

Dot and Line Laser

5DXLL (519030)



Dear User,

Thank you very much for purchasing the Dot and Line Laser 5DXLL (519030). Please read this instruction manual before operating it.

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2. User safety
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1. Features and functions

Dot and Line Laser 5DXLL (519030) could project visible self-leveling horizontal line, vertical line, and plumb up, down, front, left and right dots separately or simultaneously. It provides the exact horizontal, vertical and plumb preference for indoor construction sampling and calibration with convenient operation and broaden usage.

Features:

Output 2 laser lines and 5 laser dots

Form one cross laser line

Compatible for both indoor and outdoor application, switchable between the continuous laser and the pulse laser.

Self-leveling, laser flash and sound indication when beyond self-leveling range

Able to shield the alarming function, and could use for tilt purpose

Able to connect with the multi-functional base through 1/4" screw thread.

Instruction: this instruction manual also apply to the laser with high output power version.

2. User safety

Laser output marker is at output aperture

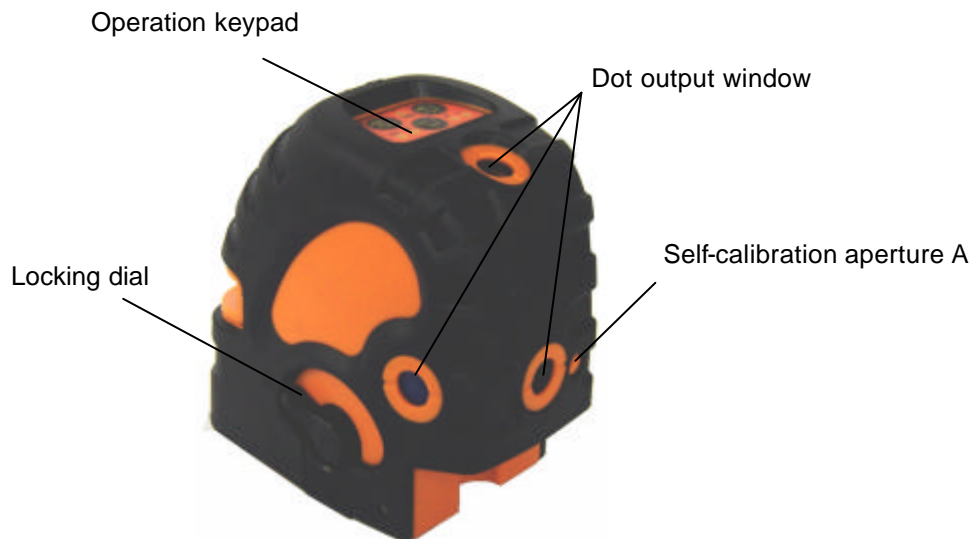
Do not stare at the laser beam directly

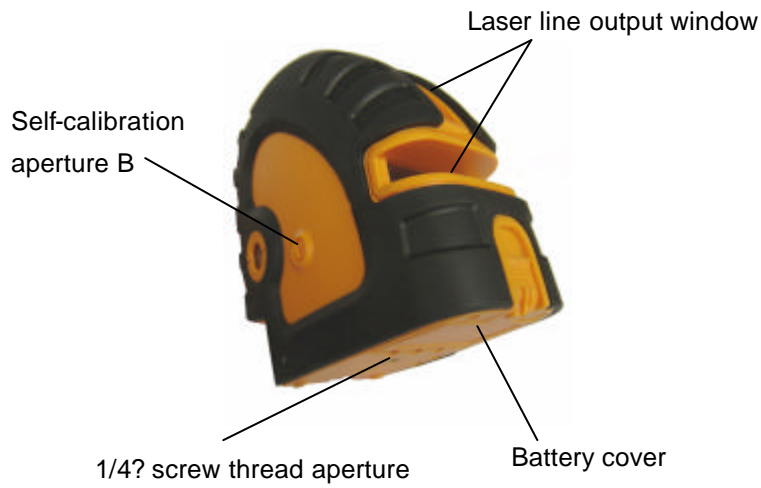
Do not disassemble the instrument and make internal servicing, please make servicing through authorized servicing center

The instrument conform to laser radiation safety class standard.

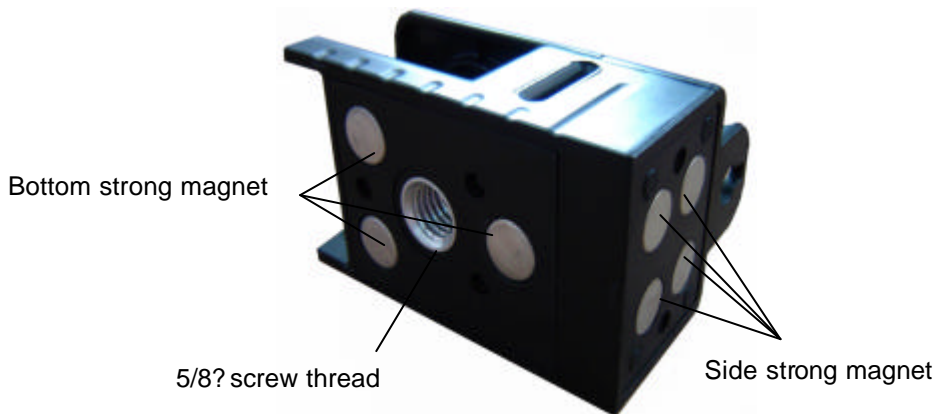
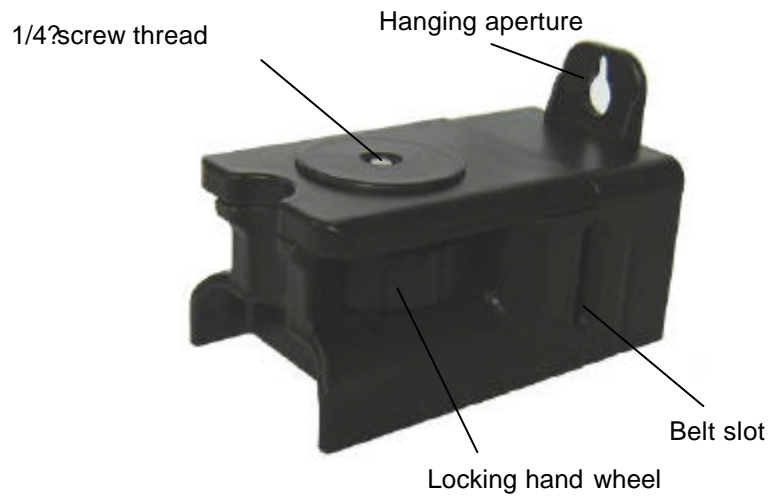
3. Instrument nomenclature

3.1. Features of main unit





3.2. Features of accessories



4. Operation guide

4.1. Battery mount

a) Open the battery box cover, put 3*AA alkaline battery into the battery box as per the polarity direction.



4.2. Place the instrument

a) Place the instrument on the horizontal platform directly



b) Connect with the multifunctional base through 1/4" screw thread



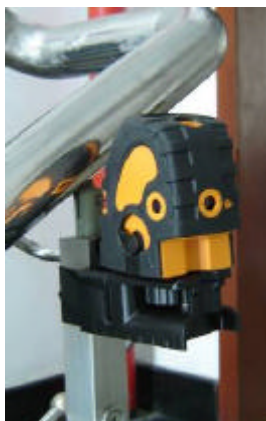
c) Fix the instrument on the tripod



d) Attach the instrument on the steel plate

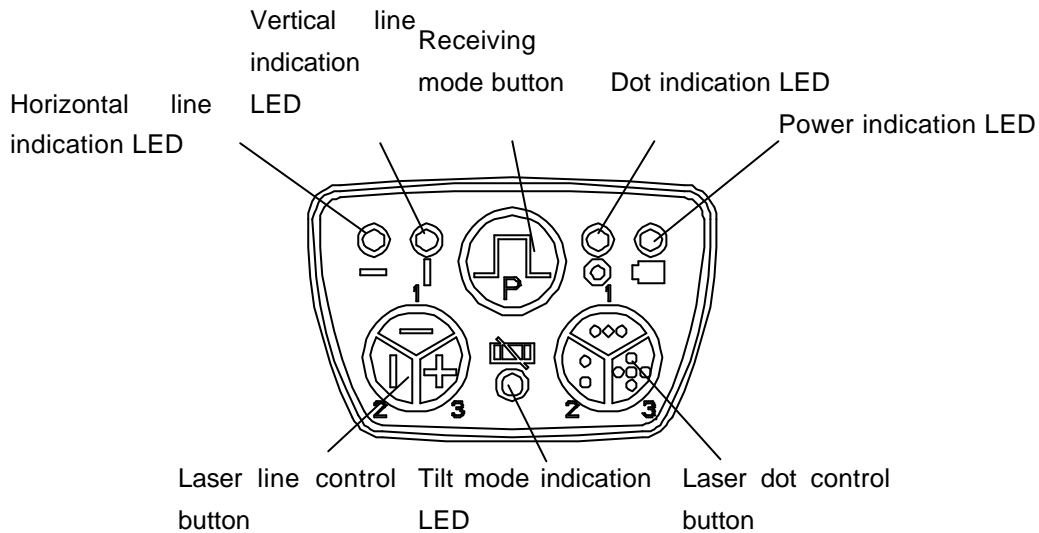


e) Hang the instrument on the wall



f) Tie the instrument on the column

4.3. Operation keypad



Power indication LED

Lighten: power is on

Extinguish: power is off

Flash continuously: low voltage

Tilt mode indication LED

Flash: the instrument will enter tilt mode status

Extinguish: the instrument will exit tilt mode status

Horizontal line indication LED

Lighten: the horizontal line is on

Flash: the horizontal line will enter receiving mode

Extinguish: the horizontal line is off

Vertical indication LED

Lighten: the vertical line is on

Flash: the vertical line will enter receiving mode

Extinguish: the vertical line is off

Dot indication LED

Lighten: dot laser is on

Extinguish: dot laser is off

4.4. ON/OFF

Unlock the instrument, the instrument is on, and the power indication LED is on.

Lock the instrument, the instrument is off, the power indication LED is off.









Unlocking status



Locking status


When powering on the instrument, if the laser flashes and with buzzer, which means the instrument is out of self-leveling range, please place the instrument again.

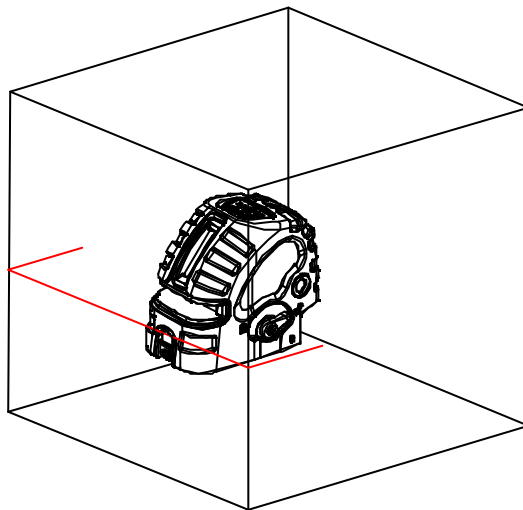
4.5. Receiving mode button


When the horizontal laser line or vertical line is on, press  button, the lightened laser line will enter receiving mode, the corresponding indication LED flash, press  button again, the instrument will exit receiving mode, the corresponding indication LED will return to be the constant on. When the horizontal line and vertical line are both on, press  button, the horizontal line and vertical line will enter receiving mode, the horizontal line and vertical line indication LED flash, then press  button again, the horizontal line and vertical line will exit receiving mode, the horizontal line and vertical line indication LED will return to be the constant on.

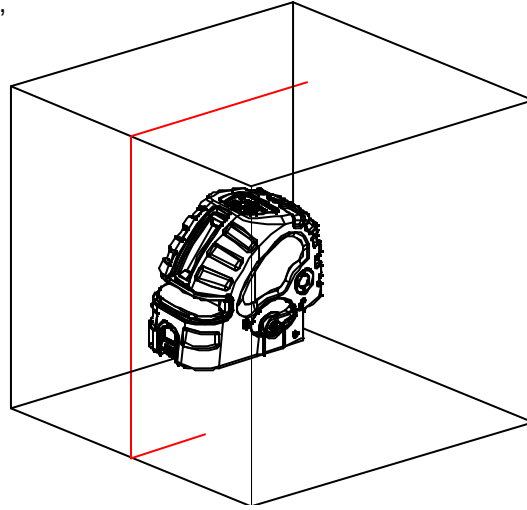
Note: when all the laser lines are off, the receiving mode button will not function.


4.6. Laser line control button

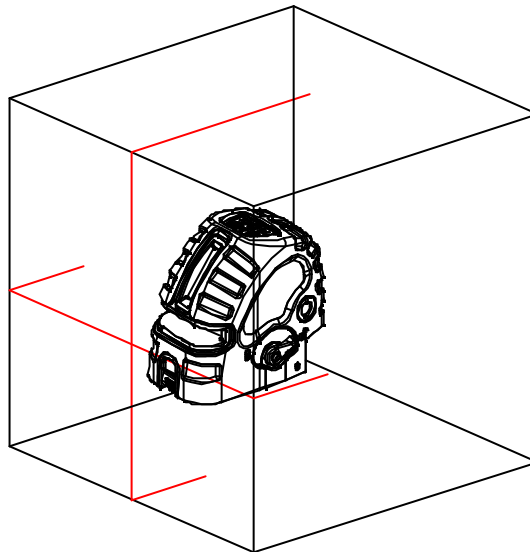
Press this button to control the laser line on or off. Unlock the instrument, press  button for the first time, the horizontal line indication LED is on, the output form of instrument is as follows,




Press  button for the second time, the horizontal line indication LED is off, the vertical indication LED is on, the output form of instrument is as follows,




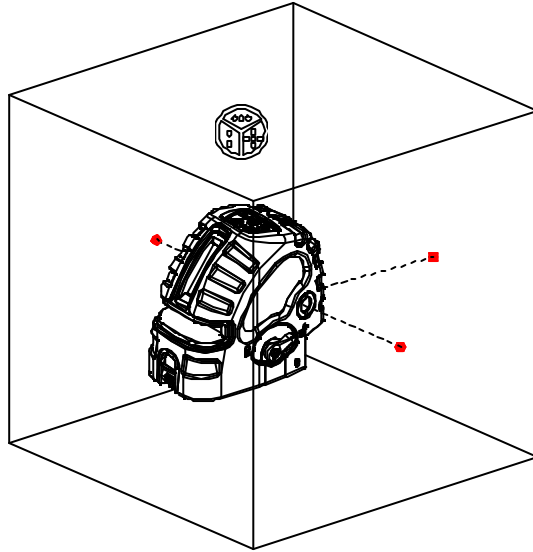
Press  button for the third time, the horizontal line and vertical line indication LED is on, the output form of instrument is as follows,




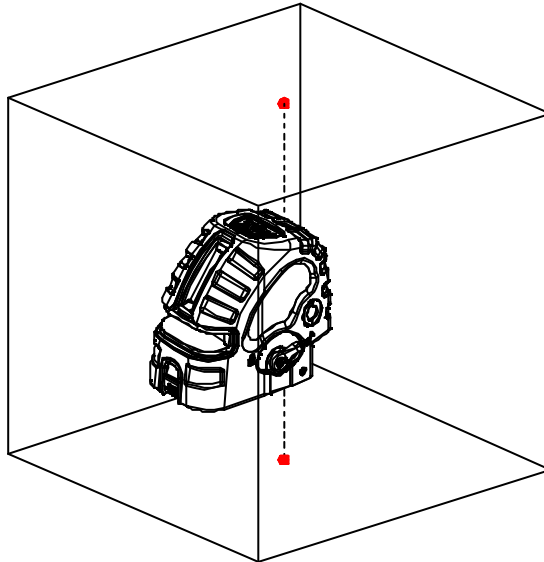
Press  button for the fourth time, the horizontal line and vertical line indication LED is off, there is no laser line output.


4.7. Laser line control button

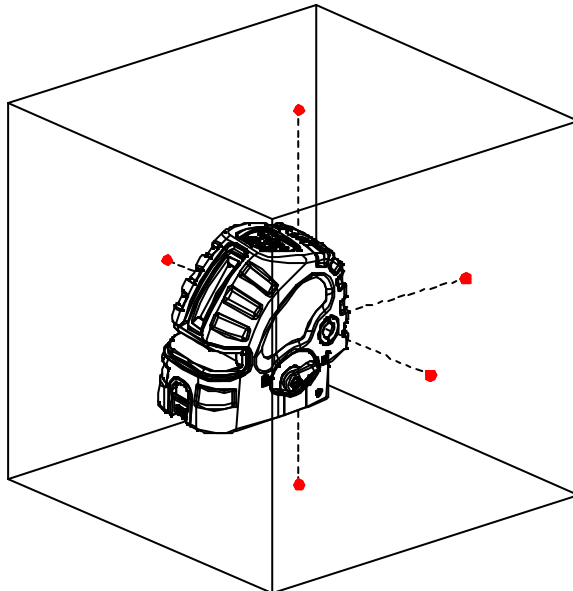
Press this button to control the laser dot on or off, unlock the instrument, press  button for the first time, the dot indication LED is on, the output form of instrument is as follows,




Press  button for the second time, the dot indication LED is always on, the output form of instrument is as follows,

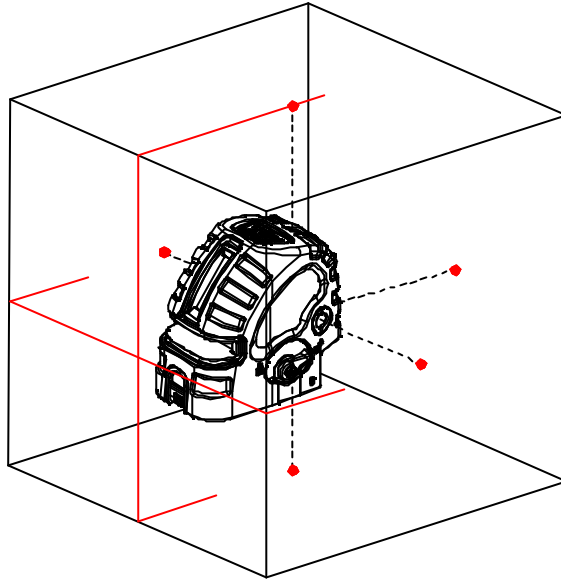


Press  button for the third time, the dot indication LED is always on, the output of instrument is as follows,







Press  button for the fourth time, the dot indication LED is off, there is no laser dot output.



All the laser lines and dots are output as follows,



4.8. Tilt mode

When the instrument is locked, press  button or  button, the instrument will enter tilt working mode, the power indication LED is on, the tilt mode indication LED flash.

Except pressing  button or  button for the fourth time, the laser line control button, the laser dot control button, and the receiving mode button are same as the above description.

Press  button or  button for the fourth time, the instrument is off.

Note:

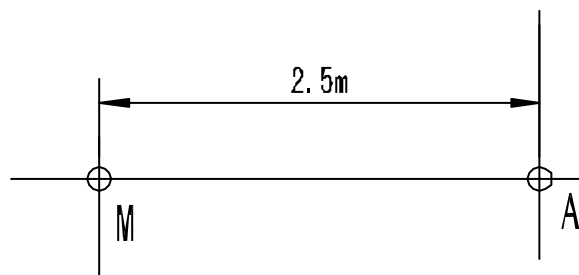
(1) The tilt mode only applies when there is no need of the horizontal or vertical reference.

(2) When unlocking the instrument, it can not enter tilt mode, if the instrument is used in the tilt mode, and unlock it, the instrument will exit tilt mode (the tilt mode indication LED is off) and enter the self-leveling status.

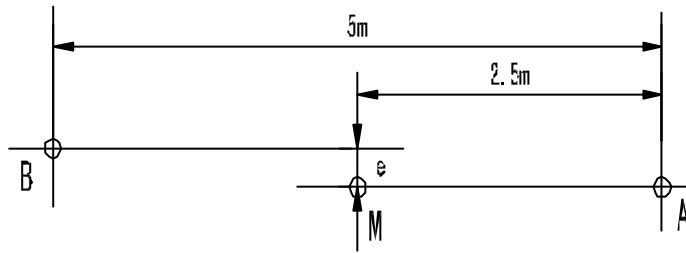
5. Self-check and calibration

5.1. Horizontal line accuracy self-check (horizontal)

- Find a flat wall, place the instrument 5m away from the wall.
- Fit the instrument on the tripod and face the front of instrument to the wall. Place the instrument horizontally by adjusting the tripod.
- Power on horizontal line and vertical line, there will be cross laser line on the wall, set the center of cross line as A dot.
- Mark A dot and M dot on the horizontal line separately (the distance of A and M is about 2.5m).



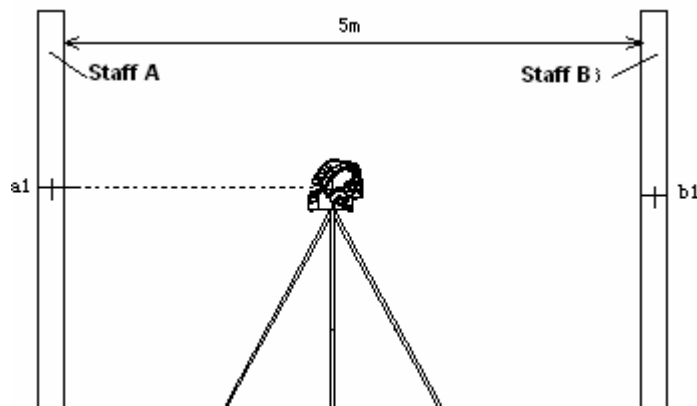
- e) Rotate the instrument, to make the cross center B dot 5m away A dot.



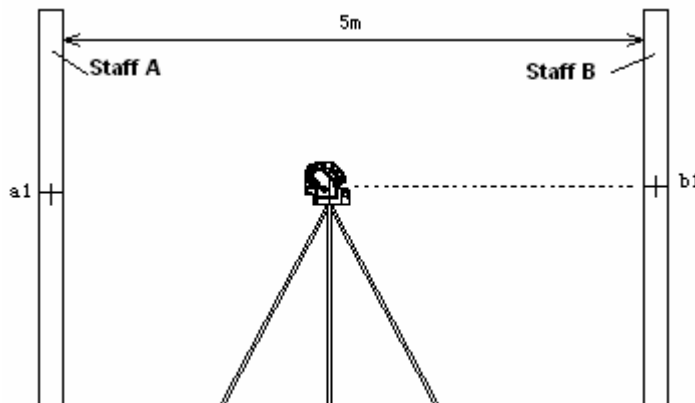
- f) Measure distance e from M dot to laser line.
g) If $e > 1\text{mm}$, the instrument accuracy is out of tolerance, please make self-calibration adjustment.

5.2. Horizontal accuracy self-check (vertical)

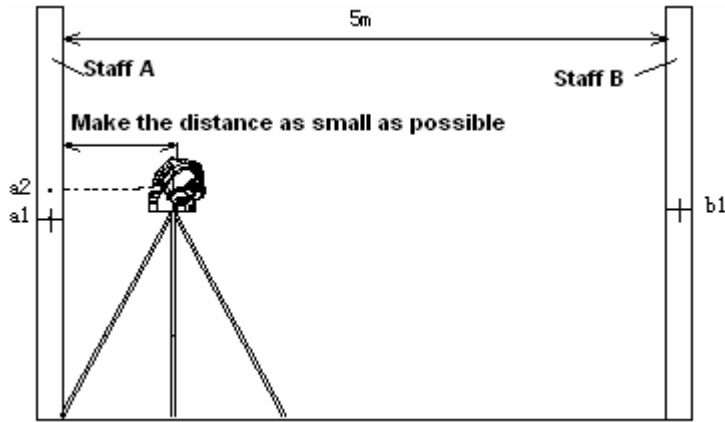
- a) As shown in the following figure, stand up two staff which is 5m away, (or find a wall which both sides are parallel and the distance is more than 5m).
b) Fit the instrument on the tripod, and place it in the center of both staff and level the instrument by adjusting the tripod.
c) Power on horizontal laser line and vertical laser line, make the cross laser dot on staff A, note down a1 dot value.



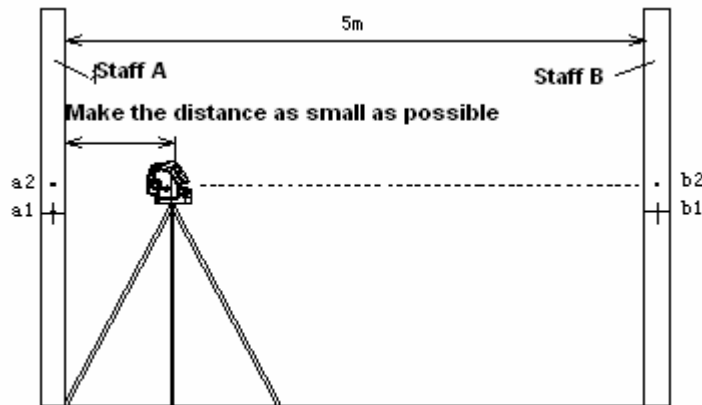
- d) Rotate the instrument by 180°, make the cross dot on staff B, note down b1 dot value.



- e) Move the tripod, make the instrument to the staff A as close as possible, make the cross dot on staff A, note down a2 dot value.



- f) Rotate the instrument by 180°, make the cross dot on staff B, note down b2 dot value.



g) Calculate $(a1 - a2) - (b1 - b2) = e$,

If the absolute value of e is above 1mm, the instrument accuracy is out of tolerance, please make self-calibration adjustment.

5.3. Self-calibration adjustment

As shown in the following picture, the instrument have two calibration apertures, A means the adjustment horizontally (the error tested by 1 item in accuracy self-calibration), B means the adjustment vertically (the error tested by 2 item in accuracy self-calibration).



Self-calibration aperture A



Self-calibration aperture B

Note when adjusting:

(1) Use 3mm hexagon spanner when adjusting

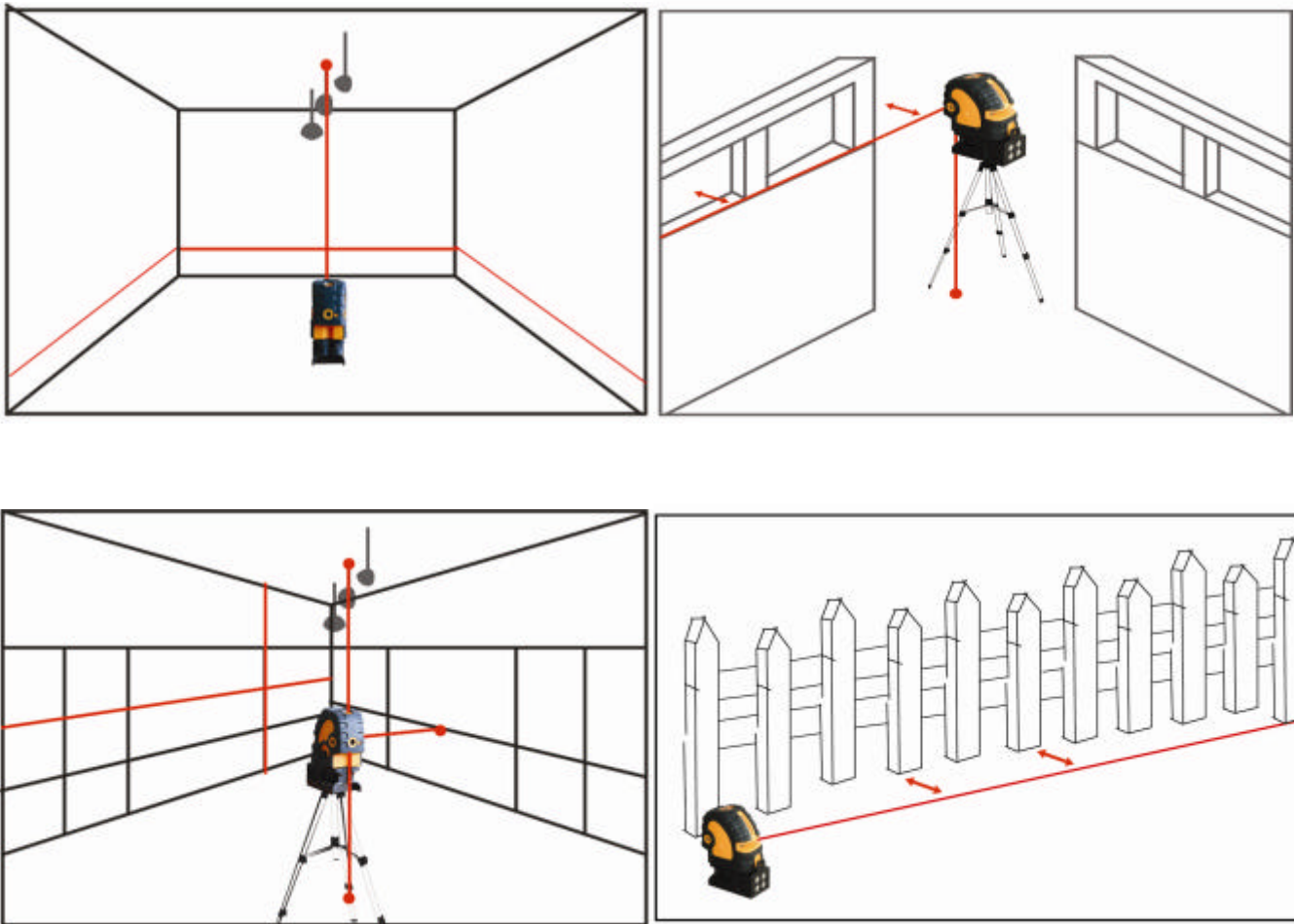
(2) The adjustment of two directions will influence each other sometimes.

When making the fine adjusting in left and right direction horizontally, the front and back direction vertical will change possibly, also, when adjusting in front and back vertically, the left and right direction horizontally will change possibly. So, when making fine adjustment, it needs to make the adjustment on two directions repeatedly.

(3) The adjustment of self-calibration screw could not exceed 4 circles. (Clockwise or anti-clockwise direction).

(4) If the instrument accuracy could not be adjusted through self-calibration aperture, please contact the distributor for servicing.

6. Application demonstration



7. Technical specifications

Item	Parameter
Laser wavelength	635nm
Laser class	Class /
Accuracy	±1mm/5m
Self-leveling range	±4°
Temperature range	-10 ~ +45
Power	3*AA battery
Low voltage indication	Power indication LED flash
Size	122x72x116mm
Weight	0.6Kg

8. Maintenance

This instrument could not be sunk in the water and could not be wet with rain.

This instrument should be carefully operated and properly preserved, any violent shock or falling possibly result in the damage of instrument.

Before moving or shipping the instrument, please set the instrument in locking status to avoid influencing the accuracy.

Do not attempt to disassemble the instrument, and any unprofessional disassembly will result in the damage of instrument.

Keep the instrument clean, especially the laser output window glass, and remove dust by the gentle operation of soft clean cloth.

Take the batteries out when the instrument is not is use for a long time, and keep the instrument in the carrying case when it is not used.

