ERMENRICH PL30 Optical Level Base Color User Manual

Contents

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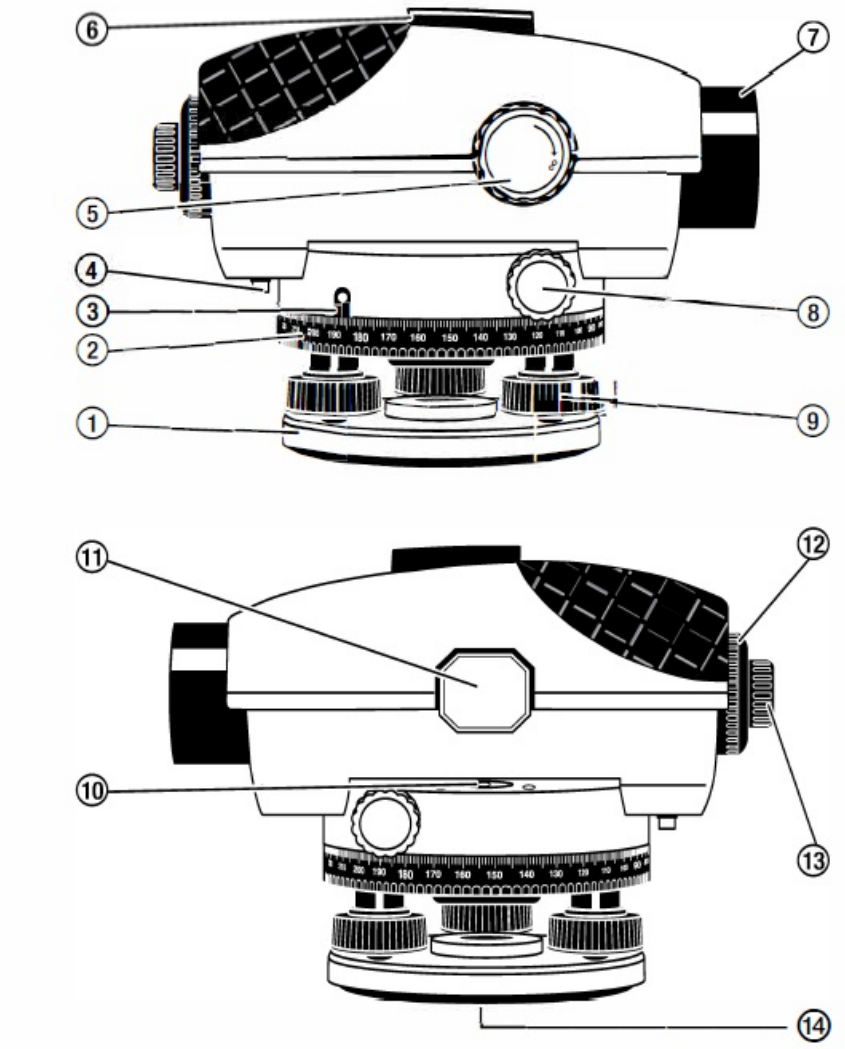
ERMENRICH PL30 Optical Level Base Color

The kit includes: an optical level, plastic carrying case, adjusting pin, hexagon wrench, user manual, and warranty.

DESCRIPTION



1. Base
2. Horizontal circle
3. Horizontal circle reference mark
4. Compensator lock
5. Focusing knob
6. Optical peep sight
7. Objective lens
8. Horizontal drive screw
9. Leveling screw
10. Bubble level
11. Bubble level 11 observation mirror
12. Eyepiece cover
13. Eyepiece focusing 13 knob
14. Tripod adapter

Setting and leveling

- Place the tripod legs on the ground and adjust the tripod to the user’s eye level.
- Place the device on the tripod and screw it tight.

- You can carry the device by lifting the tripod. Hold it vertically in order not to damage the device.
- Use the leveling screws (9) to position the bubble level (10) in the centre (Fig. 1). The device is leveled when the bubble is in the center.

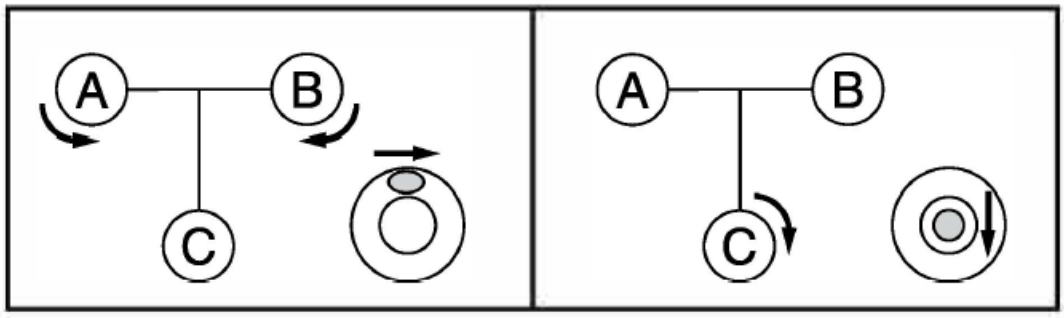


Figure 1

Aiming and focusing

- Remove the eyepiece cover (12). Aim the device at a bright object or hold a white sheet of paper in front of the objective lens (7), then turn the eyepiece focusing knob (13) until the dark black crosshairs can be seen clearly.
- Aim the device at the levelling rod. If necessary, use the optical peep sight (6) for easy aiming.
- Turn the focusing knob (5) until you can see the graduation marks of the leveling rod clearly (Fig. 2).
- Align the crosshairs exactly to the centre of the levelling rod by turning the horizontal drive screw (8).

Figure 2

Height difference measurement

- Put the levelling rods A and B in the vertical position. Place the device between the leveling rods A and B (Fig. 3).
- Focus the optical level on the center of the rod A. Record the height value of the leveling rod at the center of the crosshairs.
- Focus the optical level on the center of the rod B. Record the height value of the leveling rod at the center of the crosshairs (Fig. 4).
- Calculate the height difference by subtracting the smaller height value from the larger one.

In Figure 3, for example, the height difference is 0.565m. Subtract the value of height B from the value of height A.
1.78-1.215=0.565

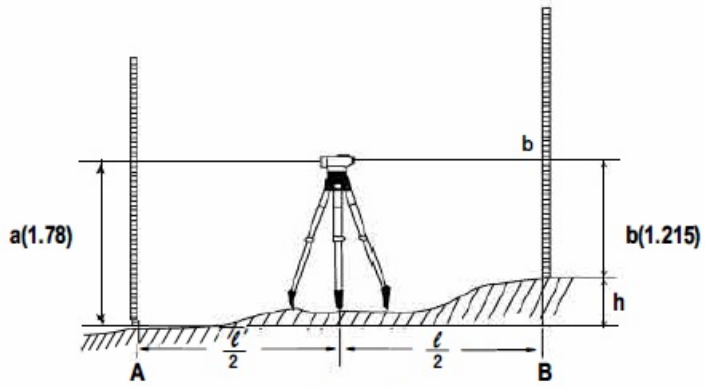


Figure 3

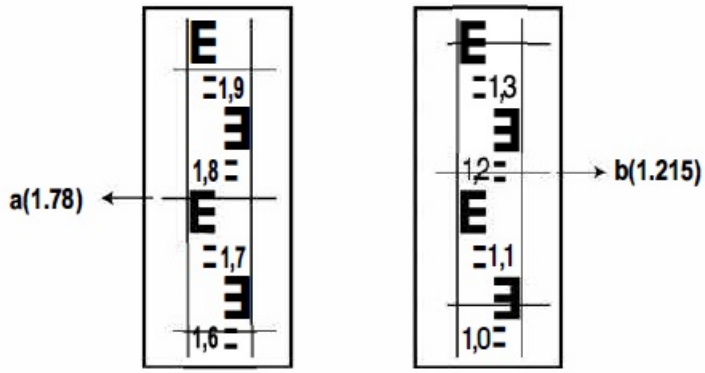


Figure 4

Distance measuring

- Focus the device on the leveling rod. Record the values of the upper and lower lines of the measuring crosshairs (Fig. 5).
- Multiply the difference in values by 100 to get the distance between the device and the leveling rod.

For example:
The distance between the device and the rod in Figure 5 is 30.5m. (1. 347 – 1.042) X 100 = 30.5

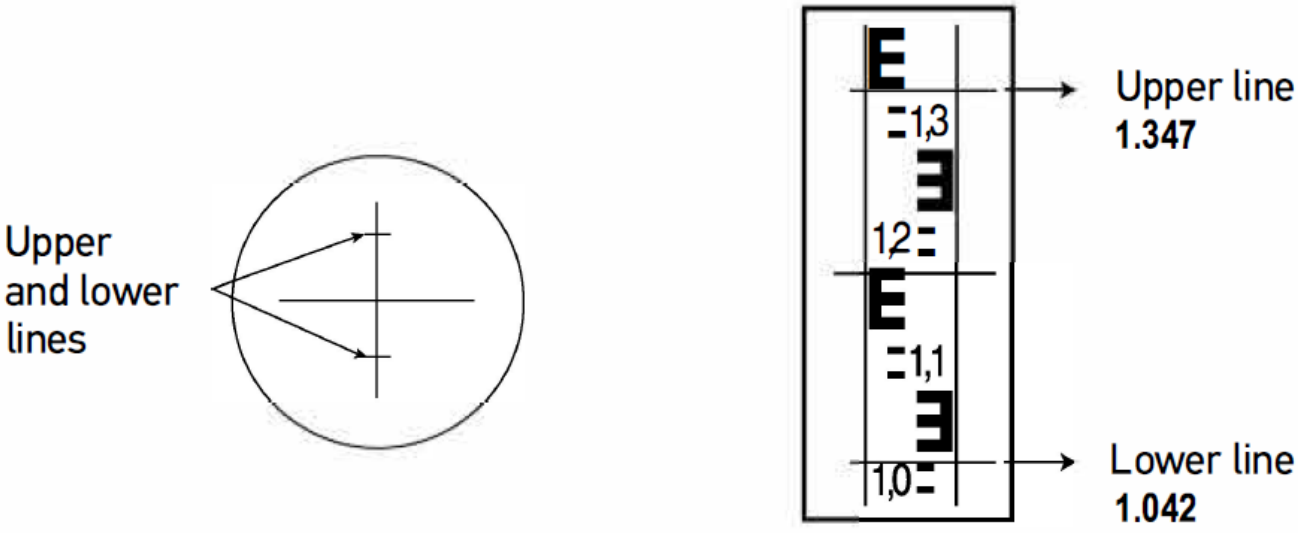


Figure 5

Angle measurement

- Focus the device on the rod A. Rotate the horizontal circle (2) until the “0” mark is aligned with the reference mark (3) (fig. 6).
- Focus the device on the rod B. Record the angle measurement of the reference mark (3) of the horizontal circle (Fig. 6).

For example:

The angle value in Figure 6 is 45°.
X0 =45°

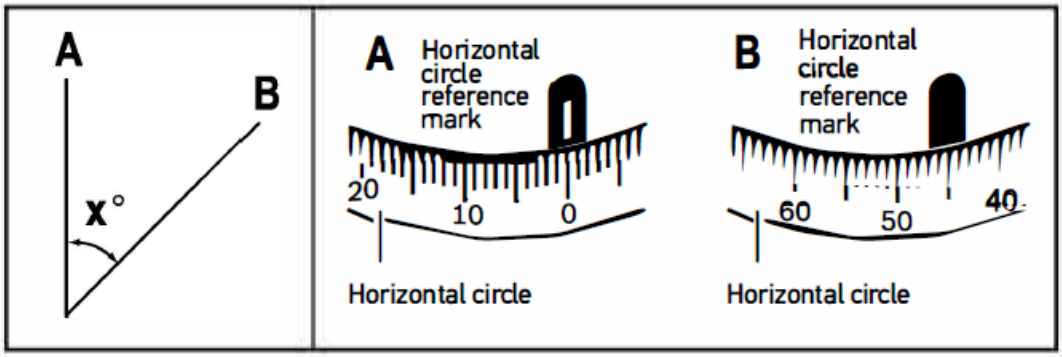


Figure 6

Bubble level calibration

- Check the bubble level (10). Use the leveling screws (9) to position the bubble level (10) in the center. Turn the device 180 degrees. If the bubble level stays in the center, the device is calibrated.
- If the bubble level is not in the center, rotate the leveling screws (9) to move the bubble level. The bubble should be placed at least on the ½ between the center and the outer end of the circle (Fig. 7).
- Then, using the hexagon, bring the bubble to the center by turning the leveling screws (Fig. 8).
- Repeat these steps until the bubble level is calibrated.

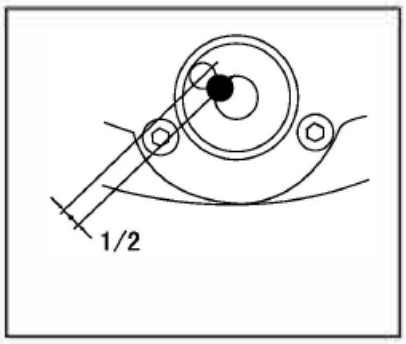


Figure 7

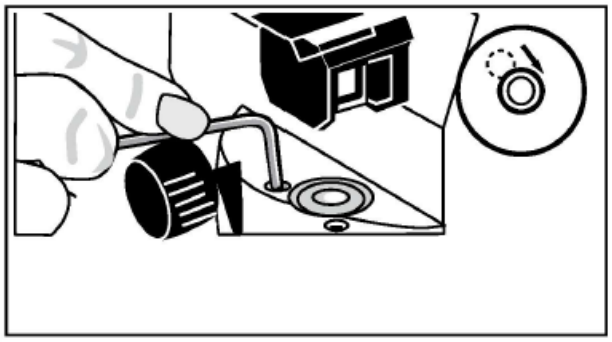


Figure 8

Angle calibration
Place the leveling rods A and Bat a distance of 30m from each other. Place the optical level between them (Fig. 9). Measure the height values of rods A and B, and then calculate the difference.

For example (Fig. 9):

- a1 = 1.937m
- b1 = 1.689m
- so the difference (d) is a1 -b1 = 0.248.

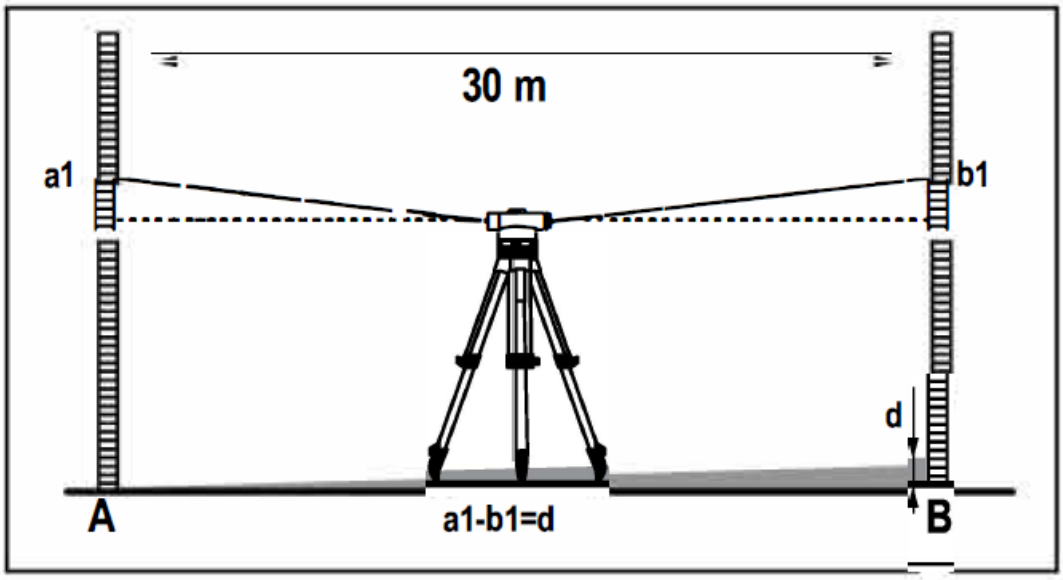


Figure 9

Place the device at a distance of 1 m from rod A. Measure the height of the rod A (value a2 in Fig. 10). Calculate the following equation: b2′ = a2 – d. Then, measure the height of rod B (b2). If the deviation between b2′ and b2 is over 3mm, the crosshairs should be calibrated.

For example:

- a2= 1.724m
- d=0.248
- sob2′ is: a2-d= 1.476

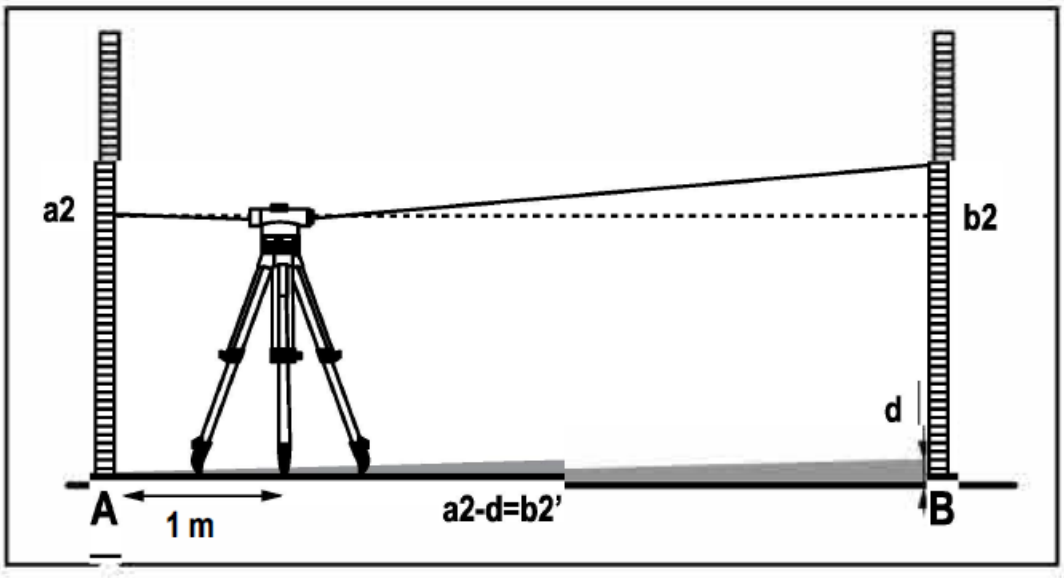


Figure 10

Take off the eyepiece cover (12). Turn the adjusting screw with the pin (Fig. 11) until the values b2′ and b2 are the same. Put on the eyepiece cover again.

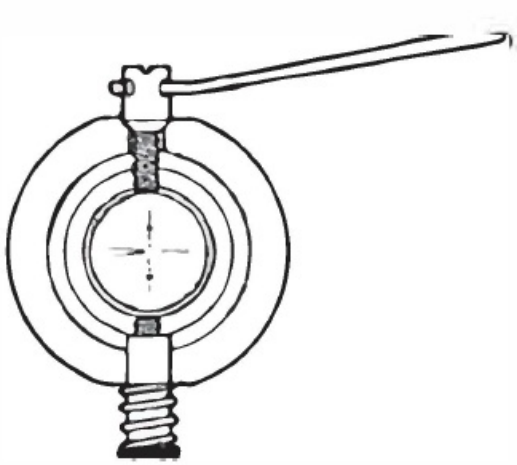


Figure 11

Specifications

The manufacturer reserves the right to make changes to the product range and specifications without prior notice.

Care and maintenance

- Never, under any circumstances, look directly at the sun, another bright source of light or at a laser through this device, as this may cause permanent retinal damage and may lead to blindness.
- Use the device only as specified in the user manual. Keep away from children.
- Store the device in a dry cool place. Do not expose the device to shock, continuous vibrations, or extreme high or low temperatures.
- Place the device in the carrying case when transporting it. Do not try to disassemble the device on your own for any reason. For repairs and cleaning of any kind, please contact your local specialized service center. Protect the device from sudden impact and excessive mechanical force. Only use accessories and spare parts for this device that comply with the technical specifications. Never attempt to operate a damaged device or a device with damaged electrical parts! If a part of the device or battery is swallowed, seek medical attention immediately.

Levenhuk International Warranty

- Levenhuk products, except for their accessories, carry a 5-year warranty against defects in materials and workmanship. All Levenhuk accessories are warranted to be free of defects in materials and workmanship for six months from the purchase date. The warranty entitles you to the free repair or replacement of the Levenhuk product in any country where a Levenhuk office is located if all the warranty conditions are met.
- For further details, please visit: **www.levenhuk.com/warranty**
- If warranty problems arise, or if you need assistance in using your product, contact the local Levenhuk branch.

Levenhuk Inc. (USA): 928 E 124th Ave. Ste D, Tampa, FL 33612, USA,+ 1- **813-468-3001**, **contact_us@levenhuk.com**
Levenhuk Optics s.r.o. (Europe): V Chotejne 700/7, 102 00 Prague 102, Czech Republic, +420 737-004-919,

sales-info@levenhuk.cz
www.levenhuk.com
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Documents / Resources

	ERMENRICH PL30 Optical Level Base Color [pdf] User Manual PL30 Optical Level Base Color, PL30, Optical Level Base Color, Level Base Color, Base Color

References

- User Manual