Instruction Manual

Congratulations on your choice of this JLX® Horizontal/Vertical Tracking Rotary with GreenBrite® Technology. We suggest you read this instruction manual thoroughly before using the instrument and save this instruction manual for future use.

This is a Class III 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 for Model 40-6590

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<th>Qty.</th>
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<td>Tracking Rotary Laser</td>
<td>1</td>
</tr>
<tr>
<td>Detector with Clamp and 4 “AA” Alkaline Batteries</td>
<td>1</td>
</tr>
<tr>
<td>Remote Control with 2 “AA” Alkaline Batteries</td>
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<tr>
<td>Tinted Glasses</td>
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<tr>
<td>6.4V Battery Charger</td>
<td>1</td>
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<tr>
<td>NiMH Rechargeable Battery Pack</td>
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<td>“C” Alkaline Battery Compartment (batteries not included)</td>
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<td>Hard-Shell Carrying Case</td>
<td>1</td>
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<td>Vertical Leveling Plate</td>
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Description for Model 40-6590I

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</tbody>
</table>

2. Features and Functions

- Electronic self-leveling with horizontal and vertical operating modes.
- Out of level indicator - if laser beam is out of its ±5° self-leveling range, an alarm occurs.
- Vertical and horizontal working modes and 90° split beam for layout work.
- Tilt indicator stops the laser beam rotation and flashes an alert when the unit is bumped to ensure accuracy.
- Dual-slope mode allows the user to perform slope adjustments in both the X- and Y-axis.
- Tracking mode sets slope automatically based on the detector’s position.
- Scan mode simulates a laser line or dot.
- Two rotational speeds: 300 RPM and 800 RPM.
- Water and dust resistant.
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 III Laser Product
Max. Power Output: \( \leq 5 \text{mW} \)
Wavelength: 510-530nm
THIS TOOL EMITS LASER RADIATION.
DO NOT STARE INTO BEAM.
AVOID DIRECT EYE EXPOSURE.

ATTENTION
• Read all instructions prior to operating this laser tool. Do not remove any labels from the 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

DANGER
LASER RADIATION
AVOID DIRECT EYE EXPOSURE.

MAXIMUM OUTPUT POWER
< 5mW @ 510-530nm

CLASS III 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 53097
Manufactured in China by JLT05
Date (m/v): _______

AVOID EXPOSURE

Laser radiation is emitted from this aperture.
5. Location of Parts/Components

- Rotating Laser Output Window
- Tilt Mode Button
- Tilt Mode LED
- Keypad
- X-Axis LED
- Y-Axis LED
- Remote Control Button
- Power Button
- Power LED
- Remote Control LED
- Rotational Speed Button
- Battery Cover
- 5/8"-11 Tripod Screw Thread
- 90° Split Beam Green Dot Output Window
Remote Control Keypad

- **Decrease Slope Button**
- **Scan Mode Adjustment Clockwise Button**
- **Rotational Speed Button**
- **Operational LED**
- **Increase Slope Button**
- **Scan Mode Adjustment Counterclockwise Button**
- **Scan Mode Button**
- **Power Button**
6. Battery Installation

Notes:
- Always make sure that the laser level is powered off before removing and/or replacing batteries. The unit requires either alkaline batteries or the included rechargeable battery pack.
- Remove the batteries when storing the instrument for an extended period of time (more than three months) to avoid damage to the tool should the batteries deteriorate.

Alkaline Battery Installation
1. Unscrew the battery cover screw in a counterclockwise direction to pull open the battery cover.
2. Insert four “C” alkaline batteries into the battery compartment according to the polarity illustrated inside.
3. Push the battery cover closed.
4. Screw in the battery cover screw in a clockwise direction to lock the battery cover.

Rechargeable Battery Pack Installation
1. Insert the battery charger into an AC outlet and into the rechargeable battery pack to charge the batteries. The charger light is red while it is charging and turns green when the battery is fully charged.
2. Unscrew the battery cover screw in a counterclockwise direction to open and pull out the battery cover.
3. Insert the charged battery pack into the battery compartment.
4. Close the battery cover.
5. Screw in the battery pack’s cover screw in a clockwise direction to lock the battery cover.

Low Battery Indicator
When the battery is low, the Power LED light will flash. To ensure continued operation, replace the batteries or recharge the battery pack.

Remote Control Battery Installation
1. Lift the battery cover latch up to open the remote control’s battery cover.
2. Insert two “AA” alkaline batteries into the battery compartment according to the polarity illustrated inside.
3. Press down on the battery cover until the battery latch clicks into place.
7. Operating Instructions

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

Laser Level Placement

1. The laser level should be positioned on a relatively flat and level surface. It need not be perfectly level.
2. The laser level can also be attached to a tripod via the 5/8"-11 tripod screw thread located on the base of the laser level.
3. The laser can be used on the floor in vertical mode by attaching it to the included vertical mounting plate.

Power On/Off the Laser Level

Press ![power symbol] to power on/off the laser level.

Power LED: Lighted LED indicates power is on. Extinguished LED indicates power is off. Flashing LED indicates that the batteries are low.

Change Rotational Speed

Press ![speed symbol] on the remote control to change the rotating speed from high (800 rpm) to low (300 rpm). This button is not functional during the self-leveling sequence.
Notes:
- When starting the unit in vertical mode, the laser will not begin rotation automatically. It will emit a plumb-down beam that you can use for reference to align the laser. After self-leveling is complete, press 🔄 to begin rotation.
- Low speed rotation is recommended for indoor use, since it improves visibility of the beam.
- High speed rotation is recommended for outdoor use or for use with the detector, since the faster speed improves the detection frequency.

Using the Tilt Indicator
The tilt indicator is enabled by default at startup. After powering on the laser level, the laser beam will begin rotating and the tilt indicator LED will begin flashing, indicating that the unit is beginning its 30-second initialization sequence. If the unit is moved during this time, the laser beam will stop rotating, re-level, and begin to rotate again. This allows 30 seconds for any final adjustments. After the 30 second period, the tilt indicator LED will stop flashing and become solid. If the laser is moved while the tilt mode LED is solid, the laser beam will stop rotating and begin to flash. The tilt indicator LED will blink rapidly, alerting the user that the height of the instrument may have been changed. Press 🔄 on the laser level or press 🎨 on the remote control to reinitiate the 30-second self-leveling sequence.

The tilt indicator can be disabled by pressing 🔄 at any time until the tilt indicator LED turns off.
**Using Scan Mode**
Scan mode simulates a dot or line laser to improve beam visibility through a narrower operating angle.

1. After the unit is powered on and it goes through the self-leveling sequence, press 🔄 on the remote control to enter scan mode. The laser beam will stop rotating and will change to a simulated laser line.
2. Repeatedly press 🔄 to change between a narrow line, wide line, and solid dot.
3. Tap 🎧 on the remote control to rotate the scan line/dot to the right.
4. Tap 🎧 on the remote control to rotate the scan line/dot to the left.
5. To return the laser beam to rotating, press 🎧 on either the remote control or the laser level.

**Using Dual-Slope Mode**
After the unit is powered on and it goes through the self-leveling sequence, press 🔄 on the remote control to enter the X-axis dual slope mode. The unit will no longer self-level, and the X-axis LED light on the laser level will illuminate.

1. Tap, or press and hold, ⬇️ on the remote control to shift the X-axis slope angle down.
2. Tap, or press and hold, ⬆️ on the remote control to shift the X-axis slope angle up.
3. Press 🔄 again to select the Y-axis slope. The X-axis LED light will turn off, and the Y-axis LED light will illuminate.
4. Tap, or press and hold, \( \downarrow \) on the remote control to shift the Y-axis slope angle down.
5. Tap, or press and hold, \( \uparrow \) on the remote control to shift the Y-axis slope angle up.
6. Press and hold \( x/y \) on the remote control to return the laser level to tilt mode operation.

**Note:**
- If the laser beam moves beyond its 5° leveling range, the laser level will emit an audible alert. Press and hold \( x/y \) on the remote control to bring the slope back within range.

**Using Single-Slope Mode**
1. After the unit is powered on and it goes through the self-leveling sequence, press and hold \( x/y \) on the remote control for three seconds to enter single-slope mode. The unit will self-level.
2. The laser level will default to the X-axis. The X-axis LED will illuminate solid while the Y-axis LED will flash.
3. Tap \( x/y \) on the remote control to change to single-slope Y-axis slope mode. The Y-axis LED will illuminate solid while the X-axis LED will flash.
4. Tap, or press and hold, \( \downarrow \) on the remote control to shift the selected axis slope angle down.
5. Tap, or press and hold, \( \uparrow \) on the remote control to shift the selected axis slope angle up.
6. Press and hold \( x/y \) on the remote control to return the laser level to tilt mode operation.
Note:
- If the laser beam moves beyond its 5° leveling allowance, the laser level will emit an audible alert. Press and hold on the remote control to bring the slope back within tolerance.

Deactivating the Remote Control
1. After powering on the unit, the remote control LED will illuminate, indicating that the remote control is ready for use.
2. To deactivate the remote control, press on the laser level. The remote control LED will turn off.
3. To reactivate the remote control, press again. The remote control LED will illuminate.

Sleep Mode vs. Power Off
Turning off the laser will put it in to sleep mode for 30 minutes. While in sleep mode, the laser will continue to receive signals from the remote control, and can be woken up by using the remote control. After 30 minutes in sleep mode without operation, the laser will power off and no longer receive remote control signals.
1. After the laser level is powered on and it goes through the self-leveling sequence, press on the remote control to enter sleep mode. The laser beam and all lights on the laser level’s keypad will initially turn off, after which time the power LED will blink.
2. If the unit is in sleep mode for 30 continuous minutes, the unit will automatically power off.
3. To return to normal operation from sleep mode, press on the remote control. The laser level will default to the most recently used operating mode.
Using the Detector Model No. 40-6591
Detectors are an indispensable accessory when using the rotary laser for use outside or in areas with bright ambient lighting. The included detector is required in order to use the slope tracking function of this laser. The main function of the detector is to detect the horizontal or vertical position of laser signals that are transmitted by the laser level. The 40-6591 detector features high sensitivity, a dual-sided display, and two-way communication with the rotary laser for operating in tracking mode.

Note: The detector is not designed for use with the remote control – the detector and remote are separate accessories both designed to interact with the laser for different purposes.

40-6591 Detector Exterior Front

- X/Y-Axis Button
- Set Zero Button
- Down Indicator LEDs
- Zero Indicator LEDs
- Side Magnets
- Zero/On Grade Mark
- Remote Control LED
- Up Indicator LEDs
- Remote Button
- Vertical Vial
- Horizontal Vial
- Detecting Window
- Front LCD Display
- Zero/On Grade Mark
- Unit of Measurement Button
- Volume/LCD Backlight Button
- Power Button
- Fine/Coarse Accuracy Key
40-6591 Detector Exterior Back

- Top Magnets
- Down Indicator LEDs
- Zero Indicator LEDs
- Side Magnets
- Zero/On Grade Mark
- Up Indicator LEDs
- ¼"-20 Tripod Screw Thread
- Back LCD Display
- Battery Cover
- Battery Cover Latch

40-6591 Detector LCD Display

- Unit of Measurement
- Positive or Negative Indicator
- Measurement Reading
- Up/Down Indicators
- Zero Set Indicator
- Fine/Coarse Accuracy
- Volume Level Indicator
- LCD Backlight Indicator
- Battery Life Indicator
Battery Installation

Notes:

- Always make sure that the detector is powered off before removing and/or replacing batteries.
- Use only alkaline batteries.
- Remove the batteries when storing the detector for an extended period of time (more than three months) to avoid damage to the tool should the batteries deteriorate.

1. Lift the battery cover latch up to open the battery cover.
2. Insert four “AA” alkaline batteries into the battery compartment according to the polarity illustrated inside.
3. Depress the battery cover until the battery cover latch clicks into place.

The battery life indicator on the LCD screen will display the current battery life:

 فإذا
- Battery has 100% power
- Battery has approximately 60% power
- Battery has approximately 25% power
- Battery has approximately 5% power, and new batteries are needed
Powering the Detector On/Off
Press \( \text{on} \) on the detector to power the detector on or off.

Setting Volume
1. Press \( \text{ } \) to change the volume. The detector defaults to low volume. The low volume icon will appear on the LCD display.
2. Press \( \text{ } \) once to turn on high volume. The high volume indicator will appear.
3. Press \( \text{ } \) a second time to turn sound off. The volume icon will disappear from the LCD display.
4. Press \( \text{ } \) a third time to return to low volume.

LCD Backlight
1. The LCD display will not be backlit after the detector is powered on. Press and hold \( \text{ } \) on the detector to turn on the LCD display backlight.
2. Press and hold \( \text{ } \) again to turn the LCD backlight off.

Setting the Unit of Measurement
1. The detector will default to the inches unit of measurement. Press \( \text{ } \) to change the unit of measurement. The selected unit of measurement will appear at the top of the LCD display: millimeters (mm), centimeters (cm), inches (in), or fractions of an inch (in/).
Setting Fine/Coarse Accuracy
Setting a fine accuracy setting establishes a more exact measurement, and a coarser accuracy allows for a faster grade location. Coarse accuracy is more commonly used outdoors, in bright ambient lighting, or at rougher stages of construction such as general excavation.

1. Press \[\text{button}\] to change the accuracy from fine (0.04"), to medium (0.2"), to coarse (0.35").

Detecting Rotary Laser Level Signals
Notes:
• To detect laser signals, be sure that nothing is blocking the detecting window and that the detecting window is facing the laser level. If the detecting window is unable to detect the laser beam, it will display “OUT” at the top left of both the front and back LCD displays.
• Always hold the detector stable while it is in use.
• When detecting a horizontal laser signal, be sure that the horizontal bubble vial is centered, as the deflection of the receiver will influence its receiving accuracy. Similarly, when detecting a vertical laser signal, be sure that the vertical bubble vial is centered.

1. Set the detector on a level surface, attach it to a tripod using the 1/4"-20 tripod screw thread, or use the detector’s magnets to attach it to a surface. Make sure that the detecting window is facing the operating laser level.

2. When the laser level’s beam intersects the detecting window, the front and back LCD displays will guide the user to the zero/on grade point. Either the up or down indicator LED will illuminate in red,
either an up or down arrow will appear at the left of both the front and back LCD displays, and the measurement at the top of the front and back LCD displays tells the user how far the detector is from being on grade. A + symbol to the left of the measurement indicates that the detector is above the zero point, whereas a – symbol indicates it is below the zero point.

3. Follow the detector’s prompts until the detector is on grade. When it is on grade, the zero indicator LED will illuminate in green, the up/down arrow at the left of the LCD display will disappear, and a thick dash will appear at the left of the front and back LCD displays.

Detecting Rotary Laser Level Signals in Tracking Mode

When the detector is in tracking mode, the rotary laser level will sweep the laser beam back and forth until it intersects the zero point of the detector. This mode is most commonly used for layout work including exterior and interior walls and for aligning posts, piers and footings.

**Note:** In order to properly function, your laser and detector must be operating on the same wireless communication channel, and this channel should be different than the channel used for other laser/detector pairs operating nearby.

**To Configure the Laser Communication Channel:**

1. With the laser powered “on” and tilt mode off (red tilt mode LED not illuminated), simultaneously press 🔱 and 📡, and hold until the red remote control LED begins to flash.

2. The number of flashes corresponds to the channel settling for the laser. 1 flash indicates channel 1, 2 flashes indicate channel 2, and so on up to a total of 9 flashes for channel 9. This LED will continue to flash until the values are stored into memory.
3. A single press of 📅 advances to the next sequential channel.
4. The channel setting is stored in memory by simultaneously pressing 📅 and 📅. The red remote control LED will illuminate solidly.

**To Configure the Detector Communication Channel:**
1. Power on the detector.
2. Enable tracking mode by holding 📅 until the blue LED illuminates.
3. Change channels by pressing 📅 and 📅 simultaneously. Repeat until the desired channel is reached, as indicated by “CH” and a numeral on the LCD.

**To Detect Signals in Tracking Mode:**
1. Press and hold 📅 on the detector. The detector LED will illuminate in blue, the remote signal will appear on the bottom of both the front and back LCD displays, and the rotary laser level will begin to emit double beeps. The laser beam will slowly sweep back and forth within a 10° arc until it intersects the detector’s zero/on grade point in Y-axis mode.
2. To switch tracking mode to the X-axis, press 📅. The laser beam will again sweep back and forth until it intersects the detector’s zero/on grade point.
3. Once the laser beam intersects the zero/on grade point, the zero indicator LED on the detector will illuminate in green, and the up/down arrow at the left of the LCD display will disappear. The on-grade indicator will appear on the front and back LCD displays, and the laser beam will stop moving.
4. The laser beam will now be fixed on grade and will not move if the detector’s position is changed.
Setting a Temporary Zero Point

This function allows the user to establish a new zero point, which the detector will consider to be on grade. It is a temporary setting; once the detector is powered off and back on, the default zero point will again be considered on grade.

1. When the laser level’s beam intersects the detecting window, move the detector until the point you wish to define as the temporary zero point meets the laser beam.

2. Press \text{ZERO} on the detector to establish the temporary zero point.

3. To return to the default zero point, power off and on the detector.

4. The zero point adjustment range is limited to +/- 0.75" (20mm).

Detector Maintenance

Keep the unit, particularly the reception window, clean. If it does become dirty, use a soft, dry cloth to wipe it clean.

Technical Specifications

Detecting Accuracy:  
- Fine: 0.04" (1mm)
- Medium: 0.2" (5mm)
- Coarse: 0.35" (9mm)

Automatic Shut-Off: 10 minutes

Power Supply: 4 “AA” Alkaline Batteries (included)

LED Display: Down Arrow, Up Arrow, Horizontal On Grade Bar (Front, Side, and Rear of Detector)

Dimensions: 3" x 3.3" x 6.8"

Weight: 0.8 Pounds

Tripod Thread: 1/4"-20

IP Rating: 66
8. Application Demonstrations

The 40-6590 tracking rotary laser level features both manual slope (slope match) and dual-axis slope tracking, making it the ideal tool for working quickly and accurately on a wide variety of jobsites. The GreenBrite® technology and strong Class III laser make this one of the most visible lasers on the market, and its detector tracking function and 90° split beam makes quick work of any layout job. This laser is particularly well suited for:

- Layout work
- Wall installation
- Drywall track installation
- Tilt-up concrete construction
- Drop ceiling installation

This laser can also be used outdoors for:

- Post & footer alignment
- Drainage piping
- Concrete flatwork – setting drainage slope
- General excavation
## 9. Troubleshooting

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<th>Symptom</th>
<th>Possible Cause</th>
<th>Solution</th>
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</thead>
<tbody>
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<td>Batteries depleted</td>
<td>Replace batteries</td>
</tr>
<tr>
<td></td>
<td>Battery charge depleted</td>
<td>Charge battery pack (rechargeable batteries only)</td>
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<tr>
<td></td>
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<td>Secure battery case with set screw</td>
</tr>
<tr>
<td></td>
<td>Polarity reversed</td>
<td>Flip batteries</td>
</tr>
<tr>
<td>Unit powers on briefly</td>
<td>Batteries depleted</td>
<td>Replace batteries</td>
</tr>
<tr>
<td></td>
<td>Battery charge too low</td>
<td>Charge battery pack (rechargeable batteries only)</td>
</tr>
<tr>
<td>Laser will not spin</td>
<td>Batteries depleted</td>
<td>Replace batteries</td>
</tr>
<tr>
<td></td>
<td>Battery charge too low</td>
<td>Charge battery pack (rechargeable batteries only)</td>
</tr>
<tr>
<td></td>
<td>Unit not powered on</td>
<td>Power on unit</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------------</td>
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<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>Laser Flashing/Beeping</td>
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<td></td>
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<tr>
<td>Flashing less than 30 seconds</td>
<td>Unit is leveling</td>
<td>Wait for unit to level</td>
</tr>
<tr>
<td></td>
<td>Unit was bumped</td>
<td>Wait for unit to re-level</td>
</tr>
<tr>
<td>Flashing greater than 30</td>
<td>Unit has entered tilt mode</td>
<td>Check that unit height has not moved, and press 🔄 to</td>
</tr>
<tr>
<td>seconds</td>
<td></td>
<td>resume use</td>
</tr>
<tr>
<td>Flashing and beeping</td>
<td>Unit is outside of its leveling</td>
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<tr>
<td></td>
<td>range</td>
<td></td>
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<td>Remote control not working</td>
<td>Remote control batteries depleted</td>
<td>Replace batteries</td>
</tr>
<tr>
<td></td>
<td>Remote control not powered on</td>
<td>Power on remote control</td>
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<tr>
<td></td>
<td>Unit powered off</td>
<td>Power on unit</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Remote control doesn’t interact with unit</td>
<td>Remote control button on unit toggled</td>
<td>Toggle ⓦ on unit</td>
</tr>
<tr>
<td></td>
<td>Laser in sleep mode (occurs after 30 minutes of inactivity)</td>
<td>Power on laser from the laser’s operation panel, then use the remote control</td>
</tr>
<tr>
<td>Detector not working</td>
<td>Detector batteries depleted</td>
<td>Replace batteries</td>
</tr>
<tr>
<td></td>
<td>Detector not powered on</td>
<td>Power on detector</td>
</tr>
<tr>
<td></td>
<td>Unit not powered on</td>
<td>Power on unit</td>
</tr>
<tr>
<td>Unit not tracking detector</td>
<td>Detector not powered on</td>
<td>Power on detector</td>
</tr>
<tr>
<td></td>
<td>Detector not within tracking range</td>
<td>Adjust placement of unit so that it sits within its leveling range</td>
</tr>
<tr>
<td></td>
<td>Unit not level</td>
<td>Adjust placement of unit so that it sits within its leveling range</td>
</tr>
<tr>
<td></td>
<td>Detector not facing unit</td>
<td>Turn detector to face unit</td>
</tr>
<tr>
<td></td>
<td>Detector located in wrong axis (slope only)</td>
<td>Move detector to correct axis, change slope axis on detector, or turn laser so correct axis faces detector</td>
</tr>
<tr>
<td></td>
<td>Laser not in tracking mode</td>
<td>Using the front control panel on the laser, turn tracking mode on</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------</td>
<td>----------------------------------------------------</td>
</tr>
<tr>
<td>Unit not accurate</td>
<td>Unit less than 3/16&quot; over 100'</td>
<td>Follow accuracy check procedure in operator’s manual</td>
</tr>
<tr>
<td></td>
<td>Unit greater than 3/16&quot; over 100'</td>
<td>Unit needs to be calibrated by a qualified service technician</td>
</tr>
<tr>
<td></td>
<td>Slope mode is engaged</td>
<td>Exit slope mode</td>
</tr>
<tr>
<td>Laser beam appears dim or does not illuminate</td>
<td>Batteries nearing depletion</td>
<td>Replace batteries</td>
</tr>
<tr>
<td></td>
<td>In direct sunlight or bright ambient lighting</td>
<td>Use a detector when exceeding 100' indoors, when using indoors with bright or fluorescent light, or when using outdoors</td>
</tr>
</tbody>
</table>
10. Accuracy Check

**IMPORTANT:** It is the responsibility of the user to verify the calibration of the instrument before each use. Accuracy check should be done indoors with dim lighting. It is critical that the laser beam is clearly visible. If the accuracy check determines that the laser level is out of calibration, the unit must be calibrated by an authorized Johnson® service center. A list of service centers can be found at www.johnsonlevel.com or by calling Johnson Level & Tool’s Customer Service Department. In the U.S., call 888-9-LEVELS. In Canada, call 800-346-6682.

1. Note the X- and Y-axis direction as indicated on the top of the laser level.
2. Place the laser level on a platform or attach to a tripod that is at least 25' away from a wall, with the laser positioned so that the X-axis direction is facing the wall. A 50' distance is preferred.
3. Press 🔄 on the laser level to power it on.
4. Once the laser level finishes its self-leveling sequence, mark where the top edge of the beam hits the wall as Point Ax.
5. Rotate the instrument 180° without changing the height of the laser level. The rotating beam will temporarily stop rotating while the instrument self-levels.
6. Once the laser beam resumes its rotation, mark where the top edge of the beam hits the wall as Point Bx. This point should be in the same vertical plane as Point Ax (directly above, below, or on top of Point Ax).
7. Mark the center point between Point Ax and Point Bx as Point 0x.
8. If the distance between Point Ax and Point Bx is more than 3/32" @ 50', the unit is out of calibration along the X-axis. If this distance is less than 3/32" @ 50', the unit is properly calibrated along the X-axis and you should proceed to checking the Y-axis calibration.

9. Turn the instrument by 90° with the Y-axis direction facing the wall. The rotating beam will temporarily stop rotating while the instrument self-levels.

10. Check the Y-axis accuracy using the same method as for the X-axis, marking Point Ay and Point By.

11. If the distance between Y points is more than 3/32" @ 50', the laser is out of calibration along the Y-axis. If this distance is less than 3/32" @ 50', then the unit is properly calibrated along the Y-axis.
### 11. Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser Wavelength</td>
<td>520nm±10nm</td>
</tr>
<tr>
<td>Laser Classification</td>
<td>Class III</td>
</tr>
<tr>
<td>Maximum Power Output</td>
<td>≤5mW</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±3/32&quot;/100'</td>
</tr>
<tr>
<td>Range</td>
<td>Up to 1,500' diameter</td>
</tr>
<tr>
<td>Remote Range</td>
<td>Up to 200' diameter</td>
</tr>
<tr>
<td>Detector Range</td>
<td>Up to 200' diameter (transmitting), up to 1,500' diameter (receiving)</td>
</tr>
<tr>
<td>Slope</td>
<td>±5° Dual</td>
</tr>
<tr>
<td>Self-Leveling Range</td>
<td>±5°</td>
</tr>
<tr>
<td>Laser Beam Modes</td>
<td>0°, 30°, 60°</td>
</tr>
<tr>
<td>Rotation Speeds</td>
<td>300 RPM, 800 RPM</td>
</tr>
<tr>
<td>Power Supply</td>
<td>NiMH battery pack and charger (included) or 4 “C” alkaline batteries (not included)</td>
</tr>
<tr>
<td>Battery Life</td>
<td>18 hours (NiMH), 16 hours (“C” alkaline batteries)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>6.9&quot; x 5.6&quot; x 7.5&quot;</td>
</tr>
<tr>
<td>Weight</td>
<td>4.1 lbs</td>
</tr>
<tr>
<td>Working Temperature</td>
<td>32°F to 104°F</td>
</tr>
<tr>
<td>Tripod Thread</td>
<td>5/8&quot; – 11</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP54</td>
</tr>
</tbody>
</table>
12. 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.

13. Product Warranty
Johnson Level & Tool offers a three-year limited warranty 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 website 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. Non-warranty repairs and coarse 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 or by calling our Customer 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.

### 14. Warranty Registration

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 will only send you marketing information if you opt-in.

To register, go to www.johnsonlevel.com/register.
15. 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.