

AOS Absolute Digimatic Caliper CD-AX/APX Series

Bulletin No. 2129



A new series of digimatic calipers derived from 30 years of accumulated Mitutoyo technologies. Equipped with **the electromagnetic induction type absolute encoder and AOS (Advanced Onsite Sensor)** applied for ABS coolant-proof calipers.

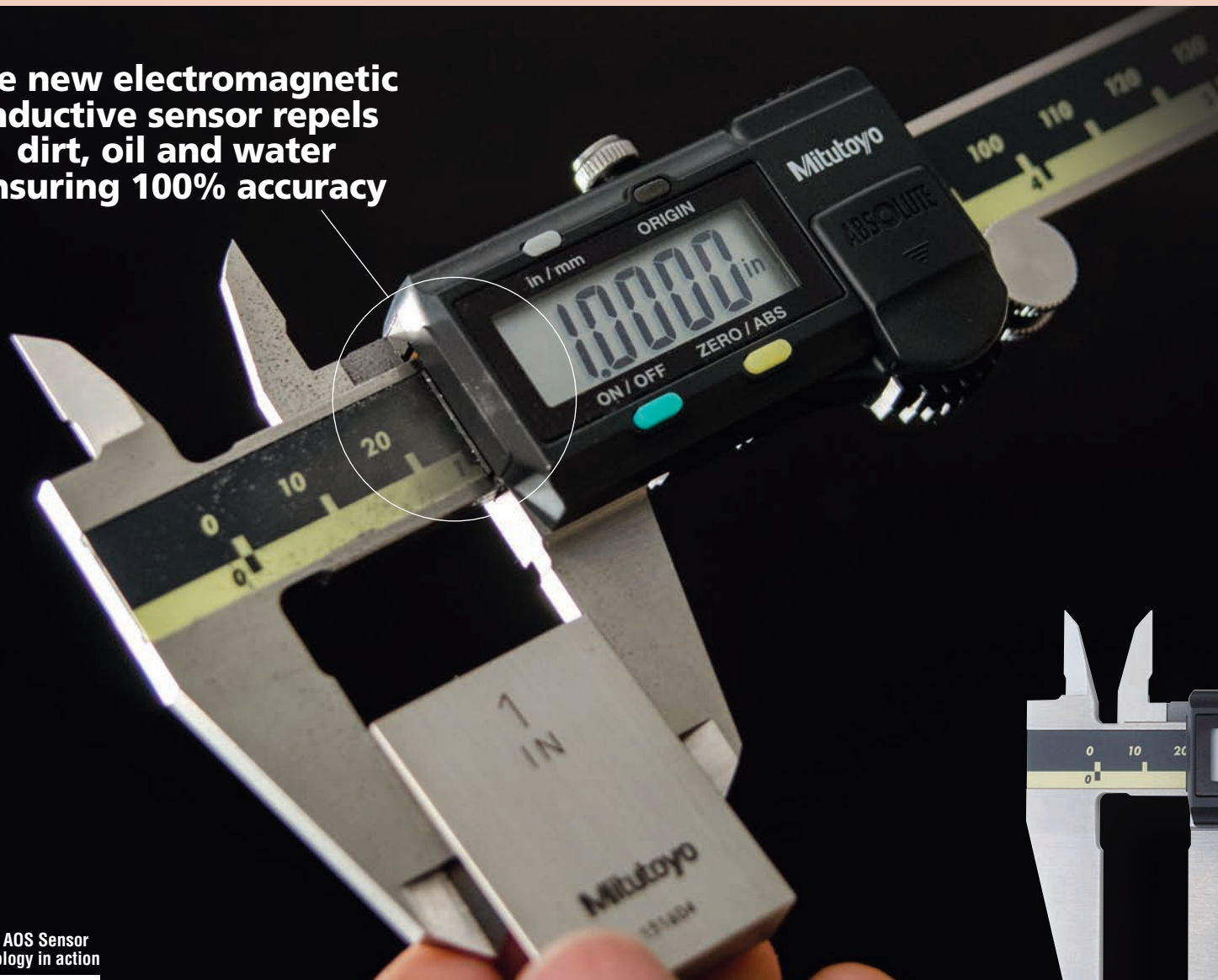
- Patent registered (in Japan, USA, China, Germany, UK, France, Switzerland and India)
- Design patent pending (in Japan, USA, EU and China)

Mitutoyo

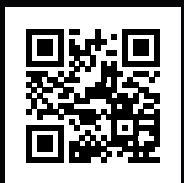
AOS Absolute Digimatic Caliper

A new series of digimatic calipers derived from 30 years of accumulated
induction type absolute encoder and AOS (Advanced Onsite Sensor)

The new electromagnetic
inductive sensor repels
dirt, oil and water
ensuring 100% accuracy



View AOS Sensor
Technology in action



www.mitutoyo.com/aoscd

Mitutoyo

Evolution of Mitutoyo's digital caliper

1983

- The first digital caliper.



1987

- A Digimatic-format measurement data output port is incorporated.

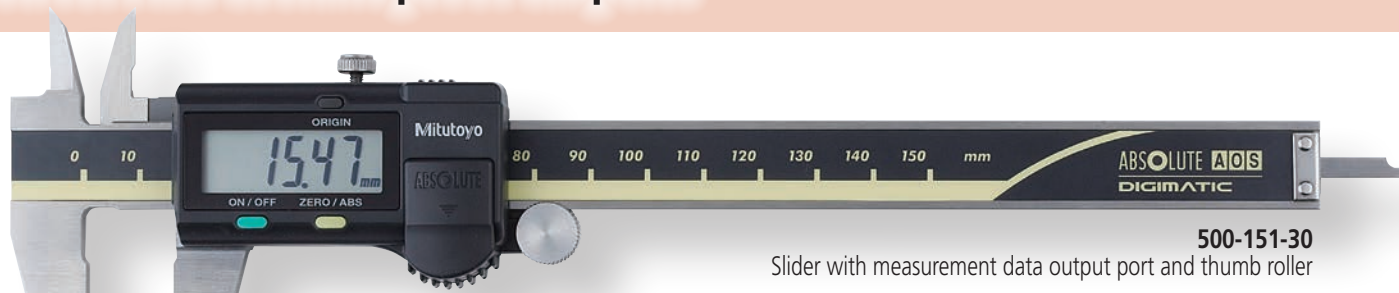


1988

- The first solar-powered model, which never needs a new battery.

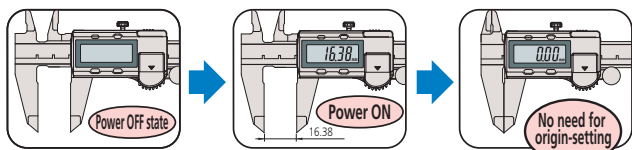


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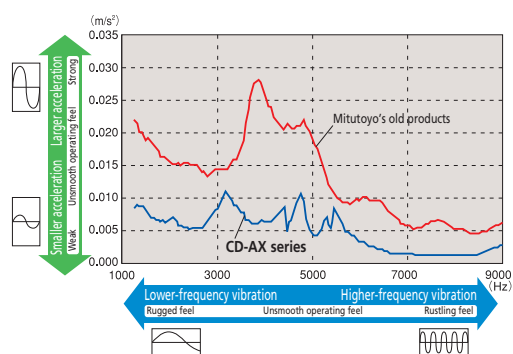
500-151-30
Slider with measurement data output port and thumb roller

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



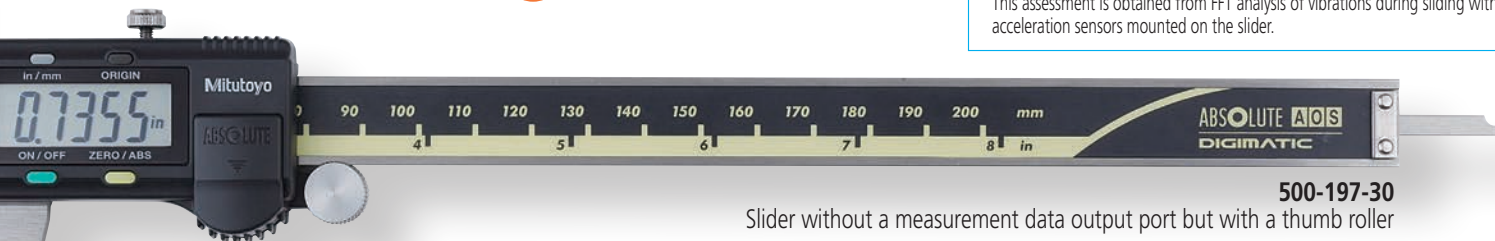
ABSOLUTE™

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



Assessment of slider operating 'feel'

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



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.
- Font height: 9mm, alleviation of fatigue with the high-contrast LCD
- 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
• Introduction of Mitutoyo's electrostatic capacitance ABSOLUTE encoder caliper.	• Introduction of an ABSOLUTE encoder caliper offering IP65-level coolant-proof performance.	• Introduction of an induction type ABSOLUTE encoder caliper offering IP67-level coolant-proof performance.	• Introduction of a solar-powered ABSOLUTE encoder caliper offering IP67-level coolant-proof performance.	• The AOS induction type ABSOLUTE encoder is introduced to a standard caliper.

Common Specifications

- Resolution: 0.01mm
- Repeatability: 0.01mm
- 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.

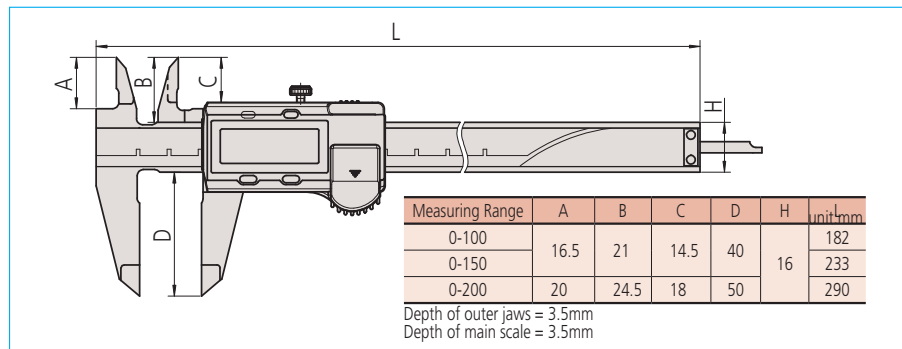
Hold function:

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				—	—	
500-154-30	0-150mm		168 g	✓	✓	Carbide-tipped jaws for outside measurement
500-155-30						Carbide-tipped jaws for outside and inside measurement
500-158-30						Depth bar ø1.9mm rod
500-181-30				—	—	
500-152-30	0-200mm		198 g	✓	✓	—
500-156-30						Carbide-tipped jaws for outside measurement
500-157-30						Carbide-tipped jaws for outside and inside measurement
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				—		
500-174-30	0-6"		168 g	✓		Carbide-tipped jaws for outside measurement
500-175-30						Carbide-tipped jaws for outside and inside measurement
500-178-30						Depth bar ø3/40" rod
500-196-30				—		
500-159-30	0-8"		198 g	—		Carbide-tipped jaws for outside measurement
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



Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring

Sensor Systems

Testing Equipment and Seismometer

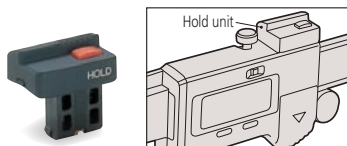
Digital Scale and DRO Systems

Small Tool Instruments and Data Management

Optional Accessories

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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