

ACCULINE LASER LEVELS PRO™

Self-Leveling Rotary Laser Level Model Nos. 40-6515 and 40-6516



Instruction Manual

Congratulations on your choice of this Self-Leveling 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

For Model No. 40-6515

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

For Model No. 40-6516

<u>Description</u>	<u>Qty.</u>
Self- Leveling Rotary Laser Level	1
“AA” Alkaline Batteries	4
Tinted Glasses	1
Detector with 9V Battery and Quick Clamp	1
Instruction Manual with Warranty Card	1
Hard Shell Carrying Case	1

2. Features and Functions

- Magnetic dampening compensation system.
- If laser is out of its self-leveling range, rotation stops and alarm sounds.
- Projects a horizontal laser plane.
- Projects a vertical laser plane with 90° split beam reference.
- Laser rotation speed is 200, 400, 600 RPM.
- Water and dust resistant.

3. Safety Instructions

Please read and understand all of the following instructions, prior to using this tool.

CAUTION: If using this product with any type of tinted goggles, please note safety warning below.

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

WARNING!

The tinted goggles are designed to enhance the visibility of the laser beam. They DO NOT offer protection to the eyes from direct exposure of the laser beam.



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
REQUIREMENTS OF 21 CFR
PARTS 1040.10 & 1040.11.

Mfg. for Johnson Level & Tool Mfg. Co., Inc.
6333 W. Dungen 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.

Alkaline Battery Installation

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



1. Install alkaline batteries into the battery case according to the polarity illustrated in the battery compartment.
2. Snap the battery door back and tighten the screw.

Ni-MH Rechargeable Battery Installation (not included)



1. Put the battery pack into the battery case and insert the battery plug.
2. Snap the battery door back and tighten the screw.

Note:

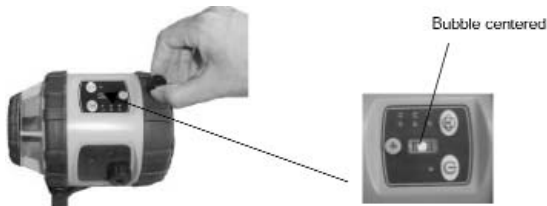
- For the first two charges of new rechargeable battery pack (not included), it is necessary to charge for 12-plus hours.
- The instrument can still work even if it is being charged with adapter.
- Do not charge alkaline batteries to avoid explosion.
- Used (discharged) batteries are hazardous waste and should be disposed of properly.

Bubble Adjustment While in Use Vertically

1. Turn the lock knob counter-clockwise to 'LOCK' the compensator.
The laser is now operating in a "manual mode" and is not self-leveling.

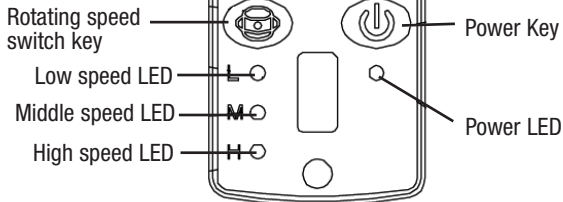


2. Turn the vertical adjustment knob to make the bubble centered in the vertical vial.



7. Using the Product

Keypad



Before pressing the Power key, the compensator/transportation lock knob must be turned to the “On” position.

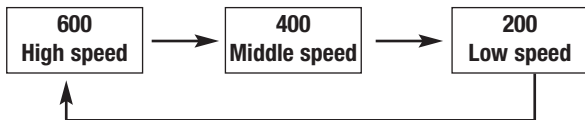


Power Key: Press this key to power on/off the instrument.

Power LED: Lighted LED mean power-on
Extinguished LED means power-off
Flashing LED means weak battery voltage



Rotating speed switch key



Note: When starting the unit, the instrument will be in the high-speed rotating status. While switching the rotating speed, the corresponding LED will light up.

Out of Level

Set the lock knob to the unlocked position. Power on. During the process of self-leveling, if the instrument is tilted to exceed its self-leveling range, it will stop rotating and will give a sound alarm.

Application Methods

Install Ni-MH battery pack (not included) or alkaline batteries into the instrument, or connect the instrument with 6V DC power supply (not included)

Put the instrument on a platform or connect the instrument to a tripod using the 5/8" - 11 screw thread.



Use on a platform



Connect the instrument with the tripod using the 5/8" - 11 screw thread

Note:

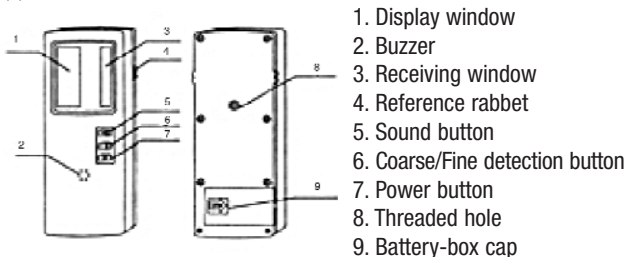
1. To use the laser in the self-leveling status, please set the lock knob to the “unlocked” position.
2. While the instrument is in the vertical status (manual mode), please set the lock knob to “lock” position.
3. Power on the instrument and select your desired speed by pressing the keys on the keypad.
4. After operations or before moving the unit, please power off and lock the instrument first.

Detector Usage (included in Model No. 40-6516)**1. Technical Specifications**

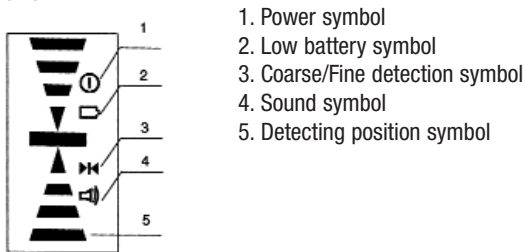
Detecting precision	Fine: $\pm 0.039''$ ($\pm 1\text{mm}$) Coarse: $\pm 0.098''$ ($\pm 2.5\text{mm}$)
Turn-off timer	10 minutes
Three types of sound	
Size	6.614" x 2.677" x 0.905" (168 X 68 X 23mm)

2. Components

(a) Structure



(b) Display



3. Operation Guide

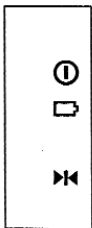
(a) Installation of battery

- Open the battery-box cap and connect the cords inside with the two polarities of the 9V battery.

Note: Take the battery out if the instrument if not used for a long time.

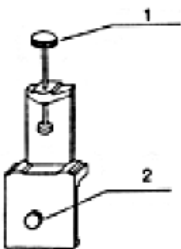
- Put the 9V battery into the battery box and close the battery-box cap.

(b) Turn on/off



- Press the on/off button. When Power symbol is displayed, the instrument is ready for coarse detection.
- When low battery symbol is displayed, change the battery.
- Press the on/off button again to turn off the instrument.

(c) Using the clamp holder

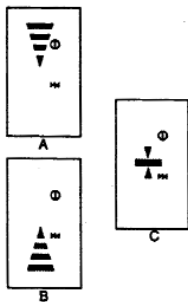


1. clamp bolt
2. screw

- Position the instrument on the clamp holder by the screw of the clamp holder.
- Position the clamp holder on rod by the clamp bolt of the clamp holder.

(d) Detection

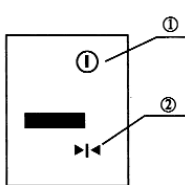
1. Coarse detection



- Aim the receiving window at the rotating laser instrument. Loosen the clamp bolt and move the instrument up and downwards to receive the laser scanning signals transmitted by the rotating laser instrument.
- When the instrument displays like Fig. (A), move the instrument slightly downwards as indicated by the arrow. When it displays like Fig. (B), move it slightly upwards as indicated by the arrow.

- When Fig. (C) is displayed, the instrument is at the right position.
- Tighten the clamp bolt and mark the position of the object on the rabbit. This mark will be the horizontal reference of the coarse detection.

2. Fine detection



1. power symbol
2. fine detection symbol

- Press coarse/fine detection button. The instrument is ready for fine detection.
- Move the instrument slightly up and downwards like the coarse detection procedure.

Figure 6

- When the instrument displays like Fig 6, it is at the right position.
- Tighten the clamp bolt and mark the position of the object on the rabbit. This mark will be the horizontal reference of the fine detection.

e) Sound function

- If the instrument is working in a circumstance that makes it difficult to use the display function, the sound function can be used instead.
- Press the sound function button. The sound symbol is displayed which means it is ready for sound function. The instrument then conducts coarse/fine detection through sound (buzz) signals.
- When the sound signal is ultra-short buzz, move the instrument slightly upwards.
- When the instrument makes short buzz, move it slightly downwards.
- When the instrument makes intermittent, continuous sound, it is at the right position.
- If there is no buzz heard, the instrument has not received the laser scanning signal.

(f) Turn-off timer

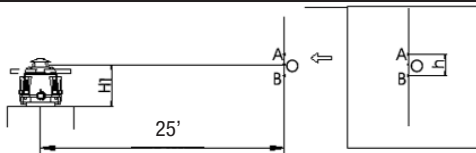
- The instrument will automatically turn off if it has not received laser scanning signal for 10 minutes

(g) Detector Maintenance

- When you are done using the detector, return it to its packing case.
- Keep the instrument, 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 instrument 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.

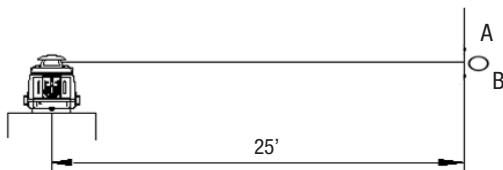
8. Self-Check and Calibration

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



X-Direction Accuracy Self-Check

1. For clarity, we define the direction of handle as X-direction, and another direction as Y-direction
2. Place the unit on a platform that is 25' away from a wall indoors, with the handle facing the wall head-on. Unlock the unit and set to low speed.
3. Mark on the wall where the beam hits the wall and mark that as A. **(Note:** This test should be done indoors with dim lighting. It's critical that the laser mark is easily seen.)
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 1/16" apart at 25', 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 Y-direction self-check with the same method as X-direction self-check, and mark point C and point D by turns.
7. If point C and point D are within 1/16" at 25', the accuracy is within tolerance. Otherwise reference section 12 of this document.

Accuracy Calibration

1. As shown in the following figures, screw off the adjustment-hole bolt with the cross screwdriver, and adjust the fine-adjustment bolt in the instrument core with a flat head screwdriver until the laser line is within 1/8" at 50'.
2. Check the accuracy of X-direction with the same method as that



Calibration of X-direction

of Y-direction. If the accuracy is beyond tolerance, make the calibration of X-direction through the adjustment hole with the same method as above.

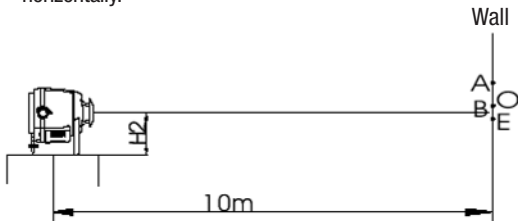


Calibration of Y-direction

3. After calibration, rotate the instrument by 90 degrees in turn to make sure that the lines on the wall should be within 1/8" at 50'.
4. Reinstall the adjustment-hole bolt.

Accuracy Self-Check for Vertical Output Status

1. Follow the operations as above, and measure the distance H1 between the laser rotating plane and the platform surface.
2. Set the locking knob to locking position, and place the instrument horizontally.



3. Adjust the adjusting screw to center the bubble.
4. Measure the distance H2 between the top laser beam and the platform surface.
5. Mark out E in the position that is $(H1 - H2)$ lower than point O.
6. If $e - \text{point O} < 0.394''$ (10mm), the accuracy is within tolerance. Otherwise reference section 12 of this document.

Vertical Bubble Calibration

1. Follow the operations as above, and use a screwdriver to screw out the bubble-adjustment-hole bolt.
2. Insert the Allen wrench into the adjustment hole to press against the Allen screw.
3. Rotate the Allen wrench to center the bubble.

4. After adjustment operation, please install the bubble-adjustment-hole bolt back to its original position.



Screw off the self-calibration-hole bolt



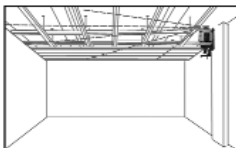
Calibrate the bubble

Note: If you fail to calibrate the accuracy according to the above steps, please contact Johnson Level & Tool for service.

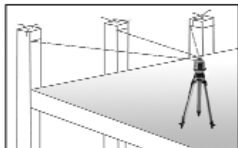
9. Technical Specifications

Laser Wavelength	635nm±10nm
Laser Classification	Class IIIa
Maximum Power Output	≤5mW
Accuracy	±1/8"/50 ft. (±2mm/10m)
Interior Range	Up to 200 ft (60m) diameter depending upon light conditions
Exterior Range	Up to 800 ft (240 m) diameter with detector
Self-Leveling Range	±3°
Power Supply	4 "AA" alkaline batteries (included)
Battery Life	Approx. battery life 24 hours continuous use
Dimensions	5" x 6 1/2" x 6 1/2" (126x170x168mm)
Weight	3.3 lbs (1.5 Kg)
Working Temperature	14°F to 113°F (-10°C to +45°C)
Center screw thread	5/8" – 11
Rotation Speed	200 rpm, 400 rpm, 600 rpm
IP protection class	54

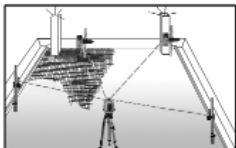
10. Application Demonstrations



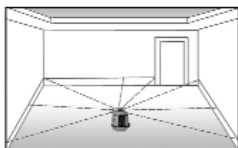
Ceiling installation



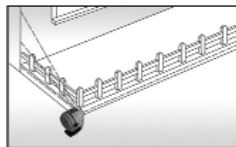
Wall or footing construction



Squaring and leveling



Baseboard installation



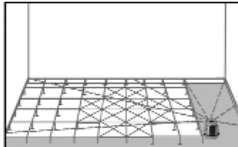
Fence installation



Cement floor installation



Window installation



Anti-static flooring 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 and in the locked position. Failure to lock before transport or storage may cause damage to the units inner mechanism and void warranty.
- 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 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

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. 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.

