



# HEAVY DUTY ELECTRONIC DIGITAL CALIPER

54-100-312, 54-100-024-1, 54-100-042-1

Version Date: 6-24-2004

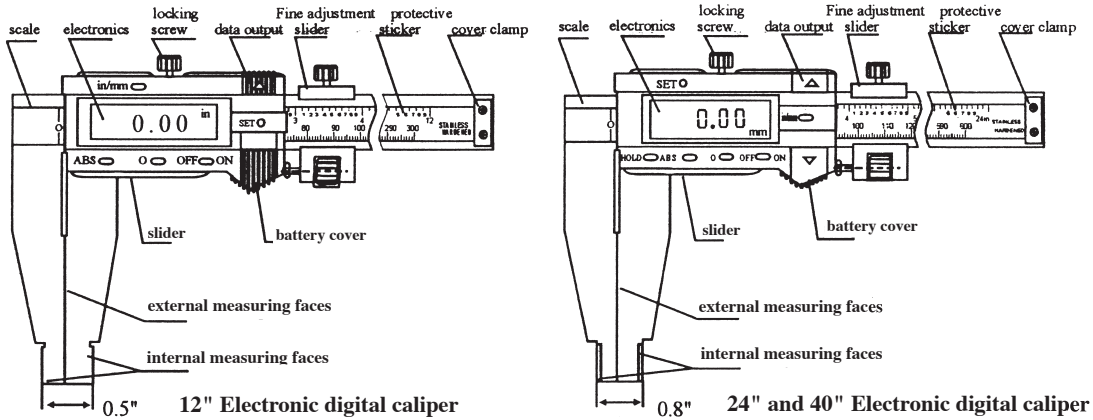
**INSTRUCTIONS:**

1. Before using the caliper, clean the surfaces and jaws of the caliper with a dry and clean cloth (or dampened with cleaning oil).
2. Operating Condition:

Temperature: 5-40 °C  
 Relative Humidity: ≤80%  
 Prevent any liquid from contacting the protective sticker

3. Never apply voltage (e.g. engraving with an electrograph) on any part of the caliper for fear of damaging the circuit.
4. Preset a starting point of measurement correctly (please refer to "OPERATION"). Unless presetting, do not press the "SET" button purposely for fear of measurement error.

**STRUCTURE (please refer to the sketch):**



**FUNCTION:**

- ON/OFF: Power on/off switch
- ABS/INC: relative/absolute measurement
- ZERO: zero setting button
- mm/in: metric/inch conversion
- SET: presetting button
- HOLD: data hold button

**OPERATION:**

1. ON/OFF button
  - 1) Press ON/OFF button at any position when the power is off, the caliper will be ready to work and display the measuring value.
  - 2) Press ON/OFF at any position when the power is on, the caliper will stop working.
  - 3) In state of hold, the caliper cannot be shut down by pressing ON/OFF.
2. ABS/INC button
  - 1) The caliper works in absolute mode after starting for the first time, and displays absolute zero (at this time, the relative zero is set at the absolute zero). Move the slider for absolute measurement.
  - 2) Press "ABS" button in absolute mode (without "INC"), then move the slider for relative measurement, the caliper is ready for relative measurement and simultaneously displays "INC," showing relative state.
  - 3) Press "ABS" button in relative mode (with "INC" displaying), then the caliper is ready for absolute measurement and simultaneously "INC" disappears, showing absolute mode. Move the slider for absolute measurement.
  - 4) Press "ABS" at any position for relative/absolute measurement interchange.
3. ZERO button
  - 1) In relative mode, press "ZERO" button to set the current point to zero and the caliper will display zero.
  - 2) In absolute mode, press "ZERO" button to set the current point to the preset value and the caliper will display this value.
4. mm/in button
  - 1) Press "mm/in" button at any position for metric/inch conversion.
5. SET button and Internal Measuring (Easy one touch set)
  - 1) It's for presetting a starting point (the value has been preset to zero in the factory).
  - 2) With each one press on this button at any position, the caliper will switch to absolute mode automatically. The current point is set to the preset value and displays on the LCD. The details are as the follows:
 

Number of times pressed	Preset value	
1	0.5"/12.7mm	for internal measuring of 12" calipers
2	0.8"/20.32mm	for internal measuring of 24" & 40" calipers
3	1"/25.4mm	for optional measuring
4	2"/50.8mm	for optional measuring
5	3"/76.2mm	for optional measuring
6	4"/101.6mm	for optional measuring
7	5"/127mm	for optional measuring
8	0	standard, after internal & optional measuring, please set 0 for normal measuring
  - 3) The process is circulative. The preset value is held even after powering off.
6. HOLD button
  - 1) Press "H" button at any position, the caliper will hold the value as before and display "H" on the LCD. The data will not change even if you move the slider.
  - 2) Press "H" button once again to release hold state (no character "H" displays), then the caliper displays the measured value.
7. Restart the caliper after powering off by pressing ON/OFF button, it will keep the last state (mm/in, ABS/INC, SET).

**TECHNICAL SPECIFICATIONS:**

1. Resolution: 0.0005"
2. Repeatability: 0.0005"
3. Accuracy: +/- [0.00008+0.000002 x Length (inch)]25.4.
4. Maximum measuring speed: 40" per second
5. Power: button battery SR44, 1.55V

**INSTRUCTIONS OF DATA OUTPUT**

The data can be input to a computer or special printer via a special cable. (RS232 output)  
 Interface: synchronous series  
 Data: Binary code, 24 bits, each data string will be sent twice. The cycle is 300ms (20ms is fast reading state), transmitting time is 0.5ms.  
 Three wires: data D, clock CP, Positive Power(+)  
 Pulse range of data: "0" Level ≤0.2V, "1" Level ≥1.3V  
 Clock CP: 90 KHz

**OPERATIONS OF DATA OUTPUT**

1. Preset zero and metric/inch system ("ZERO", "mm/in", "H" and "SET" are nonfunctional when data transmitting).
2. Connect the COM end of the interface cable to the computer, the other to the data output port of the caliper.
3. Start the caliper and software.
4. Move the slider to the position you want and press the "ZERO" button for data output.

**BATTERY REPLACEMENT**

Once display begins flashing or even no display, slide the cover open as the arrow shows and replace with a new battery (SR44, 1.55V).

- Note:
- 1) The positive pole of the battery must face out.
  - 2) Please preset the starting point over again after battery replacement.