



**FREEMANS**  
*PRECISION*

# **DIGITAL** **VERNIER** **CALIPER**

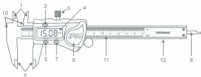


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**USER MANUAL**



### Nomenclature



- ➊ Inside Measuring Faces
- ➋ Metric/Inch Change Over
- ➌ Locking Screw
- ➍ LCD Display
- ➎ Outside Measuring Faces
- ➏ Power On/Off Button
- ➐ Set to Zero
- ➑ Battery cover
- ➒ Depth Measuring Blade
- ➓ Step Measuring Faces
- ➑ Main Scale
- ➒ Beam

### Technical Specifications

Measuring Range	FDC150	0-150mm   0-6in
	FDC200	0-200mm   0-8in
	FDC300	0-300mm   0-12in
Accuracy	FDC150	±0.03mm   0.0012in
	FDC200	±0.03mm   0.0012in
	FDC300	±0.04mm   0.0016in
Resolution	±0.01mm (0.0005in)	
Repeatability	±0.01mm (0.0005in)	
Measuring System	Linear Capacitive	
Max. Measuring Speed	1.5m/sec (60 in/sec)	
Display	LCD	

## Technical Specifications

Power	One 1.55V Button Cell
Battery Capacity	165mA
Battery Life	6 months (regular use)
Material	Stainless Steel
Working Temperature	5°-40°C   41°-104°F
Humidity	Of no importance below 80% of relative humidity.

## Preparation for Work

- 1) Slider can be removed only after the locking screw (No. 3) is loosened.
- 2) Wipe clean all the measuring faces and the caliper bar with a soft cloth. No organic solutions are allowed.
- 3) Check to see if all the buttons, and LCD display respond well.

## Multiple Measuring Applications

- 1) Loosen the locking screw.
- 2) Press the ON/OFF button to switch the Caliper on. Then select the unit system needed by pressing the mm/in button. Each time the button is pressed, inch and metric measurements will be displayed alternatively.
- 3) Make the desired measurement as per the below images.



Measurements of  
Internal Dimensions



Measurements of  
External Dimensions

## Multiple Measuring Applications

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Measurements of Depth



Measurements of Steps

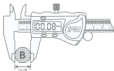
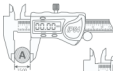


## Key Functions

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### 1) Absolute/ Relative Measurement :

- Turn on power, and press ZERO button with the caliper jaws fully closed.
- The Caliper will show 0.00 reading, and is in absolute measurement mode.
- To change to relative measurement, open the caliper jaws to any desired reference point, and press the ZERO button. The display will show 0.00 reading, and all further readings will be made relative to this reference point.
- To turn back to absolute measurement, close the caliper jaws fully, and press the ZERO button.

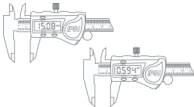


## Key Functions

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### 2) Switch between mm/in :

a) Press the mm/in button to toggle between the two displays.



## Common Measuring Errors

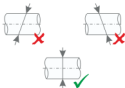
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Application of unnecessary force could lead to inaccurate jaw position and inaccurate measurements.

1)



2)



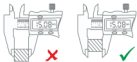
## Common Measuring Errors

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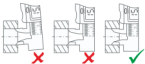
3)



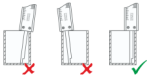
4)



5)



6)



7)



## **Maintenance Instructions**

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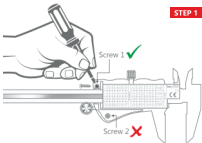
The Digital Caliper boasts an IP54 rating to protect against dust and water in the work environment.

- 1) Clean the Caliper bar with dry cotton fabrics before use. This will avoid any inaccurate display caused by humidity.
- 2) Keep the Caliper clean and dry at all times. Use only gentle, cotton fabrics to clean the faces of the caliper. Never use petrol, acetone and organic solutions. Liquid can damage the slider.
- 3) In order to save power, turn the caliper off when it is not in use. Remove battery and store separately if the caliper is not in use for extended periods of time.
- 4) Never apply any electric pressure on any part of the caliper and never use an electric pen.
- 5) The display may accidentally be affected while replacing the Caliper's battery. If this occurs, remove the battery for at least 30 seconds. When you put it back in, the display should return back to normal.

## **Battery Replacement**

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- 1) Flashing digits indicate a flat battery.
- 2) To replace the battery, remove Screw 1 located on the reverse of the Caliper by rotating it anti-clockwise.
- 3) Once Screw 1 has been removed, you can slide off the battery cover located on the front of the Caliper. Replace the battery with the positive pole facing outward.



**STEP 1**



## Troubleshooting

PROBLEM	POSSIBLE CAUSES	SOLUTION
Five digits flash simultaneously, about once per second.	Battery voltage lower than 1.45 V.	Replace the battery.
Display doesn't change when the slider is moved.	Accidental trouble in circuit.	Take out battery and reset it after 30 seconds.
Less accurate than specified but within $\pm 0.1\text{mm}$ .	Dirt in the Sensor.	Remove slider cover. Clean face of sensor with clean, compressed air ( $5\text{kg}/\text{cm}^2$ ).
No display on LCD.	1) Battery in poor contact. 2) Battery voltage under 1.4V.	1) Remove battery cover and adjust battery position, to ensure contact. 2) Replace battery.





# **FREEMANS**

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### ***Warranty***

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All **FREEMANS** Precision products are guaranteed for **1 year from the date of sale** against manufacturing defects. This guarantee does not cover damage due to modifications, misuse or fair wear and tear.

**Please Retain this Instruction Manual or Sale Invoice  
in Order to Claim Your Warranty (If Applicable).**

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**MINI DIGITAL LEVEL  
& PROTRACTOR**



**OUTSIDE MICROMETER**



**DIGITAL OUTSIDE MICROMETER**



**DIAL INDICATOR**



**MAGNETIC  
STAND**