



**Electronic Dual-Slope Rotary Laser**  
**Model Nos. 40-6535, 40-6541**



# Instruction Manual

*Thank you for your purchase of this Electronic Dual-Slope Horizontal Rotary Laser. We suggest you read this instruction manual thoroughly before using the instrument, and 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

<b>Description for Model 40-6535</b>	<b>Qty.</b>
Electronic Dual-Slope Rotary Laser	1
NiMH Rechargeable Battery Pack	2
Battery Charger	1
Remote Control with 9V Battery	1
Detector with 9V Battery	1
Instruction Manual	1
Hard-Shell Carrying Case	1

<b>Description for Model 40-6541</b>	<b>Qty.</b>
Electronic Dual-Slope Rotary Laser	1
NiMH Rechargeable Battery Pack	2
Battery Charger	1
Remote Control with 9V Battery	1
Detector with 9V Battery	1
Tripod	1
13' Grade Rod	1
Magnetic Target	1
Tinted Glasses	1
Instruction Manual	1
Hard-Shell Carrying Case	1

## 2. Features and Functions

- $\pm 5^\circ$  electronic auto-level range with out-of-level indicator.
- $\pm 8^\circ$  dual slope range.
- Height of Instrument/TILT alarm function ensures product accuracy.
- 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 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



## 5. Location of Parts/Components



## 6. Operating Instructions

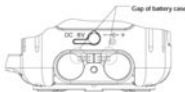
**IMPORTANT:** It is the responsibility of the user to verify the calibration of the instrument before each use.

### Battery Installation

**Note:** Always check to be sure that the on/off switch is in the off position before removing and replacing batteries.

### *NiMH Rechargeable Battery Pack Installation*

1. Unscrew the battery cover bolt and remove the battery cover.
2. Put 2 rechargeable battery packs into the battery case and then insert the plug of the battery pack lead-wire into the socket at the battery case.
3. Screw the battery cover bolt back on.



### *NiMH Rechargeable Battery Charging*

Using the battery charger (included), charge the rechargeable battery pack through the outlet jack. When the charge indicator lamp turns from red to green (after approximately five hours), the NiMH rechargeable battery pack has been fully charged.

#### **Note:**

- (1) For the first two charges of new rechargeable batteries, it is necessary to charge for 12 plus hours.
- (2) The unit can still work during charging with the charger.
- (3) Do not charge alkaline batteries to avoid explosion.
- (4) Used (discharged) batteries are hazardous waste and should be disposed of properly.

## **Before Using the Laser**

When you charge the new battery or one which has not been used for long periods of time, it may not reach full charge until after you have discharged it fully in use and recharge it several times.

## **Instrument Usage**

1. Put in NiMH rechargeable battery pack, or 4 “C” alkaline batteries (not included), or connect to DC power through the outlet jack.
2. Place the instrument on a tripod, connect it to the tripod using the 5/8” screw thread at the bottom of the instrument.

**Note:** If the instrument is inclined beyond the self-leveling range, the instrument will deliver an audible alarm. You will need to re-position the instrument.

3. Press power switch to turn power on. Press buttons on remote control to adjust for slope feature.
4. After finishing operation or before moving the instrument, turn the power off.

## ***Alkaline Battery Installation***

1. Unscrew the battery cover bolt and remove the battery cover.
2. Put in 4 “C” alkaline batteries (not included) according to the illustrated polarity direction.
3. Screw the battery cover bolt and battery cover back on the unit.

## 7. Using the Product

### Operating Panel



Instrument Panel



Remote Control Panel

### Power On/Off

1. Press the power button to power on. The power indicator lamp will light up and then the instrument will automatically level itself, with rotation occurring once the unit is level.
2. Press the power button again to power off.



### Low Battery Indication

If the battery indicator lamp is lit, this means low battery voltage. To ensure normal operation, replace batteries or charge the rechargeable NiMH battery pack.



### Alarm If Beyond Range

If the instrument is inclined beyond the self-leveling range of  $\pm 5^\circ$ , it will deliver an audible alarm, and the power indicator lamp will blink. You will need to re-position the instrument until it is within the leveling range.





## Height of Instrument (Tilt Mode)

1. After powering on the instrument and entering into auto-level status, press the tilt button. When the indicator is on (see figure), the instrument enters into TILT mode. If the leveled instrument is moved or bumped, the head will stop rotation and the TILT indicator light and laser beam will flash instead of the unit performing the auto-level function. Press the tilt button on the panel or remote to quit the tilt mode and enter into auto-level status.
2. Press the tilt button on the laser or remote again to enter the tilt mode.



## Slope Adjusting Function (SLOPE)

This function must be operated by the remote control (see operating panel shown in fig.1).

### 1. Select slope adjusting direction

The first press of X/Y button will illuminate the X indicator light (fig. 2). The second press of X/Y button will illuminate the Y indicator light (fig. 3). The third press of the X/Y button will quit the slope-adjusting function and enter the unit into auto-level status.

### 2. Adjust the slope angle

When in either the x-axis or y-axis, press either of the two up/down arrow keys on remote control (fig.1) to adjust slope angle.

**Note:** A single press of either key activates fine tuning while a continuous pressing activates quick adjustment.



Figure 1



Figure 2



Figure 3

## Adjust the inclination extent of the slope

Pressing the up/down arrow keys on the remote control, will adjust the inclination of the instrument slope. A single press will cause a slight adjustment and a continuous press will cause a quick adjustment.

If laser is taken past its slope range ( $\pm 8^\circ$ ), the laser will deliver an audible alarm and the laser beam will flash and stop rotating.

## Sleep Mode

1. The first press of the POWER button on the remote control (fig.4) will make the instrument enter sleep mode. The power indicator lamp on the panel is lit (fig.5), the laser beam goes out, and the instrument head stops rotation.
2. The second press of the POWER button on the remote control will make the instrument quit sleep mode and enter auto-level status.



Fig. 4



Fig. 5

## Timed Power-off Function

Power instrument on and press the power key on the remote control, the instrument will enter the sleep mode. Under the sleep mode, if there is no operation for 30 minutes, the instrument will power off automatically. Under sleep mode, press the power key on the remote control to make the instrument start.

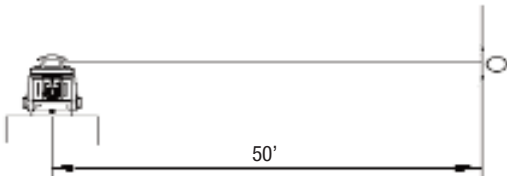
## 8. Accuracy Check

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

The instrument must be checked for accuracy before each operation. If the accuracy is found to be out of tolerance, the laser should be returned to Johnson or an authorized Johnson service center for calibration.

### Accuracy Check

1. Place the laser on a platform or tripod that is 50' away from a wall indoors, with the X-axis direction facing the wall. The X and Y axes are marked on the top of the laser head. Power on the laser.
2. Using the detector, mark the wall where the beam hits the wall as A.
3. Turn the instrument by 180 degrees, mark the beam on the wall as point B.
4. Measure the vertical distance between point A and point B. If A & B are more than 1/32" apart at 50', the unit is out of calibration.
5. Turn the instrument 90° so the Y-axis is facing the wall, and repeat steps 2 - 4 above to check the Y axis.

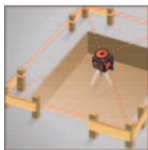


## 9. Technical Specifications

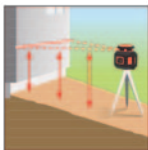
Laser Wavelength	635nm±10nm
Laser Classification	Class IIIa
Maximum Power Output	≤5mW
Accuracy	±1/16"/100 ft.
Range	Up to 200 ft. diameter
Detector Range	Up to 2000 ft. diameter
Remote Range	Up to 200 ft. diameter
Auto-Leveling Range	±5°
Slope	±8°
Power Supply	Rechargeable NiMH battery pack with charger (included) or 4 “C” alkaline batteries (not included)
Battery Life	28 hours (NiMH) 33 hours (alkaline)
Dimensions	7.4" x 5.91" x 8.15"
Weight	5.51 lbs.
Working Temperature	14°F to 113°F
Center Screw Thread	5/8" – 11
Rotation Speed	800 rpm
IP Rating	IP66

## 10. Application Demonstrations

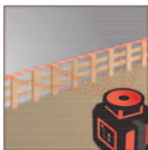
This laser features a high-accuracy dual-slope head, and is well suited to a variety of leveling and grading tasks around your jobsite:



**LEVELING  
FORMWORK**



**JOBSITE GRADING**



**LEVELING PIERS,  
POSTS & FENCES**



**LEVEL DECKS &  
FRAMING**

## 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. Troubleshooting

Symptom	Possible Cause	Solution
Will not turn on	Batteries missing or depleted	Change the batteries  Charge the batteries (if equipped with rechargeable batteries)
	Polarity reversed	Check polarity
Turns off after a short time	Batteries depleted	Change or charge the batteries
	Battery pack required reconditioning (rechargeable batteries only)	Fully discharge batteries by operating tool. Fully charge batteries (12-14 hrs.) Repeat two more times.
	Rechargeable battery pack has exceeded its useful life	Replace rechargeable battery pack.
Beam is difficult to detect with laser detector	Beam reflections or object blocking detector window	Ensure your body is not blocking the receiver window
		Ensure laser is not positioned near windows, trucks, or other reflective panels

Symptom	Possible Cause	Solution
Laser light appears dim	Batteries are weak	Replace or recharge-batteries
	Improper battery type	Ensure high quality alkaline batteries are used
	Speed too high (indoor)	For indoor operation, operate on lowest speed to give the most visible beam
	Ambient temperature too high/low	Ensure temperature is within operating range
Remote control will not function	Batteries depleted	Replace batteries
	Laser powered down more than 30 minutes	Laser must be woken up by manually turning on power from main control panel
	Remote out of operating range	Move closer to the laser
	No line of sight to laser	Position yourself so no objects are between you and the laser

## 13. Product Warranty & Warranty Registration

Johnson Level & Tool offers a three year limited warranty on this product. Warranty details are available at [www.johnsonlevel.com](http://www.johnsonlevel.com). The warranty is limited to repair and/or replacement of the product only. Repairs completed by a non-authorized service center will void your warranty. A list of service centers can be found on our web site.

**NOTE:** The user is responsible for proper use, care, and ensuring the calibration of the instrument before each use.

Customer Service Department (USA): 888-953-8357.

Customer Service Department (CANADA): 800-346-6682.

Please register within 30 days of purchase. Registering ensures we have your information on file for warranty service even if you lose your receipt, and lets us contact you if there is ever a product recall. We will never sell your information and only send you marketing information if you opt-in. To register, go to [www.johnsonlevel.com/register](http://www.johnsonlevel.com/register).

## 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 at:

888-953-8357 (USA)

or

800-346-6682 (Canada)