



Automatic Levels
Model No. 40-6926, 40-6960, 40-6962



Instruction Manual

Congratulations on your choice of this Automatic Level. We suggest you read this instruction manual thoroughly before using the instrument. Save this instruction manual for future use.



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1. Kit Contents

<u>Description for Model 40-6926</u>	<u>Qty.</u>
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26X Automatic Level	1
Instruction Manual with Warranty Card	1
Hard Shell Carrying Case	1

<u>Description for Model 40-6960</u>	<u>Qty.</u>
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30X Automatic Level	1
Instruction Manual with Warranty Card	1
Hard Shell Carrying Case	1

<u>Description for Model 40-6962</u>	<u>Qty.</u>
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32X Automatic Level	1
Instruction Manual with Warranty Card	1
Hard Shell Carrying Case	1





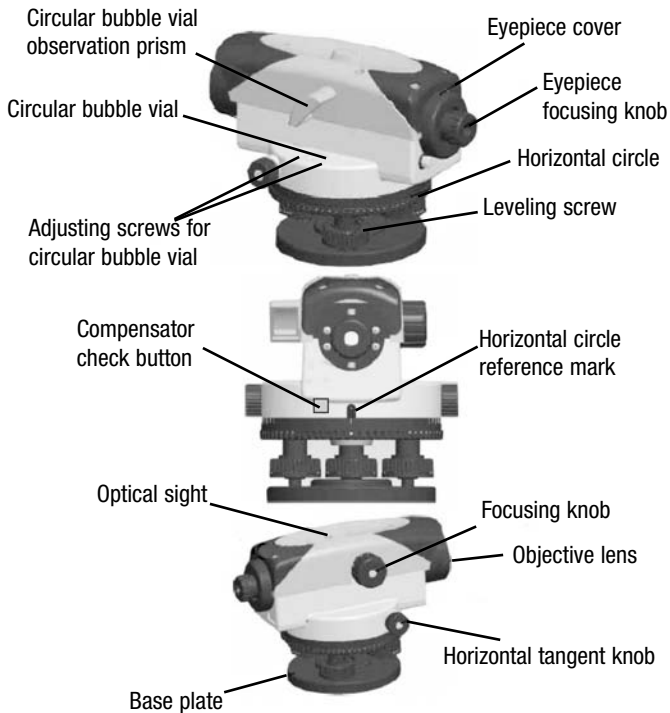
2. Features and Functions

- Water resistant, sealed construction for use in most weather conditions
- Wire-hung, magnetically dampened compensator
- Large, easy-to-use focusing knob
- 360° horizontal circle
- Penta prism for bubble viewing
- Top-mounted optical sight for quick reference
- Fine adjustment knobs on left and right sides with endless horizontal drive
- 1:100 stadia for distance estimation
- 5/8" x 11 threads to fit standard tripods





3. Location of Part/Components





4. Operating Instructions

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

Set-Up

Set the tripod up level and in a comfortable position to view through the telescope. Connect the instrument to the tripod with the 5/8"-11 central screw. Using the leveling screws, center the circular bubble.

Aiming and Focusing

Focus the cross hairs by turning the eyepiece focusing knob until the cross hairs are sharp and black.

Focus the telescope by locating a target, such as a leveling rod, using the optical sight. Looking through the eyepiece, use the focusing knob to bring the target into sharp focus. Center the cross hair to the target using the horizontal tangent knobs on either side of the instrument.





Reading measurements using a Leveling Rod

Height reading

Read the rod where it is intersected by the horizontal hair. For example, the height reading in Figure 1 is 2.0 ft.

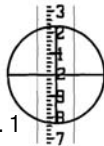


Fig. 1

Distance Measurement

Read the rod where it is intersected by the upper and lower stadia hairs. In Figure 1, these readings are at 1.9 ft. and 2.1 ft. The stadia ratio is 1:100, therefore the distance from the instrument to the rod is: $(2.1 - 1.9) \times 100 = 20\text{ft.}$

Angle Measurement

As shown in figure 2, sight point A and note the reading on the horizontal circle. Rotate the level and sight point B. The angle turned is the difference between A and B. The angle $AOB = x^\circ = A - B.$

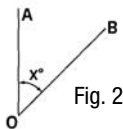


Fig. 2





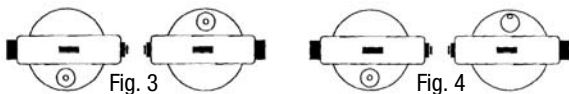
5. Calibration

5.1 Compensator Check Button

Check the compensator for proper operation before use or anytime the operation of the instrument is in question. Push and release the compensator check button to shake the compensator. The compensator should return to the exact horizontal position sighted before the check button was pressed.

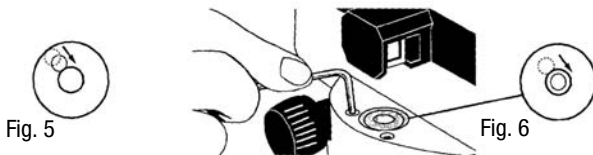
5.2 Circular Bubble Vial

Center the vial bubble using the leveling screws, then rotate the instrument 180° . The bubble should remain centered (Fig. 3). If the bubble moved from the center, the vial needs adjustment (Fig. 4).



Turn the leveling screws to bring the bubble halfway to center (Fig. 5). Using the allen wrench, turn the two vial adjustment screws to center the bubble (Fig. 6).

Repeat the above procedure until the bubble remain centered when the level is rotated 180° .





5.3 Line-of-Sight

The line-of-sight needs to be horizontal within 3mm of level to be accurate.

Set up and level the instrument on a tripod midway between two leveling rods set approximately 100 ft. to 160 ft. (30m to 50m) apart. Sight rods A and B; the height readings are a_1 and b_1 (Fig. 7). The value "H" is equal to $(a_1 - b_1)$. Move the instrument to within 6 ft. (2m) of rod A and re-level. Again sight rods A and B; these height readings are a_2 and b_2 (Fig. 8).

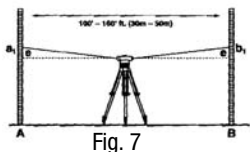


Fig. 7

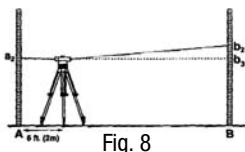


Fig. 8

If $a_1 - b_1 = a_2 - b_2 = H$, the line-of-sight is horizontal. If not, the level should be adjusted as follows.

Because the instrument is set halfway between A and B, any error in the line-of-sight causes both readings to be erroneous by the same amount. Error e cancels out, so the value $a_1 - b_1 = H$ is correct. Therefore, $a_2 - H = b_3$, the adjusting value.

To adjust, unscrew the eyepiece cover. Turn the adjusting screw with the adjusting pin (Fig. 9) until the horizontal cross hair gives the reading b_3 on rod B. Repeat the above procedure until $\{(a_1 - b_1) - (a_2 - b_2)\} \leq 3\text{mm}$.

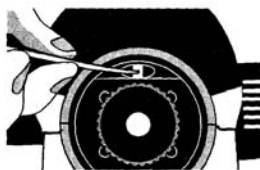


Fig. 9





6. Technical Specifications

Telescope	Erect
Magnification	26X (40-6926), 30X (40-6960), 32X (40-6962)
Leveling accuracy	$\pm 1/16''/200$ ft. (± 1.5 mm/160m)
Working range	Up to 350' (100m) (40-6926) Up to 400' (120m) (40-6960) Up to 450' (130m) (40-6962)
Clear objective aperture	40 mm
Field of view	1° 30'
Shortest focusing distance	0.0315" (0.8m)
Stadia ratio	100
Stadia addition	0
Water resistant	Yes
Sensitivity of bubble	8' (2mm)
Circle graduation	1°
Standard deviation for 1km double-run leveling	0.0689" (1.75mm)
Compensator:	
Working range	$\pm 15'$
Setting accuracy	$\pm 0.8''$
Dimensions	7.520" x 5.197" x 5.394" (191 x 132 x 137mm)
Weight	3.395 lbs (1.54Kg)
Center screw thread	5/8" - 11





7. Care and Handling

Care must be taken to maintain the accuracy of the instrument.

- After each use, the instrument should be wiped clean and kept in its carrying case.
- Remove dust from the lenses with a soft brush or a nonabrasive wipe. Never touch the lenses with your fingers.
- Store the instrument in a dust-free area with low humidity.
- A bag of silica gel dryer is included with each instrument.

8. Product Warranty

Johnson Level & Tool offers a three year limited warranty on 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 web site 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 course 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 Service 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.

9. Product Registration

Enclosed with this instruction manual you will find a warranty registration card to be completed for your product. 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 AND PROOF OF PURCHASE 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.**





10. 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.

