

Multi-beam Self-leveling Line Laser **2DL (519032)**



Congratulations on your choice of this self leveling line laser. For the purpose of long-term use of this instrument, we suggest your reading this instruction manual carefully before using it.

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1. Features and Functions

2DL (519032) multi-beam self-leveling line laser, which can simultaneously project two laser lines for leveling, can supply accurate horizontal, vertical and plumb references for indoor layout and plumb calibration. This kind of product is featured by easy manipulation and wide applications.

Features:

- ◆ Able to project two laser lines (plumb-up and plumb-down)
- ◆ Self-leveling, with laser flashing indication and buzzer alarm if beyond range
- ◆ Able to connect with camera-tripod through 1/4" screw thread on the bottom of the unit

2. User Safety

- Laser output sign is located near the output window.
- Do not stare into laser beam directly.
- Do not disassemble the instrument or attempt to perform any internal servicing. Repairs and servicing could be performed only by authorized service centers.
- The instrument complies with the safety classification standards of laser radiation.

3. Nomenclature



Figure 1



Figure 2

1. Power LED
2. Battery-cover fastener
3. Self-calibrating hole
4. Locking knob

5. Locking-status indication
6. Laser output window
7. Laser output window
8. Laser output window

9. Magnet
10. 1/4" screw thread hole
11. Battery cover

4. Operation Instruction

4.1 Battery installation

As the picture shows, put 3*AA alkaline batteries into battery box according to polarity requirement, then close the battery cover.

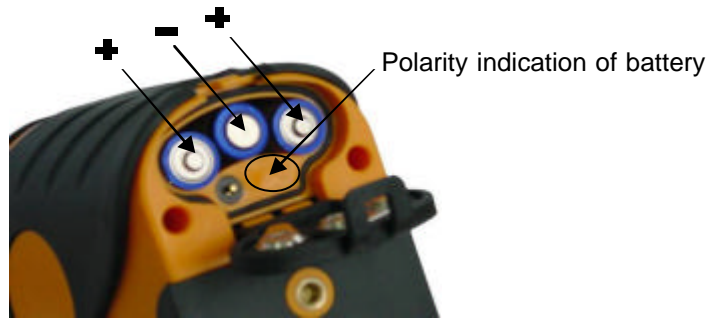


Figure 3

4.2 Power on/off

Unlock the locking knob, the power LED will light and meanwhile the laser line will be output.

Lock the locking knob, the power LED will extinguish and no laser line will be output.



Figure 4 shows locking status. Please turn the locking knob according to the direction of arrow to unlock the unit.



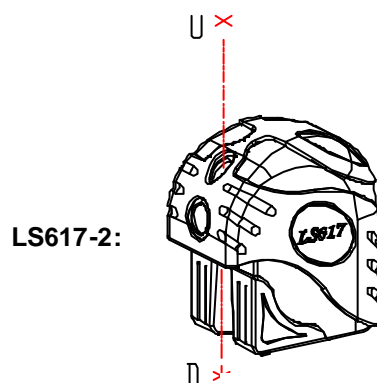
Figure 5 shows unlocking status. By turning the locking knob according to the direction of arrow, the unit could be locked

When the unit is beyond the range of selfleveling, the laser will flash and the buzzer will give a sound alarm, please level the instrument again.

When the unit is unlocked, the power LED is twinkle, it means the batteries are in low voltage.

4.3 Output form of laser line

Figure 6



5. Self-check and calibration

5.1 Plumb-point accuracy self-check

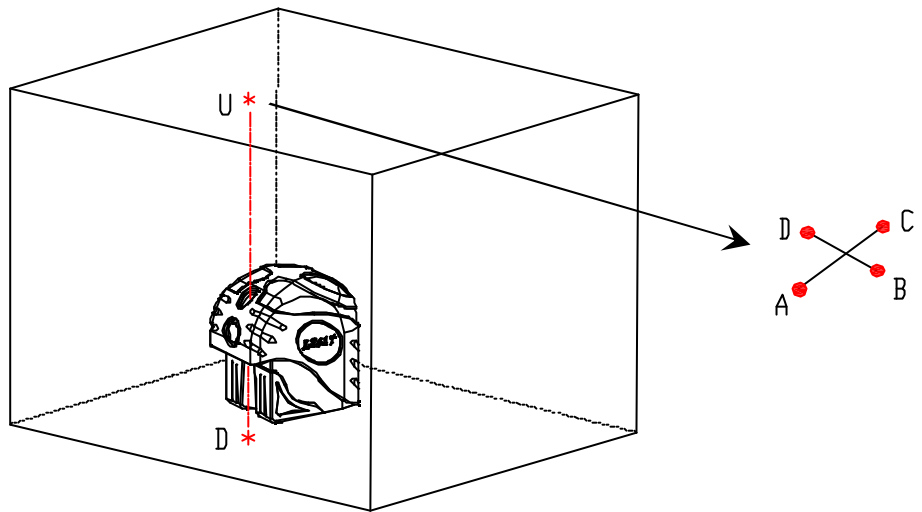


Figure 7

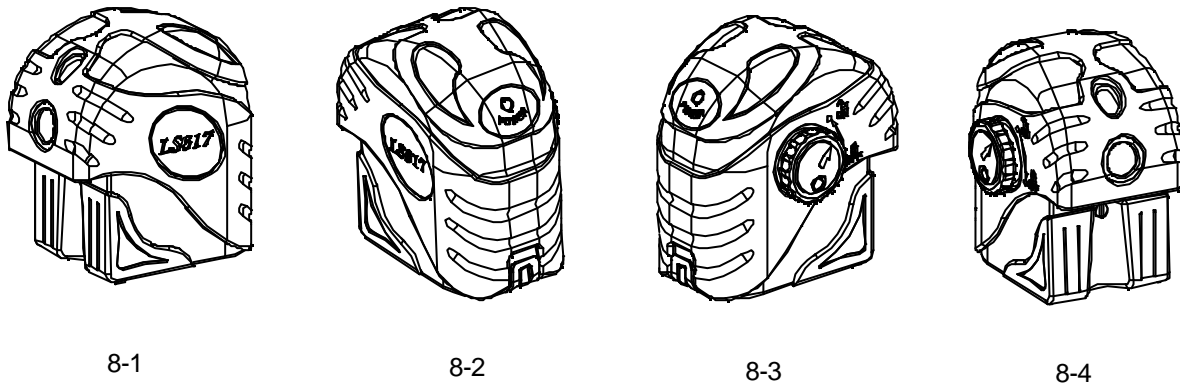
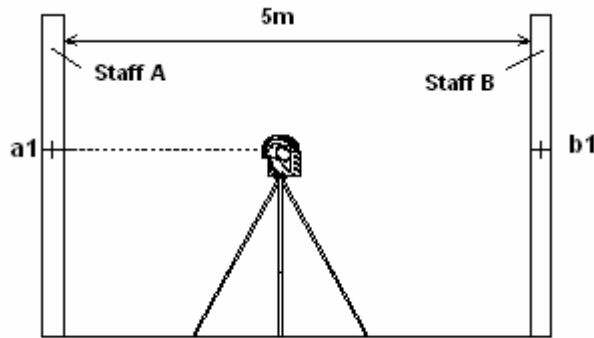


Figure 8

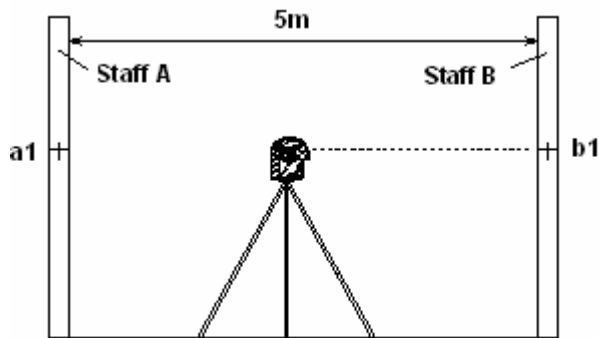
- (1) As shown in the figure 7, put the unit on the ground according to the direction shown in figure 8-1, and mark a point on the ground.
- (2) Power on the unit and make the center of plumb-down point aim at the marked point on the ground. Then take the center of the plumb-up point on the ceiling that is 3m apart from the ground as A.
- (3) Turn the unit 90 ° (as shown in figure 8-2) and repeat the above step 2, then take the center of the plumb-up point on the ceiling as B.
- (4) Turn the unit 90 ° again (as shown in figure 8-3) and repeat the above step 2, then take the center of the plumb-up point on the ceiling as C.
- (5) Turn the unit 90 ° again (as shown in figure 8-4) and repeat the above step 2, then take the center of the plumb-up point on the ceiling as D.
- (6) As shown in figure 7, the maximum distance among A, B C and D should not be over 2mm. Otherwise, the accuracy of the unit is beyond tolerance and please sent it to the dealer for maintenance.

5.2 Horizontal laser spot accuracy self-check

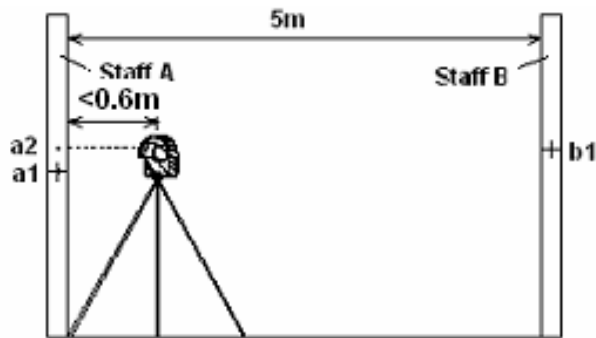
- (1) Set up two survey-staffs that are 5 meters away from each other (or two parallel walls that are more than 5m away from each other)
- (2) Set the instrument on the elevating rack or the tripod, and then place the unit at the center between the two survey-staff.
- (3) Power on the unit, have the horizontal laser spot located on staff A and note down the value of a1.



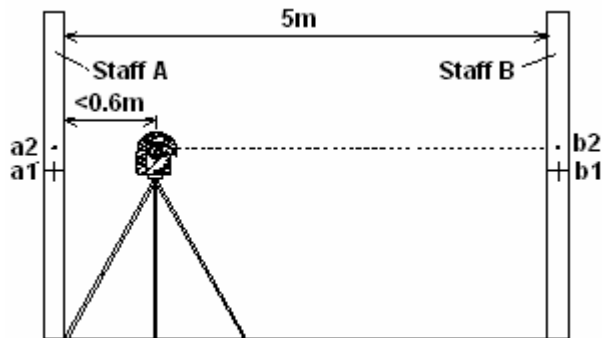
- (4) Turn the unit 180 ° , have the horizontal laser spot located on staff B and note down the value of b1;



- (5) Move the tripod to make the distance between the unit and the staff A 0.6m, have the horizontal laser spot located on staff A and note down the value of a2.



(6) Turn the unit 180 ° , have the horizontal laser spot located on staff B and note down the value of b2.



(7) Calculate: $(a1 - a2) - (b1 - b2) = e$.

(8) If the absolute value of e exceeds 1mm, the unit accuracy is beyond tolerance. Please send it to dealer for maintenance.

5.3 Self-check Adjustment

There are a self-calibration aperture in place A and B separately, as the picture figure 9 shows. Place A is used for the adjustment of front and back. Place B is used for the adjustment of left and right. Place C is used for the plumb-down point adjusting by rotating laser optical wedge seat.

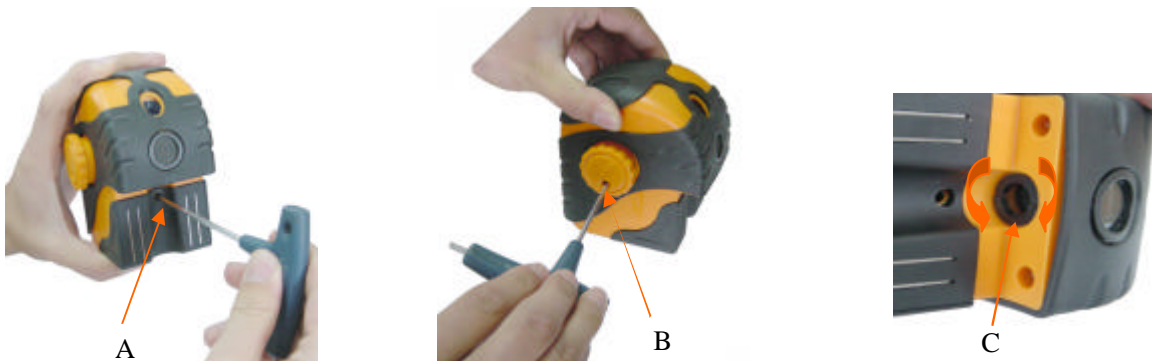


Figure 9

Please note when adjust:

1. The aperture in place B aim to the inside self-adjustment screw aperture only when the instrument is unlocked.
2. Please use 3mm hexagon spanner to adjust the aperture in place A and B.
3. For 617-2 , please figure out the upper dot firstly by fine adjusting the aperture in place A and B, then figure out the down dot by adjusting laser optical wedge seat in place C

For 617-3 ,please figure out the upper dot firstly by fine adjusting the aperture in place A and B, if the horizontal dot fall short of requirement, that need to open the housing part to repair. If the horizontal dot is OK, please just figure out the down dot by adjusting laser optical wedge seat in place C

4. The adjustment of the self-adjustment screw in place A and B should not be more than 4 rounds (clockwise or anti-clockwise), if it doesn't work, please open the housing part to repair.

6. Application Demonstrations



10-1



10-2



10-3



10-4

7. Technical Specifications

- Wavelength: 635nm
- Laser class: Class
- Accuracy: $\pm 2\text{mm}/10\text{m}$
- Self-leveling range: $\pm 3^\circ$
- Working temperature: $-10^\circ\text{C} \sim +45^\circ\text{C}$
- Power supply: 3* AA alkaline battery
- Low voltage indication: Power LED flashing
- Size: 107 x 66 x 115 mm
- Weight: 0.58Kg

8. Maintenance

- Avoid being wet with water and rain.
- The instrument should be carefully operated and properly preserved, and any violent shock or falling will possibly result in the damage of instrument.
- Before moving or transporting the instrument, please keep it in the locked situation to avoid depressing the accuracy.
- Do not attempt to disassemble the instrument, and the unprofessional disassembly will result in the damage of instrument.
- Keep the cleanness of instrument, especially the laser output window, and remove dust by the gentle operation of soft clean cloth.
- Take the batteries out when the instrument is not in use for a long time, and keep the instrument in the carrying case when it is unused.