Self-leveling Rotary Laser R740

Operating Manual

WARNING

- While the instrument is operating, be careful not to expose your eyes to the emitting laser beam. Exposure to a laser beam for a long time may be hazardous to your eyes (laser beam: equivalent to class 2 laser level).

- Do not try to dismantle the instrument. Have it repaired by your dealer or supplier. Dismantling it by yourself may cause permanent instrument malfunctions.

- When attaching the instrument to a tripod, make sure the instrument is securely fixed on tripod and the tripod leg clamps should be securely fastened. If not securely fastened or tightened, the laser could fall off or the tripod could fall over.

- When setting the tripod, beware of the tripod feet, which are sharp. These sharp points allow tripod to be securely positioned on the ground.

- Operate this laser product with the height which avoiding eyes of vehicle drivers or pedestrians. Avoid putting the laser on a highly reflective material such as a mirror. When disposing this instrument, take measure by removing the batteries so that the laser will not be emitted.

PRECAUTIONS

- The instrument should not be stored or used in extreme temperatures or job sites subject to rapid change of temperature. The instrument may not function properly if used out of working temperature range.

- Store inside the carrying case and place in a dry area not subject to vibration, dust or high moisture.

- The instrument should be transported or carried carefully to avoid impact or vibration.

- The instrument should be stored in the carrying case and packed with cushioning material. Always handle the item with care.

- Be sure to observe the items in the instruction manual for proper use of the instrument.

INCLUDES

- R740 Instrument
- High-Vis Glasses
- Remote Control
- Battery Charger
- Magnetic Laser Target
- Laser Receiver
- Alkaline batteries compartment
- Carrying case

1.Functions

This instrument is equipped with the green semiconductor diode with a wavelength of 635nm, which gives laser beam has supreme visibility. And the laser module of instrument will rotate freely to form a laser-scanning surface. Emitting direction of rotary laser-beam illustrated as follows:

Upright-setting

Horizontal-setting

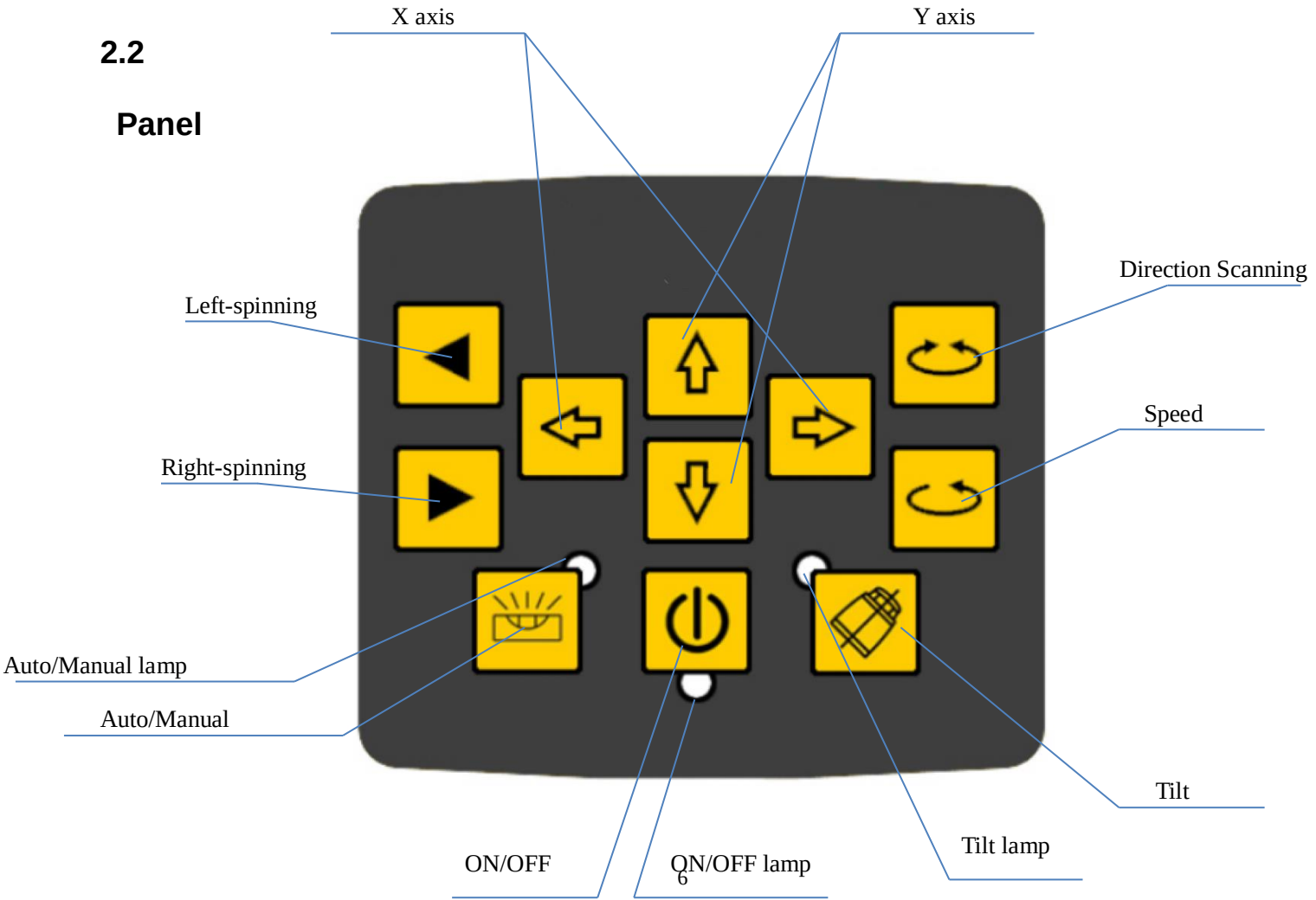
When the instrument is set upright, it will emit laser-beam to form a horizontal scanning surface and a plumb line automatically. When set horizontally, it will form a plumb scanning surface and a vertical line.

2. Introductions

2.1Main body

2.2

Panel


X axis
Y axis
Direction Scanning
Left-spinning
Speed
Right-spinning
Auto/Manual lamp
Auto/Manual
Tilt
Tilt lamp
ON/OFF
ON/OFF lamp

2.3Utilities of Panel

(1) ON/OFF: Controlling the state of power.
(2) Power lamp: When it lights, the instrument is starting up. Otherwise it is closing down.
(3) Mode lamp: When it lights, the instrument is leveling manually. When it winks, it stays in alarm. (The slope of the instrument is out of range).
(4) Key of Tilt model: Warns the user for a misaligned device
(5) Light of Automatic drift system model: When the light is twinkling slowly, it is in Automatic Drift System model. When the light is twinkling quickly, the laser level will not level.
(6) Speeding-up: Speed of scanning circling.
Includes 5-steps:0-60-120-300-600 r.p.m

(7) Directional scanning: Angle of scanning circling . Includes 5 steps:0-10° -45° -90° -180°

(8) Manual/Automatic: Controlling the mode of leveling.
(9) Left-spinning: Making the laser module step-move counter-clockwise, when the laser module is power off or it is scanning directionally.
(10) Right-spinning: Making the laser module step-move clockwise, when the laser module is power off or it is scanning directionally.
(11) X-axis: Adjusting the slope of X-axis, when the instrument stays in manual mode.

(12) Y-axis: Adjusting the slope of Y-axis, when the instrument stays in manual mode.

3.Directions:

3.1 Battery Installment

4×C size Ni-MH Rechargeable batteries can be used in laser

Please use the battery pack which is specified by manufacturer.

Put the battery pack into the fixed place at the bottom of laser and tighten all screws.

3.2Instrument Placement

3.2.1 Horizontal scanning

Lay the instrument on the tripod or stable flat surface, or even hang it on the wall. Set upright the instrument, and keep the slope of instrument within the range from -5° to +5°.

3.2.2 Vertical scanning

Lay the instrument on the flat surface, and keep the slope of instrument within the range from -5° to +5 °.

3.3 Operations

3.3.1 Power

Press the Key ON/OFF to bring automatic leveling into function when the power lamp lights.

When Power lamp lights, it shows the voltage of the batteries is insufficient. Then the rechargeable batteries need to be charged.

Press the Key ON/OFF again to switch off the instrument and power lamp will goes out.

3.3.2 Leveling

Press the Key ON/OFF to bring automatic leveling into function when the laser beam begins to blink. After automatic leveling, the laser module will rotate at the speed of 600r.p.m.

If the instrument is placed improperly, or the slope of instrument exceeds the

range of ±5°,at that moment mode lamp and the laser beam will blink together. Then place the instrument properly.

3.3.3 Spinning

(1) Continuous spinning

Press the Key “Rotational speed adjustment” to control the spinning speed of the laser module. If press the key repeatedly, the spinning speed of the laser module will continuously change as follows:0-60-120-300-600-0 r.p.m.

(2) Stepping spinning

Make the Key Speeding-up at speed of 0 r.p.m, the laser module will stop spinning. And press the Key Right-spinning, the laser module will step-move clockwise. Then if press the Key Left-spinning, the laser module will step-move counter-clockwise.

3.3.4 Direction scanning

(1) Make the Key Speeding-up at speed of 0 r.p.m, the laser module will stop rotating. Press the Key Direction scanning; the laser module will scan directionally. If press the key repeatedly, the angle of scanning of laser

module will continuously change as follows: 0° -10-° 45º-90-° 180° -0° .

(2) Press the Key Left-spinning or the Key Right-spinning to change the direction of scanning.

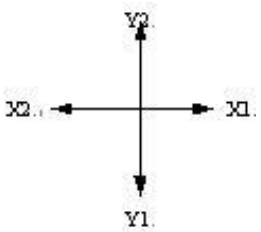
3.3.5 Slope Adjustment

When the instrument is set upright to do horizontal scanning, the slope of X-axis and Y-axis can be set.

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

(1) Slope of X-axis

a. Aim the X1-beam to the direction of the slope required then to adjust.



b. Press the Key ⇦ or ⇨ to move the laser beam up or down.

(2) Slope of Y-axis

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

b. Press the Key ⇧ or ⇩ to move the laser beam up or down.

(3) Quit slope adjustment mode

Press Manual/Automatic key again. After mode lamp goes off, the instrument then will quit the slope adjustment mode and will self-leveling again.

4.Power

When the voltage lamp lights, the batteries needs to be charged immediately. Connecting the charger with AC, insert the plug of charger into the plughole at the bottom of the instrument (As depicted above).

If the red lamp of charger lights, it shows the batteries are being charged.

If the green lamp of charger lights, it shows the course of recharging has finished.

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.

5.Remote

The remote control 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: indoor: 30M; outdoor: 20M). The keypad panel includes 9 keys; the lamp on the RC will wink to show the operating signal has been sent out once pressing any key.

REMOTE CONTROL

Functions fulfilled by the remote as follows:

(1)Rotating: Operating method referring to 3.3.3

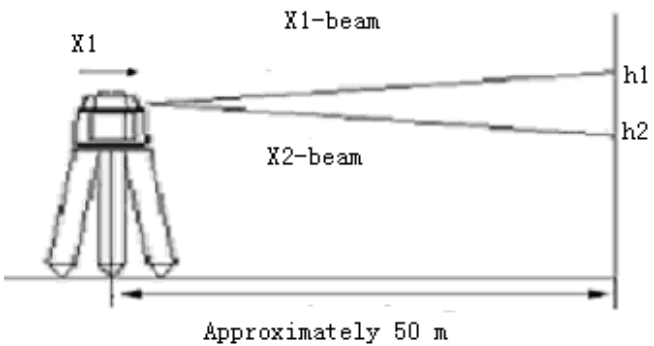
(2) Directional scanning: Operating method referring to 3.3.4

(3) Slope adjustment: Operating method referring to 3.3.5

6.Accuracey Checking

6.1 Horizontal-surface Checking

(1) Place the instrument at the point of 50m in front of wall (or set a scaleplate 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 scaleplate), as depicted below:



(2) After switching on the power, use the laser detector measuring the h1 of X1-beam on the wall or scaleplate.

(3) Loose the screw of the tripod , turn around the instrument for 180° to

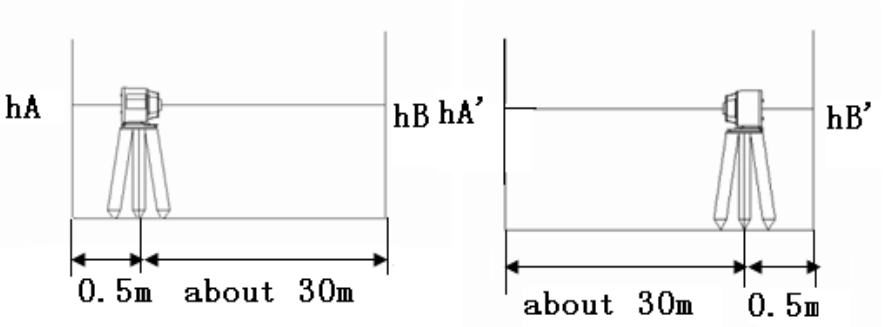
measure the h2 of X2-beam on the wall or scale- plate. The method should be the same with h1.

D-value between h1 and h2 ought to be less than 10mm.

(4) Check the Y-beam in the same way.

6.2 Horizontal-line Checking

(1) Place the instrument between two walls with the distance of 30m (or two scaleplates 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 scaleplate): hA, hB and hA′, hB′.

(4)△1=hA-hA′, △2=hB-hB′

D-value between △1 and △2 ought to be less than 6mm.

7.Specifications

Leveling Accuracy	**Horizontal:±20″** **Vertical:±20″**
Leveling Range	**±5º**
Measuring Range	**Diameter:500m(with detector)**
Spinning Speed	**0、60、120、300、600 r.p.m**
Directional-Scanning Angle	**0º、10 º、45 º、90 º、180 º**
Slope-adjusting Range	**±5º(Dual axis)**
Light Source	**Laser Diode, wavelength: 635nm**

Down Point Diode	**Accuracy:±1mm/1.5m**
Remote controlling Distance	**Approximately 20m**
Working Temperature	**-10℃-- 50℃**
Power Supply	**DC 4.8-6V(4 section of NI-MH rechargeable batteries)**
Hours in continuous use	**Approximately 18 hours**
Water-proof	**IP 56**
Dimension	**206(L)×206(W)×211(H)mm**
Weight	**2.8kg**