ACCULINE PRO™
LASER LEVELS

Automatic-Leveling Horizontal Rotary Laser Level
Model No. 40-6535

Instruction Manual

Congratulations on your choice of this Automatic-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.

Table of Contents

1. Kit Contents

Description Model No. 40-6535	Qty.
Automatic-Leveling Horizontal Rotary Laser Level	1
Ni-MH Rechargeable Battery Pack	1
6V Battery Adapter	1
Remote Control with 9V Battery	1
Detector with 3 "AAA" Batteries and Quick Clamp	1
Instruction Manual with Warranty Card	1
Hardshell Carrying Case	1

2. Features and Functions

- Large ±5° 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.
- 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: ≤ 5mW
Wavelength: 625-645nm

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

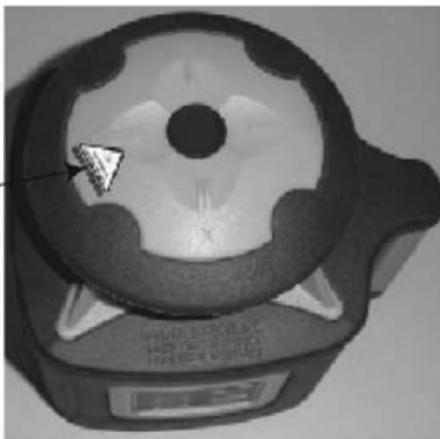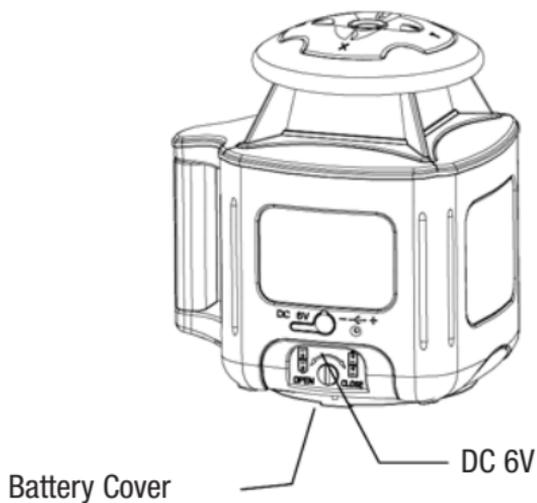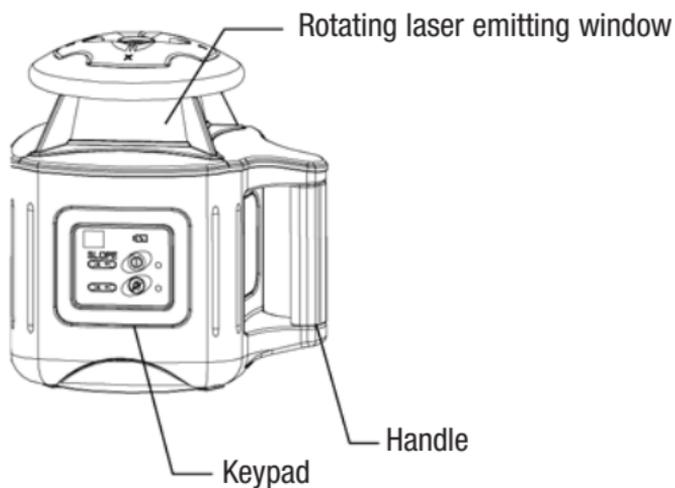
ATTENTION   IMPORTANT

- 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™ parts and accessories purchased from your AccuLine Pro authorized dealer. Use of non-AccuLine Pro parts and accessories will void warranty.

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4. Location/Content of Warning Labels

DANGER

LASER RADIATION
AVOID DIRECT EYE
EXPOSURE.

MAXIMUM OUTPUT POWER
< 5mW @ 625-645nm

CLASS IIa LASER PRODUCT.
THIS PRODUCT COMPLIES
WITH THE APPLICABLE
REQUIREMENTS OF 21CFR
PARTS 1040.10 & 1040.11.

Mfg. for Johnson Level & Tool Mfg. Co., Inc.
6333 W. Donges Bay Rd.,Mequon, WI 53092

Manufactured in China by JLT05
Date (m/y): _____

Laser radiation is
emitted from this aperture.
AVOID EXPOSURE

©2007 Johnson Level & Tool

5. Location of Part/Components

Rotating laser emitting window

Handle

Keypad

Battery Cover

DC 6V

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.

Ni-MH 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.
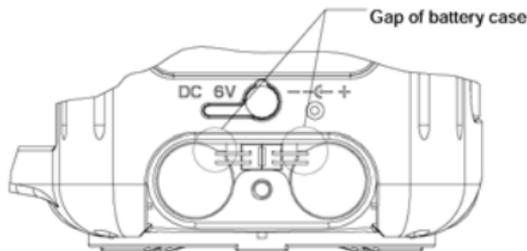
Ni-MH Rechargeable Battery Charging

Using the battery adapter (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 Ni-MH rechargeable battery pack has been fully charged.

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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 adapter.
(3) Do not charge alkaline batteries to avoid explosion.
(4) Used (discharged) batteries are hazardous waste and should be disposed of properly.

Instrument Usage

1. Put in Ni-MH rechargeable battery pack, or 4 "C" alkaline batteries (not included), or connect with the 6V DC power through the power 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. Press H.I. button to lock in the height of the instrument.
5. 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.
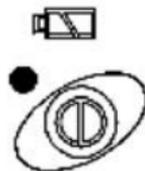
7. Using the Product

**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 Ni-MH battery pack.
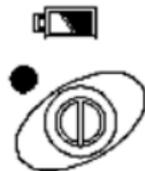
Alarm If Beyond Range

If the instrument is inclined beyond the self-leveling range of ±5° , 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.

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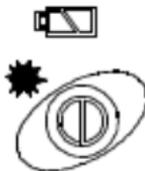
Height of Instrument (H.I.) - TILT

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.
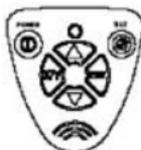

Fig. 1

SLOPE
X Y

Fig. 2

SLOPE
X Y

Fig. 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 presses will cause a quick adjustment.

If laser is taken past its slope range (±8º), 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.
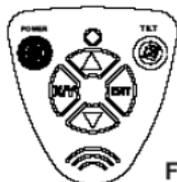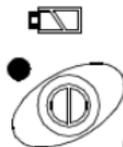

Fig.4 Fig.5

2. The second press of the POWER button on the remote control will make the instrument quit sleep mode and enter auto-level status.

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.

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 $\pm 0.039"$ (± 1mm)
	Coarse $\pm 0.098"$ ($+2.5$mm) when range is < 492 ft. (150m)
	$\pm 0.138"$ ($+3.5$mm) when range is > 492 ft. (150m)
Turn-off time	6 minutes ± 1 minute
Power	2 "AA" batteries
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

8. Self-Check and Calibration

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

The instrument must be self-checked before operation. If the accuracy is found beyond tolerance, user can make some adjustment according to directions as follows.

X-Direction Accuracy Self-Check

1. For clarity, we define the direction of handle as Y-direction, and another direction as X-direction

2. Place the unit on a platform or tripod that is 50' away from a wall indoors, with the handle facing the wall head-on. Turn the unit on.

3. Using the detector mark on the wall where the beam hits the wall and mark that as A.

4. Turn the instrument by 180 degrees, mark the beam as point B.

5. 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.

6. As shown, turn the instrument by 90° and place it on the platform, with the operating panel facing you. Perform
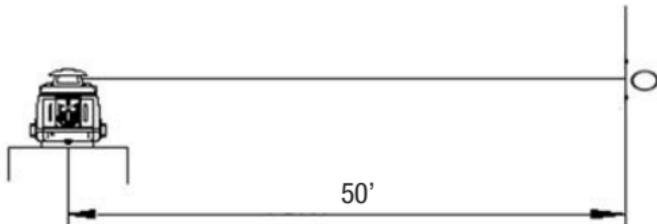
X-direction self-check with the same method as Y-direction self-check, and mark point C and point D by turns.

7. If point C and point D are within 1/32" at 50', the accuracy is within tolerance. Otherwise reference section 12 of this document.

Enter self-calibration

In power off status, press the power and the tilt buttons of the laser unit simultaneously. Then let go of the power button while still pressing the tilt button. 10 seconds later, the self-calibration indicator lights of X direction and Y direction flash 3 times simultaneously. Let go of the tilt button, the instrument enters self-calibration mode. Remote control is necessary for self-calibration.

X Direction Self-calibration
Select self-calibration direction

Make X direction of the instrument face to the reference line. Press X/Y button on the remote control once to select X direction for self-calibration. The X direction indicator light in the "CALIBRATOR" area of the instrument keypad is lighted as shown in the following figure, and the rotator head begins to rotate.

Adjust laser beam to reference position

Press the up/down arrow buttons on the remote control to adjust the laser beam to reference position.

Confirm calibration value

Press 'ENT' button on the remote control to confirm self-calibration value. The X direction self-calibration indicator light will extinguish after pressing this button.
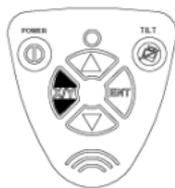
SLOPE

Y Direction Self-calibration

Select Self-calibration Direction

Make Y direction of the instrument face to the reference line at first, and press X/Y button on the remote control twice to select Y direction for self-calibration. The Y direction indicator light in "CALIBRATOR" area of the instrument keypad will light up and the rotator head begins to rotate.
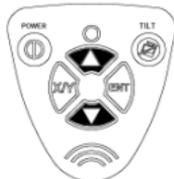
SLOPE

Adjust laser beam to reference position

Press the up/down arrow buttons on the remote control to adjust the laser beam to reference position.

Confirm calibration value

Press 'ENT' button on the remote control to confirm self-calibration value. The Y direction self-calibration indicator light will extinguish after pressing this button.

Note: In order to make the calibration effective, you must power off the instrument after the calibration, and then power it on again. Y-axis accuracy check is a necessity after X-axis calibration, and X-axis accuracy check is also a necessity after Y-axis calibration. Instrument self-calibration will not be fulfilled until both X-axis and Y-axis accuracy meet the requirement.

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 with detector
Auto-Leveling Range	±5°
Slope	±8º
Power Supply	Rechargeable battery pack, or 6V adapter (included) 4 "C" alkaline batteries (not included).
Battery Life	Approx. battery life is 20 hours continuous use
Dimensions	7.4" x 5.91" x 8.15" (188 x 150 x 207mm)
Weight	5.51 lbs. (2.1Kg)
Working Temperature	14°F to 113°F (-10°C to 45°C)
Center Screw Thread	5/8" – 11
Rotation Speed	700 rpm
IP Protection Class	66

10. Application Demonstrations
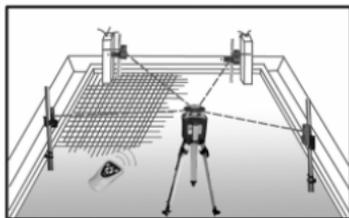
Squaring Leveling
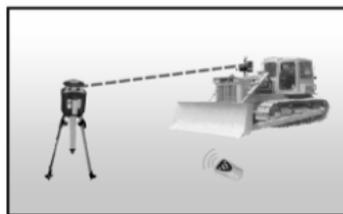
Grading
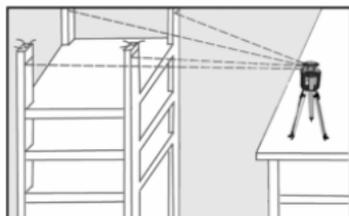
Elevation
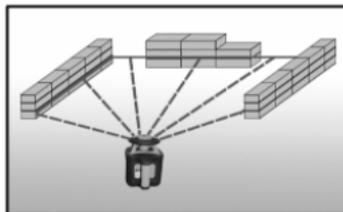
Set Forms

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. 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.

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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. 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.

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