

Common User Errors

Handy Tips & Advice

TROUBLE SHOOTING

Error	Cause & Solution
<p>Will Not Power On</p>	<p><u>Check Batteries</u> Often lasers are sent to Service Centres with the following User battery mistakes: Standard batteries that are dead / Rechargeable batteries that are flat and need charging and Polarity errors i.e. batteries of either type that have been fitted incorrectly. Always double-check. It's well worth trying another set of new batteries and do not mix different types nor mix old batteries with new. Sometimes even new sealed batteries are faulty, so always try two sets. Bare in mind that new lasers with rechargeable batteries will not have been fully charged. Follow the User Manual to give them a full charge, before assuming the laser is defective.</p>
<p>Not Charging</p>	<p><u>Incorrect Charger</u> It's common for Service Centres to receive lasers in for repair with either no charger or the wrong charger. Using a non-original charger can cause serious damage to the batteries, internal charge circuit or the laser itself. We always recommend contacting us to purchase the correct OEM charger, if yours has been mislaid. Do not risk buying an often cheaper equivalent to find it causes problems. Its false economy. Ensure that all users are aware of which batteries are fitted so that in error, a charger is not plugged into a laser level fitted with standard batteries, which could cause serious damage.</p>
<p>Random Or Incorrect Levels</p>	<p><u>Site Refraction</u> Not every user is aware that laser levels, both Rotary and Line lasers can be affected by reflective surfaces on the work site. Customers report to the Service Centre that the detector (laser receiver) is faulty because it is picking up the laser beam in random positions. 99.9% of the time this is due to site Refraction. It's too easy to conclude the laser is faulty rather than understanding what site conditions can cause this phenomenon. However, it is very easy to eliminate the problem by making sure that laser beam reflections cannot be bounced back to the detector. As an example, if your site has large glass windows (Bifold doors / UPVC Windows) make sure you set-up the laser level so that when you hold the detector, the glass is behind you and the detector, so it cannot reflect on to it. Basically look out for & position your laser, being aware of all reflective surfaces like glass and shiny wet surfaces. It is also important to understand that the laser has a range of 500m diameter and spins 360 degrees. As such the refraction can be being caused by something outside the boundaries of your location.</p>

TROUBLE SHOOTING (CONTINUED)

Error	Cause & Solution
<p>Laser Will Not Self-Level</p>	<p><u>Outside Levelling Range Or Impact Damage</u> If the Laser Level is positioned outside of it's self levelling range of ± 5 degrees the rotating laser prism will tilt over to one side (to try and locate a level position) and then time-out. Re-position the Laser Level so that is is within ± 5 degrees of level and try again. If it's within ± 5 degrees of level and the prism remains tilted over to one side, turn the laser OFF and On again and try again. If the laser will still not self level, it may have received an impact which has affected the self levelling system. Please contact the Service Department: 08000 869 769 who will be able to how to send it for repair.</p>
<p>Laser Not Holding It's Charge</p>	<p><u>Battery Issue</u> Check the battery pack. The battery pack may require charging or need to be replaced due to age and/or a high number of charging cycles. Check the battery compartment for signs of damage and ensure that the compartment is clean and that the battery terminals are not corroded.</p>
<p>Detector Not Detecting The Laser Beam</p>	<p><u>Multiple Causes</u> Check the batteries in the detector. They may be low and need replacing. Check the Laser Level is spinning and producing a visible laser beam. You will be able to see the beam on your hands when placed in front of the protective lighthouse. Check the line of sight and ensure there is no obstructions. Check that the laser level and detector are within the operating range. If you are too close to the laser it may not pickup the beam. You need to be at least 3m away. Check that the protective lighthouse glass is clean and free of dust and dirt at all times.</p>
<p>Laser Will Not Power Off</p>	<p><u>Poor Storage Conditions</u> If the Laser will not turn OFF, it is typically due to poor storage (stored away wet, stored in a cold unheated building or vehicle) etc. which has caused internal condensation to build up and affect the main circuit board. Safely dry the Laser and accessories out thoroughly and try again. If this does not resolve the issue, please contact the Service Department: 08000 869 769 who will be able to advise how to sending it for repair.</p>

CHECKING THE CALIBRATION

Controlled Test

If you believe the Laser is not giving accurate datums (after ensuring you have completely ruled out refraction of the laser beam explained on page 5), please carry out the following controlled test in your office, or another indoor location.

- Position the Laser Level on it's tripod in the **middle** of your office, garage, workshop etc... somewhere where you have space (10m or similar).
- Ensure there is no glazing or reflective surfaces in line of sight of the laser beam. This is to prevent the Refraction of the laser beam (See Refraction Issues section on page 5 for further details).
- Turn off all the lights and press the **ON/OFF** button once and the Laser Level will power on and begin automatically self-levelling horizontally.
- **No other button needs to be pressed for the laser to self level.**
- This self levelling process takes around 15-20 seconds and then the prism will start spinning and will project a laser beam 360 degrees around the room.
- With the laser level keypad facing your chest (towards you) walk to the left hand wall and mark the position of the laser beam on the wall.
- With the laser level keypad facing your chest (towards you) walk to the right hand wall and mark the position of the laser beam on the wall.
- Walk back to the laser and carefully twist the laser level round so the laser keypad now faces the left wall.
- **Be extremely careful not to overly disturb the laser when twisting it round to the point the tripod position moves or is kicked.**
- The laser will momentarily stop and re-start when turned round. This is normal. The laser will then self level again and project a laser beam 360 degrees around the room.
- Walk to the datum marks on both the left and right wall. You should see that the beam is hitting these marks.
- **If it is hitting the datum marks then the laser is operating correctly.**

If it's not hitting the datum mark's...

(and you have 100% ruled out Refraction and have not pressed Manual override)

Please contact the Service Department: **08000 869 769** who will be able to advise how to send it for repair / calibration.

REFRACTION ISSUES

Product types: All Rotary and Cross line laser levels

Although there will always be the 0.1% of products that develop a fault, 99.9% of the technical enquiries we receive relating to “incorrect levels”, “random positions”, “out-of-level” or “Detector not picking up the beam correctly” transpire to being Refraction of the laser beam.

Laser levelling equipment is used by many different industries in various work-site environments. Users should be aware of the possibility of refraction problems, when using this type of equipment.

“Refraction” is the phenomenon where light is transmitted but moves direction when it passes from one medium to another e.g. through air then glass or water. This is why a pond of water appears shallower than it actually is or when you shine a torch at a window and the beam bounces off to another position. In the same way, this refraction can affect the correct setting-out, when using laser beams.

An easy example to understand is if, for example, a rotary laser is operated with a double-glazed window behind it. The true level position can be refracted and the deviation can be appreciable, even over small distances. In some instances, a double beam position can occur and the wrong level marked.

Our advice is to be aware of this and take appropriate care when setting out with your laser level, **both** indoor & outdoors.

A simple *fix* (if the laser cannot be moved or lowered) is to position a simple brown cardboard cover over the laser level on the side towards the refraction surface.

The following surfaces can potentially be problematic:

All glazing - single, double or treble glazed units. Patio / Bi-fold glass doors etc.

Glazed office partitioning.

Vehicle or Site Plant - glass windows & windscreens. (Curved windows are the worst)

Panel van sides - wet surfaces.

Mirrors & mirrored surfaces.

Stainless steel, shiny aluminum panels & reflective Celotex panels

Water – fountains, water displays, rivers, dams and weirs etc.

In addition, please be aware of the effects of amber & green warning beacons on plant & equipment. This “strobe effect” is a known problem and can affect all types of laser detectors to give erratic readings.

Our main advice is just to be site-aware when using laser levelling equipment, to ensure the reliable and accurate setting-out of your jobs.

It’s also important to understand that refraction of the beam, occurs with all lasers regardless of cost and or brand purchased.

CARE & MAINTENANCE

Protecting the Laser Level Kit

- Your Laser Level is precision levelling equipment and should be treated as such. Always handle with care and transport within the carry case provided.
- Always turn the laser level off when transporting or moving around the job site.
- Ensure the laser & accessories are clean and dry before storing in the case.
- If wet, dry well before storing and store the case and contents at room temperature. Failure to do so may void warranty.
- ***NEVER store the Laser Level Kit in a van, car or an unheated location (workshop / shed / garage / lockup etc.) overnight. The Laser Level Kit is designed to work in cold and wet conditions but it's the storage of the product when not in use that is critical. Keeping it in a secure heated building increases the usable life of the product and reduces the possibility of theft.***
- When the laser level is not in use or is being stored long term, it is highly recommended to remove the batteries or battery pack from the base of the laser as well as the batteries in the remote control and detector.
- Ensure the protective lighthouse glass is clean and free of dust and dirt at all times.
- Only use the supplied charger with the laser. The charger is for indoor use only. If the charger becomes damaged, stop using immediately and purchase a replacement. ***Never use a generic charger with this laser.***
- Always check the accuracy of the laser level before precision levelling is attempted. Failure to do so may result in inaccurate levels. See page **20** for further details.
- If the Laser Level has received a heavy impact or has been dropped, please ensure the calibration is checked.
- There are no user serviceable parts inside the Laser Level. Warranty void if tampered.

Laser Levels Online

**Unit 35, Bridge Business Centre, Beresford Way, Dunston Road,
Chesterfield, Derbyshire, S41 9FG, United Kingdom**

Freephone: 08000 869 769 (Free from UK mobiles and landlines)

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