

Operating Instructions

Plumb-up Laser LL-90L/-91L

Plumb-down Laser LL-92L/-93L



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Designed, developed and
made in Germany

Congratulations on your new GEO laser

This operating instructions contain enclosed in addition to information on how to use the laser **important safety information**.

Please note: First read the **safety instructions** on the supplement page **1 - 3** and then the operating instructions carefully before using the laser.

1. Description

The laser emits an automatically levelled plumb laser beam as reference axis. This laser beam is, for example, represented as dot on a target. If the target is connected to sliding moulding, the moulding can be controlled according to the position of the laser dot. The LL is a special laser for all types of plumbing operations. Its possible uses are virtually unlimited. The pipe lasers of the 90 generation have a green laser beam which is much better visible, especially at daylight.

1.1 Robust Light Metal Housing, 100 % watertight

Plastic-coated, swept and filled with nitrogen

1.2 Handle

For easy handling, safe transport and simple set-up.

1.3 Laser Warning Sign

LL-90L/-92L: Laser class 2, 1 mW
LL-91L/-93L: Laser class 3R, < 5 mW

1.4 Keyboard

Clear layout. Big, user-friendly, self-explanatory keys.

1.5 Identification

1.6 Charging Socket

Behind the dust guard cap.

1.7 Box Level

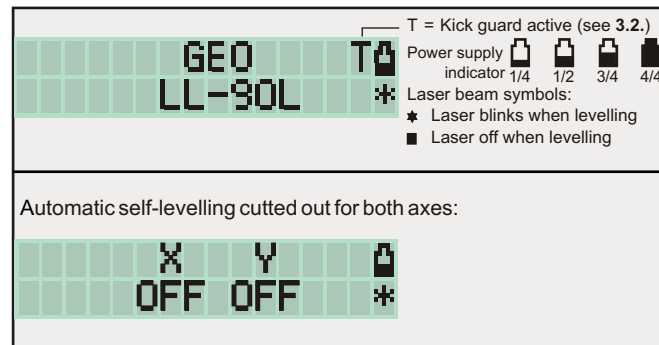
Build-up assistance LL-82L/-83L

1.8 Bulging Ground Area, niro St.

Protects against damages of coat and guarantees a secure stand. Central fastening thread 5/8".

1.9 LCD Display

Clearly legible, illuminated display for on/off, company data, device data, duty type and battery level.



1.10 Box Level

Build-up assistance LL-90L/-91L

2. Buttons

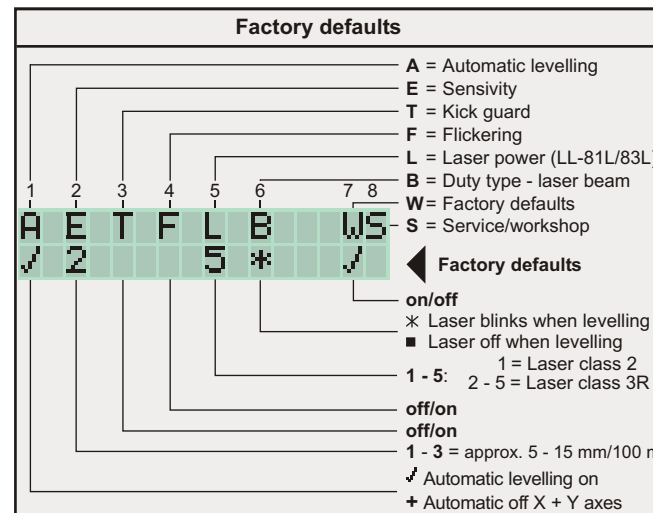
2.1 = ON/OFF Button

The device is switched on by pressing this button. The device and company data are then shown, followed by the LCD main level (see 1.9). The device is then levelled automatically. After the levelling phase the laser beam and laser beam symbol stop blinking. If this does not happen, the device must be moved into the levelling range by tilting it forwards. The display illumination switches off after approx. 30 seconds automatically. The illumination is switched on again by pressing the ON/OFF button shortly. To switch off the device, press the ON/OFF button until "Auf Wiedersehen !" appears.



2.2 = Select Menu Level

Keep the button pressed until the adjustment menu is shown:



or



Select Letter

2.3 = The selected letter begins to blink.

Y axes inclination setting (see 3.1)



or



Change Settings

2.4 = **X axes inclination setting** (see 3.1)



= **Back to Operating Display**

3. Device Settings

3.1 Automatic Levelling Cut-Out

- ✓ = Automatic levelling switched on (factory defaults)
- + = Automatic self-levelling cutted out for both axes. On the display **X-A OFF + Y-A OFF** is indicated.

When the automatic is cutted out, the laser can be positioned just as you like it. For electromotive fine/coarse adjustment of the laser beam, push the respective arrow buttons. Longer pushing changes the direction with increasing speed.

3.2 Sensivity Setting (Wind/Vibration)

The self-levelling function corrects even the smallest deviation. Additionally the laser beam and the laser beam symbol at the operating mode display blink when the limit values of step 1 to 3 are exceeded, i. e. by influence of wind and/or vibration.

- 1 = 0.005 % no effect
- 2 = 0.010 % weak effect (factory defaults)
- 3 = 0.015 % strong effect

3.3 Kick Guard (Automatic Laser Cut-Out)

- ✓ = Kick guard switched on. It is only active after 30 sec. Then a T appears in front of the battery symbol at the operating mode display. This means the laser is switched off automatically as a precautionary measure in the event of a jerky movement (bump). The T then begins to blink. The laser must be switched on again and the positioning checked and corrected if necessary.

■ = Factory defaults: Kick guard switched off.

3.4 Laser Beam Flickering

- = Flickering off (factory defaults)
- ✓ = Flickering on. Flickering makes the laser beam significantly easier to see in unfavourable light conditions.

3.5 Laser Power

The laser power of the LL-90L/-92L can be regulated in 2 steps, the laser power of the LL-91L/-93L can be regulated in 5 steps.
LL-90L/-92L: 1 = approx. 0.5 mW, 2 = < 1 mW(default)
KL-91L/-93L: 1 = < 1 mW (default, laserclass 2),
2 = approx 2 mW, 3 = approx. 3 mW, 4 = approx. 4 mW,
5 = <5 mW

3.6 Operating Mode Laser Beam

- ✱ = Laser beam and laser beam symbol blink at the operating mode display when levelling (factory defaults).
- = Laser beam is off when levelling. However the symbol blinks at the operating mode display.

3.7 Factory Defaults

- ✓ = All set to factory defaults.

3.8 Service/Workshop Notice

First off all a phone no. for service/help appears. Then authorized personnel can put in a numerical code to come to the adjustment mode.

