.0005"/0.01mm	
0(1")-60"	552-163-10	+/- .0045"	.0005"/0.01mm	long jaws 7.9"
0(1")-80"	552-316-10	+/- .005"	.0005"/0.01mm	
0(1")-80"	552-164-10	+/- .0055"	.0005"/0.01mm	long jaws 7.9"

*(): Minimum dimension in ID measurement

Function

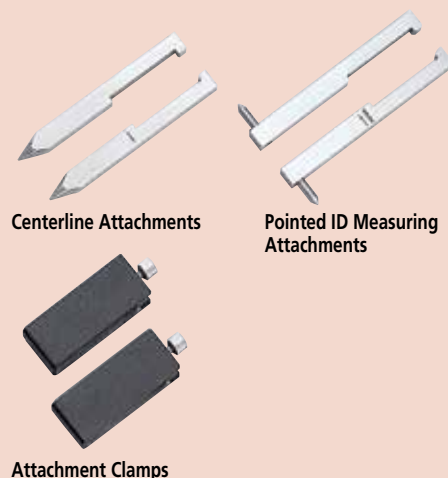
Origin-set, Zero-setting, Presetting, Offsetting, Data hold, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error

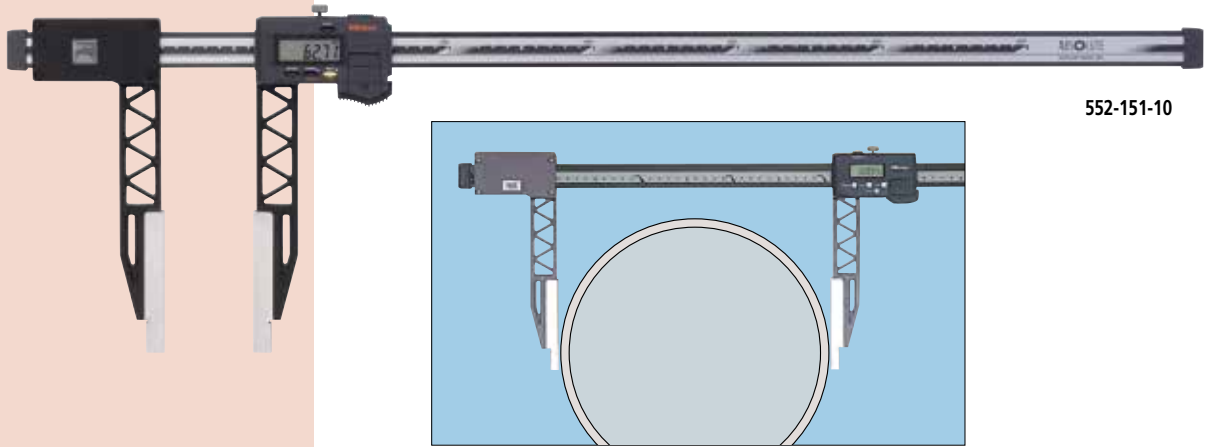
Optional Accessories

05CZA624: SPC cable with data switch (40"/1m)
05CZA625: SPC cable with data switch (80"/2m)

- 914055:** Centerline attachments (mm)*
- 914056:** Centerline attachments (inch)*
- 914057:** Pointed ID measuring attachments (mm)*
- 914058:** Pointed ID measuring attachments (inch)*
- 914053:** Attachment clamps (for models up to 24" / 600mm range)
- 914054:** Attachment clamps (for models over 24" / 600mm range)

* Attachment clamps are required and not available for long jaw type.





552-151-10



Ceramic jaws



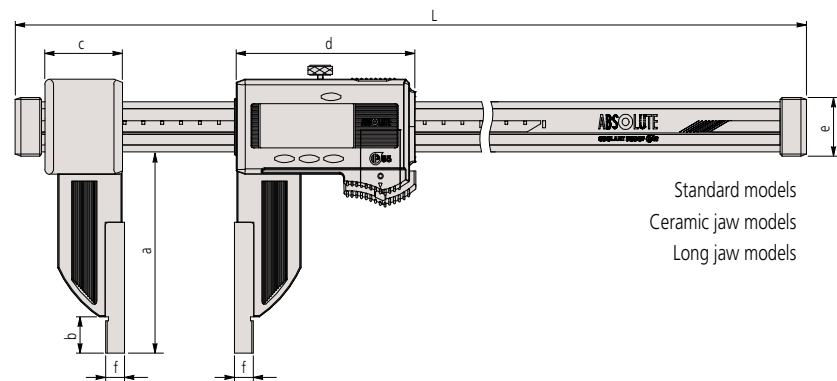
Centerline attachments



ID point attachments

DIMENSIONS AND MASS

Unit: mm



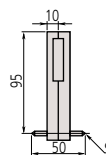
Standard models
Ceramic jaw models
Long jaw models

Standard models, Ceramic jaw models

Range	L	a	b	c	d	e	f	Mass (g)
0 - 18" / 0 - 450mm	640	100	18	41.2	91.8	25	10 (.25")	715
0 - 24" / 0 - 600mm	790	100	18	41.2	91.8	25	10 (.25")	790
0 - 40" / 0 - 1000mm	1230	150	24	62.8	113.8	32	10 (.5")	1,760
0 - 60" / 0 - 1500mm	1740	150	24	62.8	113.8	32	10 (.5")	2,160
0 - 80" / 0 - 2000mm	2250	150	24	62.8	113.8	32	10 (.5")	2,560

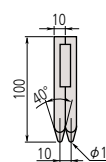
() : inch/mm models

Pointed ID Measuring Attachments



Unit: mm

Centerline Attachments



Long jaw models

Range	L	a	b	c	d	e	f	Mass (g)
0 - 18" / 0 - 450mm	680	200	24	89	91.8	25	10 (.25")	1,215
0 - 24" / 0 - 600mm	830	200	24	89	91.8	25	10 (.25")	1,290
0 - 40" / 0 - 1000mm	1280	200	24	110	113.8	32	10 (.5")	2,090
0 - 60" / 0 - 1500mm	1790	200	24	110	113.8	32	10 (.5")	2,490
0 - 80" / 0 - 2000mm	2300	200	24	110	113.8	32	10 (.5")	2,890

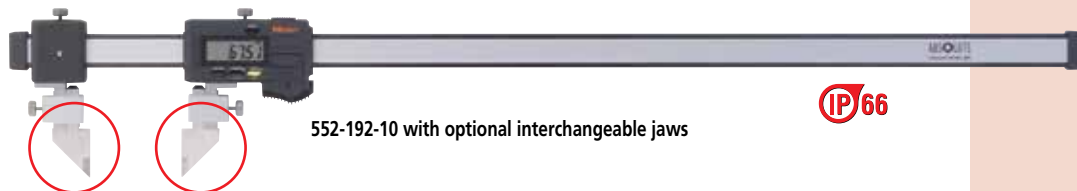
() : inch/mm models

ABSOLUTE Coolant Proof Carbon Fiber Caliper

SERIES 552 — with Interchangeable Jaws

FEATURES

- The range of applications can be expanded by using interchangeable jaws (optional).
- Quick and easy exchanging of jaws due to the unique clamping mechanism. (A pair of clamping wheels is a standard accessory.)
- Provided with preset function for setting a desired starting point, which allows direct readout of offset measurements.
- SPC data output.



552-192-10 with optional interchangeable jaws

SPECIFICATIONS

Inch/Metric

Range	Order No.	Accuracy	Mass(g)
0 - 18" / 0 - 450mm	552-191-10	±.002"	650
0 - 24" / 0 - 600mm	552-192-10	±.002"	725
0 - 40" / 0 - 1000mm	552-193-10	±.002"	1480
0 - 60" / 0 - 1500mm	552-194-10	±.004"	1880
0 - 80" / 0 - 2000mm	552-195-10	±.005"	2280

Interchangeable Jaws (Optional)

Standard type

Inside point type

Standard Type

Order No.	Components	a	b
07CZA056	Right (07CAA044), Left (07CAA045)	28mm (1.1")	30mm (1.2")

Inside Point Type

Order No.	Components	a	b
07CZA058	07CZA041 x 2pcs.	25mm	50mm
07CZA059	07CZA048 x 2pcs.	1"	2"

Surface Plate Type

Scriber Type

Centerline Type

Scriber Type

Order No.	Components	a	b
07CZA055	Right (07CZA042), Left (07CZA043)	8mm	30mm
07CZA061	Right (07CZA042), Left (07CZA049)	031"	1.2"

Surface Plate Type

Order No.	a	b
07CZA044	3.5" / 90mm	1.1" / 28mm

Centerline Type

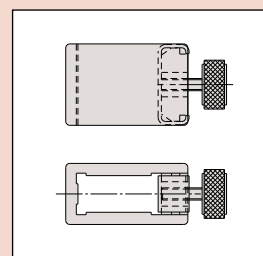
Order No.	Components	a	b
07CZA057	07CZA039 x 2pcs.	30mm	30mm
07CZA060	07CZA047 x 2pcs.	1.2"	1.2"

Unit: mm



Technical Data

Accuracy: Refer to the list of specifications.
 Resolution: .0005"/0.01mm
 Display: LCD
 Scale type: ABSOLUTE electromagnetic linear encoder
 Max. response speed: Unlimited
 Battery: SR44 (1 pc.), 938882
 Battery life: Approx. 5,000 hours in continuous use
 Dust/Water protection level: IP66
 Standard accessory: Jaw clamps (2 pcs.), 05GZA033

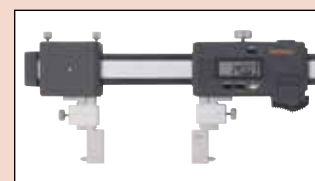


Functions

Origin-set, Zero-setting, Presetting, Offsetting, Data hold, Automatic power on/off, Data output, inch/mm conversion (inch/mm models)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

- 05CZA624: SPC cable with data switch (40" / 1m)
- 05CZA625: SPC cable with data switch (80" / 2m)
- 02AZD790A: SPC cable for U-WAVE w/ data switch (160mm)





ABSOLUTE[®]

Absolute System Patented by MITUTOYO

ABSOLUTE Back-Jaw Centerline Caliper

SERIES 573 — Center-to-Center & Edge-to-Center Types

FEATURES

- Specially designed to measure the distance between two centers or the distance from an edge to center.
- Provided with jaws on the back of the slider, measurements can be read easily by looking down.
- Direct reading of pitch measurements is available due to the offset value setting function.
- With SPC data output.
- Supplied fitted in wooden case.

Technical Data

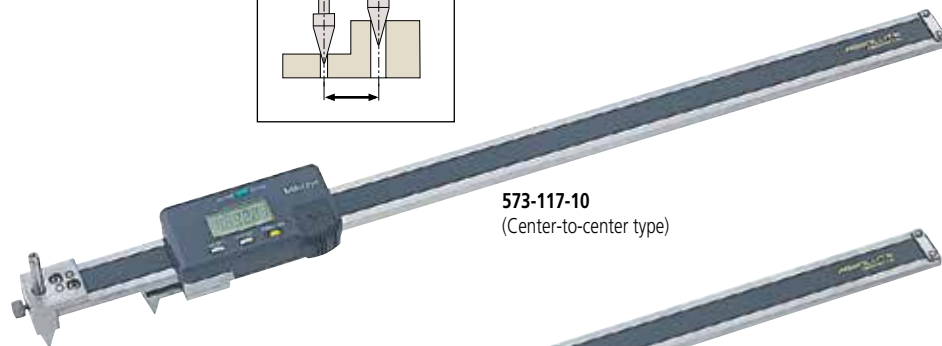
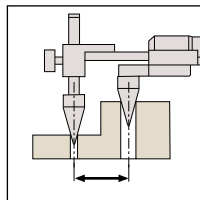
Accuracy: Refer to the list of specifications.
 Resolution: 0.01mm
 Display: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed: Unlimited
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 3.5 years under normal use

Function

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

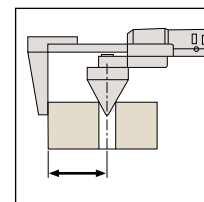
- 959143:** Data hold unit
959149: SPC cable with data switch (1m)
959150: SPC cable with data switch (2m)



573-117-10
(Center-to-center type)



573-119-10
(Edge-to-center type)



SPECIFICATIONS

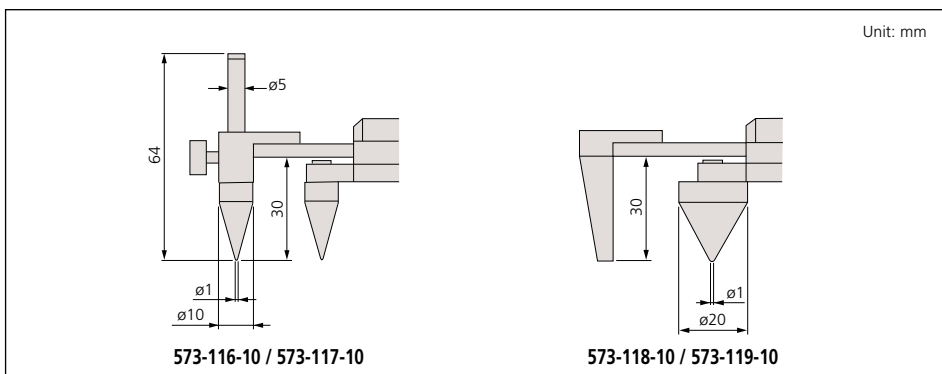
Metric — Center-to-center distance type

Range	Order No.	Accuracy	Resolution	Mass (g)
10 - 200mm	573-116-10	±0.10mm	0.01mm	482
10 - 300mm	573-117-10	±0.15mm	0.01mm	578

Metric — Edge-to-center distance type

Range	Order No.	Accuracy	Resolution	Mass (g)
10 - 200mm	573-118-10	±0.10mm	0.01mm	485
10 - 300mm	573-119-10	±0.15mm	0.01mm	581

DIMENSIONS

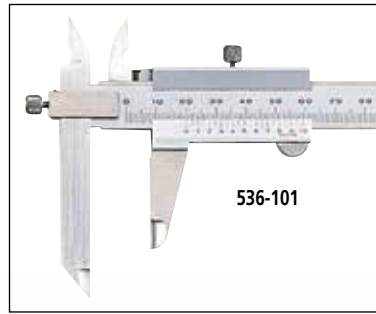


Offset Caliper

SERIES 573, 536 — ABSOLUTE Digimatic and Vernier Type

FEATURES

- Main scale jaw can slide up and down to facilitate measurement of stepped sections. (Hard-to-get-at dimensions such as A, B, C can be accurately measured.)
- With depth bar.
- With SPC data output. (Series 573)
- Supplied in fitted plastic case.



536-101



573-701



SPECIFICATIONS

Metric Digital model

Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 150mm	573-601	±0.02mm	0.01mm	168
0 - 200mm	573-602	±0.02mm	0.01mm	198
0 - 300mm	573-604	±0.03mm	0.01mm	350

Metric

Range	Order No.	Accuracy	Graduation	Mass (g)
0 - 150mm	536-101	±0.05mm	0.05mm	150
0 - 200mm	536-102	±0.05mm	0.05mm	200
0 - 300mm	536-103	±0.08mm	0.05mm	400

Inch/Metric Digital model

Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 6" / 0 - 150mm	573-701	±.001"	.0005" / 0.01mm	168
0 - 8" / 0 - 200mm	573-702	±.001"	.0005" / 0.01mm	198
0 - 12" / 0 - 300mm	573-704	±.0015"	.0005" / 0.01mm	350

DIMENSIONS

Unit: mm

Range	a	b	c	d
0 - 6" / 0 - 150mm	95	10	40	30.4 (30)
0 - 8" / 0 - 200mm	95	10	50	40.4 (38.5)
0 - 12" / 0 - 300mm	135	15	64	51

() Digital Model



Technical Data

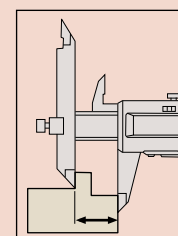
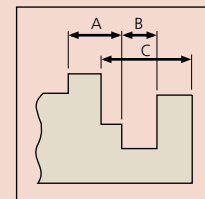
Accuracy: Refer to the list of specifications.
 Resolution*: .0005"/0.01mm or 0.01mm
 Graduation**: 0.05mm
 Display*: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), **938882**
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

- 05CZA624**: SPC cable with data switch (40" / 1m)
- 05CZA625**: SPC cable with data switch (80" / 2m)
- Connecting cable for **U-Wave-T**
- 02AZD790A**: SPC cable for **U-Wave** (160mm)





Technical Data

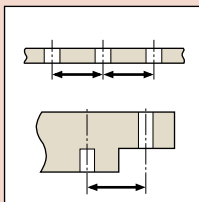
Accuracy: Refer to the list of specifications.
 Resolution*: .0005"/0.01mm or 0.01mm
 Graduation**: 0.05mm
 Display*: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), 938882
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

- 05CZA624: SPC cable with data switch (40" / 1m)
- 05CZA625: SPC cable with data switch (80" / 2m)
- Connecting cable for U-Wave-T
- 02AZD790A: SPC cable for U-Wave (160mm)



Offset Centerline Caliper

SERIES 573, 536 — ABSOLUTE Digimatic and Vernier Type

FEATURES

- Specially designed for center to center distance measurements on the same and offset planes.
- Can also measure from edge to center.
- Hole diameter should be in the range of 1.5mm - 10mm (.06" - .4").
- With SPC data output. (Series 573)
- Supplied in fitted plastic case.



573-605



536-105

SPECIFICATIONS

Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass (g)
10 - 150mm	573-605	±0.03mm	0.01mm	157
10 - 200mm	573-606	±0.03mm	0.01mm	177
10 - 300mm	573-608	±0.04mm	0.01mm	320

Inch/Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass (g)
.4 - 6" / 10 - 150mm	573-705	±.0015"	.0005" / 0.01mm	157
.4 - 8" / 10 - 200mm	573-706	±.0015"	.0005" / 0.01mm	177
.4 - 12" / 10 - 300mm	573-708	±.0015"	.0005" / 0.01mm	320

Metric		Vernier model		
Range	Order No.	Accuracy	Graduation	Mass (g)
10 - 150mm	536-105	±0.05mm	0.05mm	140
10 - 200mm	536-106	±0.05mm	0.05mm	160
10 - 300mm	536-107	±0.08mm	0.05mm	320

DIMENSIONS

Unit: mm

Range	a	t
0 - 6" / 0 - 150mm	75	3
0 - 8" / 0 - 200mm	75	3
0 - 12" / 0 - 300mm	100	3.8

Point Caliper

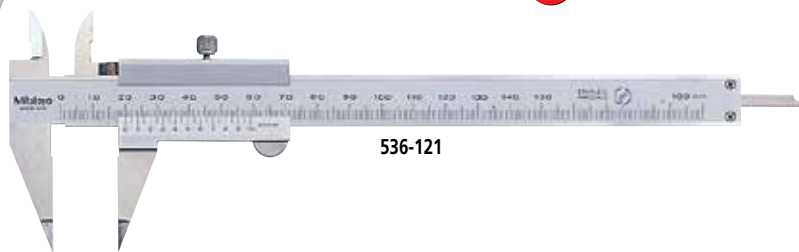
SERIES 573, 536 — ABSOLUTE Digimatic and Vernier Type

FEATURES

- Narrow tip jaws fit into very small grooves and tracks, making many previously difficult outside measurements far easier to obtain.
- With depth bar.
- With SPC data output. (Series 573)
- Supplied in fitted plastic case.



573-721



536-121

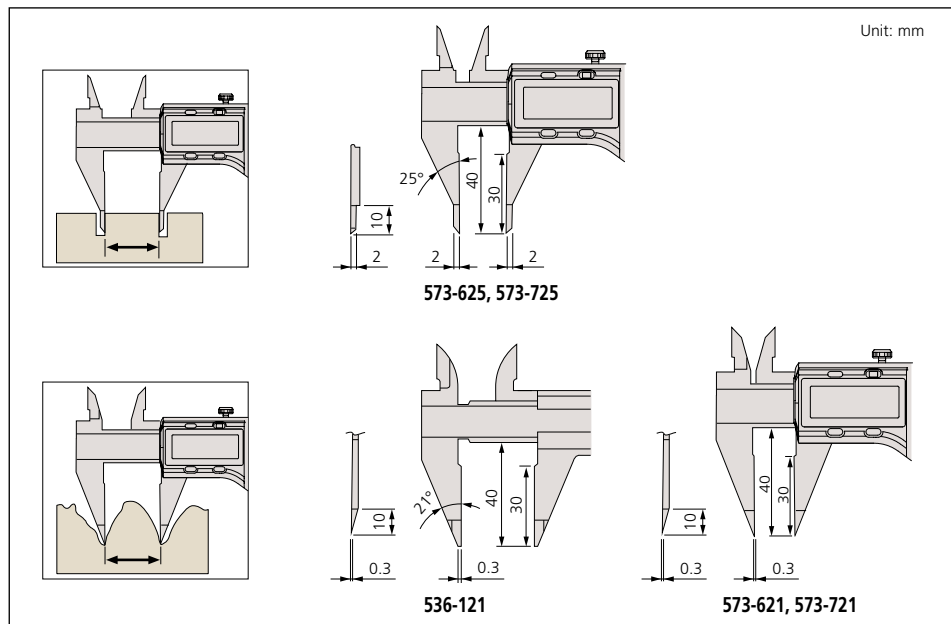
SPECIFICATIONS

Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 150mm	573-621	±0.02mm	0.01mm	163
0 - 150mm	573-625	±0.02mm	0.01mm	163

Inch/Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 6" / 0 - 150mm	573-721	±.001"	.0005" / 0.01mm	163
0 - 6" / 0 - 150mm	573-725	±.001"	.0005" / 0.01mm	163

Metric		Digital model		
Range	Order No.	Accuracy	Graduation	Mass (g)
0 - 150mm	536-121	±0.05mm	0.05mm	150

DIMENSIONS



Technical Data

Accuracy: Refer to the list of specifications.
 Resolution*: .0005"/0.01mm or 0.01mm
 Graduation**: 0.05mm
 Display*: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), **938882**
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

05CZA624: SPC cable with data switch (40" / 1m)
05CZA625: SPC cable with data switch (80" / 2m)





Technical Data

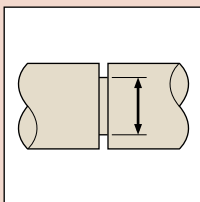
Accuracy: Refer to the list of specifications.
 Resolution*: .0005" / 0.01mm or 0.01mm
 Graduation**: 0.05mm
 Display*: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), **938882**
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

05CZA624: SPC cable with data switch (40" / 1m)
05CZA625: SPC cable with data switch (80" / 2m)

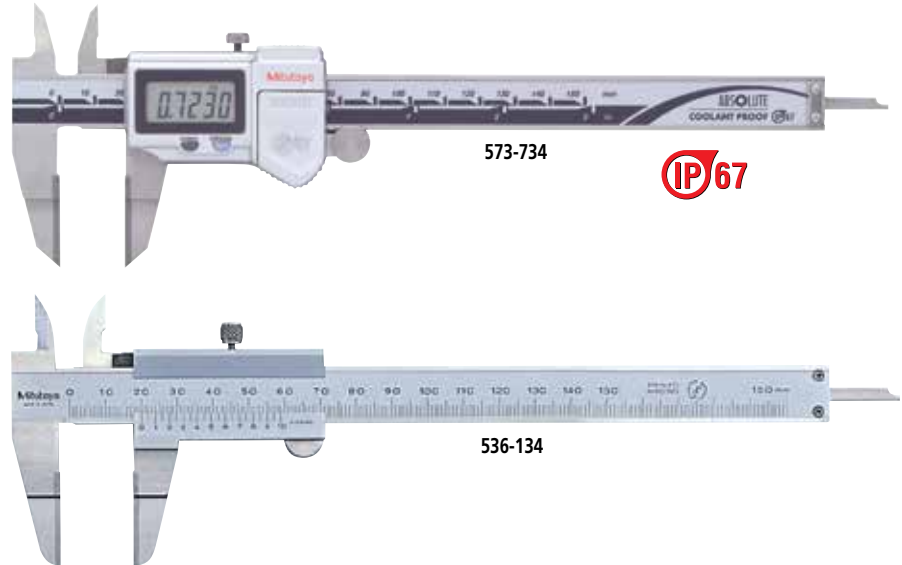


Blade Type Caliper

SERIES 573, 536 — ABSOLUTE Digimatic and Vernier Type

FEATURES

- The thin blade type jaws fit into very small grooves and making previously difficult outside measurements far easier to obtain.
- The OD measuring faces are carbide-tipped.
- With depth bar.
- With SPC data output. (Series 573)
- Supplied in fitted plastic case.



SPECIFICATIONS

Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 150mm	573-634	±0.02mm	0.01mm	168

Inch/Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 6" / 0 - 150mm	573-734	±.001"	.0005" / 0.01mm	168

Metric				
Range	Order No.	Accuracy	Graduation	Mass (g)
0 - 150mm	536-134	±0.05mm	0.05mm	130
0 - 200mm	536-135	±0.05mm	0.05mm	160
0 - 300mm	536-136	±0.08mm	0.05mm	340

DIMENSIONS

Unit: mm

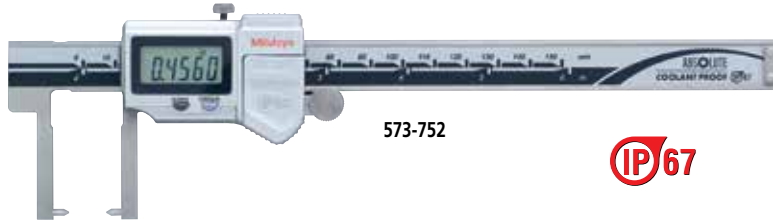
Range	a	b	c	t
0 - 6" / 0 - 150mm	40	20	0.75	3
0 - 200mm	50	25	0.75	3
0 - 300mm	64	30	1	3.8

Neck Caliper

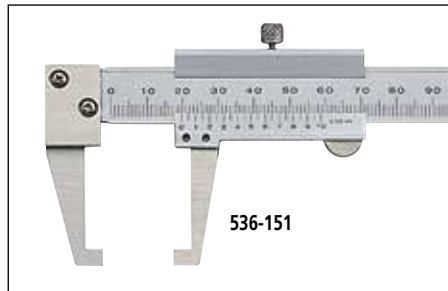
SERIES 573, 536 — ABSOLUTE Digimatic and Vernier Type

FEATURES

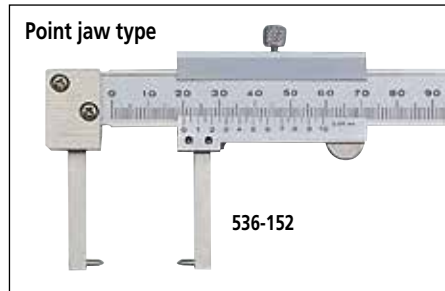
- Point jaw type can measure wall thickness inside bores and recesses.
- Flat jaw type can measure grooves and recesses.
- With SPC data output. (Series 573)
- Supplied in fitted plastic case.



573-752



536-151



Point jaw type

536-152

SPECIFICATIONS

Metric Digital model

Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 150mm	573-651	±0.03mm	0.01mm	157
0 - 150mm	573-652*	±0.03mm	0.01mm	157

*Point jaw type

Inch/Metric Digital model

Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 6" / 0 - 150mm	573-751	±.0015"	.0005" / 0.01mm	157
0 - 6" / 0 - 150mm	573-752*	±.0015"	.0005" / 0.01mm	157

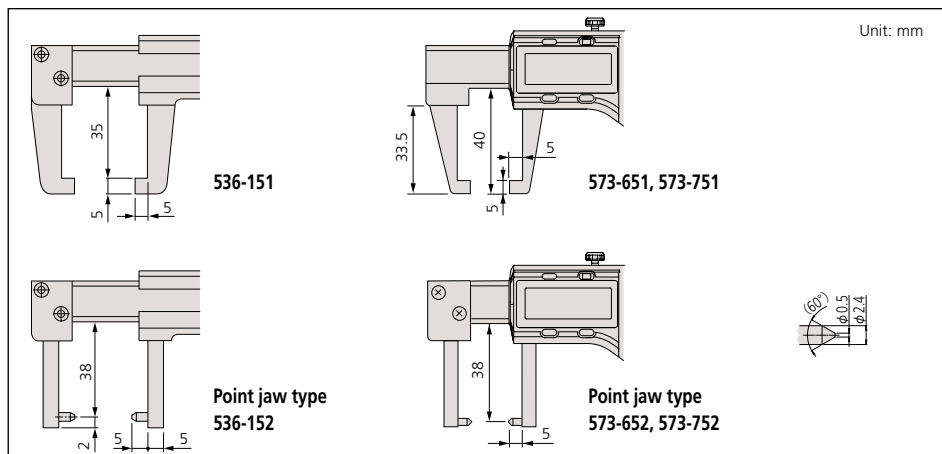
*Point jaw type

Metric

Range	Order No.	Accuracy	Graduation	Mass (g)
0 - 150mm	536-151	±0.05mm	0.05mm	140
0 - 150mm	536-152*	±0.05mm	0.05mm	140

*Point jaw type

DIMENSIONS



Technical Data

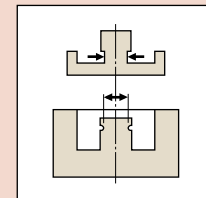
Accuracy: Refer to the list of specifications.
 Resolution*: 0.01mm or .0005"/0.01mm
 Graduation**: 0.05mm
 Display*: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), **938882**
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

- 05CZA624**: SPC cable with data switch (1m / 40")
- 05CZA625**: SPC cable with data switch (2m / 80")





Technical Data

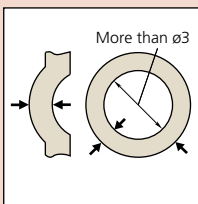
Accuracy: Refer to the list of specifications.
 Display*: LCD
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), 938882
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories for Digital Model

05CZA624: SPC cable with data switch (40" / 1m)
 05CZA625: SPC cable with data switch (80" / 2m)

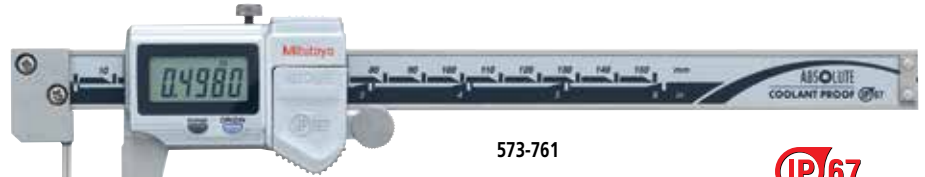


Tube Thickness Caliper

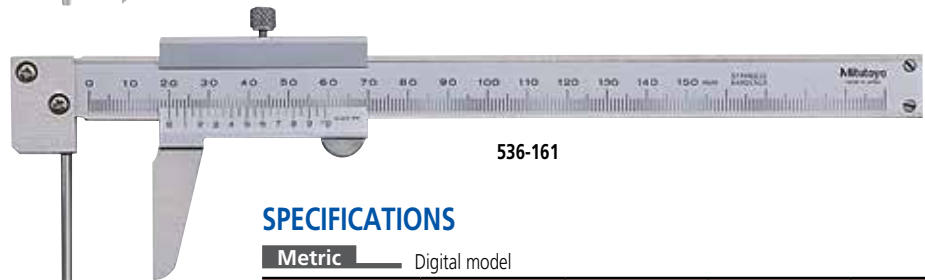
SERIES 573, 536 — ABSOLUTE Digimatic and Vernier Type

FEATURES

- The main scale jaw is a round bar that facilitates measurements of tube wall thickness.
- With SPC data output. (Series 573)
- Supplied in fitted plastic case.



573-761



536-161

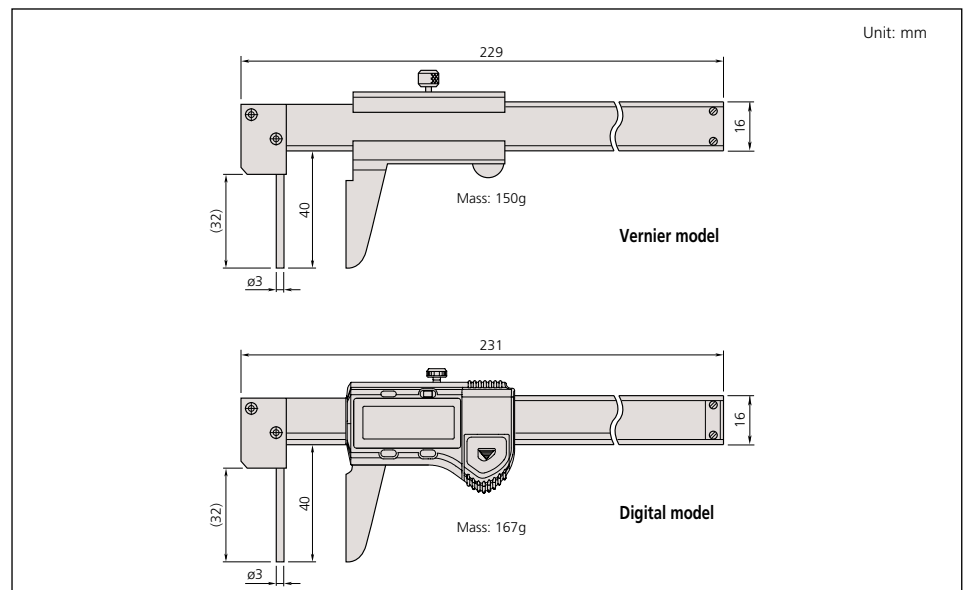
SPECIFICATIONS

Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass(g)
0 - 150mm	573-661	±0.05mm	0.01mm	167

Inch/Metric		Digital model		
Range	Order No.	Accuracy	Resolution	Mass(g)
0 - 6" / 0 - 150mm	573-761	±.002"	.0005" / 0.01mm	167

Metric		Vernier model		
Range	Order No.	Accuracy	Graduation	Mass(g)
0 - 150mm	536-161	±0.05mm	0.05mm	150

DIMENSIONS AND MASS



ABSOLUTE Low Force Caliper

SERIES 573

FEATURES

- Due to the low measuring force these calipers are ideal for elastic or resilient workpieces such as plastic parts and

rubber parts that standard calipers cannot measure.

- With SPC data output.
- Supplied in fitted plastic case.



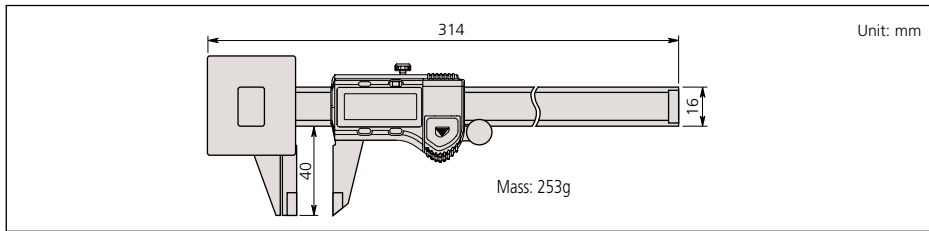
573-191-20

SPECIFICATIONS

Metric				
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 180mm	573-191-20	±0.05mm	0.01mm	253

Inch/Metric				
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 7" / 0 - 180mm	573-291-20	±.002"	.0005" / 0.01mm	253

DIMENSIONS AND MASS



ABSOLUTE Snap Caliper

SERIES 573

FEATURES

- The ABSOLUTE Digimatic snap caliper features a spring-loaded mechanism to allow quick and efficient GO/NO-GO

inspection for mass production parts.

- With SPC data output.
- Supplied in fitted plastic case.



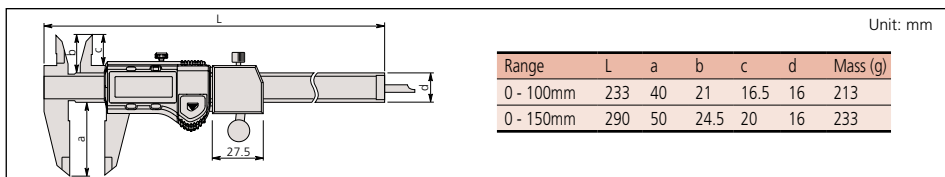
573-281-20

SPECIFICATIONS

Metric				
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 100mm	573-181-20	±0.02mm	0.01mm	213
0 - 150mm	573-182-20	±0.02mm	0.01mm	233

Inch/Metric				
Range	Order No.	Accuracy	Resolution	Mass (g)
0 - 4" / 0 - 100mm	573-281-20	±.001"	.0005" / 0.01mm	213
0 - 6" / 0 - 150mm	573-282-20	±.001"	.0005" / 0.01mm	233

DIMENSIONS AND MASS



Technical Data

Accuracy: Refer to the list of specifications.
 Resolution: .0005"/0.01mm or 0.01mm
 Display: LCD
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder
 Measuring force: 0.49N to 0.98N (50gf to 100gf)
 Jaw retraction: 0.3mm
 Max. response speed: Unlimited
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 3.5 years under normal use

Function

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

- 959143: Data hold unit
- 959149: SPC cable with data switch (40" / 1m)
- 959150: SPC cable with data switch (80" / 2m)



Measurement procedures



To measure resilient workpieces take the measurement when the pointer is between the two index lines.



Technical Data

Accuracy: Refer to the list of specifications.
 Resolution: .0005"/0.01mm or 0.01mm
 Repeatability: .0005" / 0.01mm
 Display: LCD
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder
 Measuring force: 7N to 14N (700gf to 1400gf)
 Jaw retraction: 2mm
 Max. response speed: Unlimited
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 3.5 years under normal use

Function

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

- 959143: Data hold unit
- 959149: SPC cable with data switch (40" / 1m)
- 959150: SPC cable with data switch (80" / 2m)

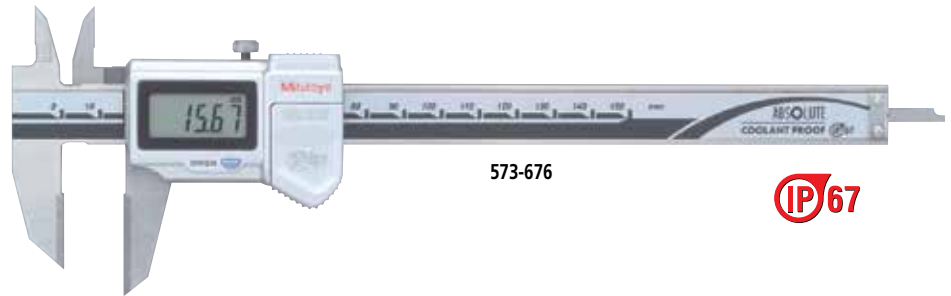


Scribing Caliper

SERIES 573, 536 — ABSOLUTE Digimatic and Vernier Type

FEATURES

- The carbide-tipped jaws facilitate fine scribing on workpiece.
- With depth bar.
- With SPC data output. (Series 573)
- Supplied in fitted plastic case.



Technical Data

Accuracy: Refer to the list of specifications.
 Display: LCD
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed: Unlimited
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 3.5 years under normal use

Function

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

- 05CZA624:** SPC cable with data switch (40" / 1m)
05CZA625: SPC cable with data switch (80" / 2m)

SPECIFICATIONS

Metric		Digital model			
Range	Order No.	Accuracy	Resolution	Mass (g)	
0 - 150mm	573-676	±0.02mm	0.01mm	166	
0 - 200mm	573-677	±0.02mm	0.01mm	196	
0 - 300mm	573-679	±0.03mm	0.01mm	345	

Metric		Vernier type			
Range	Order No.	Accuracy	Graduation	Mass (g)	
0 - 150mm	536-221	±0.05mm	0.05mm	150	
0 - 200mm	536-222	±0.05mm	0.05mm	180	
0 - 300mm	536-223	±0.08mm	0.05mm	355	

DIMENSIONS

Unit: mm

Range	L	a	b	c	d	e
0 - 150mm	229	46	21.5	17	16	33
0 - 200mm	288	50	25	20.5	16	43
0 - 300mm	403	64	27.5	22	20	54

ABSOLUTE Inside Caliper

SERIES 573, 536 — Knife-edge/Inside Groove/Point Jaw Type

FEATURES

- Specially designed for inside measurements in hard-to-reach places.
- With SPC data output. (Series 573)
- Supplied in fitted plastic case. 18" / 450mm and 24" / 600mm supplied in wooden case.

Knife-edge type



Inside groove type



Point jaw type



SPECIFICATIONS

Metric Digital model

Range	Order No.	Accuracy	Remarks	Mass (g)
10 - 200mm	573-642	±0.05mm	Knife-edge type, Measurable min. hole diameter: ø10mm	227
10 - 160mm	573-645	±0.05mm	Inside groove type, Measurable min. hole diameter: ø10mm	147
20 - 170mm	573-646	±0.03mm	Point jaw type, Measurable min. hole diameter: ø20mm	157

Inch/Metric Digital model

Range	Order No.	Accuracy	Remarks	Mass (g)
.4" - 8" / 10-200mm	573-742	±.002"	Knife-edge type, Measurable min. hole diameter: ø.4"	227
.4" - 6" / 10-150mm	573-745	±.002"	Inside groove type, Measurable min. hole diameter: ø.4"	147
.8" - 6" / 20-150mm	573-746	±.0015"	Point jaw type, Measurable min. hole diameter: ø.8"	157

Metric

Range	Order No.	Accuracy	Remarks	Mass (g)
10 - 200mm	536-142	±0.12mm	Knife-edge type, Measurable min. hole diameter: ø10mm	210
10 - 150mm	536-145	±0.05mm	Inside groove type, Measurable min. hole diameter: ø10mm	130
20 - 150mm	536-146	±0.05mm	Point jaw type, Measurable min. hole diameter: ø20mm	140
30 - 300mm	536-147	±0.08mm	Point jaw type, Measurable min. hole diameter: ø30mm	370
70 - 450mm	536-148	±0.10mm	Point jaw type, Measurable min. hole diameter: ø70mm	1,250
70 - 600mm	536-149	±0.12mm	Point jaw type, Measurable min. hole diameter: ø70mm	1,430



Technical Data

Accuracy: Refer to the list of specifications.
 Resolution*: .0005"/0.01mm / 0.01mm
 Graduation**: 0.05mm
 Display*: LCD
 Length standard*: ABSOLUTE electrostatic capacitance type linear encoder
 Max. response speed*: Unlimited
 Battery*: SR44 (1 pc.), **938882**
 Battery life*: Approx. 3.5 years under normal use
 *Digital models **Analog models

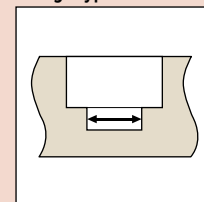
Function of Digital Model

Origin-set, Zero-setting, Power On/Off, Data output, inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

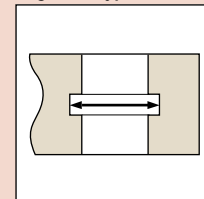
Optional Accessories for Digital Model

- 05CZA624**: SPC cable with data switch (40" / 1m)
- 05CZA625**: SPC cable with data switch (80" / 2m)

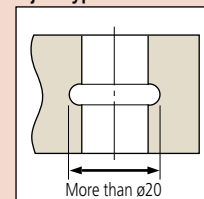
Knife-edge type



Inside groove type



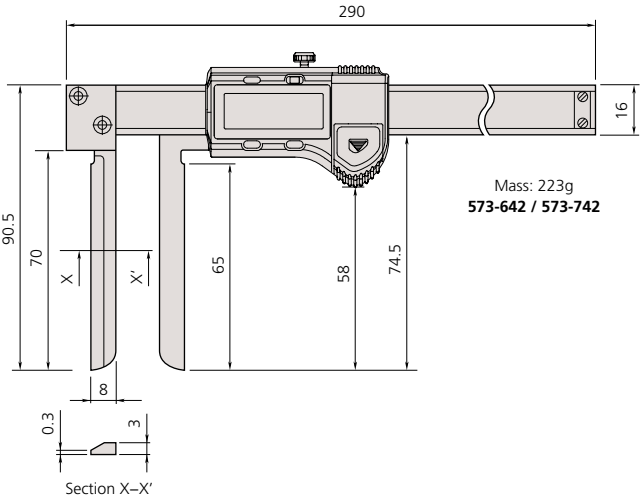
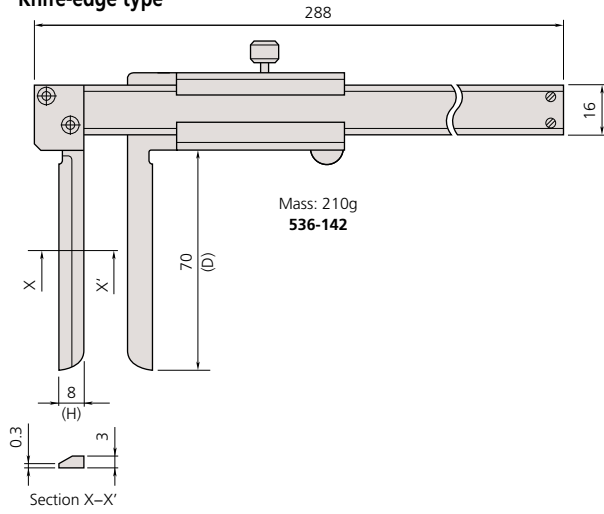
Point jaw type



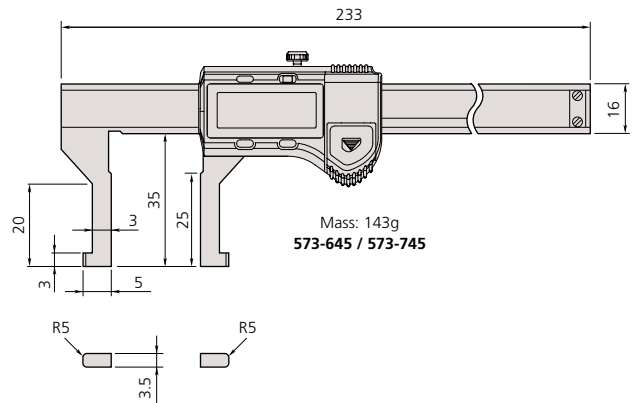
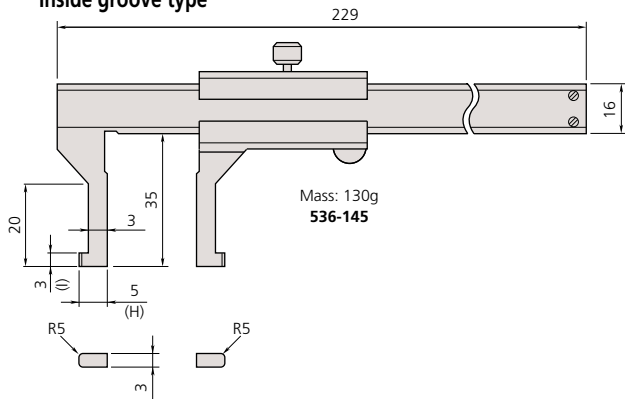
DIMENSIONS AND MASS

Unit: mm

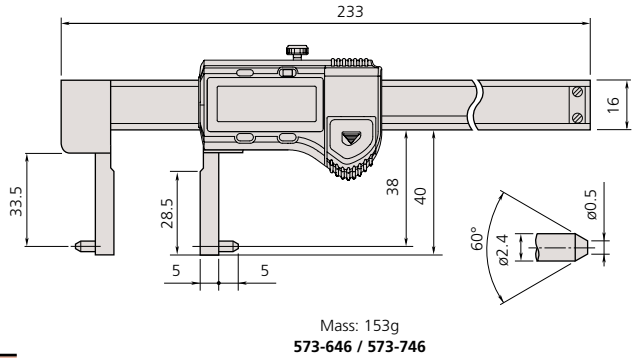
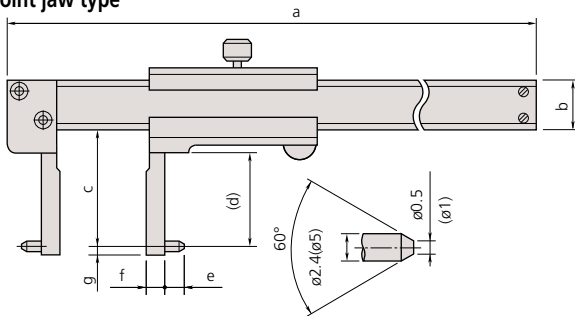
Knife-edge type



Inside groove type



Point jaw type



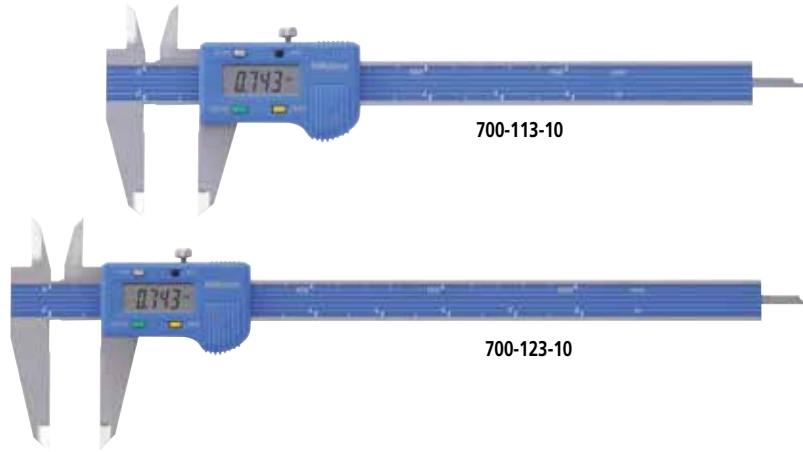
Order No.	Range	a	b	c	d	e	f	g	Mass (g)
536-146	150mm	229	16	38	31	5	5	2	140
536-147	300mm	403	20	98	89	5	10	2	370
536-148	450mm	610	25	145	136	10	25	5	1,250
536-149	600mm	750	25	145	136	10	25	5	1,430

MyCAL-Lite

SERIES 700 — Digital Caliper for DIY

FEATURES

- The "MyCAL-Lite" is an ideal measuring tool for DIY.
- The LCD screen allows error-free readout of measurements.
- With depth measuring bar.



Technical Data

Accuracy: Refer to the list of specifications.
Resolution: .001" / 0.1mm
Display: LCD
Length standard: Electrostatic capacitance type linear encoder
Max. response speed: 1800mm/s
Battery: SR44 (1 pc.), **938882**
Battery life*: Approx. 2 years under normal use

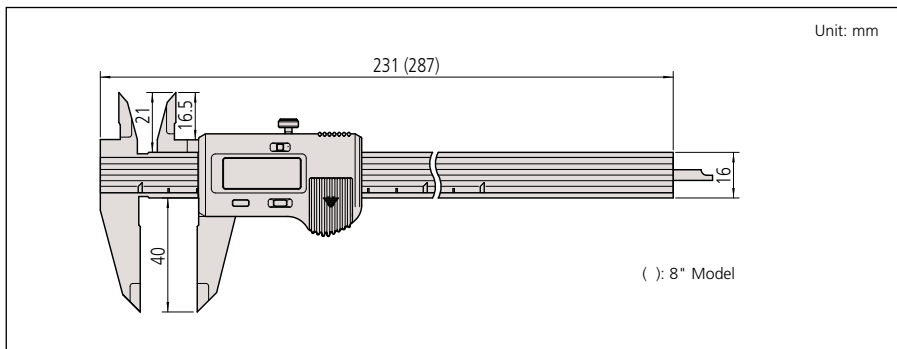
Function

Zero-setting, Power on/off
inch/mm conversion
Alarm: Low voltage, Counting value composition error

SPECIFICATIONS

Inch/Metric			
Range	Order No.	Accuracy	Mass (g)
0 - 6" / 0 - 150mm	700-113-10	±.005" / ±0.2mm	150
0 - 8" / 0 - 200mm	700-123-10	±.005" / ±0.2mm	170

DIMENSIONS

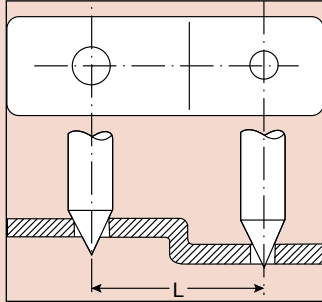


Center Line Gage

Optional Accessories for Caliper

FEATURES

Pairs of conical probes are specially designed for Digimatic, Dial and Vernier calipers to quickly measure centerline distances.



050001

Application for 4", 6" and 8" Vernier, Dial and Digimatic Calipers, requiring dimensions over .375".



050018

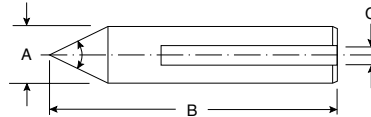
Application for 12" Vernier, Dial and Digimatic Calipers requiring dimensions over .5".

SPECIFICATIONS

Center Line Gage

Order No.	Description
050001	For 4, 6 and 8" Calipers
050018	For 12" Calipers

DIMENSIONS



	A	B	C
050001	.375"	2.187"	.141"
050018	.500"	2.75"	.154"

Depth Base Attachment

Optional Accessories for Caliper

FEATURES

- For 4", 6", 8", 12" / 100mm, 150mm, 200mm, 300mm, vernier, dial and digital calipers which have a depth measuring bar.

- Finely grounded base surface and secure locking clamp.



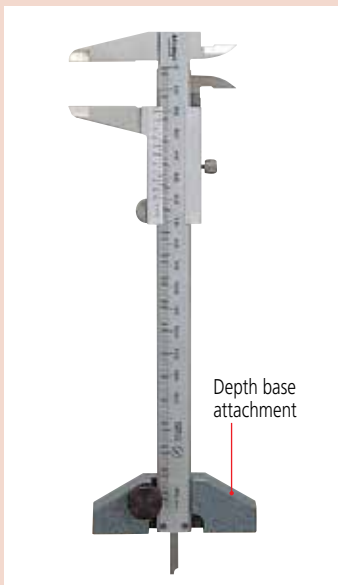
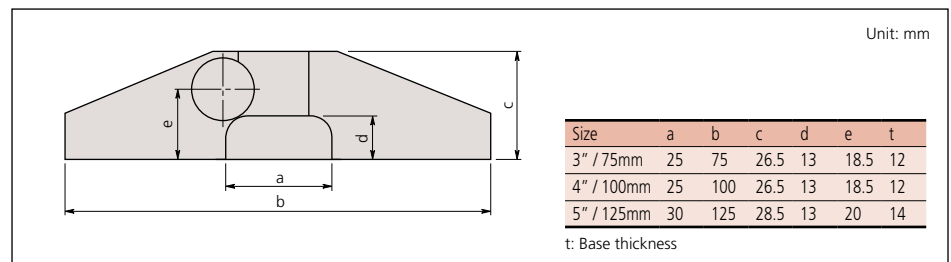
050084-10

SPECIFICATIONS

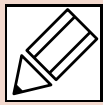
Inch/Metric

Size	Order No.	Remarks (applicable measuring range of caliper)
3" / 75mm	050083-10	4", 6", 8" / 100mm, 150mm, 200mm
4" / 100mm	050084-10	4", 6", 8" / 100mm, 150mm, 200mm
5" / 125mm	050085-10	12" / 300mm

DIMENSIONS



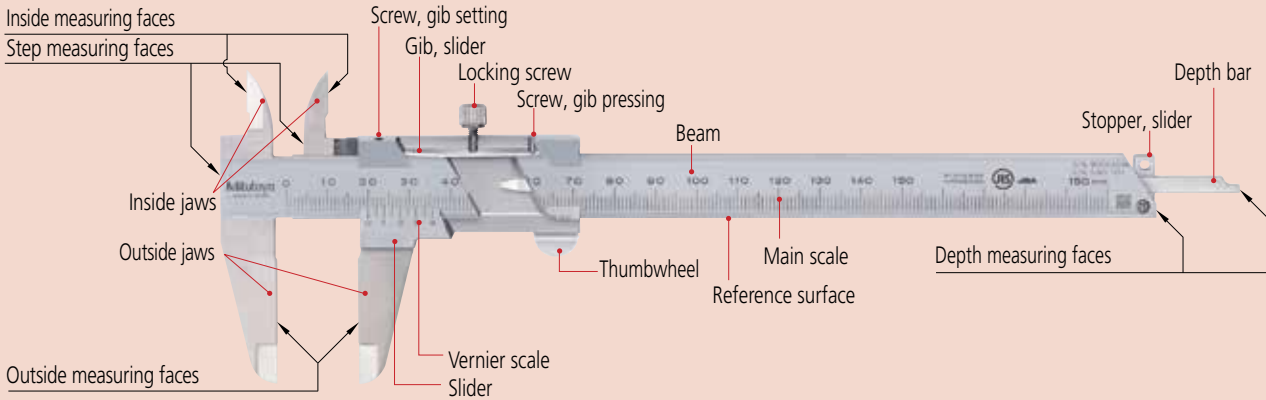
Quick Guide to Precision Measuring Instruments



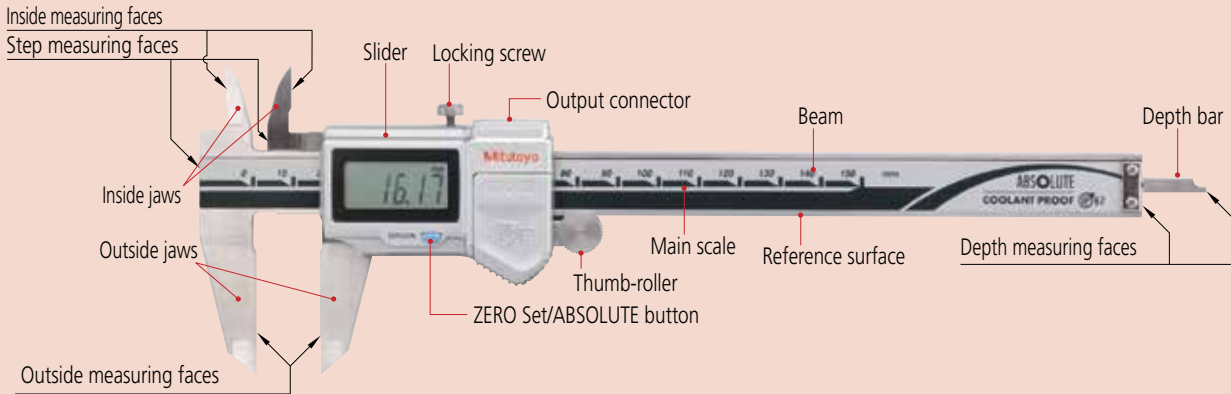
Calipers

Nomenclature

Vernier Caliper

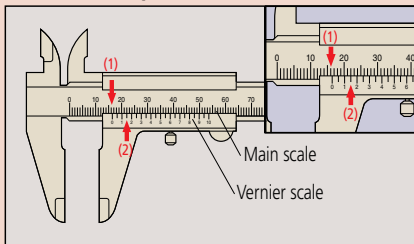


Absolute Digimatic Caliper



How to Read the Scale

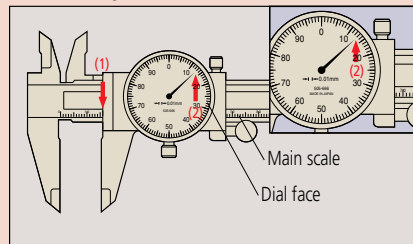
Vernier Calipers



Graduation 0.05mm

(1) Main scale	16	mm
(2) Vernier	0.15	mm
Reading	16.15	mm

Dial Calipers

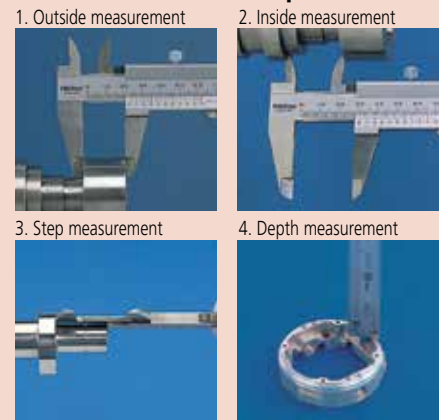


Graduation 0.01mm

(1) Main scale	16	mm
(2) Dial face	0.13	mm
Reading	16.13	mm

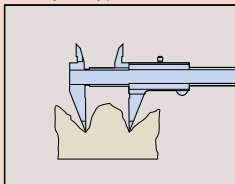
Note) Above left, 0.15 mm (2) is read at the position where a main scale graduation line corresponds with a vernier graduation line.

Measurement examples



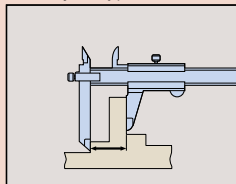
Special Purpose Caliper Applications

Point jaw type



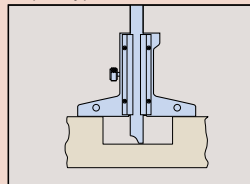
For uneven surface measurement

Offset jaw type



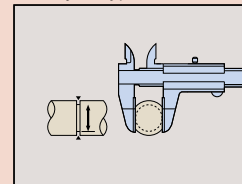
For stepped feature measurement

Depth type



For depth measurement

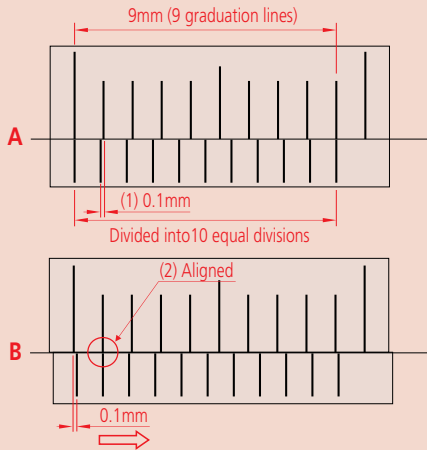
Blade jaw type



For diameter of narrow groove measurement

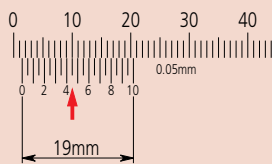
Vernier scale

This is a short auxiliary scale that enables accurate interpolation between the divisions of a longer scale without using mechanical magnification. The principle of operation is that each vernier scale division is slightly smaller than a main scale division, so that successive vernier graduations successively coincide with main scale graduations as one is moved relative to the other. Specifically, n divisions on a vernier scale are the same length as $n-1$ divisions on the main scale it works with, and n defines the division (or interpolation) ratio. Although n may be any number, in practice it is typically 10, 20, 25, etc., so that the division is a useful decimal fraction. The example below is for $n = 10$. The main scale is graduated in mm, and so the vernier scale is 9mm (10 divisions) long, the same as 9mm (9 divisions) on the main scale. This produces a difference in length of 0.1mm (1) as shown in figure A (the 1st vernier graduation is aligned with the first main scale graduation). If the vernier scale is slid 0.1mm to the right as shown in figure B, the 2nd graduation line on the vernier scale moves into alignment with the 2nd line on the main scale (2), and so enables easy reading of the 0.1mm displacement.



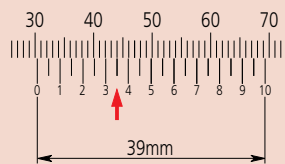
Some early calipers divided 19 divisions on the main scale by 20 vernier divisions to provide 0.05mm resolution. However, the closely spaced lines proved difficult to read and so, since the 1970s, a long vernier scale that uses 39 main scale divisions to spread the lines is generally used instead, as shown below.

19mm Vernier scale



Scale reading 1.45mm

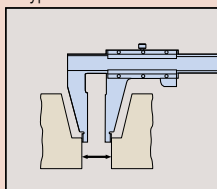
39mm vernier scale (long vernier scale)



Scale reading 30.35mm

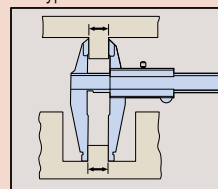
Calipers were made that gave an even finer resolution of 0.02mm. These required a 49-division vernier scale dividing 50 main scale divisions. However, they were difficult to read and are now hard to find since Digital calipers with an easily read display and resolution of 0.01mm appeared.

C-type



Standard outside measurement
Inside measurement of a stepped hole
Measurement of a stepped part

CN-type

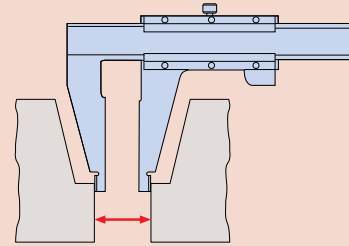


Standard outside measurement
Measurement of a stepped hole
Measurement of a stepped part

About Long Calipers

Steel rules are commonly used to roughly measure large workpieces but if a little more accuracy is needed then a long caliper is suitable for the job. A long caliper is very convenient for its user friendliness but does require some care in use. In the first place it is important to realize there is no relationship between resolution and accuracy. For details, refer to the values in our catalog. Resolution is constant whereas the accuracy obtainable varies dramatically according to how the caliper is used.

The measuring method with this instrument is a concern since distortion of the main beam causes a large amount of the measurement error, so accuracy will vary greatly depending on the method used for supporting the caliper at the time. Also, be careful not to use too much measuring force when using the outside measuring faces as they are furthest away from the main beam so errors will be at a maximum here. This precaution is also necessary when using the tips of the outside measuring faces of a long-jaw caliper.



Small hole measurement with an M-type caliper

A structural error d occurs when you measure the internal diameter of a small hole.

ϕD : True internal diameter

ϕd : Measured diameter

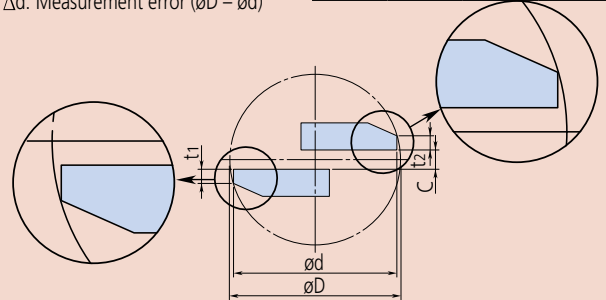
t , t_c : Thickness of the inside jaw

C : Distance between the inside jaws

Δd : Measurement error ($\phi D - \phi d$)

True internal diameter (ϕD : 5mm)
Unit: mm

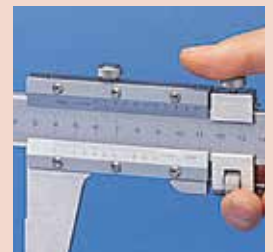
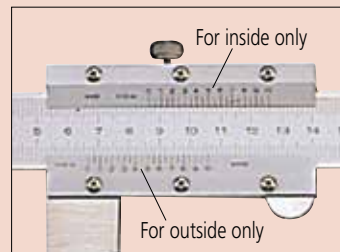
$t_c + t_c + C$	0.3	0.5	0.7
Δd	0.009	0.026	0.047



Inside Measurement with a CM-type Caliper

Because the inside measuring faces of a CM-type caliper are at the tips of the jaws the measuring face parallelism is heavily affected by measuring force, and this becomes a large factor in the measurement accuracy attainable.

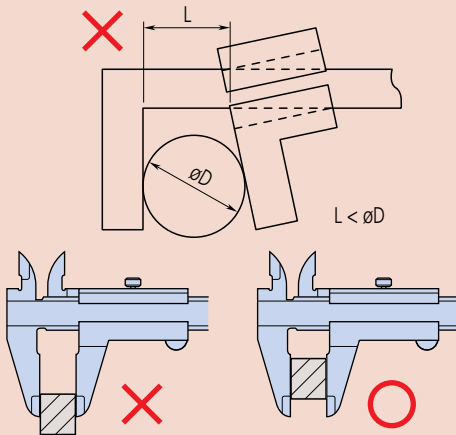
In contrast to an M-type caliper, a CM-type caliper cannot measure a very small hole diameter because it is limited to the size of the stepped jaws, although normally this is no inconvenience as it would be unusual to have to measure a very small hole with this type of caliper. Of course, the radius of curvature on the inside measuring faces is always small enough to allow correct hole diameter measurements right down to the lowest limit (jaw closure). Mitutoyo CM-type calipers are provided with an extra scale on the slider for inside measurements so they can be read directly without the need for calculation, just as for an outside measurement. This useful feature eliminates the possibility of error that occurs when having to add the inside-jaw-thickness correction on a single-scale caliper.



General notes on use of caliper

1. Potential causes of error

A variety of factors can cause errors when measuring with a caliper. Major factors include parallax effects, excessive measuring force due to the fact that a caliper does not conform to Abbe's Principle, differential thermal expansion due to a temperature difference between the caliper and workpiece, and the effect of the thickness of the knife-edge jaws and the clearance between these jaws during measurement of the diameter of a small hole. Although there are also other error factors such as graduation accuracy, reference edge straightness, main scale flatness on the main blade, and squareness of the jaws, these factors are included within the instrumental error tolerances. Therefore, these factors do not cause problems as long as the caliper satisfies the instrumental error tolerances. Handling notes have been added to the JIS so that consumers can appreciate the error factors caused by the structure of the caliper before use. These notes relate to the measuring force and stipulate that "as the caliper does not have a constant-force device, you must measure a workpiece with an appropriate even measuring force. Take extra care when you measure it with the root or tip of the jaw because a large error could occur in such cases."



2. Inside measurement

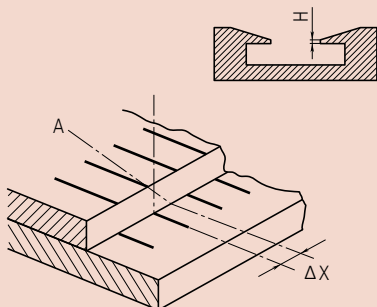
Insert the inside jaw as deeply as possible before measurement.
Read the maximum indicated value during inside measurement.
Read the minimum indicated value during groove width measurement.

3. Depth measurement

Read the minimum indicated value during depth measurement.

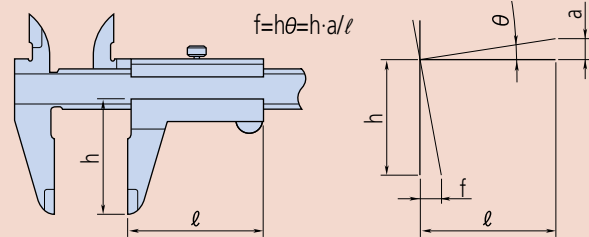
4. Parallax error when reading the scales

Look straight at the vernier graduation line when checking the alignment of vernier graduation lines to the main scale graduation lines. If you look at a vernier graduation line from an oblique direction (A), the apparent alignment position is distorted by ΔX as shown in the figure below due to a parallax effect caused by the step height (H) between the planes of the vernier graduations and the main scale graduations, resulting in a reading error of the measured value. To avoid this error, the JIS stipulates that the step height should be no more than 0.3 mm.



5. Moving Jaw Tilt Error

If the moving jaw becomes tilted out of parallel with the fixed jaw, either through excessive force being used on the slider or lack of straightness in the reference edge of the beam, a measurement error will occur as shown in the figure. This error may be substantial due to the fact that a caliper does not conform to Abbe's Principle.



Example: Assume that the error slope of the jaws due to tilt of the slider is 0.01 mm in 50 mm and the outside measuring jaws are 40 mm deep, then the error (at the jaw tip) is calculated as $(40/50) \times 0.01 \text{ mm} = 0.008 \text{ mm}$.
If the guide face is worn then an error may be present even using the correct measuring force.

6. Relationship between measurement and temperature

The main scale of a caliper is engraved (or mounted on) stainless steel, and although the linear thermal expansion coefficient is equal to that of the most common workpiece material, steel, i.e. $(10.2 \pm 1) \times 10^{-6} / \text{K}$, note that other workpiece materials, the room temperature and the workpiece temperature may affect measurement accuracy.

7. Handling

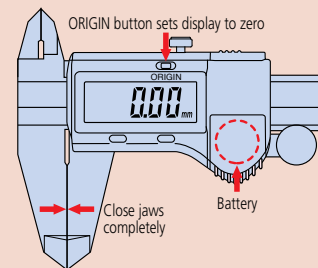
Caliper jaws are sharp, and therefore the instrument must be handled with care to avoid personal injury.
Avoid damaging the scale of a digital caliper and do not engrave an identification number or other information on it with an electric marker pen.
Avoid damaging a caliper by subjecting it to impact with hard objects or by dropping it on a bench or the floor.

8. Maintenance of beam sliding surfaces and measuring faces

Wipe away dust and dirt from the sliding surfaces and measuring faces with a dry soft cloth before using the caliper.

9. Checking and setting the origin before use

Clean the measuring surfaces by gripping a sheet of clean paper between the outside jaws and then slowly pulling it out. Close the jaws and ensure that the vernier scale (or display) reads zero before using the caliper. When using a Digimatic caliper, reset the origin (ORIGIN button) after replacing the battery.



10. Handling after use

After using the caliper, completely wipe off any water and oil. Then, lightly apply anti-corrosion oil and let it dry before storage.
Wipe off water from a waterproof caliper as well because it may also rust.

11. Notes on storage

Avoid direct sunlight, high temperatures, low temperatures, and high humidity during storage.
If a digital caliper will not be used for more than three months, remove the battery before storage.
Do not leave the jaws of a caliper completely closed during storage.