

PERFECT LASER

PLT 40 Owners Guide

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Owning a PLT 40 engraver can be both exciting and frustrating. Exciting because of the 40W power capability and frustrating because there are a few quirks, tips and guidelines necessary to ensure smooth trouble free operation and which you won't find in the manual.



Here are my thoughts after having sold, installed and maintained over thirty PLT 40 laser machines over the past few years.

The list below is arranged in no particular order but each one will have or could have a bearing on the performance of your PLT 40 so please read carefully. If you do have any technical queries please email techsupport@perfectlaser.co.za with specific details and we will do our best to help, wherever possible.

1. Water Temperature – This is vital to the smooth extended running time of your laser. Hot running lasers erode the laser life, can result in broken/cracked tubes (not covered by warranty) and lose power - whilst warm.

Solution: Use at least a 20 litre bucket level with the PLT 40 (pushing water up to the height of your laser which slows down the water circulation). Buy and install an inexpensive aquarium temperature gauge from any pet shop. Ensure the water system is 'closed' ie. dust free and always keep the return pipe out of the water so that you can see that the pump is working correctly.

If you lose power after an hour or so of hard work change to a 40 litre bucket and throw in ice or frozen plastic bottled water.

Ideally speaking change the water regularly and if possible used distilled water which can be purchased at motor spares outlets.

2. Lenses and Mirrors - These can cost a small fortune to replace. Mirrors should be cleaned regularly. Use only ear buds and surgical spirits or methylated spirits. If you have used masking tape to check the alignments of the laser it is important to clean the glue residue of the mirror before resuming laser work.

The lens of the PLT 40 can be adjusted manually by loosening and extending/retracting the silver vertical lens holding cylinder.

If you have the PLT 40 without the centre cavity/hole on the cutting board then the orange focus stick (supplied in nylon blue carry case) will need to be extended by about 3mm. It is best to cut a new one from MDF wood. In fact, as the focal length can affect overall engraving and cutting effects and performance you will probably

want to cut focus boards at various heights and record this on your materials sheet along with power, speed and fabric type settings.

It is possible to adjust the alignment of the laser beam by adjusting the three screws attached to each mirror though this is NOT RECOMMENDED at all unless you have received some training from our technical staff.

3. Air Pump/Water Pump and Extraction System - Always ensure that these are connected together to a separate power point and that when switched on ALL are working correctly.

The air pump blows away debris from the laser lens, the extraction system sucks it out and the water pump keeps the laser tube cool.

Silver flexible tube/hosing can be bought in sections from Builders Warehouse and must be used to ensure that the fumes generated by the PLT 40 do not enter living or sensitive work spaces. Use silicon sealant to seal the extraction fan to the PLT 40 as it is not air tight.

General Notes

Always operate the laser with the lid down and do not look at the laser beam.

Cutting and/or engraving PVC/Plastic will generate harmful fumes.

The cutting board will get burnt from cutting and can be cleaned using Methylated Spirits.

For those owners who want a rudimentary Z-Axis capability the cutting board can be removed by taking out the 4 holding screws.

Do not operate at high cutting speeds at the maximum cutting size, ie. cutting paper to 200 X 300mm at high speed. It is always a good idea to leave about 15mm space as at high speed the laser head cannot always change direction without possibly causing out-of-cutting-area problems.

Testing for Alignment

If you suspect that your laser is losing power at different points on the cutting surface design a set of 5 circles in each of the 4 corners and centre. Use 3mm MDF and check that all 5 cuts are clean. If not then a possible alignment problem exists.

Check with a spirit level that the cutting board is level. If not and sections are uneven then the results will also be uneven.

The next test would be to check that the laser beam is hitting the centre of all 3 mirrors. This can be done by placing, masking tape systematically from Mirror 1 to Mirror 3 and checking that when the test fires the beam hits the centre of the masking

tape. Remember to clean afterwards as the beam will perforate the masking tape and leave glue residue on the mirror.

Stability of Software

Moshidraw has weak error correction capability. If you bump the USB cable and the connection is lost even momentarily the system cannot auto correct and resume. If you set the parameters beyond the 200 X 300mm cutting size the system will remain confused.

The only way to reset it is as follows:

Reset the PLT40 (switch on and off) and occasionally if the error persists re-install the Moshidraw software which only takes a few seconds.

Software Support / Remote Desktop Support

As many problems can be attributed to software settings it is essential that you download and install TeamViewer www.teamviewer.com a free remote desktop control program which will allow our staff to 'take over' your pc for testing and maintenance purposes.
