UNIVERSAL LASER SYSTEMS - Laser exchange

Procedure before replacing the laser cartridge

Section 1. Low Power
Section 2. No Beam
Section 3. Intermittent
Section 4. Poor Engraving Quality
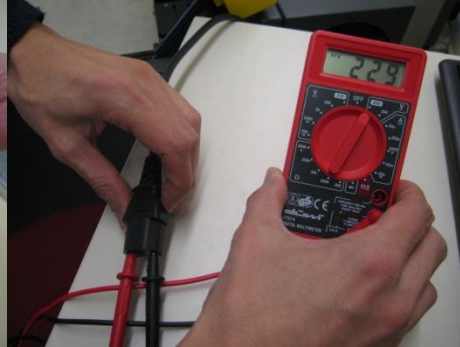**Section 5. No red pointer**

Section 1 – Low power

- **Make sure that the machine is getting stable 110/220V.**

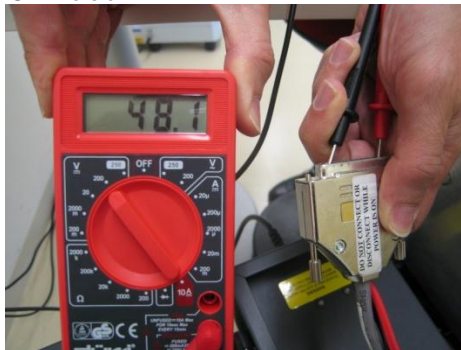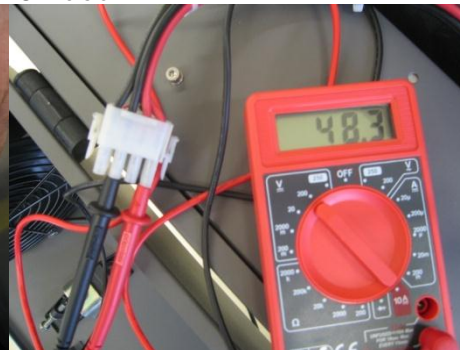The wall socket   The power cable to the machine

- **Make sure the laser getting power from the power supply? (If customer has a meter can check for 48 volts across the big RED and BLACK wires on laser plug)**

ULR-version   UL-version

- **Check that the table is leveled.**

- **Check that you are in focus.**

- **Check the beam alignment.**

- **Check so the laser cartridge is properly installed.**

- **Check the filters on the rear cover. If these are dirty the laser cartridge will not get the cooling needed and may overheat. Please also keep a free space behind and beside the machine (80cm/30Inch).**

Rear cover filter

Rear cover filter

- **Check the optics, Lens assembly, Mirror #3, Mirror #2 and the beam window. If you have a power meter, please check after each optic to narrow down which optic that needs replacement.**
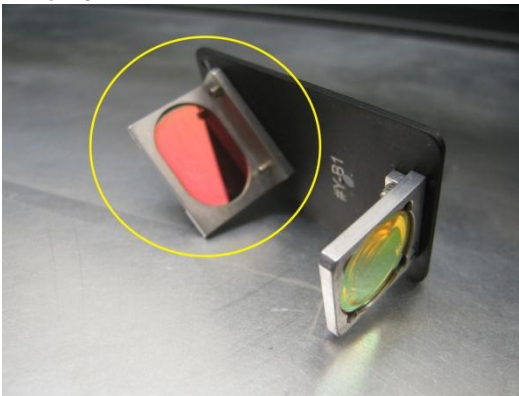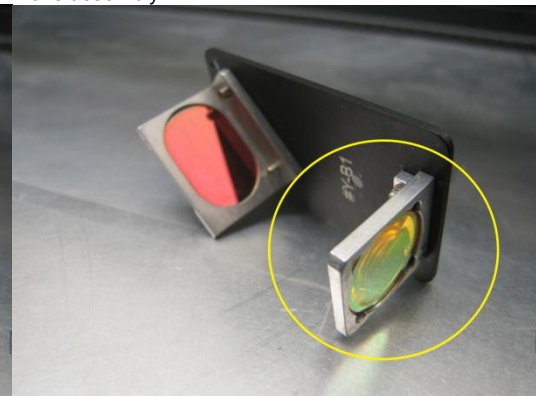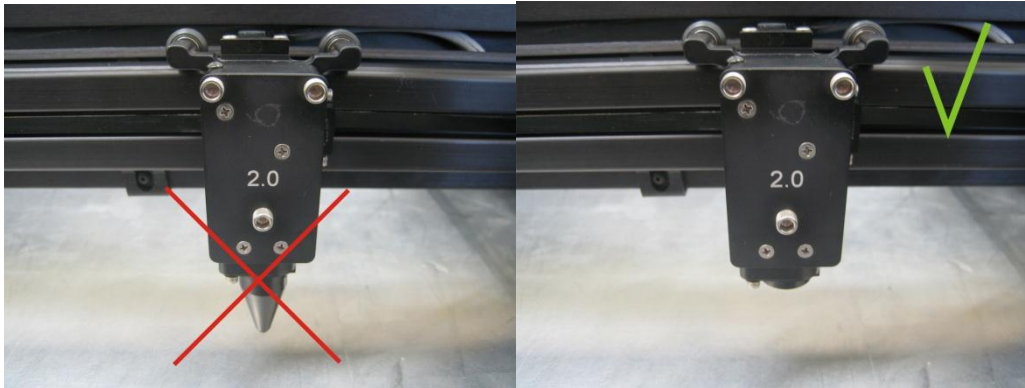
Beam window.

Mirror #2

Mirror #3

Lens assembly

- **IMPORTANT: If you are using a cone**
  Remove the cone and run a small test. If the power is increased you need to do the beam alignment but may also need to adjust the cone holder. When checking the Power on your ULS machine, never use a cone.

- **Make sure that the cooling fan on the laser cartridge is running (ref. technical bulletin – laser fan control).**

- **If you have low power or higher than normal have the please check;**
  Diagnostics Tab in the UCP to make sure the right laser wattage is displayed. The laser wattage can be changed using the Hot Keys. (SHIFT + INSERT, Systems tab.), Password: "vienna" . Set to correct laser wattage.
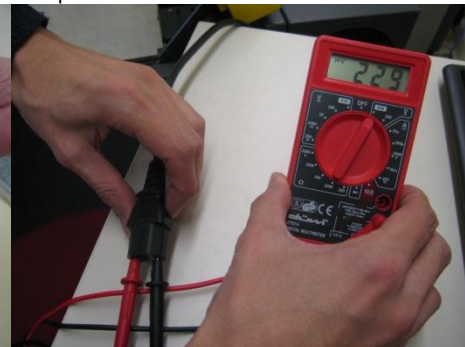
Section 2 - No Beam

- **Make sure that the machine is getting stable 110/220V.**

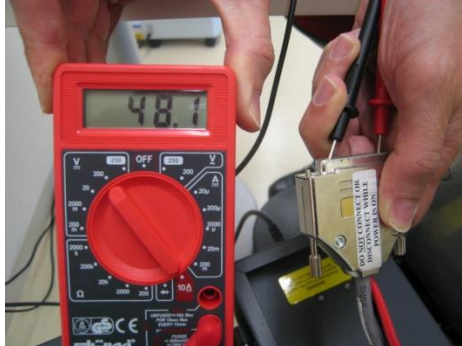The wall socket   The power cable to the machine

- **Make sure the laser getting power from the power supply? (If customer has a meter can check for 48 volts across the big RED and BLACK wires on laser plug)**
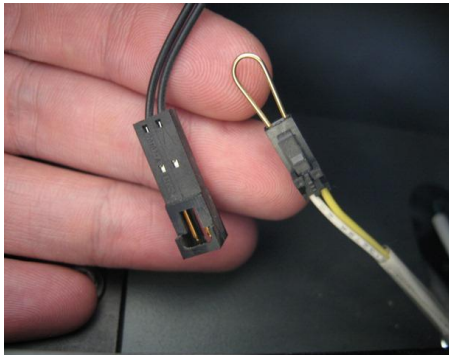
ULR-version   UL-version

- **Check that the table is leveled.**

- **Check that you are in focus.**

- **Check the beam alignment.**

- **Check so the laser cartridge is properly installed.**

- **Check the cables/connectors/pins relating to the wire harness to your laser cartridge and the CPU.**

- **If the symptom is no lasering at all, check if the red dot on the table - and if so, is it small & bright (In Focus) or wide & dull (out of focus). Should be small and bright. If not, have the customer focus using the focus tool.**

- **Next, have them run a job and ask the status of the front panel LEDs - If the red LED is blinking on keypad / front panel the customer has an interlock issue. Need to address the interlock before continuing.**

- **If no lasering but the red dot pointer is good and no interlock open - Have them remove the lens kit from the focus carriage and see if a spot can be burnt on the tape in beam alignment mode.**

- **Can you see the red power light on the back of the laser cartridge looking through the cooling fan on right side rear of the machine? This red diode will activate once all interlocks are close.**
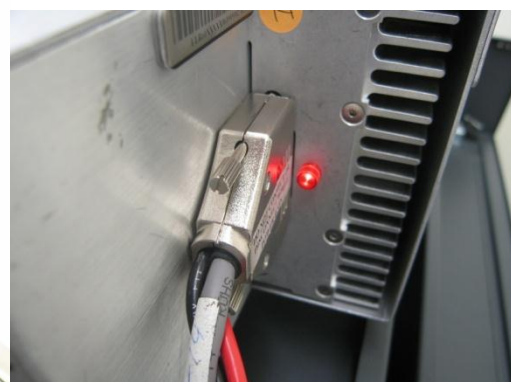
- **If the red dot pointer is centered on the tape and is small in size but still no lasering then at that point, recommend a laser cartridge exchange (when the next point has been checked)**

- **In rare cases one of the interlocks/interlock cables can be damaged and indicate that the interlocks are closed in the Diagnostics tab in the UCP. However, the interlocks are pulling voltage from the send and return signal of the interlock chain causing the laser cartridge not to fire but everything else appears to be OK.**
  Response: Use a paperclip to bridge and bypass <u>all</u> interlocks and try again. (See example 1 & 2 below) **IMPORTANT: MAKE SURE ALL DOORS ARE CLOSED WHEN TRYING THE MACHINE TO AVOID POTENTIAL EXPOSURE OF THE LASER BEAM.**

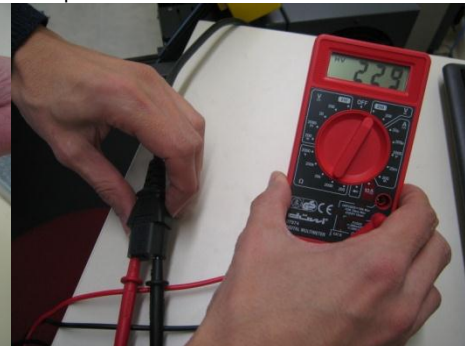Example 1   Example 2
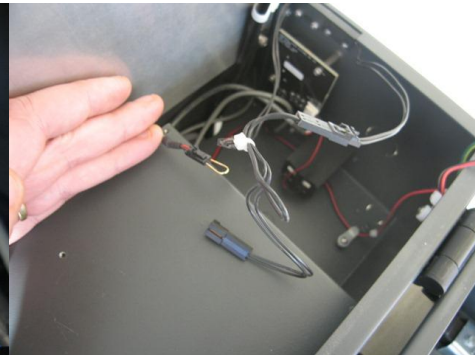
Section 3 - Intermittent
Laser beam turns on and off during a print job.

- **Make sure that the machine is getting stable 110/220V.**

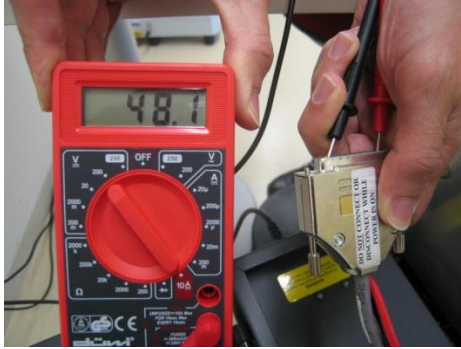The wall socket   The power cable to the machine

- **Make sure the laser getting power from the power supply? (If customer has a meter can check for 48 volts across the big RED and BLACK wires on laser plug)**

ULR-version   UL-version

- **Check that the table is leveled.**

- **Check that you are in focus.**

- **Check the beam alignment.**

- **Can you see the red power light on the back of the laser cartridge looking through the cooling fan on right side rear of the machine? This red diode will activate once all interlocks are close.**

- **If you still experiencing an intermittent problem, we recommend a laser cartridge exchange.**

Section 4 - Poor Engraving Quality

- **Check that the table is leveled.**

- **Check that you are in focus.**

- **Check the beam alignment.**

- **Check/adjust the tuning value in the UCP (Systems Tab).**

- **If you have a cone installed, please remove it and run the file again. If the quality is better the cone holder needs adjustment.**

- **Check the optics, Lens assembly, Mirror #3, Mirror #2 and the beam window. If you have a power meter, please check after each optic to narrow down which optic that needs replacement.**
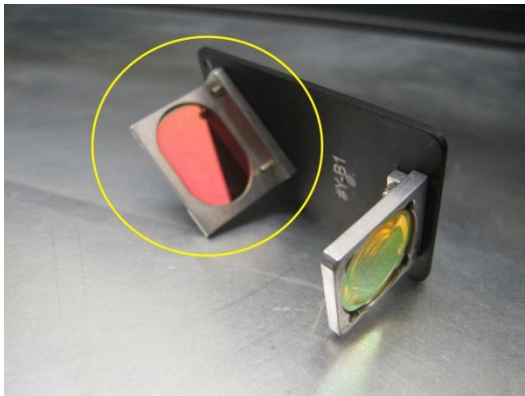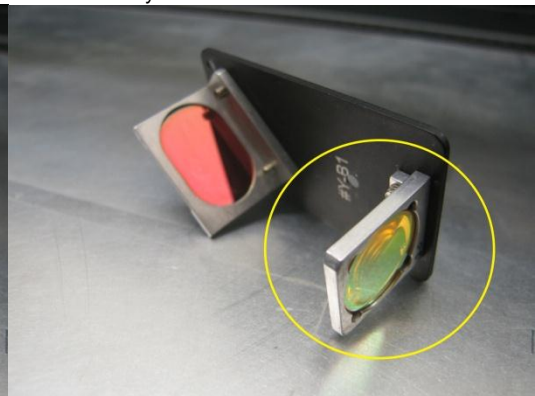
Beam window.
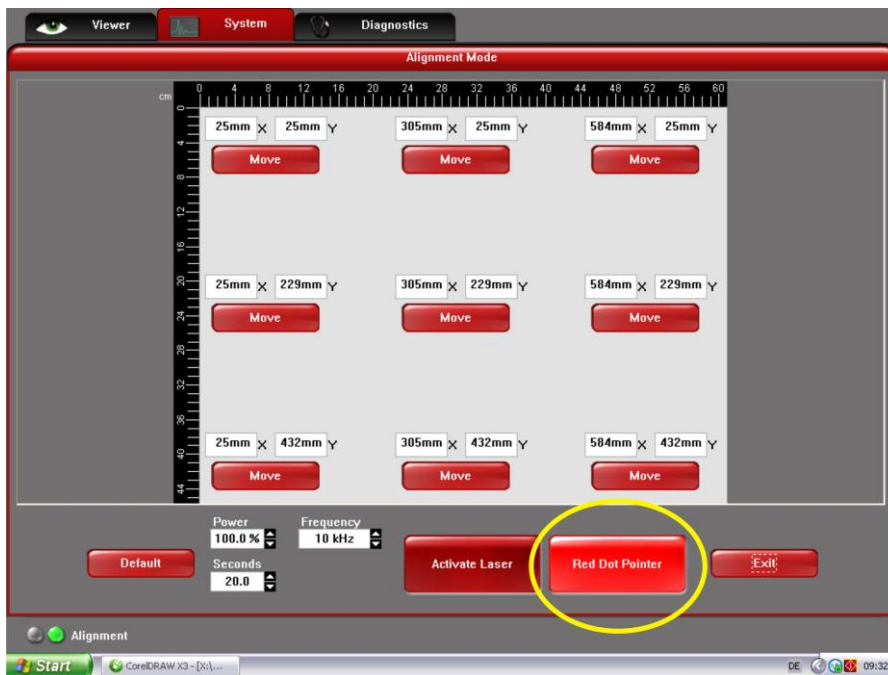
Mirror #2

Mirror #3

Lens assembly

- **Check so the X-axis arm square to the Y-axis rails.**

- **Check and/or replaced the x-axis bearings, belt, idler, and drive gear.**

- **Provide a picture of the "bad" quality to the technical department for check. (also provide the original file, .emf file and the .las.**

Section 5 - No red pointer - but have a laser beam.

- **Check if the laser cartridge is properly installed? (Rubber seal burnt on back of machine where laser mounts?)**

- **If you have a dual laser system, make sure that the Top cable is attached on the top cartridge. (The red dot pointer is only active on the top cable).**

- **Go to alignment mode in the UCP and check the red dot pointer activation/deactivation button.**

- **Check the cables/connectors/pins relating to the wire harness to your laser cartridge and the CPU.**