

# 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.

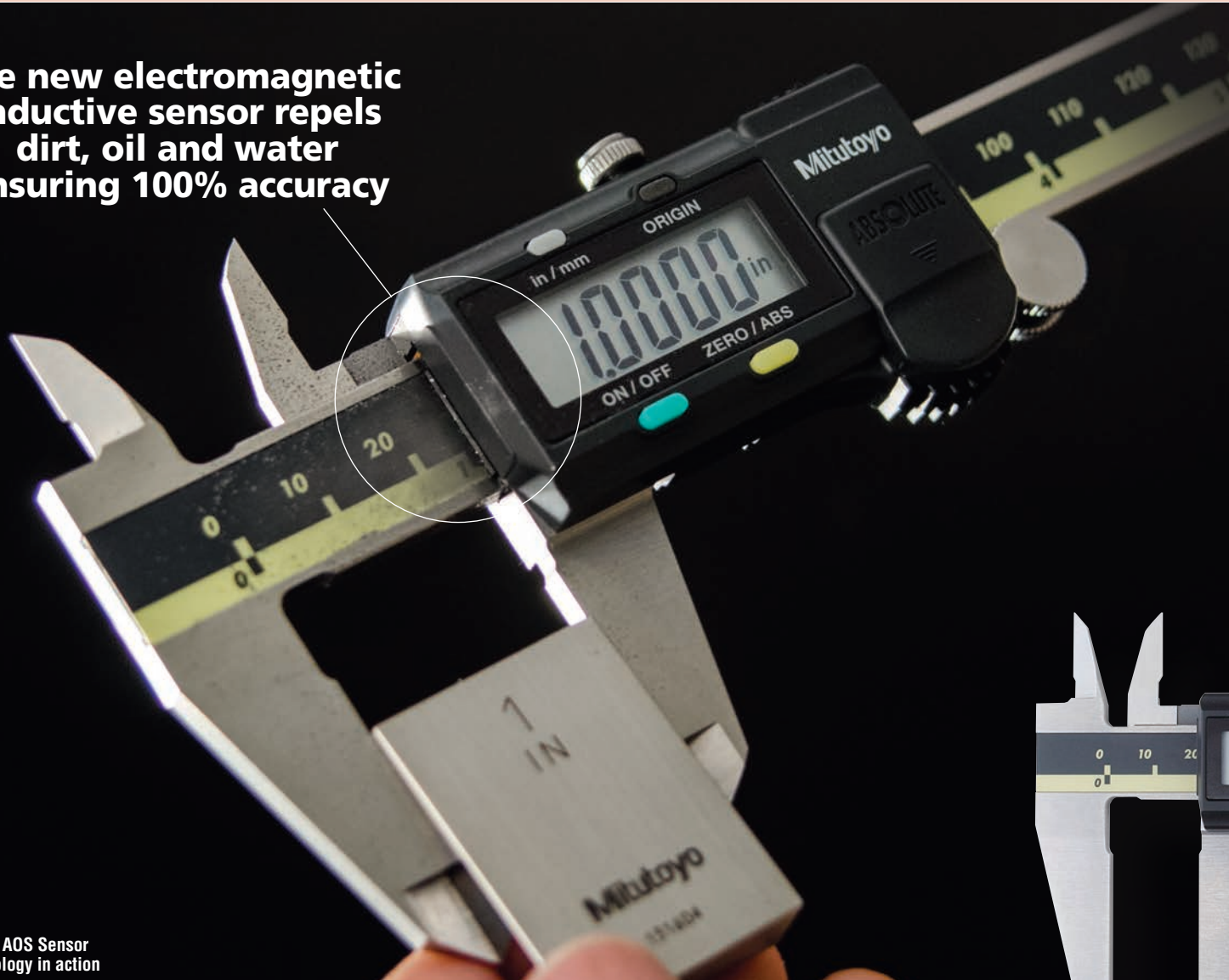
- Patent registered (in Japan, USA, China, Germany, UK, France, Switzerland and India)
- Design patent pending (in Japan, USA, EU and China)

**Mitutoyo**

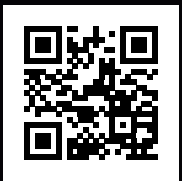
# AOS Absolute Digimatic Caliper

A new series of digimatic calipers derived from 30 years of accumulated experience, featuring an **induction type absolute encoder and AOS (Advanced Onsite Sensor)** and a

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



View AOS Sensor Technology in action



[www.mitutoyo.com/aoscd](http://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.

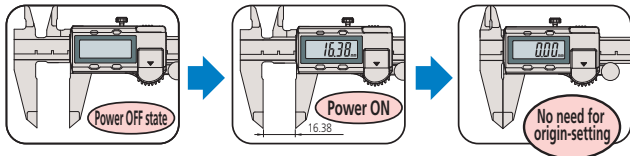


ated Mitutoyo technologies. Equipped with **the electromagnetic** applied for ABS coolant-proof calipers.

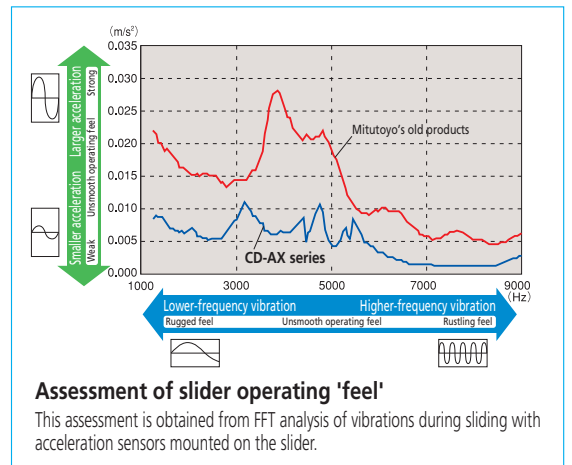
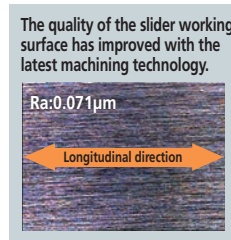


500-151-30  
Slider with measurement data output port and thumb roller

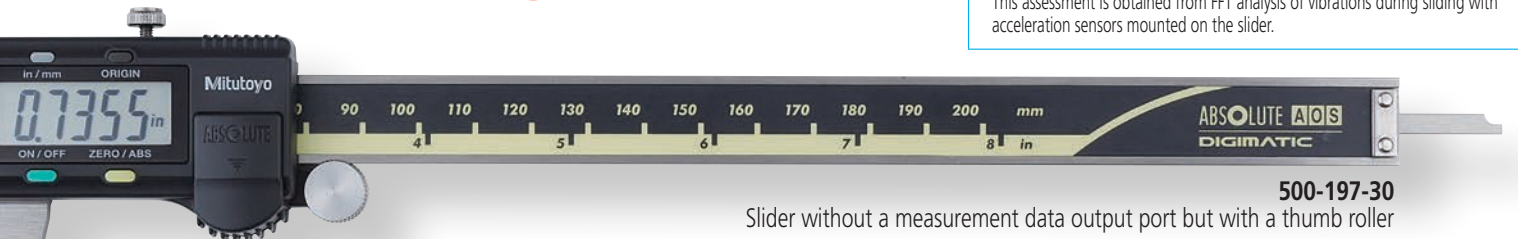
The ABS (absolute) scale **requires no origin setting** after power-on and **also has no limit to response speed**.



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



**ABSOLUTE™**



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

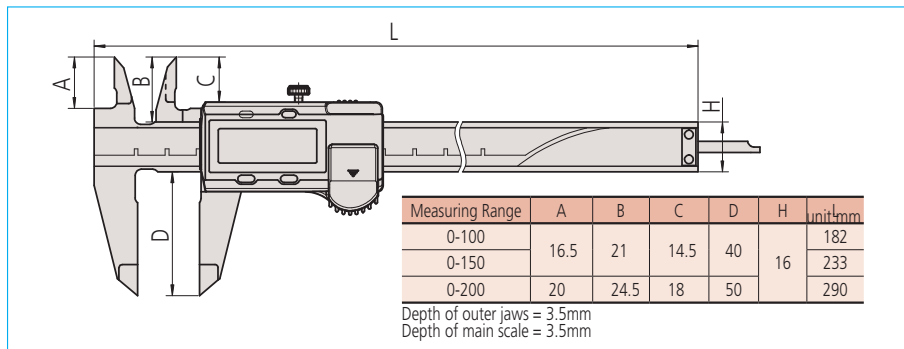
### Metric

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	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			-	-	Carbide-tipped jaws for outside and inside measurement	
500-156-30			-	-	-	
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			-	-	Carbide-tipped jaws for outside and inside measurement		
500-160-30			-	-	-		
500-172-30			-	-	-		
500-176-30	0-8"	198 g	✓	Carbide-tipped jaws for outside measurement			
500-177-30			-	-	Carbide-tipped jaws for outside and inside measurement		
500-197-30			-	-	-		
500-163-30			-	-	-		
500-164-30	-	-	-	-	-	-	

## External View/Dimensions Chart



Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring

Sensor Systems

Testing Equipment and Seismometer

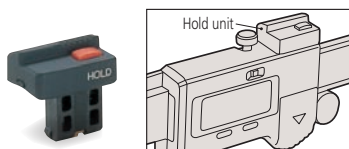
Digital Scale and DRO Systems

Small Tool Instruments and Data Management

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

### Data Hold unit

Order No.959143



### USB direct input tool

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

### Connecting cable

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

1m cable: Order No.959149

2m cable: Order No.959150



### U-WAVE-T dedicated connecting cable

Cable for standard use: Order No.02AZD790C

Cable for foot switch: Order No.02AZE140C

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