



**Electronic Self-Leveling Horizontal  
Rotary Laser Level  
Model No. 40-6537**



# Instruction Manual

*Congratulations on your choice of this Electronic Self-Leveling Horizontal Rotary Laser Level. 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

### **Description Model No. 40-6537**

	<b>Qty.</b>
Electronic Self-Leveling Horizontal Rotary Laser Level	1
Ni-MH Rechargeable Battery Pack	1
6V Battery Adapter	1
Remote Control with 9V Battery	1
Detector with 9V Battery and Quick Clamp	1
6 "AA" Battery Holder	1
Instruction Manual with Warranty Card	1
Hardshell Carrying Case	1

## 2. Features and Functions

- Large  $\pm 5^\circ$  electronic auto-level range. When beyond the leveling range, the laser line will flash, rotation of the beam will stop, and an audible alarm will activate.
- Electronic beam shield to turn the laser beam off from one to three quadrants for multiple laser usage.
- Vibrate mode ignores slight movements as in windy conditions.
- Slope operation function allows user to perform slope at different inclinations in both x and y axis.
- Height of Instrument (H.I.) alarm function ensures product accuracy.
- Projects a laser horizontal plane.
- Dust and rain resistant.
- Remote power off function.
- Included detector and remote control for more convenient operation.

### 3. Safety Instructions

Please read and understand all of the following instructions, prior to using this tool. Failure to do so, may result in bodily injury.

#### **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 AccuLine Pro<sup>®</sup> parts and accessories purchased from your AccuLine Pro<sup>®</sup> authorized dealer. Use of non-AccuLine Pro<sup>®</sup> parts and accessories will void warranty.

## 4. Location/Content of Warning Labels



**DANGER**

**LASER RADIATION  
AVOID DIRECT EYE  
EXPOSURE.**

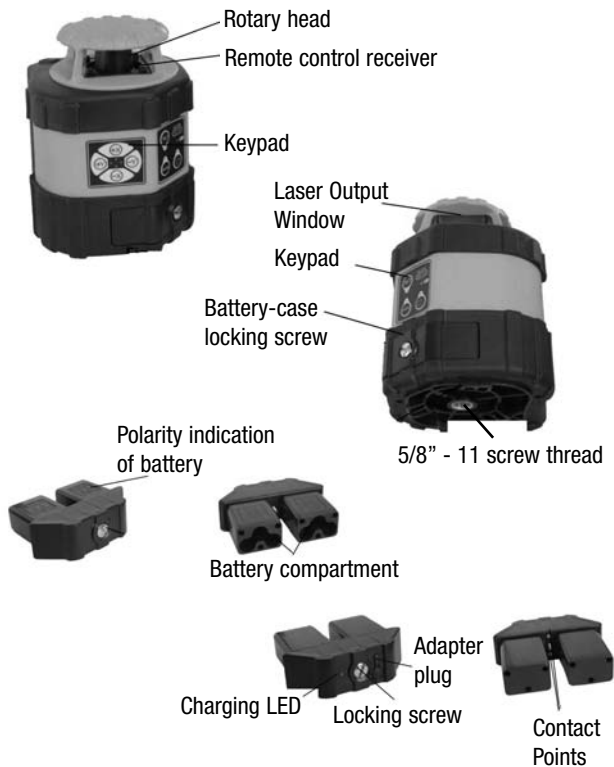
**MAXIMUM OUTPUT POWER**  
≤ 5mW @ 625-645nm

**CLASS IIIa LASER PRODUCT.  
THIS PRODUCT COMPLIES WITH  
THE APPLICABLE REQUIRE-  
MENTS OF 21 CFR PARTS  
1040.10 & 1040.11**

**Mfr. for Johnson Level & Tool Mfg. Co., Inc.**  
4533 W. Chicago Bay Rd. Mequon, WI 53092  
Manufactured in China by JLTOS  
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.

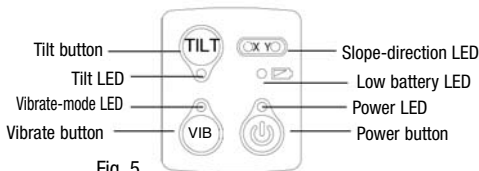


Fig. 5

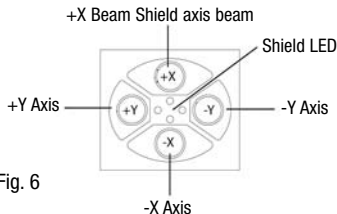


Fig. 6

### Power LED:

LED light on = power-on; LED light off = power-off

### Low Battery LED:

LED light on = low battery voltage; LED light off = normal battery voltage

### Vibrate-mode LED:

LED light on = vibrate-mode on; LED light off = vibrate-mode off

### Slope LED on X/Y Axis:

LED light on = slope-mode in X or Y axis (need to actuate w/remote control)  
Flashing LED means self-calibration on X/Y direction mode on (see Self-Calibration section)




**Tilt LED:**

LED light on = Tilt mode on; LED light off = Tilt mode off;  
Flashing LED light = Tilt in warning mode



**Beam Shield LED:**

LED light on = shielding the laser beam in this axis




**Power on/off:**

Press  button, the lasers power is on, and the power LED  light goes on. When the power is turned on, the laser is in the electronic self-leveling mode with an 800rpm rotate speed and there is no beam shield area for approximately 90 seconds. The laser will automatically enter into the “TILT” mode and the LED  light goes on.

**Tilt mode:**

Press  button, the LED  light will go on and the unit will be in the TILT mode. If the unit is moved or bumped while in operation, the laser will stop rotating and the laser beam and TILT LED will both flash. Pressing the TILT button again will turn the TILT mode off and the laser will electronically self-level itself and begin rotation.  
Note: The TILT function does not operate in the slope mode.

**Vibrate mode:**

Press  button, the LED  will light, which means laser is in vibrate mode. Vibrate mode allows continuous operation during high winds, vibrations and shocks. Slight movements are ignored and the laser self-levels only if significant movement occurs.  
Press  button again, to turn vibrate off.

### Beam shield mode:

Press the Beam Shield button of the axis you wish to shield the beam from. The corresponding LED light will turn on and this direction is shielded. From one to three quadrants can be shielded simultaneously.

### Remote control mode:

This laser can be operated with the remote control included. The keypad of the remote control is shown in figure 7. The functions of SLOPE, TILT, SHIELD, SLEEP, and SELF-CALIBRATION can all be operated by remote control.

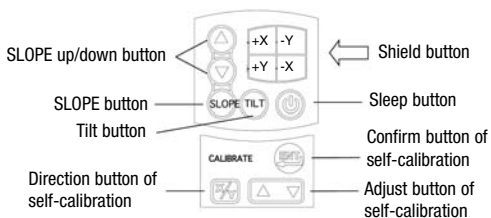


Fig. 7

### Slope mode:

The slope function can only be operated using the remote control. The keypad of remote control is shown as follows.

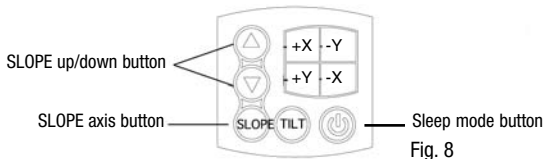









Fig. 8



Press the SLOPE button to enter the SLOPE function. The SLOPE on X-axis is set as the default. SLOPE LED light on in X-axis.  Press   button to adjust the slope angle on X-axis. Press the SLOPE button again to change the SLOPE to the Y-axis. SLOPE LED light on in Y-axis.  Press   key to adjust the slope angle on Y-axis. If the SLOPE angle is beyond its range, the laser will stop rotating and alarm horn will sound. When it is in SLOPE mode, the laser will exit TILT mode automatically.

### **Sleep mode:**

Press the sleep button  on the remote control to turn on/off the sleep mode. The laser will not self-level and the laser beam will shut off. The power LED light will stay on and all other LED lights will turn off. All the buttons on the laser key pad will not operate except the power button. All the buttons on remote control will not operate except the sleep button. The laser will turn off after 30 min sleep. When turning off the sleep mode, the laser will return to the mode it was previously in.

### **Alarming mode when beyond self-leveling range:**

When the laser is tilted beyond its self-leveling range, it will stop rotating and laser beam will blink and the alarm will sound.

## 7. Using the Product

### ***Alkaline Battery Installation***

Loosen the locking screw, put 6 “AA” alkaline batteries into the battery case according to the polarity indication shown on the battery case. Then put the battery case into the instrument and tighten the locking screw.



### ***Rechargeable Battery Case***

Put rechargeable battery case into laser then tighten locking screw.



### ***Adapter***

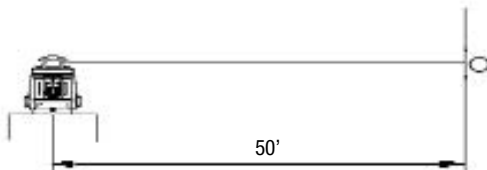
Connect the laser to the adapter through the outlet socket on the battery cover. The LED displays red during charging and turns green when finished charging.



## 8. Self-Check and Calibration

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

### Accuracy Check





1. Put the laser on a tripod 50' away from the wall. Put the laser on the tripod with X+ axis towards wall.
2. Power on and after self-leveling, using the detector, make a mark "A" on the wall where the detector indicates on grade with the laser beam.
3. Turning the instrument 90°, Y+, X-, Y-, after the laser self-levels, mark "B" for Y+, "C" for X- and "D" for Y- on the front wall. Make sure points B, C, D are in the same vertical line as point A.
4. Measure the vertical distance between the highest and lowest points between A, B, C, D and mark that "h".
5. If "h" is less than 1/32", the accuracy is good. If it is more than 1/32", the accuracy is beyond its tolerance and the laser needs to be recalibrated.




## Re-calibration

Referencing the results of the self-check and using the “h” mark (the mid-point between the highest and the lowest point among A, B, C, D).




### 1. Enter self-calibration mode

- a. Power off the instrument and face the X-axis towards the wall.
- b. Press  button and  button simultaneously. Then release the power button while still pressing the vibrate button. Release the vibrate button after all LED flashes three times. The laser will enter self-calibration mode and continuously rotates.


### 2. X-axis calibration

- a. Opening the cover on the remote control, press the  button, the X LED light on the laser keypad  flashes which means the laser has entered the self-calibration mode for X-direction.
- b. Press  button to make the laser beam move up and down until it coincides with the “h” mark.

### 3. Y-axis calibration

- a. Turn the instrument by 90° in self-calibration mode and make Y-axis facing the wall.
- b. Press  button, the Y LED light on the laser keypad  flashes which means the laser enters self-calibration mode for Y-direction.
- c. Press  button to make the laser beam move up and down until it coincides with the “h” mark.

### 4. Self-calibration confirmation

Press  key after finishing re-calibration on both X and Y

axis. The re-calibration LED turns off and the value of the re-calibration will be stored. The laser has now exited re-calibration mode.

**Note:** In order to make the saved calibration effective, you must power off the instrument after calibration, and then power it on again. Y-axis accuracy check is a necessity after the X-axis calibration, and X-axis accuracy check is also a necessity after the Y-axis calibration. Laser re-calibration will not be finished until both X-axis and Y-axis accuracy meet the specifications.

## Detector Usage

### 1. Product Description

A laser detector is an indispensable accessory when using this rotary laser level. The main function of the detector is to locate the position of laser signals transmitted by rotary lasers. This detection quickly and precisely provides the user with the horizontal reference. This product features a high level of sensitivity, a double-faced display, low power consumption, reliability and easy use.

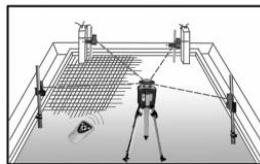
### 2. Technical Specifications

Detecting accuracy	Fine	$\pm 0.039''$ ( $\pm 1\text{mm}$ )
	Coarse	$\pm 0.098''$ ( $+2.5\text{mm}$ ) when range is $< 492$ ft. (150m) $\pm 0.138''$ ( $+3.5\text{mm}$ ) when range is $> 492$ ft. (150m)
Turn-off time		6 minutes $\pm 1$ minute
Power		1 9V battery
Sound indicator		slow short sounds, rapid short sounds and a continuous sound
LED indicator		up, level, down
Dimensions		5.906" x 2.992" x 1.142" (150 x 76 x 29mm)
Weight		0.485 lb. (220g)
Others		Rain and dust resistant

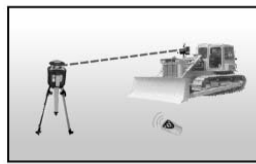
## 9. Technical Specifications

Laser Wavelength	635nm±10nm
Laser Classification	Class IIIa
Maximum Power Output	≤5mW
Accuracy	±1/16"/100 ft. (±1.5mm/30m)
Exterior Range	Up to 2000 ft. (600m) diameter
Remote Range	Up to 100 ft. (30m) diameter with remote
Auto-Leveling Range	±5°
Slope	±5°
Power Supply	Rechargeable battery pack, or 6V adapter (included) or 6 "AA" battery holder (batteries not included).
Battery Life	Approx. 17 hours with rechargeable battery pack, 8 hours with 3 "AA" alkaline batteries and 17 hours with 6 "AA" batteries
Dimensions	5.512" x 5.512" x 7.480" (140 x 140 x 190mm)
Weight	3.968 lbs. (1.8Kg)
Working Temperature	14°F to 113°F (-10°C to 45°C)
Center Screw Thread	5/8" – 11
Rotation Speed	800 rpm
IP Protection Class	66

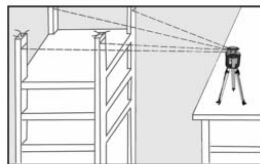
## 10. Application Demonstrations



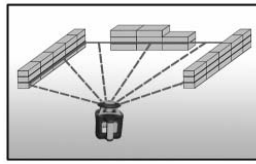
Squaring Leveling



Grading



Elevation



Set Forms

## 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 one year limited warranty on each 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 us online 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. Required repair/calibration must be done by an authorized AccuLine Pro® service center or Johnson Level & Tool's limited warranty, if applicable, will be void and there will be NO WARRANTY. Contact our Customer Service Department to obtain a Return Material Authorization (RMA) number for return to an authorized service center. 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 Department.

In the U.S., contact Johnson Level & Tool's Customer Service Department at 800-563-8553.

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

## 13. Product Registration

Enclosed with this instruction manual you will find a warranty card to be completed for product warranty registration. Product warranty registration can also be completed online at our web site [www.johnsonlevel.com](http://www.johnsonlevel.com). 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 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

AccuLine Pro® accessories are available for purchase through authorized AccuLine Pro dealers. Use of non-AccuLine Pro 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 800-563-8553.

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