

Owner's Manual



Green Rotary Laser Level

Model No.

320. XXXXX



CAUTION: Before using this product, read this manual and follow all its Safety Rules and Operating Instructions.

- Safety
- Operation
- Maintenance
- Trouble shooting

Sears, Roebuck and Co., Hoffman Estates, IL 60179, USA

www.craftsman.com

TABLE OF CONTENTS

Warranty.....	Page 2
Safety Instructions.....	Page 3-4
Description.....	Page 4-6
Operation.....	Page 6-16
Application.....	Page 16-17
Maintenance.....	Page 17-18
Trouble Shooting.....	Page 18-19
Service Numbers.....	Back Cove

FULL ONE YEAR WARRANTY ON CRAFTSMAN GREEN ROTARY LASER LEVEL If this CRAFTSMAN digital laser level fails to give complete satisfaction within one year from the date of purchase, RETURN IT TO ANY SEARS STORE OR PARTS & REPAIR CENTRE OR OTHER CRAFTSMAN OUTLET IN THE UNITED STATES FOR FREE REPAIR(or replacement if repair proves impossible)

If this CRAFTSMAN green rotary laser level is used for commercial or rental purposes, this warranty applies for only 90 days from the date of purchase.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co., Hoffman Estates, IL 60179

Contents

Green rotary laser level, Detector, Remote control, Wall mount base, Detector mounting base, AC/DC adapter, Green laser enhancing safety glasses.

SAVE THESE INSTRUCTIONS!
READ ALL INSTRUCTIONS!

SAFETY INSTRUCTION

⚠ WARNING: BE SURE to read and understand all instruction in this manual before using this green rotary laser level. Failure to follow all instructions may result in hazardous radiation exposure, electric shock, and/or bodily injury.

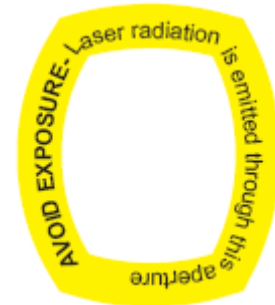
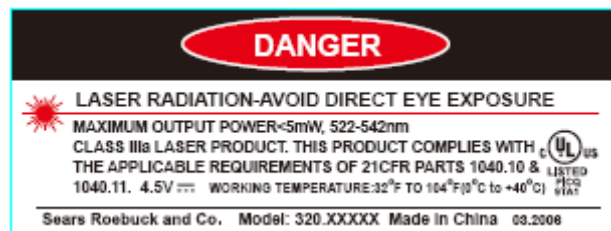
⚠ CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein, may result in hazardous radiation exposure.

⚠ CAUTION: The use of optical instrument with this product will increase eye hazard.

IMPORTANT: The following labels are on your tool. They indicate where the laser light is emitted.

ALWAYS BE AWARE of the emission point locations when using the green rotary laser level.

ALWAYS MAKE SURE that any bystanders in the vicinity of use are made aware of the dangers of looking directly into the laser.



⚠ WARNING! LASER LIGHT. LASER RADIATION.

Avoid Direct Eye Exposure. Do Not Stare into beam.

1. **DO NOT** remove or deface any product labels. Removing product labels increases the risk of exposure to laser radiation.
2. **DO NOT** stare directly at the laser beam or project the laser beam directly into the eyes of others. Serious eye injury could result.
3. **DO NOT** place the digital laser level in a position that may cause anyone to stare into the laser beam intentionally or unintentionally. Serious eye injury could result.
4. **DO NOT** use any magnifying optical tools such as, but not limited to telescopes or transits to view the laser beam. Serious eye injury could result.
5. **DO NOT** operate the green rotary laser level around children or allow children to operate the tool. Serious eye injury could result.
6. **ALWAYS** turn the green rotary laser level “OFF” when not in use. Leaving the tool “ON” increases the risk of someone inadvertently staring into the laser beam.
7. **DO NOT** operate the green rotary laser level in combustible areas such as in the presence of flammable liquids, gases or dust.
8. When using any of the base plates, **ALWAYS** check to be sure that the tool is

SAFETY INSTRUCTION cont.

securely mounted on the base. Damage to the tool and/or serious injury to the user could result if the tool falls.

9. **ALWAYS** use only the accessories that are recommended by Sears for use with this product. Use of accessories that have been designed for use with other laser tools could result in serious injury.
10. **DO NOT** use this green rotary laser level for any purpose other than those outlined in this manual. This could result in serious injury.
11. **DO NOT** leave the green rotary laser level "ON" unattended.
12. **DO NOT** attempt to repair or disassemble the green rotary laser level. If unqualified persons attempt to repair this laser product, serious injury may result. Any repair required on this laser product should be performed by authorized service center personnel.
13. Before plugging in the tool, **BE SURE** that the outlet voltage supplied is same as the voltage marked on the tool's power adapter.
14. **DO NOT** expose power adapter to rain or wet conditions. Water entering the adapter will increase the risk of electric shock.
15. When operating the power adapter outside, **ALWAYS** use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.
16. **CAUTION!** to reduce the risk of electric shock, use the tool only in dry location.

DESCRIPTION

KNOW YOUR GREEN ROTARY LASER LEVEL (See Fig.1 & Fig.2)

This Craftsman green rotary laser level is a highly versatile tool. It can be hand-held, wall-mounted (on the wall-mount base included) or leveled on a horizontal surface or tripod stand (sold separately). It projects a bright pulse green laser 'dot' that forms a line horizontally or vertical dimension in a 360° complete circle. As a 2-beam level, it can be used to accurately determine square alignment such as when laying concrete foundations, "squaring off" a deck or porch and when aligning fence and rail constructions.

This green rotary laser level is easy to use in many applications from simple home decorating projects to home construction. It will project a level horizontal or vertical 'line' that is accurate to $\pm 1/4$ -inch at 100 feet. (Recommended usable range is 50 feet)

Use the remote control you can conveniently operate your rotary laser when you do some layout far away within 100 feet. The green laser detector can help you easily find the laser position within 200 feet even in bright surrounding.

Fig.1

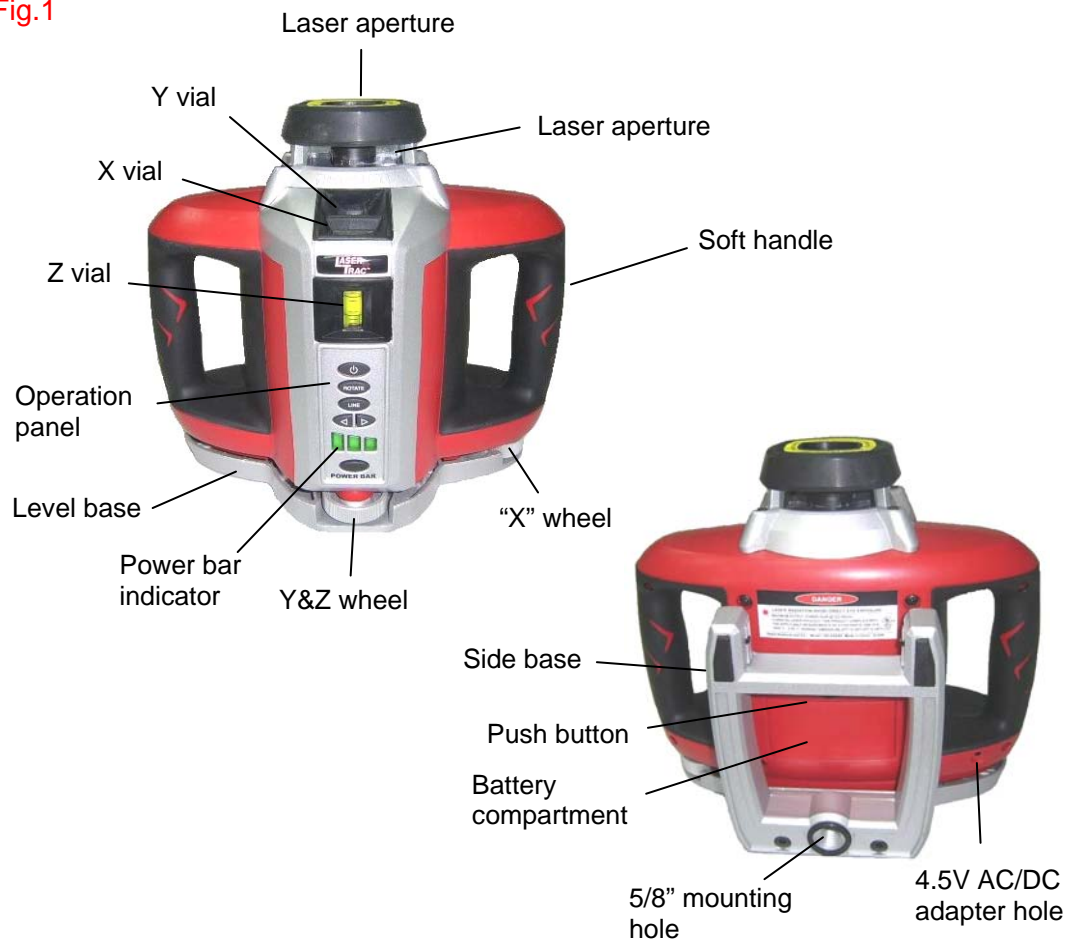
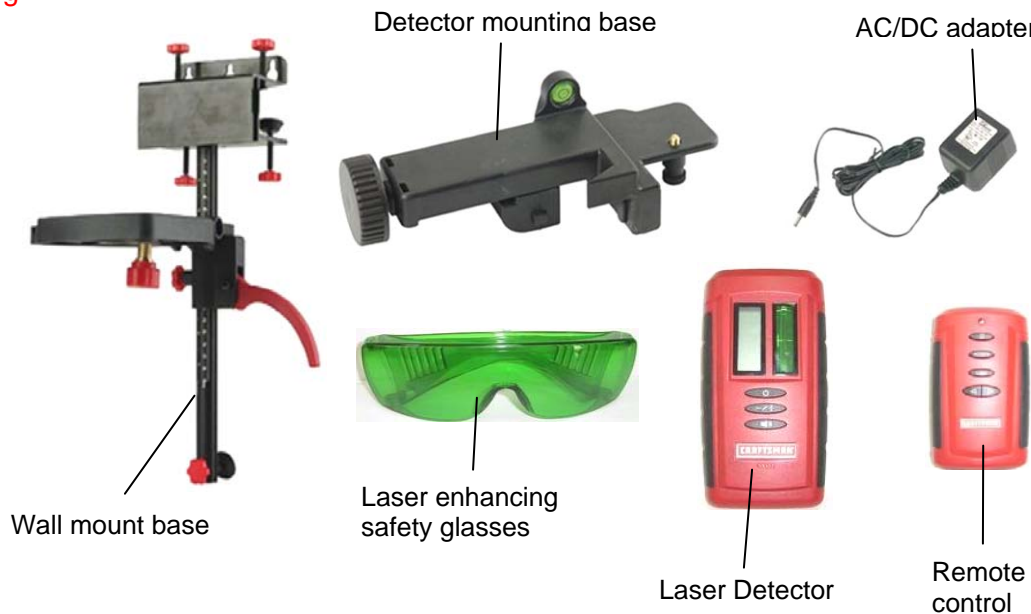


Fig. 2




TECHNICAL SPECIFICATIONS	
Recommended Use	Indoors
Laser Diode Type	Green Laser Diode 522-542nm
Laser Class	Class IIIa, power output <5mW
Battery	3pcs 1.5V "D" batteries for rotary laser level, 1pc 12V "23A" battery for remote control and 1pc 9V "6LR61" battery for detector. (all the batteries are not included)
Working range of laser	Maximum 100ft. (30m) without detector, depending upon light conditions Maximum 200ft. (60m) with detector
Working range of remote control	100 ft. (30m)
Optimum Operating Temperature Range	32°F to 104°F (0°C to +40°C)
Accuracy	+/-1/4-inch at 100 feet
weight	???

OPERATION

To install batteries for the green rotary laser level (See fig.3)

This green rotary laser level uses three "D" 1.5V batteries. (Sold separately)

<p>Fig.3</p> 	<ol style="list-style-type: none"> 1. Press the "Push" button to take out the battery compartment. 2. Install three new "D" size alkaline batteries according to the polarity indicators inside the battery compartment. 3. Fix the battery compartment into the tool and push it securely in place. <p>⚠ CAUTION! When fix the battery compartment into the tool, always MAKE SURE it has been locked securely. Damage to the case and/or serious injury to the user could result if it drops out.</p>
--	--

To connect AC/DC adapter to the tool

Fig. 4



The laser level can also be power supplied with AC/DC adapter besides batteries.

1. Insert the connecting plug into the adapter hole which locates in the rear of the level as Fig.4 shown.
2. Plug the AC/DC adapter into the correct mains supply (120V, 60Hz)

CAUTION! Whenever connect the adapter to the mains supply, always check if the voltage is 120V, 60Hz. Damage to the adapter or the tool and/or serious injury to the user could result if connecting to the other voltage of mains supply.

To turn on/off the rotary laser (see Fig. 5)

Press the Power button to turn on the level; the bright green laser beam will light. The backlights of the vials will also be light up for easier visibility when leveling or calibrating the laser tool. To turn off the level, press the button again, the backlights of the vials will wink twice quickly before shutting off.

If the laser is not operated for rotating or chalk line for one hour after it is turned on, it will automatically turn to the “Sleeping mode” to save the electricity. The laser will be shut off temporarily, and the backlights of the vials will flash once each two seconds to remind you that the tool has not been fully shut off. You can wake up the level within two hours by pressing any of the buttons on the tool except “the power button” or using remote control. After two hours of time, the tool will automatically shut off totally. You can press the power button on the tool to turn on the rotary laser again.

⚠ WARNING: When turning ON the Rotary Laser Level, **ALWAYS** be aware of protecting the eyes of yourself and those around you. **NEVER** point the green laser at anyone’s face, including your own.

Fig.5

Operation panel



1. **Power button:** turn on/off the tool.
2. **Rotation button:** adjust the rotation speed.
3. **Chalk line button:** adjust the length of chalk line.
4. **Left button:** move chalk line or laser dot to left position.
5. **Right button:** move chalk line or laser dot to right position.
6. **Power bar indicator:** show battery capacity.
7. **Power bar button:** turn on/off the Power bar indicator

Power bar indicator:

The indicator has three LEDs for indicating battery capacity; press the “POWER BAR” button, the LEDs will be light. It will extinguish automatically in about five seconds. All the LEDs light up showing the battery has full capacity. The rightmost LED begins to wink showing low battery; it reminds you of replacing batteries or powering it with AC/DC adapter.

Using the Laser-Enhancing Glasses Provided

This green laser level includes a pair of standard safety glasses that are made of a laser-light enhancing material. The purpose of these glasses is to improve the viewing of the tool’s laser line.

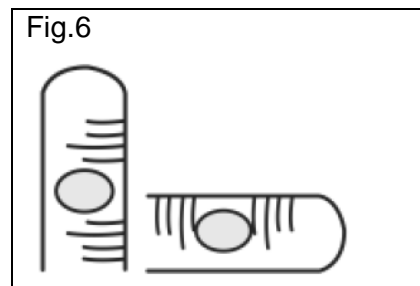
⚠ WARNING: These glasses WILL NOT protect the eyes from damage that could result from looking directly into the laser projection.

Adjustment of X&Y wheels to center the bubbles

To level the green rotary laser level, operate as following instructions:

1. If the Green rotary laser Level is in horizontal position, adjust the “X”&”Y” wheels. The “X” wheel controls the X bubble vial, and “Y” wheel control Y bubble vial. Adjust the two wheels to make sure the

Fig.6



X and Y bubbles are in the centre of each vial. (Fig6)

2. If the Green rotary laser level is in vertical position, adjust the “Y” wheel. The “Y” wheel controls the Z bubble vial. Adjust the “Y” wheel to make sure the bubble of Z vial is in the centre of the vial.

NOTE: The Green rotary laser level can be mounted on a tripod (sold separately) or mounted on the wall mount base by using thread holes located on level base plate or side base plate.

Level the mounting plate on the tripod base as closely as possible before mounting the Green rotary laser level. After mounting and securing the level to the tripod base plate, perform steps 1 and 2 above to level the tool to its new position.

Marking a series of level points

1. Adjust the X&Y wheels to center the bubble of the vials.
2. Turn on the laser
3. Align the laser beam to your target by pressing the left arrow button or right arrow button.

The tool can be used of marking a series of points either in the horizontal or vertical directions.

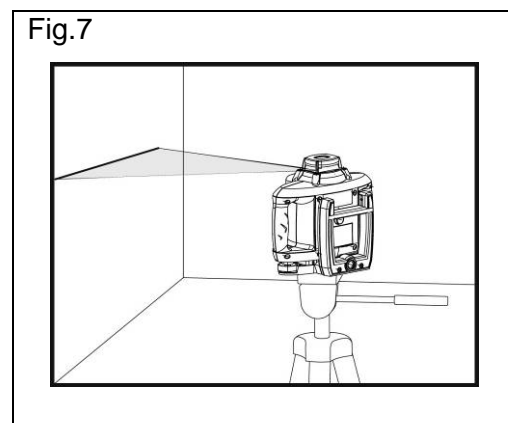
Adjusting the laser rotating speed

1. Place the Green rotary laser level on a horizontal surface or vertical position or on a tripod stand (sold separately).
2. Level the tool.
3. Press the power button to turn on the level.
4. Press the rotation button once for “fast” speed; twice for” medium” speed; third time for “slow” speed; or fourth time to stop rotation.

You can choose different speeds depending on different work surroundings. Selecting the best scan speed for your working conditions and job requirements gives you a highly visible level reference line.

Making a chalk line (see Fig.7)

1. Place the Green rotary laser level on a horizontal surface or on a tripod stand (sold separately).
2. Level the tool.

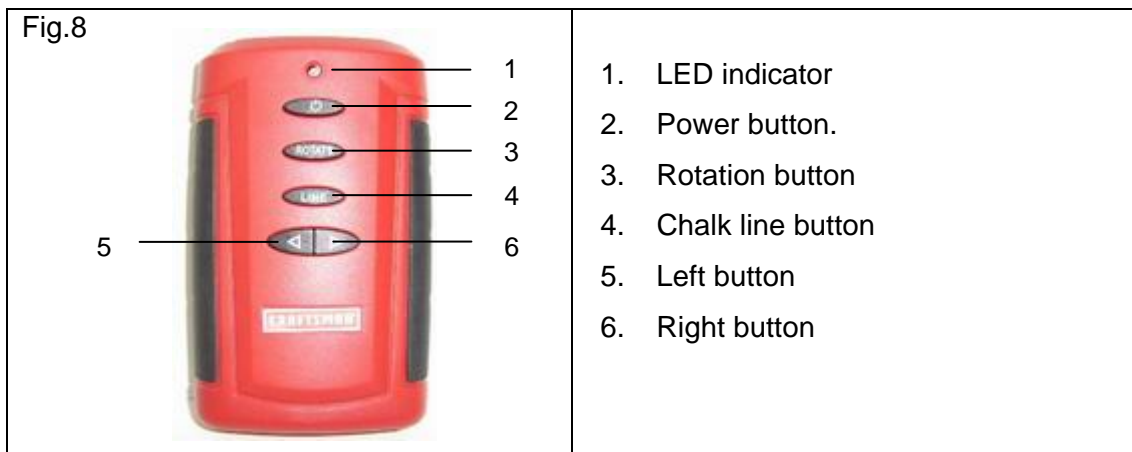


3. Press the power button to turn on the level.
 4. Press the chalk line button to project a chalk line. Press once to project a longest chalk line; twice to project a medium chalk line and three times to project a shortest chalk line.
 5. Align the laser beam to your target by pressing the left or right button.
- You can get the chalk line either in the horizontal or vertical directions. Press the left or right button to remove the projecting direction of the chalk line- you do not need to move the tool and re-level it.

Using the remote control (see fig.8)

Description

The wireless remote control can operate your rotary level within a maximum distance of 100 feet; the function of buttons on remote control is same as the buttons in operation panel of the level except for the power button.



Power button of the rotary laser level: when the level is power on, push it to turn off the level; the backlights of the vials will flash twice quickly showing all the circuits are shut off wholly. Now the remote can not control the tool. To operate the remote control, turn on the tool first.

Power button of the remote control: when the green rotary laser level is powered on, push it to make the level enter sleeping mode, at this time the backlights of the vials will flash once each two seconds to remind you that the tool has not been fully shut off. You can wake up the level within two hours with remote control after you select "Sleep mode". After two hours of time, the tool will automatically shut off totally. Then the remote can not control the tool. To operate the remote control, turn on the tool with the power button of the level first.

To install battery for the remote control (See fig.9)

The remote control uses one piece of "23A 12V" battery. (Sold separately)

Fig. 9



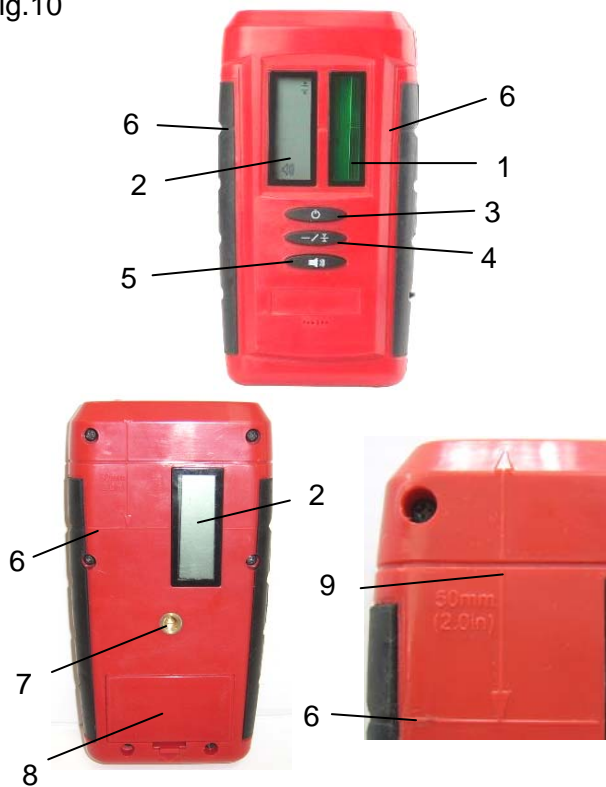
1. Open the battery cover.
2. Install one "23A" 12V battery (sold separately), be sure the polarity (+/-) is correct!
3. Close the cover and make sure it locks securely in place.

Using the green laser detector

The green laser detector is designed to find the position of the green laser line within a maximum range of 200 feet when the laser is hard to see. It can not locate the red laser line, so do not use the tool to detect it.

Description

Fig.10



1. Receiving window
2. LCD
3. Power button
4. Coarse/Fine detection button
5. buzzer button
6. Lineation slot
7. Mounting hole (1/4")
8. Battery compartment
9. Distance indicator

1. Receiving window: receive the laser signals
2. LCD: indicate the detection result and the position of the laser line. There are two LCD on the front and back of the detector for conveniently viewing; they have the same displaying when detecting the laser.

3. Power button: turn on/off the detector.
4. Coarse/Fine detection button: coarsely detect laser position or accurately detect laser position.
5. Buzzer button: Turn on/off buzzer.
6. Lineation slot: for marking target line
7. Mounting hole (1/4"): for installation on the mounting base or on a tripod (sold separately).
8. Battery compartment: for battery installation.
9. Distance indicator: it shows the lineation slot is 2 inches to the top of the detector.

To install battery for the detector

Fig. 11



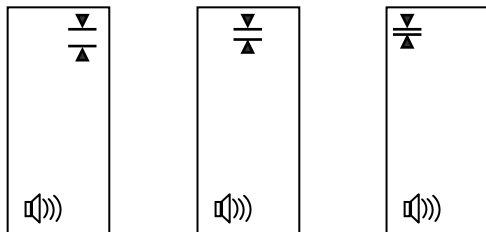
1. Open the battery compartment cover.
2. Install one "6LR61" 9V battery, be sure the polarity (+/-) is correct!
3. Close the battery compartment cover in place.

Locating the green laser line with this detector

NOTE: Always keep the instrument stable and level when detecting.

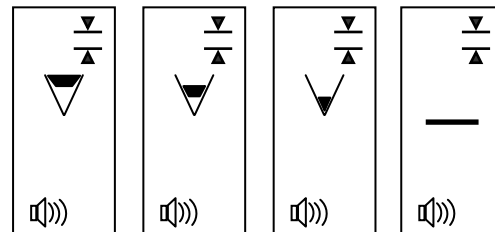
1. Press the power button to turn the unit on. The LCD display will illuminate detection indicator and sound indicator as shown in Fig.12 (a), and it is ready for use.

Fig. 12



(a) Coarse (b) Medium (c) Fine

Fig. 13



(a) (b) (c) (d)

2. Move the detector vertically up and down, if the laser is in the detection area, the detection indicator will appear on the LCD (as figure 13 (a) (b) (c) shown) and the buzzer will sound discontinuously, it tells you the direction you should move and how close the laser line is to the lineation slot. The downward arrow shows the

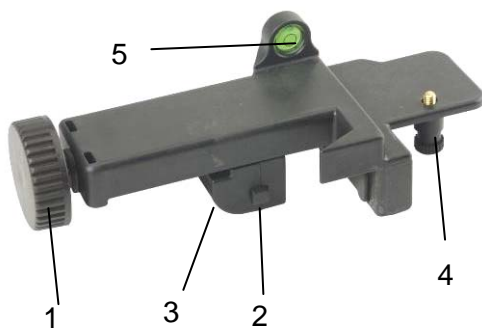
laser line is under the lineation slot, you should move downwards to close and match the laser line. The upward arrow tells you to move the tool upwards.

3. If the laser line is detected aligned with the lineation slot, a black line will appear on the center of the LCD and the buzzer will sound continuously. It tells you the position of the laser line is.
4. To accurately locate the position of the laser line, you can push the Coarse/Fine detection button to choose a fine detection mode, as figure 12(b) and 12(c) shown, more narrow of the two lines means more accurate of the detection. Repeat step 2 and 3 to locate the laser line.
5. When the laser line is located, you can mark this position with pencil through either side of the lineation slot.

Detector mounting base

Description

Fig.14



1. Tightening knob: used for fixing the detector to vertical pillar tightly.
2. Release button: it locates on the both sides of the quick clamp; push the buttons to slide the quick clamp.
3. Quick clamp: slide it to quickly clamp or unclamp
4. 1/4" Mounting thread screw: Used for fixing detector.
5. Round vial: indicate if the base is vertical and level.

Using the detector mount base

Use the special detector mount base; you can easily fix the detector on a vertical pillar for convenient use.

1. Inert the 1/4" mounting thread screw (4) into the 1/4" mounting hole at the back of the detector, tighten the screw to fix the detector securely as Fig.15.
2. Press the two release buttons at the same time to slide the quick clamp and fix on the vertical pillar as Fig.16.
3. Turn the tightening screw clockwise to keep the clamp securely fixed with the pillar.

4. To get accurate detection, make sure the bubble of the round vial in the middle of the circle mark.

⚠ CAUTION! Whenever use the mount base to secure the detector on a vertical pillar, **BE SURE** the detector is connected tightly and the base is clamped firmly.

Fig. 15



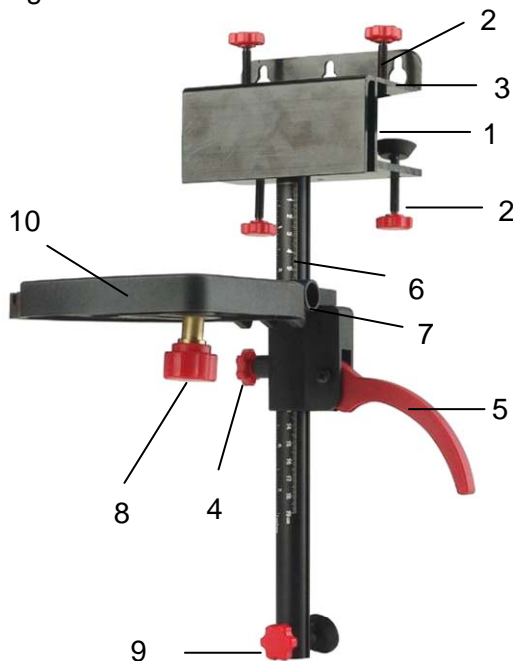
Fig. 16



Wall mount base for the green rotary laser level

Description

Fig.17



1. Trough - Used for attaching the mount base to beams on wall.
2. Lock screw - Used for fixing the mount base to beams on wall.
3. Mounting hole - Used for hanging the base from a nail or screw on a wall
4. Secure screw - Used for fixing the platform securely.
5. Handle – Quick release or clamp of the platform.
6. Inch/Centimeter scale
7. Platform pivots – Used for easy storage of wall mount.
8. 5/8" mounting thread screw – Used for fixing rotary laser on the base
9. Balance screw – Used for adjusting the balance of the base.
10. Platform – Used for support of the rotary laser.

Using the wall mount base

The wall mount base can be hung from nails or screws on a wall or clamped on a beam. By using the wall mount base, you can easily adjust the height and direction of the laser to your reference object.

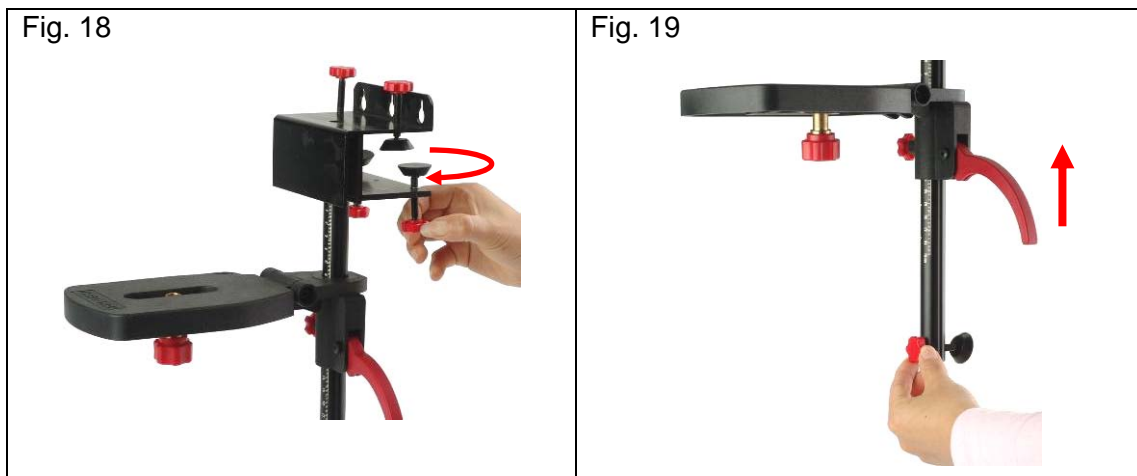
- **Hang from nails or screws:**

The base has three mounting holes for safety hanging. To ensure firmly hanging, always use three screws or nails and make sure these screws or nails have been firmly pinned up in the wall.

- **Clamp on a level beam**

The base can only be attached on “—” level beam, do not try to attach on a vertical beam.

1. Turn the four lock screws (2) counterclockwise, as fig.18 shown; attach the wall mount base to a level beam, make sure the beam is fixed in the full inner position of the trough (1)
2. Turn the four lock screws clockwise to secure the clamp. The four rubber blocks can protect the beam from clamping damage.
3. Adjust the balance screw (9) to make the rubber support against the wall, ensure the platform is approximately level, as fig.19 shown.



- **Mount the rotary laser on the wall mount base**

1. Align the 5/8” screw of the platform with the screw hole of the tool in the bottom base or side base.
2. Adjust the direction of the tool to your reference object.
3. Turn the screw clockwise to secure the tool on the base as fig.20 shown.

⚠ CAUTION! Whenever use the wall mount base to secure the green rotary laser on the beam, **BE SURE** to place the tool on the base carefully, securing it with your hands at all time, once you are sure the tool is fixed firmly on the base with the screw and the base is fastened on the beam, you can remove your hands safely.

- **Adjust the laser height**

1. Support the base of the platform with one hand to hold the tool
2. Pull the handle upwards to loose it as fig.19 shown.
3. Adjust the height of the platform to your desired position; the adjustable platform height is up to 7 1/2”.
4. Pull the handle downwards to lock the platform. To fix the platform firmly, you can tighten the secure screw clockwise as fig.21 shown.

Fig.20



Fig.21



APPLICATIONS

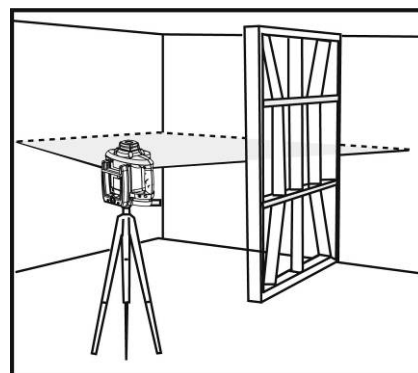
Using the green rotary laser level

This level can be easily used in several ways. It can be hand-held for point marking and simple alignment, placed on a level surface, mounted on the wall mount base or on a tripod (sold separately) to project a pulsing dot “chalk line” as a horizontal level line or vertical plumb line. Be sure re-leveling (re-calibrating) the rotary laser level every time you change its position.

Working with obstructions and user interference

Figure 22 illustrates the nature of the laser “line” projected from the rotary laser level. It is actually a “dot” of laser light that is projected as a pulse. This is important because obstructions and user interference that takes place in front of the device **WILL**

Fig. 22



NOT affect the laser line projected on either side of the user or obstruction.

Referencing and Leveling across multiple adjacent surfaces

The rotary laser level's 'dot of light' is also useful when working with two or more adjacent surfaces.

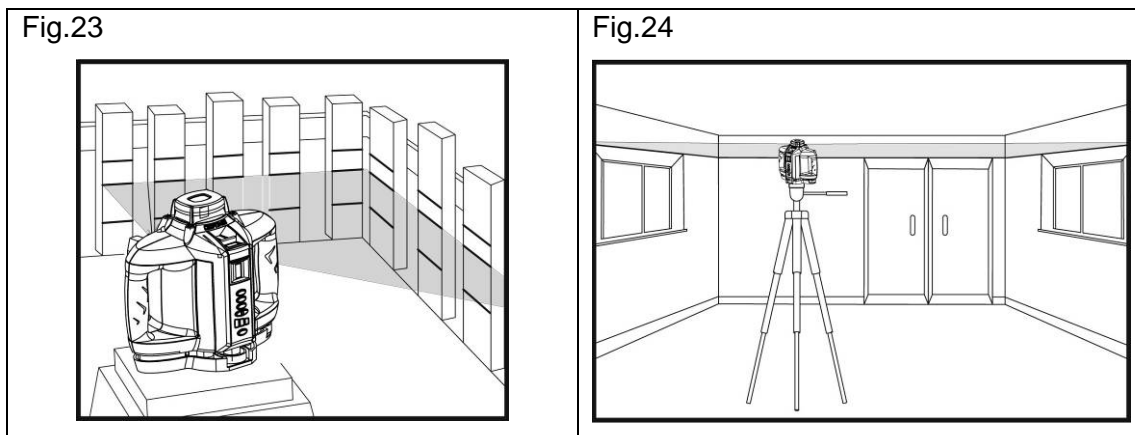


Fig.23 illustrates its use in aligning electrical outlet positions on stud work with two adjoining walls.

Fig.24 illustrates pictures being aligned on multiple room walls.

MAINTENANCE

This green rotary laser level has been designed to be a low-maintenance tool.

However, in order to maintain its performance, you must **ALWAYS** follow these simple directions.

1. **ALWAYS** handle the tool with care. Treat it as the fine optical device it is, and as you would treat a camera or binoculars.
2. **AVOID** exposing the tool to shock, continuous vibration or extreme hot or cold temperature.
3. **ALWAYS** store the tool indoors. When not in use, **ALWAYS** store the tool in its protective case.
4. After you have finished using the tool, **ALWAYS** make sure that the tool has been turned off.
5. **ALWAYS** keep the tool free of dust and liquids. If needed, **ONLY** use a soft cloth or cotton swab and glass cleaner to clean the laser emitting window.
6. **ALWAYS** clean and thoroughly dry the tool after each use.
7. Check the batteries regularly to avoid deterioration. **ALWAYS** remove the batteries from the tool, if it is not going to be used for an extended period of time.

8. **ALWAYS** replace the batteries when the power bar indicator goes out.
9. **DO NOT** disassemble this green rotary laser level. This will not only void the warranty, but could expose the user to hazardous radiation exposure.
10. **DO NOT** attempt to change any part of the laser lens.
11. Tool service **MUST BE** performed only by a Sears Parts and Repair Center. Service or maintenance performed by unqualified personnel could result a risk of injury.

TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Laser dot/line projected is weak, hard to see	<ol style="list-style-type: none"> 1. Low voltage of the batteries 2. The tool is out of the operating temperature range. 3. The tool is too far from the target. 4. Working condition is too bright. 	<ol style="list-style-type: none"> 1. Replace with new batteries 2. Make sure the tool operating temperature is within 32°F to 104°F 3. Get the tool closer to the target. 4. Use laser enhancing glasses and green laser detector to locate the laser position.
Laser dot/line is not projected	<ol style="list-style-type: none"> 1. The tool is not turned on 2. The tool has automatically entered into “sleeping mode” with a long time of no operation with it. 3. The tool has automatically shut off with a long time of no operation with it. 4. The tool is out of the operating temperature range. 	<ol style="list-style-type: none"> 1. Check to be sure the tool is turned on. 2. Press any of the buttons to active the tool except power button. 3. Press the power button of the tool to turn it on again. 4. Make sure the tool operating temperature is within 32°F to 104°F
The tool can not be calibrated to level	The surface where the tool is placed is very uneven	Place the tool on a approximate horizontal surface.
Laser dot/line projected is not level	<ol style="list-style-type: none"> 1. The X and Y bubbles are not in the centre of vials 2. The Z bubble is not in the centre of vial 3. The rotary laser level is moved to a new position 	<ol style="list-style-type: none"> 1. Adjust the “X” and”Y” wheels to make sure the X and Y bubbles are in the centre of vials. 2. Adjust the “Y” wheels to make sure the Z bubble is in the centre of the vial. 3. Adjust the “X” and “Y” wheels to re-level the tool.

<p>Detector can not find the laser</p>	<ol style="list-style-type: none"> 1. It detects a red laser line 2. The detector is out of its working range 3. Low voltage of the battery 	<ol style="list-style-type: none"> 1. This detector can only detect green laser. 2. Make sure the distance between tool and detector does not exceed 200 feet. 3. Change with a new battery
<p>The remote control can not operate the tool</p>	<ol style="list-style-type: none"> 1. The tool is shut off wholly 2. Low voltage of the battery 3. The remote control is out of its working range 	<ol style="list-style-type: none"> 1. Press the power button on the tool first, and then use the remote control to operate it. 2. Change with a new battery 3. Make sure the distance between tool and remote control does not exceed 100 feet.
<p>AC/DC adapter can not provide electricity for the rotary laser</p>	<ol style="list-style-type: none"> 1. Weak connection of the plugs 2. The mains supply is power cut 	<ol style="list-style-type: none"> 1. Make sure the AC/DC adapter is connected well with the tool and the socket of mains supply. 2. Operate the tool with batteries.