



**Manual-Leveling Rotary Laser**  
**Model Nos. 40-6502 and 40-6512**



# Instruction Manual

*Congratulations on your choice of this Manual-Leveling Rotary Laser. We suggest you read this instruction manual thoroughly before using the instrument. Save this instruction manual for future use.*

This is a Class IIIa laser tool and is manufactured to comply with CFR 21, parts 1040.10 and 1040.11 as well as international safety rule IEC 285.

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## 1. Kit Contents

### *For Model No. 40-6502*

<b>Description</b>	<b>Qty.</b>
Manual-Leveling Rotary Laser	1
“AA” Alkaline Batteries	4
Tinted Glasses	1
Instruction Manual with Warranty Card	1
Soft-sided Carrying Case	1

### *For Model No. 40-6512*

<b>Description</b>	<b>Qty.</b>
Manual-Leveling Rotary Laser	1
“AA” Alkaline Batteries	4
Wall/Ceiling Mount	1
8’ Grade Rod	1
Detector with 2 “AAA” Batteries and Clamp	1
Tinted Glasses	1
Magnetic Target	1
Elevating Tripod	1
Instruction Manual with Warranty Card	1
Hard-Shell Carrying Case	1

## 2. Features and Functions

- Emits a horizontal laser plane.
- Emits a vertical laser plane with simultaneous 90° split beam.
- Large and small scan modes achieve a chalk line.
- Scan line can be moved clockwise or counter-clockwise.
- Variable rotation speed.
- Rugged Housing.

## 3. Safety Instructions

Please read and understand all of the following instructions, prior to using this tool. Failure to do so, may void the warranty.

### **DANGER!**

Class IIIa Laser Product  
Max. Power Output:  $\leq 5\text{mW}$   
Wavelength: 625-645nm

**THIS TOOL EMITS LASER RADIATION.  
DO NOT STARE INTO BEAM.  
AVOID DIRECT EYE EXPOSURE.**



**ATTENTION****IMPORTANT**

- Read all instructions prior to operating this laser tool. Do not remove any labels from tool.
- Do not stare directly at the laser beam.
- Do not project the laser beam directly into the eyes of others.
- Do not set up laser tool at eye level or operate the tool near a reflective surface as the laser beam could be projected into your eyes or into the eyes of others.
- Do not place the laser tool in a manner that may cause someone to unintentionally look into the laser beam. Serious eye injury may result.
- Do not operate the tool in explosive environments, i.e. in the presence of gases or flammable liquids.
- Keep the laser tool out of the reach of children and other untrained persons.
- Do not attempt to view the laser beam through optical tools such as telescopes as serious eye injury may result.
- Always turn the laser tool off when not in use or left unattended for a period of time.
- Remove the batteries when storing the tool for an extended time (more than 3 months) to avoid damage to the tool should the batteries deteriorate.
- Do not attempt to repair or disassemble the laser tool. If unqualified persons attempt to repair this tool, warranty will be void.
- Use only original Johnson® parts and accessories purchased from your Johnson® authorized dealer. Use of non-Johnson® parts and accessories will void warranty.



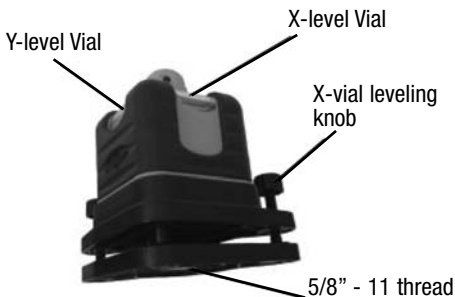
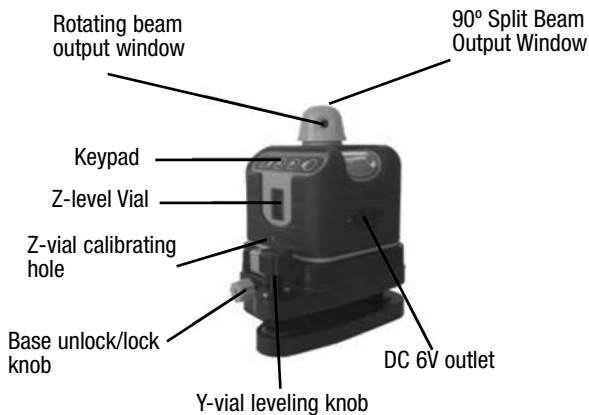
## 4. Location/Content of Warning Labels



Mfg. for Johnson Level & Tool Mfg. Co., Inc.  
 6333 W. Donges Bay Rd., Mequon, WI 53092  
 Manufactured in China by JLT05  
 Date (m/y): \_\_\_\_\_



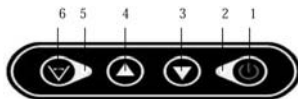
## 5. Location of Part/Components



## 6. Operating Instructions

**IMPORTANT:** It is the responsibility of the user to verify the calibration of the instrument before each use.

1. Power ON/OFF
2. Power LED
3. Decrease rotation speed/rotate scan clockwise
4. Increase rotation speed/rotate scan counterclockwise
5. Scan and rotate mode LED
6. Scan mode key

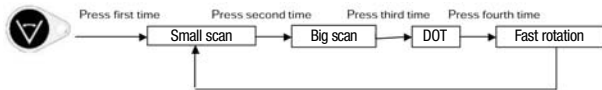


1. **Power ON/OFF:** Press this key to turn on or turn off the laser.



- ON rotary laser is on, power LED (2) is on (when battery is low the power LED will blink)
- OFF laser and power LED (2) is off

2. **Scan mode key:** Press this key to change the scan size



**Fast Rotation:** When the laser is turned on, the laser is in its fastest rotation speed (scan & rotate mode LED (5) is on), laser is rotating.

**Small scan:** Laser is in small scan (scan & rotate mode LED (5) blinks).

**Big scan:** Laser is in big scan (scan & rotate mode LED (5) blinks).





**DOT:** Laser stops rotating and projects a DOT (scan & rotate mode LED (5) blinks).

### 3. UP and Down Keys:





#### In the rotation mode:

Press  rotation speed increases (Note: when turning the power on, the laser is in its highest rotation speed)

Press  rotation speed decreases

#### In the scan mode:

Press  scan moves in counterclockwise direction

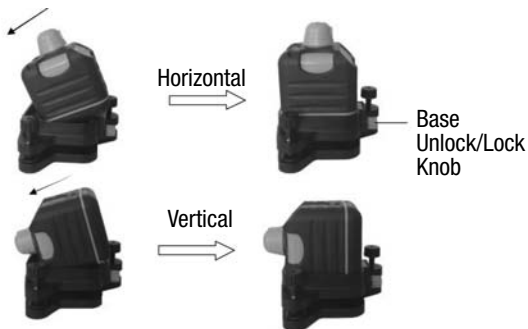
Press  scan moves in clockwise direction





## 7. Using the Product

### Connecting the Laser to its Base



Position the two slots on the laser into the base, tighten the locking knob to secure the base to the laser. The laser can now be secured to a tripod.

### Battery Installation

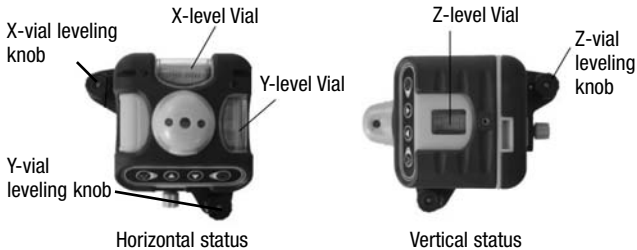
1. Disconnect the laser from the base as shown in the figure on the next page (rotate the base unlock/lock knob counterclockwise to unlock the laser from the base).
2. Remove battery cover (rotate the battery compartment knob counterclockwise to the open position).
3. Put in 4 "AA" alkaline batteries following the polarity specified in the battery compartment.



- Put the battery cover back into place (rotate the battery compartment knob to the lock position).



**Level Vial Adjustment:** To adjust the laser to center the vial.



### Horizontal Usage

- Put 4 “AA” alkaline batteries in the unit.
- As shown above, place the laser on a flat surface or 5/8” - 11 tripod
- Adjust the vial leveling knobs to center the bubble inside the X-vial and Y-vial.
- Turn on the laser.
- After finishing work, turn off the laser.





## Vertical Usage

1. Put 4 “AA” alkaline batteries in the unit.
2. As shown in figure on previous page, place the laser on a flat surface or 5/8” - 11 tripod
3. Adjust the vial leveling knobs to center the bubble inside the Z-vial.
4. Turn on the laser.
5. After finishing work, turn off the laser.

## Detector Usage (included in Model No. 40-6512)

### 1. Technical Specifications

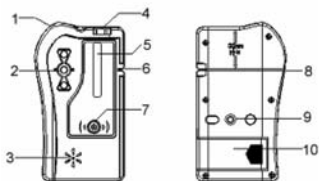
Detecting accuracy	$\pm 1.5\text{mm}$ (<50m) $\pm 2.5\text{mm}$ (>50m)
Turn-off timer	6 min $\pm 1$ min
Power	2 “AAA” Batteries
Battery life	45 hours of continuous use
Sound function	Short sound and solid sound
LED indication	Upper red, middle orange, middle green, down red
Size	4.645” x 2.637” x 0.984” (118mm x 67mm x 25mm)
Weight	0.253 lbs. (115g)





## 2. Components

### (a) Structure



1. Holding Cord
2. Signal Indicator
3. Horn
4. Horizontal Vial
5. Detecting Window
6. Reference Front Marker
7. Power Key
8. Back Reference Marker
9. Connection Port
10. Battery Door

### (b) Display



When first turning the detector on, the middle signal indicator turns red first and then turns green. If the horn gives two short sounds and the unit powers off automatically, it means that the battery voltage is seriously low and it is necessary to replace the battery immediately. When turning the power on and the down signal indicator flashes, it means that the battery is low and it is necessary to replace the battery.



Power Key: Turn on/off the instrument

## 3. Battery Installation

1. Open the battery cover and put the batteries into the battery case according to the polarity shown in the battery slot.
2. Snap the battery cover back.










**Note:** Take the batteries out when the unit is not in use for a long time.

#### 4. Detecting Methods

1. This unit can detect a red rotating laser beam.
2. Press the Power Key once, the middle signal indicator will quickly turn red first and then turns green. It will beep once to indicate that the instrument is ON.

While detecting, the signal indicators show as follows:

The lower red LED is on	The upper red LED is on	The middle LED is orange	The middle LED is green	All LEDs are off
Laser Line  The laser beam is up	Laser Line  The laser beam is down	Laser Line  The laser beam is close to center	Laser Line  The laser beam is exactly to center	 No laser beam is detected
<b>Sound:</b> Single short sound	<b>Sound:</b> Single short sound	<b>Sound:</b> Single short sound	<b>Sound:</b> Solid sound	<b>Sound:</b> No Sound

**Note:**

1. While detecting a horizontal laser beam, it is necessary to have the horizontal bubble vial centered, as the tilt of the detector will influence its receiving accuracy.

Horizontal Vial



2. Keep the detecting window facing the rotating laser.
3. Keep the detector still while detecting the laser beam
4. When the laser beam is centered, mark at the front reference marker.

5. When the detector does not receive a laser signal for 6 minutes, and there are no buttons pushed during these 6 minutes, the middle signal indicator will turn green first and then turn red. The horn will give two short sounds and the unit will power off automatically.



### ***5. Accessories Usage***

- Connecting to the grade rod bracket



- Connecting to the grade rod

The top of the bracket should be level with the back reference marker line



## **6. Maintenance**

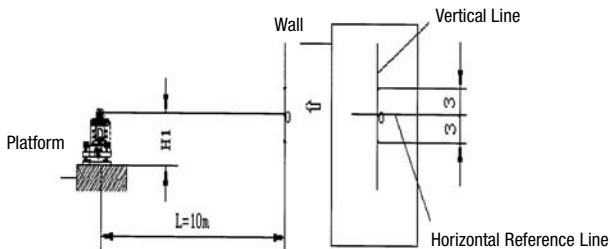
- When you are done using the detector, return it to its case.
- Keep the detector, particularly the detecting window, clean. If unit becomes dusty, use a clean cloth to gently wipe it clean.
- Avoid knocking the unit over or allowing it to fall on the ground.
- Although the detector is rain resistant, you should avoid submerging the unit in water or other liquids. If unit comes into contact with water or other liquids, wipe it dry immediately.
- Do not use unit around fire or expose it to fire in any way.



## 8. Self-Check & Fine Calibration

**IMPORTANT:** It is the responsibility of the user to verify the calibration of the instrument before each use.

### Checking for Accuracy:



1. Start by placing the laser 1' away from a wall (near wall), and at least 20' from a wall (far wall).
2. Align the laser so that one axis (vial) points to both walls.
3. Turn the laser on and adjust the thumbscrews until the unit is level in both the X and Y axis.
4. Make a mark where the laser hits the near wall (wall #1), and then the same for the far wall (wall #2).
5. Next, move the laser to 1' next to the far wall, and ensure it is in the same axis.
6. Level the laser, and then adjust the height so that the laser is level and hits the mark you made on the far wall (wall #2). You may need to re-level to achieve this.



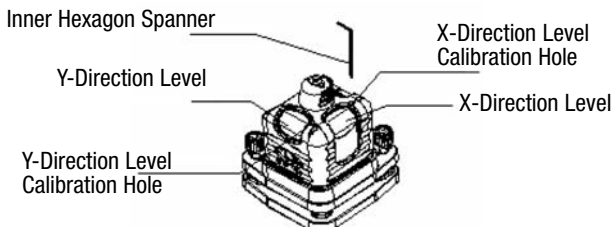


7. Then walk over to the original near wall (wall #1) and measure the difference between the original mark and the laser line. If the value is more than 1/4" at 100', then calibration is required.
8. Ensure accuracy is verified for both the X and Y axis.

**Note:** X and Y axis are determined by the end user, either vial can be considered X/Y.

### Adjusting Accuracy:

1. Measure the difference between the original near wall mark (wall #1) and where the laser is hitting the near wall.
2. Walk back to the far wall (wall #2) and adjust the laser so that it is halfway between the two near wall marks (pencil mark and laser mark).
3. Next, remove the screw cap for the vial for the axis you are working with, and using a 2.5mm hex tool, adjust the vial so that it appears level.





## 9. Technical Specifications

Laser Wavelength	635nm±10nm
Laser Classification	Class IIIa
Maximum Power Output	≤5mW
Accuracy	±1/4"/100 ft. (±2mm/10m)
Interior Range	Up to 200 ft. (60m) diameter depending upon light conditions
Exterior Range	Up to 800 ft. (240m) diameter with detector
Power Supply	4 "AA" alkaline batteries
Battery Life	Approx. battery life 15 hours continuous use
Dimensions	5.118" x 5.118" x 6.141" (130 x 130 x 156mm)
Weight	1.653 lbs. (0.75Kg)
Working Temperature	14°F to 113°F (-10°C to +45°C)
Center Screw Thread	5/8" – 11
Rotation speeds	150-300 rpm
Scanning mode	Large, Small, Dot
IP Protection Class	54





## 10. Application Demonstrations



Ceiling installation



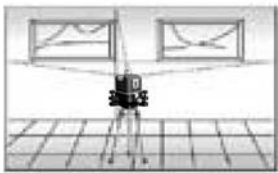
Anti-static flooring installation



Window installation



Baseboard installation



Hanging pictures



Dormer installation





## 11. Care and Handling

- This laser unit is a precision tool that must be handled with care.
- Avoid exposing unit to shock vibrations and extreme temperatures.
- Before moving or transporting the unit, make sure that the unit is turned off.
- Remove the batteries when storing the unit for an extended time (more than three months) to avoid damage to the unit should the batteries deteriorate.
- Always store the unit in its case when not in use.
- Avoid getting the unit wet.
- Keep the laser unit dry and clean, especially the laser output window.  
Remove any moisture or dirt with a soft, dry cloth.
- Do not use harsh chemicals, strong detergents or cleaning solvents to clean the laser unit.

## 12. Product Warranty

Johnson Level & Tool offers a three year limited warranty on each of its products. You can obtain a copy of the limited warranty for a Johnson Level & Tool product by contacting Johnson Level & Tool's Customer Service Department, as provided below, or by visiting our web site at [www.johnsonlevel.com](http://www.johnsonlevel.com). The limited warranty for each product contains various limitations and exclusions.

Do not return this product to the store/retailer or place of purchase.

Non-warranty repairs and course calibration must be done by an authorized Johnson® service center or Johnson Level & Tool's limited warranty, if applicable, will be void and there will be NO WARRANTY. Contact one of our service centers for all non-warranty repairs. A list of service centers can be found on our web site at [www.johnsonlevel.com](http://www.johnsonlevel.com) or by calling our Customer Service Department. Contact our Customer Service Department for Return Material Authorization (RMA) for warranty repairs (manufacturing defects only). Proof of purchase is required.





**NOTE:** The user is responsible for the proper use and care of the product. It is the responsibility of the user to verify the calibration of the instrument before each use.

For further assistance, or if you experience problems with this product that are not addressed in this instruction manual, please contact our Customer Service Dept.

In the U.S., contact Johnson Level & Tool's Customer Service Department at 888-9-LEVELS.

In Canada, contact Johnson Level & Tool's Customer Service Department at 800-346-6682.

### 13. Warranty Registration

Enclosed with this instruction manual you will find a warranty registration card to be completed for your product. You will need to locate the serial number for your product that is located on the bottom of the unit. **PLEASE NOTE THAT IN ADDITION TO ANY OTHER LIMITATIONS OR CONDITIONS OF JOHNSON LEVEL & TOOL'S LIMITED WARRANTY, JOHNSON LEVEL & TOOL MUST HAVE RECEIVED YOUR PROPERLY COMPLETED WARRANTY CARD AND PROOF OF PURCHASE WITHIN 30 DAYS OF YOUR PURCHASE OF THE PRODUCT OR ANY LIMITED WARRANTY THAT MAY APPLY SHALL NOT APPLY AND THERE SHALL BE NO WARRANTY.**





## 14. Accessories

Johnson® accessories are available for purchase through authorized Johnson® dealers. Use of non-Johnson® accessories will void any applicable limited warranty and there will be **NO WARRANTY**. If you need any assistance in locating any accessories, please contact our Customer Service Department.

In the U.S., contact Johnson Level & Tool's Customer Service Department at 888-9-LEVELS.

In Canada, contact Johnson Level & Tool's Customer Service Department at 800-346-6682.

