

# INSTRUCTION MANUAL

ROTARY LASER LEVEL

**GPR-R9H Red Beam**  
&

**GPR-G9 Green Beam**

To help you use this instrument conveniently, we provide a specific operation manual for you. Please read the manual carefully before you use the instrument and keep it well.

**FOR YOUR RECORD**

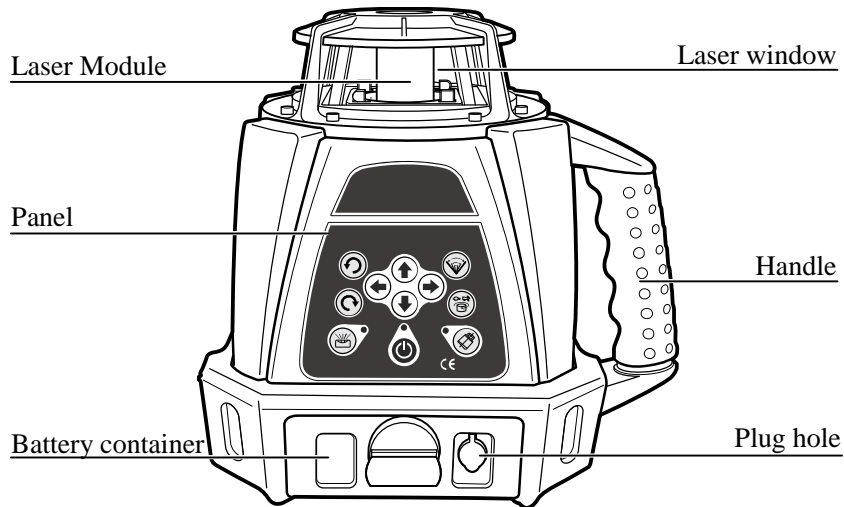
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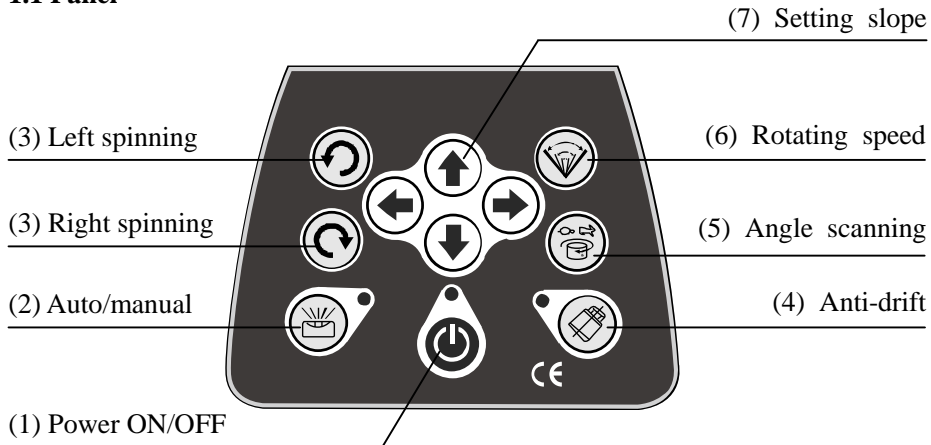
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## 1. Main body



## 1.1 Panel



## 1.2 Operation instrument

- (1) **Power(ON/OFF):**Controlling the state of power.
- (2) **Auto/manual:** Push button to switch manual ( Remote ) or auto leveling.
- (3) **Left / right spinning:**After the laser head speed is set on 0 r.p.m. the left/right button can change the laser position.
- (4) **Anti-drift:** The Anti-Drift System, when ON, will signal to the operator that the instrument has been moved out of level.  
The ADS LED will blink slowly when instrument in Anti-Drift System.  
The ADS LED will blink quickly when instrument moved out of level.
- (5) **Angle scanning:**Setting 5 sections angle scanning,  $0^{\circ}$ - $10^{\circ}$ - $45^{\circ}$ - $90^{\circ}$ - $180^{\circ}$ , the Left/right button can change the laser position.
- (6) **Rotating speed:**Setting 5 sections rotating speed, 0-60-120-300-600 r.p.m.

- (7) **Setting slope (manual mode):**The arrow button for upper & down & left & right can adjust X and Y axis.(Touch panel direction is Y axis)

## **2. Directions**

### **2.1. Battery Installment**

- (1) Take down the cover of battery case at the bottom of the instrument.
- (2) Put the batteries into the case according to the right position.
- (3) Lay the cover on the box, and then tighten all screws.

### **2.2 Instrument Placement**

#### **2.2.1 Horizontal scanning (manual mode)**

Lay the instrument on the tripod or stable flat surface, or even hang it on the wall.

Set up right the instrument, and keep the slope of instrument within the range from  $-5^{\circ}$  to  $+5^{\circ}$ .

#### **2.2.2 Vertical scanning (manual mode)**



Lay the instrument on the flat surface, and keep the slope of instrument within the range from  $-5^{\circ}$  to  $+5^{\circ}$ .

## **2.3 Operations**

### **2.3.1 Power**

- (1) Press the key ON/OFF to bring automatic leveling into function when the power indicator lights.
- (2) When power indicator blink, it shows the voltage of the batteries is insufficient. Then the rechargeable batteries need to be charged.
- (3) Press the Key ON/OFF to close down the instrument.

### **2.3.2 Leveling**

- (1) When turned on, the laser beam will start to blink, It will stop winking after

finish leveling.

- (2) If the instrument is placed improperly, or the slope of instrument exceeds the range from  $-5^{\circ}$  to  $+5^{\circ}$ , the mode indicator and the laser beam will wink at the same time. Then place the instrument properly.

### **2.3.3 Spinning**

#### **(1) Change speed**

Press the rotating speed button to control the spinning speed of the laser head.

If press the key repeatedly, the spinning speed of the laser head will continuously change as follows: 0-60-120-300-600-0 r.p.m.

#### **(2) Stepping spinning**

Locate the Key Speeding-up at 0 r.p.m., The laser head will stop spinning.

And press the Key Right- spinning, the laser head will step-move clockwise.If

then press the key Left-spinning, the laser head will step-move counter-clockwise.

#### **2.3.4 Directional scanning**

- (1) Press the Key Directional scanning: the laser head will scan directionally. If press the key repeatedly, the angle of scanning of laser head will continuously changes as follows:  $0$ ,  $-10^\circ$ ,  $-45^\circ$ ,  $-90^\circ$ ,  $-180^\circ$ ,  $-0^\circ$
- (2) Press the Key Left-spinning or the key Right-spinning to change the direction of scanning.

#### **2.3.5 Slope Adjustment**

Press the remote Key Manual/Automatic when mode indicator lights, the instrument enters the mode of manual leveling.



- (1) Slope of X-axis

Aim the X1-beam to the direction of the slope required to adjust, as depicted below.

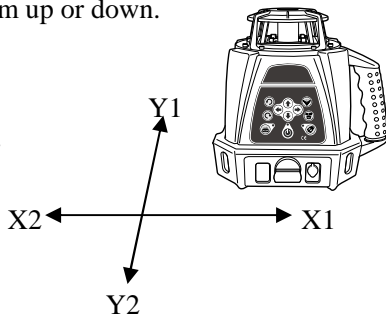
Press the key  or  to move the laser beam up or down.

(2) Slope of Y-axis

Aim the Y1-beam to the direction of the slope required to adjust.

Press the key  or  to move the laser beam up or down.

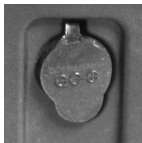
- (3) **Press the key Manual/Automatic again when mode indicator goes out, the instrument will enter mode of automatic leveling.**



### 3. Recharge battery

- (1) When the batteries needs to be charged, connecting the charger with AC.  
Insert the plug of charger into the plug hole at the bottom of the instrument  
(As depicted below).
- (2) If the indicator of charger lights, it shows the batteries are being charged.
- (3) If the indicator light of the charger winks, it shows the course of recharging has ended.

Plug hole



Charger



Notices:

1. Using the standard rechargeable batteries of the instrument, recharging will be

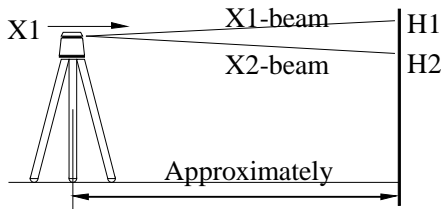
finished within 7 hours.

2. Power required for the charger: Frequency: 50-60HZ; Voltage: 85-265V.
3. Charging and using of the instrument can progress simultaneously.
4. If keeping the instrument in storage (or Leave the instrument unused for a long time), the batteries (dry battery or rechargeable battery) needs to be taken out.
5. Brand-new rechargeable batteries or long-time unused rechargeable batteries need to be recharged and discharged three times to attain the capacity required.

## 4. Accuracy Checking

### 4.1 Horizontal-surface Checking

- (1) Place the instrument at the point of 50m in front of wall (or set a scale plate at the point of 50m away from the instrument), and then adjust the level of the base approximately to aim the X1 to the wall (or scale plate), as depicted below:



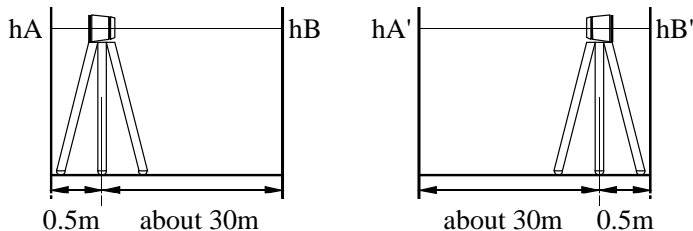
- (2) After switching on the power, use the laser detector measuring the  $h_1$  of X1-beam on the wall or scale plate.
- (3) Loose the screw of the tripod, and then turn around the instrument  $180^\circ$  to measure the  $h_2$  of X2-beam on the wall or scale plate.  
D-value between  $h_1$  and  $h_2$  ought to be less than 10mm
- (4) Check the Y-beam in the same way.

#### **4.2 Horizontal-line Checking**

- (1) Place the instrument between two walls with the distance of 30m (or two scale plates with the distance of 30m)
- (2) Place the instrument according to horizontal setting and then adjust the instrument.



- (3) Switch on the power, and then measure the middle point of the laser beam on the wall (or scale plate):  $h_A$ ,  $h_B$  and  $h_A'$ ,  $h_B'$
- (4)  $\Delta 1 = h_A - h_A'$ ,  $\Delta 2 = h_B - h_B'$
- D-value between  $\Delta 1$  and  $\Delta 2$  ought to be less than 6mm

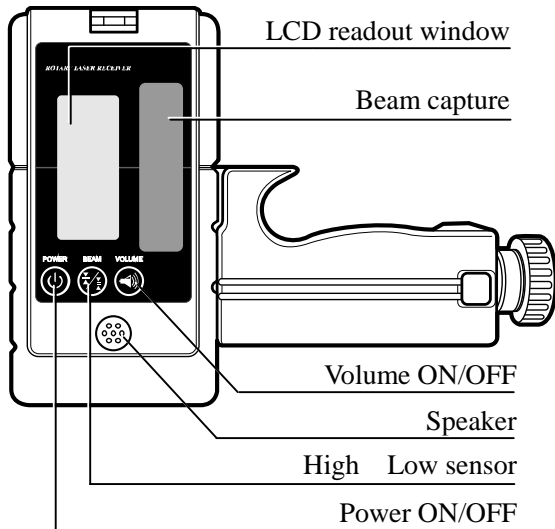


## 5. Specifications

Model no.	GPR-R9H	GPR-G9
Light source	Red beam-High power	Green beam
	wavelength 635nm	wavelength 532nm
Leveling accuracy	$\pm 10'' / \pm 20''$	
Self-leveling range	$\pm 5^\circ$	
Measuring range	Diameter: 500m (Using the laser detector)	
Spinning speed	0,60,120,300,600 r.p.m.	
Directional-scanning	0°, 10°, 45°, 90°, 180°	
Setting slope	$\pm 5^\circ$ (Dual axis)	
Down point	Accuracy: $\pm 1\text{mm}/1.5\text{m}$	
Remote controlling Distance	Approximately 20m	
Power Supply	DC 4.8-6V (NI-MH rechargeable)	
Working Temperature	$-20^\circ\text{C} \sim +50^\circ\text{C}$ ( $-4^\circ\text{F} \sim +122^\circ\text{F}$ )	
Water-proof	IP-56	
Dimension	160(L)x160(W)x185(H)mm	
Weight	2 kg	

## 6. Detector

The Universal Laser Detector aids in locating and targeting a visible or invisible beam emitted by a rotary laser; perfect for use in outdoor conditions, where sunlight and distance may make locating the beam more difficult. The laser detector includes a rod clamp which allows to mount the detector onto square, round or oval sighting rods.



## **6.1 Operation instrument**

- (1) Mount the instrument onto a sighting rod if you are using one. Turn on the instrument by pressing the ON/OFF pad. The LCD symbols will momentarily flash and the “coarse” beam indicator symbol will remain lit and the audio signal will be on.
- (2) Expose the beam capture window of the laser detector towards the direction of the rotating laser.
- (3) Slowly move the laser detector in an upward and downward direction until the LCD beam indicator arrows appear and/or a pulsing audio signal is heard. Use the Beam Resolution feature to choose between the coarse/low setting, used for approximating level or for initial locating of the center level point, the medium setting, used for greater accuracy, and the fine/high setting, used for

the most accurate pinpointing of level. (to see the available Resolutions, please refer to the Specs Table).

- (4) Move the detector upward when the low beam indicator light is lit (with volume on, a short pulsing audio tone is heard). Move the detector downward when the high beam indicator arrow is lit (with volume on, a long pulsing audio tone is heard). When the beam is level, the level beam indicator line will be lit and a solid audio tone will be heard.
- (5) If the detector is not struck by a laser beam after 5-8 minutes, the detector will automatically shut itself off to preserve battery life. Turn the instrument back on using the power button.

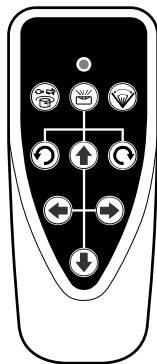
## 7. Remote

The remote of the instrument adopts the infrared technique. Aim the aperture of infrared ray to the instrument (as depicted below) to bring remote controlling into function (Available distance: 20M).

The tele controlling panel includes 9 keys; the indicator on the device will wink to show the operating signal has been sent out once pressing any key.

Functions fulfilled by the remote as follows:

- (1) Spinning: Operating method referring to 2.3.3.
- (2) Directional scanning: Operating method referring to 2.3.4.
- (3) Slope adjustment: Operating method referring to 2.3.5.



Remote

# Memo

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