

# OPERATION MANUAL DIGITAL CALIPER

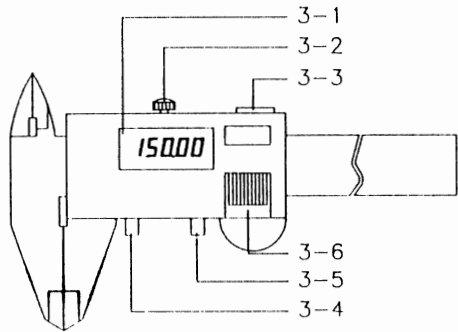


Your purchase of this DIGITAL CALIPER marks a step forward for you into the field of precision measurement. Although this CALIPER is a complex and delicate instrument, its ruggedness will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

## 1. GENERAL SPECIFICATIONS

Display	: 4.7mm (0.19") LCD, 5 digits & another small digit "5", "-" for minus sign, "mm" for mm measuring unit, "IN" for inch measuring unit.
Measurement range	: 0 to 150mm (0 to 6 inch).
Resolution	: 0.01 mm/0.0005 inch.
Accuracy	: 0.03 mm/0.0015 inch.
Max. measuring speed:	1.5 m/sec., 60 inch/sec.
Measuring unit	: Inch & mm, changed by pushing the button, true conversion.
Zero setting	: Zero setting at any position within the measuring range.
Polarity	: Automatic switching, "-" indicates negative polarity.
Power Off	: When the LCD displays "0", power will automatically switch off within 10 minutes.
Operating Temp.	: 0°C to 40°C (32°F to 104°F).
Storage Temp.	: -20°C to 70°C (-4°F to 194°F)
Operating Humidity	: Max. 80% RH.
Power Supply	: One battery, 1.5V, silver oxide.
Power Consumption	: Approx. DC 18 uA. Battery approx. 5000 hours for continuous use.
Data output	: Serial output for computer interface & printer.
Dimension	: Length 237 mm (9.4 inch).
Weight	: Approx. 145 g/0.32 lb.
Standard Accessories	: Instruction Manual .....1 pc. Carrying case .....1 pc. Battery (1.5V, silver oxide) .....2 pcs.

## 2. FRONT PANEL DESCRIPTION



- 3-1 Display
- 3-2 Fix screw for slider assembly
- 3-3 Data output socket/cover
- 3-4 mm/inch button (true conversion)
- 3-5 Zero setting button (zero setting at any position within the measuring range)
- 3-6 Battery cover/compartment

## 3. MEASURING CONSIDERATIONS

- (1) When the LCD displays "0" (push the Zero setting button), the circuit will automatically switch off within 10 minutes.  
Moving the slider will again switch on the display.
- (2) Loose the "Fix screw" (3-2) during the measurement.
- (3) Keep body face clean, prevent liquid material from getting into slider as this will damage the internal electronics.
- (4) Face should be cleaned with pure alcohol and body lubricated with fine oil. Acetone or harsh clearances should not be used.
- (5) Don't remove the "Data output cover" (3-3) if the output interface is not connected, as metal dust such as iron filings making contact with this socket may damage the circuit.
- (6) Other notes refer the conventional type caliper.

## 4. REPLACEMENT OF BATTERY

- (1) When the LCD display flashes, it indicate a normal battery output of less than approx. 1.4 V. It is necessary to replace the battery.
- (2) To replace the battery, remove the "Battery cover" (3-6) on the front panel.
- (3) Take out the battery, install a new one, paying attention to the observed polarity positions and reinst~~ate~~ate the battery cover again.

## 5. COMMON FAULT & REMEDIES

Fault	Cause	Remedy
Display flashes.	Battery voltage is below 1.4 V	Remove battery cover & replace battery.
Display not counting	Circuit latched	Remove battery for 30 sec to reset circuit.
Only digits or in/mm mode shown on Display	Function buttons and slider contacts shorted	Remove front cover & place function button spring into position
Function buttons not operating	Button springs not in position	As above.
Display measurement error over full length is $>0.1\text{mm}$	Dirt in sensor	Remove cover and slider assembly, clean sensor face with pure alcohol and use compressed air ( $<5\text{kg/cm}^2$ ) to dry surface
No Display	Battery contact poor or battery voltage under 1.1 V	Remove battery cover and clean contacts or if need be replace battery.

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## 1 . S P E C I F I C A T I O N S

Display : 4.7mm (0.19") LCD, 5 digits &  
another small digit "5",  
"-" for minus sign,  
"mm" for mm measuring unit,  
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Resolution : 0.01 mm/0.0005 inch.

Accuracy : 0.03 mm/0.0015 inch.

Max. measuring speed: 1.5 m/sec., 60 inch/sec.

Measuring unit : Inch & mm, changed by pushing the button,  
true conversion.

Zero setting : zero setting at any position within  
the measuring range.

Polarity : Automatic switching,  
'-' indicates negative polarity.

Power Off : When the LCD displays "0", power will  
automatically switch off within approx.  
10 minutes.

Operating Temp. : 0 °C to 40 °C (32 °F to 104 °F).

Storage Temp. : -20 °C to 70 °C (-4 °F to 194 °F)

Operating Humidity : Max. 80% RH.

Power Supply : One battery, 1.5V, silver oxide.

Power Consumption : Approx. DC 18 uA.  
Battery approx. 5000 hours for continuous use.

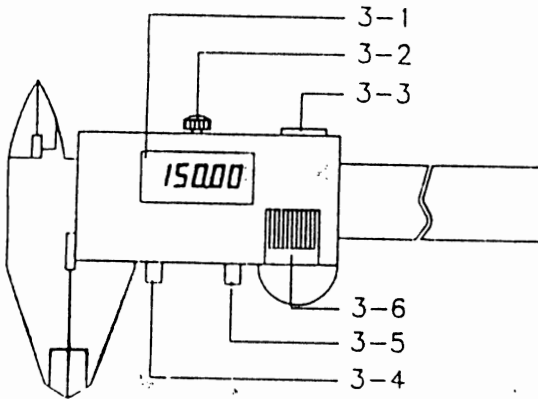
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(true conversion)
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the measuring range)
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### 3 . MEASURING CONSIDERATIONS

- (1) When the LCD displays "0" (push the Zero setting button), the circuit will automatically switch off within approximately 10 minutes.

Moving the slider or push the mm/inch button(3-4) will again

"switch on" the display.

- (2) Loose the "Fix screw" (3-2) during the measurement.
- (3) Keep body face clean, prevent liquid material from getting into slider as this will damage the internal electronics.
- (4) Face should be cleaned with pure alcohol and body lubricated with fine oil. Acetone or harsh clearances should not be used.
- (5) Don't remove the "Data output cover" (3-3) if the output interface is not connected, as metal dust such as iron filings making contact with this socket may damage the circuit.
- (6) Other notes refer the conventional type caliper.

### 4 . REPLACEMENT OF BATTERY

- (1) When the LCD display flashes, it indicate a normal battery output of less than approx. 1.4 V. It is necessary to replace the battery.
- (2) To replace the battery, remove the "Battery cover" (3-6) on the front panel.
- (3) Take out the battery, install a new one, paying attention to the observed polarity positions and reinstate the battery cover again.

## 5 . COMMON FAULT & REMEDIES

Fault	Cause	Remedy
Display flashes.	Battery voltage is below 1.4 V.	Remove battery cover & replace battery.
Display not counting.	Circuit latched.	Remove battery for 30 secs to reset circuit.
Only digits or in/mm mode shown on Display.	Function buttons and slider contacts shorted.	Remove front cover & place function button spring into position.
Function buttons not operating.	Button springs not in position.	As above.
Display measurement error over full length is > 0.1 mm.	Dirt in sensor.	Remove cover and slider assembly, clean sensor face with pure alcohol and use compressed air ( $< 5\text{kg}/\text{cm}^2$ ) to dry surface.
No Display.	Battery contact poor or battery voltage under 1.1 V.	Remove battery cover and clean contacts or if need be replace battery.