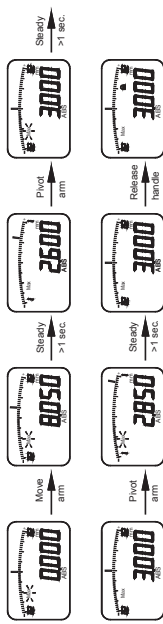


flashing when measured value is steady >1 sec. The gauge will find and display the maximum from saved data. After release operating lever and let measuring arms free, the gauge will display "H" and the maximum, and record its position. You can repeat the above process when moving measuring arm again.



7. Calibrate the origin

Outside caliper gauge
Measuring external groove diameter in "Max" mode.
Steadily pivot the gauge horizontally to find the maximum.

Inside caliper gauge
Measuring internal groove diameter in "Max" mode.
Steadily pivot the gauge horizontally to find the maximum.

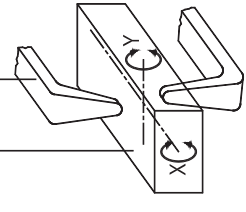
6.4 Find and save steady value automatically

"H" flashing in this mode. "H" stops flashing when measured value is steady >1 sec, this value and its position will be saved. After release operating lever and let measuring arms free, the gauge will display "H" and the steady value, and record its position. You can repeat the above process when moving measuring arm again.

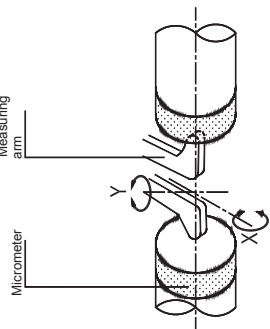


7. Calibrate the origin

Outside caliper gauge
Gage block
Measuring arm



Inside caliper gauge
Micrometer
Measuring arm



Calibrate the origin with gage block (for outside caliper gauge) or outside micrometer (for inside caliper gauge) before measuring. Clean measuring faces of gage block or outside micrometer and measuring

contacts of calipers with soft cloth. Pivot caliper gauge according the drawings to find the minimum. Follow chapter 4, set caliper gauge's origin to actual value of the gage block or the micrometer reading (you must hold caliper gauge steadily when setting). Repeat the above process until origin position's reading not change. If you calibrate the origin for inside caliper with a ring gage, you need to find the maximum in similar way.

In automatically measuring mode, the origin calibrating will become more convenient and accurate. Follow chapter 6.2, find the minimum, "A" appears on LCD. Then, set the origin. At this time, wherever the measuring arm is the position of the origin is the position of the minimum recorded by gauge. Follow chapter 6.3, find the maximum, "B" appears on LCD. Then, set the origin. At this time, wherever the measuring arm is the position of the origin is the position of the maximum recorded by gauge.

8. Analog display

Analog display in normal measuring mode is the fractional part of displayed value. Its range will change automatically.

a. Resolution: 0.001mm/0.00005in

Analog display range	Digital display range (Fractional part)		Analog display resolution	
	mm	in	mm	in
±0.02	±0.001	X.000—X.019	X.0000—X.00095	0.001
±0.04	±0.002	X.020—X.039	X.0010—X.00195	0.002
±0.2	±0.01	X.040—X.199	X.0020—X.00995	0.01
±0.4	±0.02	X.200—X.399	X.0100—X.01995	0.02
±1	±0.1	X.400—X.999	X.0200—X.09995	0.05
±2	±0.2	X.1000—X.1999	X.0500—X.09995	0.1
±1	±1	X.2000—X.9999	X.9995—X.99995	0.05

b. Resolution: 0.005mm/0.0002in

Analog display range	Digital display range (Fractional part)		Analog display resolution	
	mm	in	mm	in
±0.1	±0.004	X.000—X.095	X.0000—X.0038	0.005
±0.2	±0.01	X.100—X.195	X.0040—X.0098	0.01
±0.4	±0.02	X.200—X.395	X.0100—X.0198	0.02
±1	±0.1	X.400—X.995	X.0200—X.0998	0.05
±2	±0.2	X.1000—X.1998	X.0500—X.0998	0.1
±1	±1	X.2000—X.9998	X.9998—X.9998	0.05

9. Power

- Battery is a CR2032, 3V. Replace the battery when display is blurring or "E" appears.
- If not used in about 5 minutes, the power will auto-off. The gauge will wake up when pressing "ON/OFF" key or moving measuring point.
- Power off the gauge by pressing "ON/OFF" key to save battery if not use.



10. Data output

- Data output interface is RS232C. The gauge can be connected to PC's serial port by SPC cable (Order No. P1104) or to PC's USB port by SPC cable + USB to serial port cable (Order No. P1201).
- The gauge outputs data once if press the "DATA" key shortly, and "E" flashes once.

- Press and hold the key (> 1 sec.), the gauge outputs the data to PC continuously and "E" keeps displaying. Press the key again to stop outputting.

Series port format:

Baud rate	Start bit	Data bit	Stop bit	Parity	Data logic reverse
1200	1	7	2	none	reverse

Data format:

Order	1	2	3	4	5	6	7	8	9	10
Metric	S	N1	N1	N	N	N	N	N	CR	LF
Inch	S	N	N	N	N	N	N	N	CR	LF

S: Minus or space N1: Minus or space or digit 0-9 N: Digit 0-9

11. Specifications

- Resolution: 0.001mm/0.00005in 0.005mm/0.0002in
- Measuring range: 0-12.7mm/0-0.5in
- Responding speed: 0.35ms
- Power consumption: <=50uA
- Operating temperature: 0 - 40 °C
- Storage temperature: -20 - 60 °C

12. Precautions

- Do not subject the gauge to blows or knocks.
- Do not drop the gauge or apply excessive force to the gauge.
- Do not disassemble the gauge.
- Do not press the key with a pointed object.
- Do not use or store the gauge under direct sunlight, or in an excessively hot or cold environment.
- Do not subject the gauge in strong magnetic fields and high voltage environment.
- Use soft cloth or cotton cleaning the gauge. Do not use any organic solvent such as acetone etc..
- Remove the battery if the gauge not use for a long time.



13. Trouble shooting

Failure	Causes	Repairing
Display "E" 1*	Measuring value over display range.	Reset the origin or convert to relative measuring mode.
Display "E" 2*	The origin is too great.	Reset the origin.
Display "E" 3*	Something wrong with sensor.	1. Reset the battery. 2. Return the gauge for repair.
Display "E" 4*	Upper limit <= lower limit.	Reset tolerance.
Measuring value is not correct	1. Measuring surfaces are dirty 2. The origin isn't correct.	1. Clean measuring surfaces. 2. Reset the origin.
Display is confusing or dead	Suffer to strong disturb.	Reset battery.
No display	Battery voltage under 2.8V.	Replace battery.
"E" appears	Battery voltage under 2.8V.	Replace battery.
The output data is wrong	Battery voltage under 2.8V.	Replace battery.