

Digital Caliper ABS Digimatic Caliper CD-AX/APX Series

Catalog No. E12021



New-series Digimatic calipers born from Mitutoyo's technologies accumulated for 30 years since development of digital calipers Equipped with **the electromagnetic induction type absolute encoder** applied for ABS coolant-proof calipers

- Patent registered (in Japan, USA, China, Germany, UK, France, Switzerland and India)
- Design patent pending (in Japan, USA, EU and China)

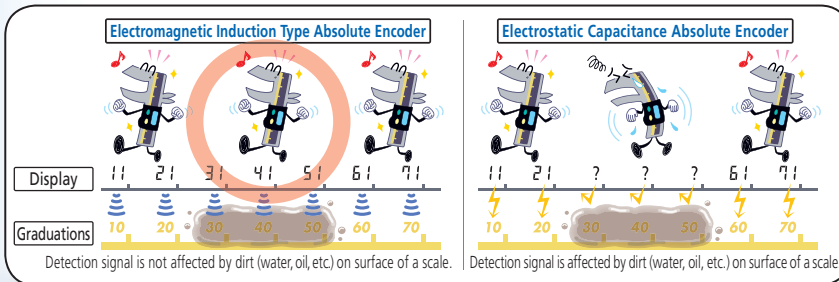
Mitutoyo

New

ABS Digimatic Caliper CD-AX/APX Series

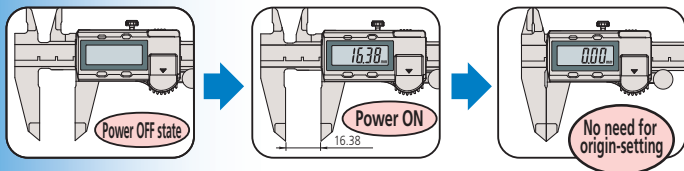
A new series of cost-effective standard Digimatic caliper born of Mitutoyo's
Now equipped with the same AOS (Advanced Onsite Encoder) induction

Thanks to the adoption of the **electromagnetic induction type ABS encoder**, this caliper can be used without concern for **contamination on the scale face during measurement.**



Font height: **9mm**
Alleviation of fatigue with the high-contrast LCD

The ABS (absolute) scale **requires no origin setting** after power-on and **also has no limit to response speed.**



500-181-30
Slider without a measurement data output port or thumb roller

ABSOLUTE™

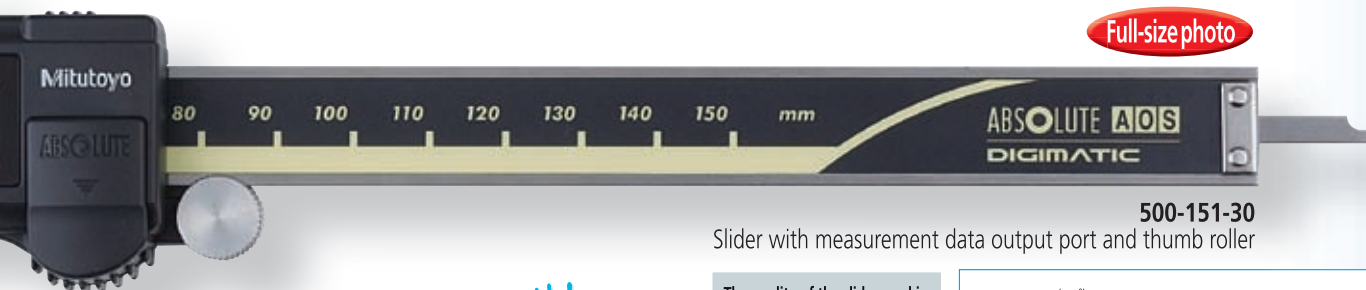
Evolution of Mitutoyo's digital caliper

- | 1983 | 1987 | 1988 |
|--|--|---|
| <ul style="list-style-type: none"> The first digital caliper. | <ul style="list-style-type: none"> A Digimatic-format measurement data output port is incorporated. | <ul style="list-style-type: none"> The first solar-powered model, which never needs a new battery. |



Mitutoyo

ground-breaking encoder technologies developed over the last 30 years.
 type encoder used in top-of-the-line **ABS coolant-proof calipers.**



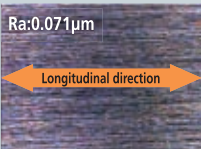
Full-size photo

500-151-30

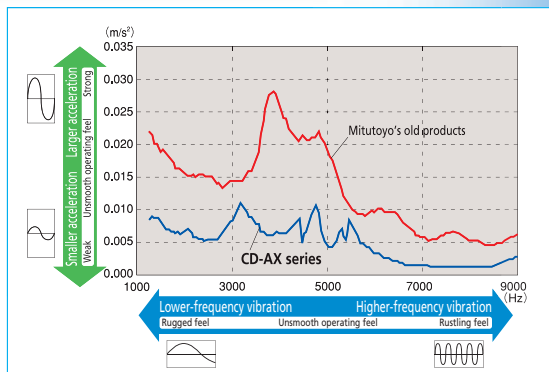
Slider with measurement data output port and thumb roller



The quality of the slider working surface has improved with the latest machining technology.



The slider provides **smooth, stable and comfortable** operation.



Assessment of slider operating 'feel'

This assessment is obtained from FFT analysis of vibrations during sliding with acceleration sensors mounted on the slider.



Full-size photo



Full-size photo

500-197-30

Slider without a measurement data output port but with a thumb roller

- A battery life of approximately 3.5 years has been achieved under normal use through the adoption of Mitutoyo's ABSOLUTE scale.
- The slider configuration features an ergonomic, thumb-friendly shape.
- Step-measurement capable.
- Carbide-tipped jaw models are ideally suited to the measurement of rough-machined workpieces, castings, grindstones, etc.
- The data output function allows integration into statistical process control and measurement systems.



An inspection certificate is included standard with each caliper.

1993	2000	2003	2005	2013
<ul style="list-style-type: none"> • Introduction of Mitutoyo's electrostatic capacitance ABSOLUTE encoder caliper. 	<ul style="list-style-type: none"> • Introduction of an ABSOLUTE encoder caliper offering IP65-level coolant-proof performance. 	<ul style="list-style-type: none"> • Introduction of an induction type ABSOLUTE encoder caliper offering IP67-level coolant-proof performance. 	<ul style="list-style-type: none"> • Introduction of a solar-powered ABSOLUTE encoder caliper offering IP67-level coolant-proof performance. 	<ul style="list-style-type: none"> • The AOS induction type ABSOLUTE encoder is introduced to a standard caliper. <i>New</i>

Common Specifications

- Resolution: 0.01mm
- Repeatability: 0.01mm (Quantizing error excluded)
- Power supply: Button-type silver oxide battery SR44 (No. 938882), 1 piece supplied as standard (The standard supplied battery is for the monitor.)
- Battery life: Approx. 3.5 years under normal use
- Maximum response speed: Unlimited

Functions

ABS (absolute) measurement function:
Enables absolute-mode measurement to be started without any zero-setting after switch-on. The absolute origin position can be set, or reset, with the ORIGIN switch at any time.

INC (incremental) measurement function:
Enables the display value to be set to zero, temporarily, at the current slider position to enable easy incremental-mode measurement.

Low battery alarm:

Indicates (with a 'B' symbol in the display) that the battery needs replacing. This allows timely battery replacement before the caliper becomes unusable.

External output function:

Allows measurement data to be exported using the optional data cable.

Hold function:

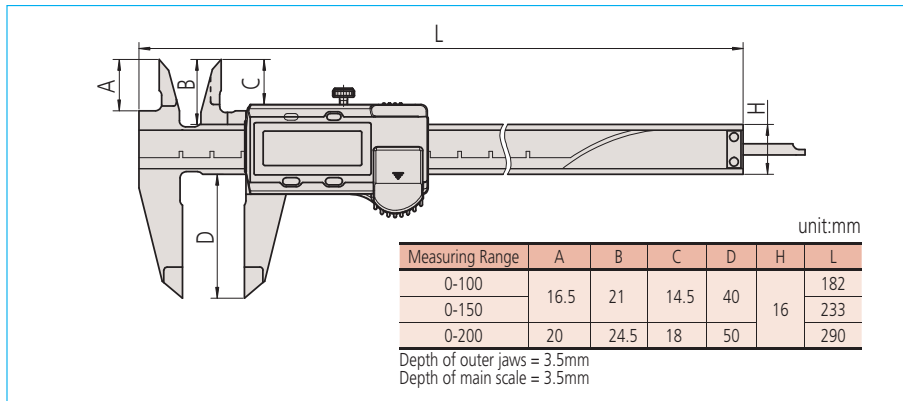
Allows a display value to be held using the optional Data Hold unit. (This function cannot be used along with the external output function.)

SPECIFICATIONS

Metric							
Order No.	Range	Accuracy	Mass	Measurement data output port	Thumb roller	Remarks	
500-150-30	0-100mm	±0.02mm	143 g	✓	✓	Depth bar ø1.9mm rod	
500-180-30				-	-		
500-151-30	0-150mm		168 g	✓	✓	Carbide-tipped jaws for outside measurement	
500-154-30				-	-	Carbide-tipped jaws for outside and inside measurement	
500-155-30			-	-	✓	✓	Depth bar ø1.9mm rod
500-158-30			-	-	-	-	-
500-181-30	0-200mm	198 g	✓	✓	Carbide-tipped jaws for outside measurement		
500-152-30			-	-	-	-	
500-156-30			-	-	✓	✓	Carbide-tipped jaws for outside and inside measurement
500-157-30			-	-	-	-	-
500-182-30	-	-	-	-	-	-	

Inch								
Order No.	Range	Accuracy	Mass	Measurement data output port	Thumb roller	Remarks		
500-170-30	0-4"	±0.001"	143 g	✓	✓	Depth bar ø3/40" rod		
500-195-30				-	-		-	
500-171-30	0-6"		168 g	✓	✓	Carbide-tipped jaws for outside measurement		
500-174-30				-	-	Carbide-tipped jaws for outside and inside measurement		
500-175-30				-	-	✓	✓	Depth bar ø3/40" rod
500-178-30				-	-	-	-	-
500-196-30	0-8"	198 g	✓	✓	Carbide-tipped jaws for outside measurement			
500-159-30			-	-	-	-		
500-160-30			-	-	✓	✓	Carbide-tipped jaws for outside and inside measurement	
500-172-30			-	-	-	-	-	
500-176-30			-	-	✓	✓	Carbide-tipped jaws for outside measurement	
500-177-30			-	-	-	-	Carbide-tipped jaws for outside and inside measurement	
500-197-30	-	-	-	-	-			
500-163-30	-	-	-	-	Carbide-tipped jaws for outside measurement			
500-164-30	-	-	-	-	Carbide-tipped jaws for outside and inside measurement			

External View/Dimensions Chart



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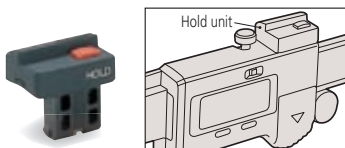
- Coordinate Measuring Machines
- Vision Measuring Systems
- Form Measurement
- Optical Measuring
- Sensor Systems
- Test Equipment and Seismometers
- Digital Scale and DRO Systems
- Small Tool Instruments and Data Management

Optional Accessories

These accessories are available only for those models with the measurement data output function.

• Data Hold unit

Order No.959143



• Connecting cable

Used for input tool DP-1VR or MUX-10F.

1m cable: Order No.959149

2m cable: Order No.959150



• USB direct input tool

USB-ITN-C (2m): Order No.06ADV380C

• U-WAVE-T dedicated connecting cable

Cable for standard use: Order No.02AZD790C

Cable for foot switch: Order No.02AZE140C

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