K0904C

SFX®

SPLIT FIBER LASER ENGRAVER
SFX-GS Operation Manual

HONESTY DESERVES SINCERE BEHAVIOR BEFORE WORK

Luoyang Xincheng Precision Machinery Co., Ltd

ADD : NO.256 Tanggong Road , Luoyang , HenanChina 471002

TEL : +86-0379-63512276

FAX: +86-0379-69960770

E-MAIL: info@sfxlaser.com

Web: www.sfxlaser.com

Luoyang Xincheng Precision Machinery Co.,Ltd
www.sfxlaser.com

Contents

It is important that you read this guide PRIOR to uncrating and setting up the machine. There may be slight differences in the appearance or features of your machine depending on the model that you purchased.

Safety / Warning

It is important that you read this guide PRIOR to uncrating and setting up the machine. There may be slight differences in the appearance or features of your machine depending on the model that you purchased. Laser safety glasses have been provided with your new machine. It is extremely important that you observe all safety protocols when operating the machine. Failure to do so can cause blindness or severe personal injury.

-The working beam of the laser is INVISIBLE to the human eye

-ALWAYS wear Laser safety glasses when the laser is operating

-DO NOT place hands in the workspace when the laser is operating

-Both direct and indirect exposure to the beam can cause injury!

Component Identification

The image below identifies the major components of your new machine. Please refer to this diagram when needed to complete the setup instructions.

Component Identification

1. Laser Source / Controller
2. Working Platform
3. Supporting Column
4. Vertical Adjustment (focus)
5. Emitter Body / Assembly
6. Emitter Head
7. Second Dot / Line Focus Laser (optional)
8. Rotary Attachment (optional)

SFX model SFX-50GS

Uncrating / Unpacking

After removing the protective foam blocks and the Accessory Kit from the crate you will find the rotary attachment (optional) bolted to the work area of the work platform. If present, remove the four (4) M6 Allen bolts holding it to the working platform and set it aside (the needed Allen wrenches are in the Accessory Kit bag.

There are 4 screws that go through the working platform securing it to the bottom of the crate, these need to be removed using a Phillips head screwdriver. To accomplish this, carefully move the laser source/controller off of the working platform so that all the screws are accessible.

WARNING!

When uncrating and moving the machine it is critical that care is taken to bend the umbilical between the laser source/controller and the emitter/platform as little as possible. Any bend radius less than 20cm (7.8in) can damage the fiber optic cable that transmits the laser beam from the source to the emitter module. The fiber optic cable is a NON-REPLACEABLE item if it is damaged. Damage from mishandling is NOT covered by warranty. If the fiber optic cable is damaged, a new laser source and emitter module must be purchased.

Once the laser source/controller and emitter/working platform are moved to their permanent location proceed to the next steps for preparing the machine for use.

Initial Setup Requirements

NOTE:
The fiber laser marking machine is shipped with the emitter assembly moved forward so the lens is not centered on the working space, this is done to save space for shipping and protect it from damage. It will need to be moved to center the lens over the working platform. This will be covered in the "Aligning the Emitter Head" section after the initial power up and connection to a PC since the red laser aiming dot from the emitter head is required to position the emitter assembly properly.

Accessory Kit

Inside the included accessory kit you will find the following items:
-120VAC Power Cable (US) or 240V Power Cable (EU/UK)
-Grounding Wire
-Foot Pedal Switch
-USB Cable
-USB Thumb Drive (Software and instructional Videos)
-Laser Safety Switch Keys (2)
-Laser Safety Glasses
-Metric Allen wrench Kit
-Spare Jaws and chuck key for the rotary attachment (only if purchased optionally)

Laser Marking Machine Connections

NOTE: A PC or Laptop with Windows 7/8/10 is required to operate the machine.
Connect the USB cable, Power cable and Foot Switch to the back of the machine via the ports that are labeled. The yellow lug on the bottom is for an additional ground connection if a proper ground is not provided by the power outlet that you have available via the third pin [ground / earth] (Figure 1).

Figure 1

Driver Installation

Once connected to the machine, connect the USB cable to the PC, then plug the machine into the AC power outlet and perform the following steps:

-Plug the USB Thumb Drive into the PC (it contains the driver software for the laser controller)

-Twist the Emergency Stop button clockwise, it will pop outwards and the "Indicator Lamp" will light, this shows that the machine has power

-Remove the cap from the lens of the emitter (be careful not to touch the lens with your fingers)

-Insert key into the laser safety switch and rotate clockwise, you will hear the cooling fans for the laser source start and the secondary red line focusing laser will light (optional, if equipped)

-On the PC, Navigate to the Control Panel > System and Security > Administrative Tools > Device Manager, you will see the new device listed under "Other Devices" (Figure 2)
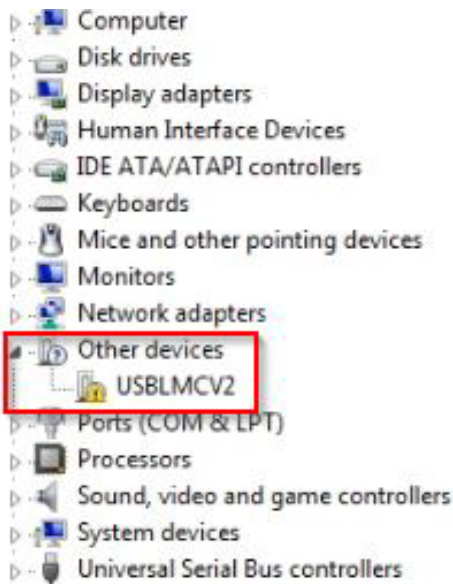

When you find the device "USBLMCV2", this is the laser controller, right click on it and choose "Update Driver Software" (Figure 3).

NOTE: the name of the new device may vary depending on the controller that your machine comes configured with.
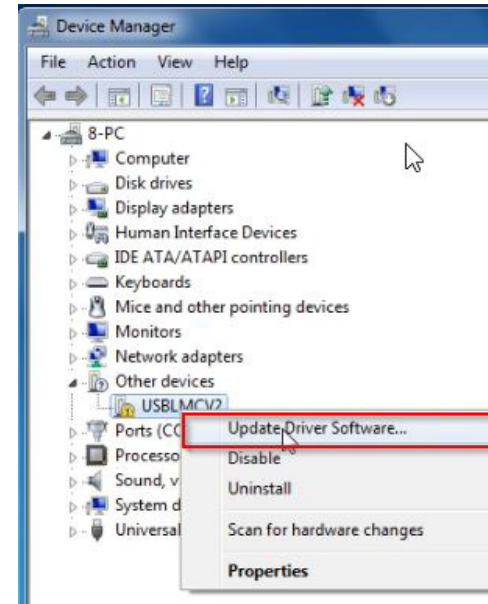
Figure 2

Figure 3

You will be presented with a new window that asks you where to locate the updated driver for the device, choose "Browse my Computer for Driver Software". The USB thumb Drive that was provided with your machine will have the necessary software on it.
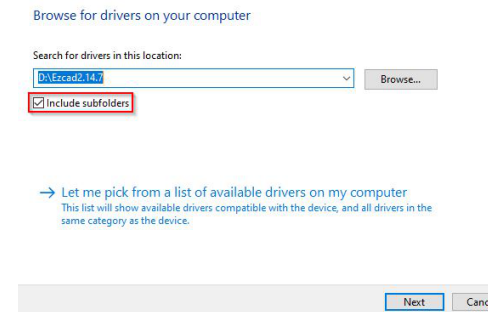

Figure 4

Before proceeding make sure that the USB Thumb Drive that was provided is plugged into the PC, browse to it and select the main Ezcad2.x.x folder and select it. Windows will look in the subdirectories to locate the proper driver for the device (Figure 4).

Once the driver is installed the Device Manager view will be updated to show the Laser Control Board recognized by the system (Figure 5).
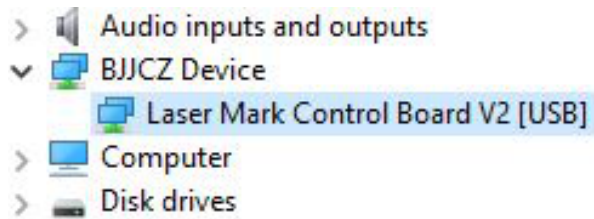

Figure 5

Software Setup (Ezcad)

"Installation" is not required to run Ezcad, it is a standalone program. The best method is to copy the contents of the USB Thumb Drive into a new folder on your desktop, and then create a shortcut to the Ezcad executable. You can do this by locating the Ezcad executable, right click and drag it onto the desktop. When you let go of the mouse button a menu will appear, select "Create shortcut here". Alternately you can right click on the Ezcad executable and choose "Pin to taskbar" to place it on your taskbar or "Pin to Start" to place it in the Windows Start menu.

NOTE:
For Ezcad to operate in the Registered Mode the PC must be connected to the laser with it powered on (the laser controller is the "Dongle"), if the laser is not connected and powered up Ezcad can only be run in trial mode which does not allow you to save any files from it.

Aligning the Emitter Head

As mentioned earlier in this document, the machine was shipped with the emitter head moved forward over the working platform to save space and protect it during shipping. It needs to be moved towards the rear of the working platform to center the working area of the

emitter over the working platform. The following steps will help you accomplish this.

1.Locate the center threaded hole in the working platform and insert one of the M6 Allen head screws into it finger tight, this serves as an easy reference to center of the working platform.
2.With the machine still powered up from the driver installation, open the Ezcad application.
3.Place a shape in the working field within Ezcad and keep it selected, this will cause the red drawing laser in the emitter head to light.
You will notice that it is far forward from the center of the working platform.
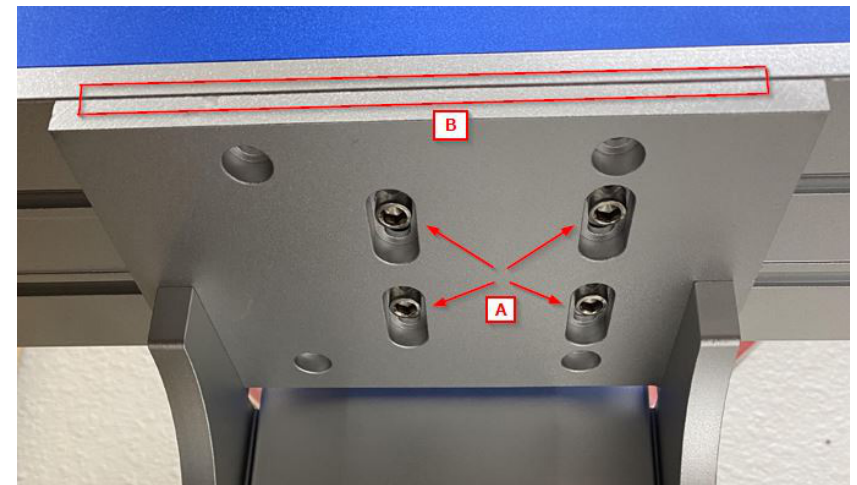4.On the underside of the emitter head assembly there are four (4) Allen head screws (Figure 6 "A").

Figure 6

5.Using the included Allen wrenches loosen these slightly, only enough that you can slide the emitter assembly backwards.
6.Slide the emitter head backwards until the dot from the red tracing laser is aligned with the center hole in the working platform on the X axis.

7.Once the emitter assembly is roughly on center, draw a square the size of you scanning field in Ezcad and press the "Light" (F1) button to have the red scanning laser project the square onto the work platform. Using a square you can move the emitter assembly so that one of the Sprojected X axis lines is perfectly square to the working platform. The X axis is the most important since it cannot be adjusted using the Ezcad software, only the Y axis can be adjusted via software.

8.Slightly snug the screws and recheck the alignment, if it is satisfactorily aligned, tighten the 4 bolts.

NOTE:

This is also a good time to ensure that all screws between the main emitter body and the emitter head are tightened down snugly (do not overtighten) as they may have loosened slightly during shipping. If not properly tightened you will see inconsistencies in marking.

Determining the Optimal Focal Point

In order for your machine to provide the best results it is important that it is focused properly. The emitter assembly can be moved up or down to account for the thickness / height of the objects being marked. The first step is to find the optimal focal point between the lens and the working platform.

-Place a piece of test material on the working platform that is a known thickness in millimeters (mm).

-Using Ezcad draw a 10mm square in the working area and then set the following settings for the object

*Hatch 1

□90 degrees, 0.01mm line distance

*Hatch 2 180 degrees, 0.01mm line distance

*Pen No. 0

□Use default settings (50% power @ 75KHz)

-Click on the "Light" button (F1) and verify that the area that is going to be marked is on the test material.

-Check the "Continuous" box, then the "Mark" button (F2)

-When the laser is marking, move the emitter assembly up / down

using the crank handle on the top of the supporting column.

oWhen moving up and down listen for the "loudest" noise being made by the test material as it is being marked. As you move away from the optimal focal point the noise from the test material will lessen.

*When fine tuning, listening for loudness, do this SLOWLY as the optimum focal area range can be as small as +/- 0.25mm

-When the focal point is found, stop the marking process.

*Using the scale on the right side of the supporting column note the number of mm indicated by the pointer.

*Subtract the thickness of the test material in mm from the number indicated on the scale and this is your "zero" focal point from the lens to the working platform (you may want to mark this on the scale with a small dot using a Sharpie for future reference).

-If equipped, the optional second dot / line focus laser can be adjusted if required to match the proper focal point by aligning it with the dot from the tracing laser projected from the emitter lens.

*The optional second dot / line laser is aligned at the factory. Using the manual focusing process helps verify that the setting was not disturbed during unpacking and setup. If the setting was disturbed during shipping, adjust the second dot / line focusing laser as required.

Use of the Included Foot Pedal

When Ezcad is running, and the laser is powered on, the foot pedal can be used to initiate marking whether or not the working area is being lit by the red tracing laser. A single press of the foot pedal will begin the marking process.

NOTE: The foot pedal can only be used to start the marking process, it will not stop it.

Technical Support

If you have questions or require assistance, please contact technical support.

info@sfxlaser.com

www.sfxlaser.com