

Fiber Laser Marking Machine User Manual



Please Read Carefully Before Use and Keep It for Future Reference

PREFACE

Dear Customer,

Thank you for choosing the Monport Laser System.

This fiber laser marking machine is intended for both personal and professional use.

Monport is committed to providing the highest level of customer satisfaction and support. To ensure a favorable customer experience, we kindly suggest that you thoroughly read the User Manual provided with your equipment before operation.

The manual covers the correct installation, adjustment, maintenance, and, most importantly, the safe operation of your new laser equipment. It is intended to be used in conjunction with the manual for the engraving software (BslAppSimple or LightBurn). These programs not only provide image design capabilities but also serve as the main interface for the laser settings and machine controls. You and any other users of this device should thoroughly understand BOTH manuals before attempting to operate the laser. Both manuals should be included if this device is given or sold to a third party.

The instructions for using BslAppSimple are provided only in electronic format and are included on the USB flash drive. The instructions for using LightBurn can be viewed by logging into the LightBurn official website (https://lightburnsoftware.com).

If you have any questions after reading these manuals, please contact us, and our support department will address your concerns as soon as possible. We understand that there may be a learning curve when using any new piece of machinery, but with some effort and patience, you'll soon be operating your new laser confidently and efficiently!

Your usage experience and suggestions are essential for Monport to improve our products and services. We will carefully listen to any opinions and suggestions from customers.

Again, thank you for choosing Monport.

Sincerely,

Monport Product Director

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CONTENTS

1. Introduction	2
1.1 General Information	2
1.2 Symbols Guide	2
1.3 Designated Use	3
1.4 Technical Specifications	4
1.5 Components	6
1.6 Package List	9
2. Safety Information1	0
2.1 Disclaimer	0
2.2 General Safety Instructions 1	0
2.3 Laser Safety Instructions1	0
2.4 Electrical Safety Instructions	1
2.5 Material Safety Instructions	2
3. Installation	3
3.1 Overview	3
3.2 Location Selection	3
3.3 Electrical Grounding1	4
3.4 Step-by-Step Assembly with GA1	4
4. Operation	5
4.1 Operation Overview1	5
4.2 Software Installation	5
4.3 Instructions for Specific Materials	1
5. Maintenance	2
5.1 Maintenance Overview	2
5.2 Regular Maintenance Procedures	2
5.3 Troubleshooting Guidance	2
5.4 Disposal Instructions	3
6. Contact Us	3

1. Introduction

1.1 General Information

This is the designated user guide for the installation, setup, safe operation, and maintenance of your fiber laser marking machine. It is divided into six chapters, covering: General Information, Safety Instructions, Installation Steps, Operation Instructions, Maintenance Instructions, Contact Information.

All personnel involved in the installation, setup, operation, maintenance, and repair of this machine should read and understand this manual, particularly its safety instructions. Failure to follow these instructions may result in substandard performance, reduced longevity, property damage, and personal injury.

How It Works: Your fiber laser marker emits a powerful laser beam from its fiber laser source. The beam travels through a fiber optic cable, focuses through the galvanometer lens, and uses this concentrated light to etch designs into various substrates.

Features:

Nanoscale Fiber Laser Source: Provides a single-mode output, excellent heat dissipation, high efficiency, and a compact structure.

High Precision: Ideal for detailed laser marking.

Longevity: With typical use, the device has an average lifespan of around 100,000 working hours.

Optimal Usage:

Power Settings: To ensure optimal performance and longevity, use the laser at 10-75% of its maximum rated power. Constant operation above 80% can significantly shorten its service life.

High-Voltage Precaution: As this is a high-voltage device, it is recommended to touch its components with only one hand at a time during use.

Safety Considerations:

This device does not come with a protective housing. It is recommended to use a dedicated room or set up protective screens around the work area.

The active laser is invisible to the human eye. Everyone in or near the working area MUST wear special protective eyewear when the laser is in use to avoid potentially permanent injury.

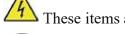
1.2 Symbols Guide

The following symbols are used on this machine's labeling or in this manual:

1 These items present a risk of serious property damage or personal injury.



These items address similarly serious concerns regarding the laser beam.



These items address similarly serious concerns regarding electrical components.

Protective eyewear should be worn by anyone around this machine during operation.

This product is sold in conformity with applicable EU regulations.

This product contains electrical components that should not be disposed of with regular garbage.

1.3 Designated Use

This machine is intended for engraving signs and other consumer products on applicable substrates. It can process a wide variety of metals, including steel, aluminum, titanium, brass, copper, tungsten, carbide, and chrome. It can also be used with stone and some hard plastics such as acrylic.

Use of this system for non-designated purposes or materials is NOT permitted.

The system **MUST** be operated, maintained, and repaired by personnel familiar with the field of use and aware of the dangers associated with the machine and the materials being engraved, including their reflectivity, conductivity, and potential for creating harmful or combustible fumes.

Laser beams are dangerous. The manufacturer and/or seller bear(s) no responsibility and assume(s) no liability for any improper use of this device or any damage or injury arising from such use. The operator is obliged to use this fiber laser marker **ONLY** in accordance with its designated use, the instructions on the device and in its manuals, and all applicable local and national laws and regulations.

1.4 Technical Specifications

Туре	GA Series				
]	Product Name	GA20	GA30	GA50	
	Voltage		and Canada regions: 1 d Australia regions: 22		
Ove	erall Rated Power	600W	600W	600W	
Field	Lens Specification	4.3x4.3 in. 110×110 mm	5.9x5.9 in. 150×150 mm	7.9x7.9 in. 200×200 mm	
Ma	arking Accuracy		0.01mm		
Ma	x. Marking Speed		393.7ips(10000 mm/s)		
Max. Marking Depth (depends on different material)		0.002in. (0.04mm)	0.003in. (0.08mm)	0.004in. (0.1mm)	
Positioning Accuracy		±0.1 µm			
	Rated Power	20W	30W	50W	
	Expected Service Life	100,000 hr.			
	Central Wavelength	1064nm			
Laser	Frequency Range	29~60kHz	30~60kHz	45~170kHz	
Lasci	Pulse Width	Nonadjustable (Fixed pulse width)			
	Beam Diameter	6-8 mm			
	Beam Quality M2	<1.5	<1.5	<1.6	
	Maximum Pulse Energy	0.78 mJ	0.78 mJ	1.1 mJ	
Required Operating	Max. Humidity	<70%RH(Operating outside the recommended humidity range n reduce the laser's lifespan, degrade performance, or even caus damage)			
Environment	Temp. Range		32–104°F(0 - 40°C)		
Provide	d Operating Software	BslAppSimple			
Applicable	BslAppSimple	Windows			
Computer	Lightburn		Windows, MacOS		
System	(not Included)		windows, macOS		
Applic	cable Image Formats	BMP, GI	F, JPG, JPEG, DXF, DS	T, Al.etc	
Materials	Suitable for Engraving		Titanium, Brick, Mar Tungsten, Granite, S		

Туре	GA Series				
]	Product Name	GA30 MOPA	GA60 MOPA	GA100 MOPA	
	Voltage		s and Canada regions: nd Australia regions: 2		
Ove	erall Rated Power	600W	600W	600W	
Field	Lens Specification		6.9x6.9 in. 175×175 mm		
Ma	arking Accuracy		0.01mm		
Max	x. Marking Speed		393.7ips(10000 mm/s)		
	x. Marking Depth s on different material)	0.003in. (0.08mm)	0.004in. (0.1mm)	0.006in. (0.15mm)	
Positioning Accuracy		±0.1 µm			
	Rated Power	30W	60W	100W	
	Expected Service Life	100,000 hr.			
	Central Wavelength	1064nm			
Laser	Frequency Range	1-3000kHz			
Lasti	Pulse Width	2-500ns			
	Beam Diameter	7±1mm			
	Beam Quality M2	<1.35	<	1.8	
	Maximum Pulse Energy	0.8mJ	1.5	imJ	
Required Operating	Max. Humidity	<70%RH(Operating outside the recommended humidity range reduce the laser's lifespan, degrade performance, or even caus damage)			
Environment	Temp. Range		32–104°F(0 - 40°C)		
Provide	d Operating Software		BslAppSimple		
Applicable	BslAppSimple		Windows		
Computer	Lightburn		Windows, MacOS		
System	(not Included)		windows, wideos		
Applic	able Image Formats	BMP, GI	F, JPG, JPEG, DXF, DS	ST, Al.etc	
Materials	Suitable for Engraving		Titanium, Brick, Ma Tungsten, Granite, S		

1.5 Components

1.5.1 Main Parts



1: Focus Adjustment Wheel

Manually rotate the adjustment wheel to move the laser arm up and down to achieve the correct focal length.

2: Support Column

The support column fixes the laser arm, providing stability and support for the machine's moving parts.

3: F-theta Lens

The F-theta lens marks a consistent and precise light spot at any position within the corresponding range.

4: Work Table

The work table can hold the target material and has optional positioning holes for precise alignment and positioning of the marking target.

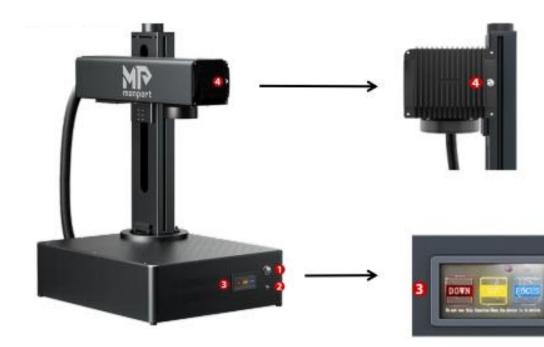
5: Control Panel

It is equipped with a control system and various electronic devices, responsible for controlling and managing the operation of the machine.

6: Laser Cable

Transmits the laser beam from the laser source to the laser head.

1.5.2 Buttons



1



- 1. Laser Power Switch
- 2. Start Engraving Button
- 3. Auto Focus Panel:
 - ① Laser Arm Down
 - (2) Laser Arm Up
 - 3 Auto Focus
- 4. Dual Red Light Switch

1.5.3 Interfaces



1. USB Interface

Connects the marking machine to a computer device.

2. Rotary Axis Socket

Connects the rotary axis port (compatible with the corresponding rotary axis).

3. Power Cord Socket

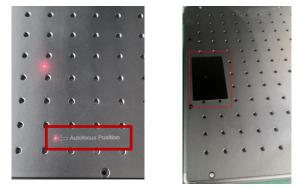
Connects the machine to the power supply using a standard 3-pin power cord.

4. Power Switch

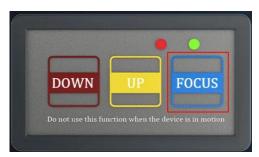
This switch controls the power on and off of the machine.

<u>1.5.4 Auto Focus Instructions</u>

1. Place the object to be marked under the red light used for measuring the focal length of the laser.



2. Press the autofocus button and wait a moment for the laser arm to move up and down to complete the autofocus.



3. After focusing, move the object to the position indicated by the red light, then press the 'Start Engraving' button to begin marking

Please consult customer service for operation videos if needed.

1.6 Package List

ТҮРЕ	Accessory	Quantity
	Power Cable	1
	USB Cable	1
	Flash Disk	1
	Wrench	1
	Position Plant	2
	Screws M6*12	4
GA	Hand tighten screws	2
	Goggles	1
	Testing Card	10
	USB-TypeC	1
	Intructions	1
	Ruler	1

2. Safety Information

2.1 Disclaimer

Your engraver may differ somewhat from those shown in this manual due to options, updates, etc. Please contact us if your marking machine comes with an outdated manual or if you have any other questions.

2.2 General Safety Instructions

• Use this laser marking device **ONLY** in accordance with all applicable local and national laws and regulations.

• Use this device **ONLY** in accordance with this instruction manual and the manual for the engraving software included with it.

• **ONLY** allow this device to be installed, operated, maintained, and repaired by individuals who have read and understood both manuals. Ensure that this manual and the software manual are included with this device if it is ever given or sold to a third party.

• **DO NOT** operate this device continuously for more than 5 hours. Stop every 5 hours for at least half a hour.

• **DO NOT** leave this device unattended during operation. Observe the device throughout operation and, if anything seems to be operating strangely, immediately cut off **ALL** power to the machine and contact either our customer service or your dedicated repair service. Similarly, ensure the device is **FULLY** turned off in the correct order after each use.

• **DO NOT** allow minors, untrained personnel, or personnel suffering from physical or mental impairment that would affect their ability to follow this manual and the software manual to install, operate, maintain, or repair this device.

• Any untrained personnel who might be near the device while it is in operation **MUST** be informed that it is dangerous and fully instructed on how to avoid injury during its use.

• ALWAYS keep a fire extinguisher, water hose, or other flame retardant system nearby in case of accidents. Ensure that the local fire station's phone number is clearly displayed nearby. In case of a fire, cut electrical power before dousing the flame. Familiarize yourself with the correct range for your extinguisher before use. Take care not to use your extinguisher too close to the flame, as its high pressure can produce blow-back.

2.3 Laser Safety Instructions

This machine uses an invisible **CLASS 4 LASER**, the strongest and most dangerous class of laser available for public use. Used without care, it can cause serious property damage and personal injury, including but not limited to the following:



- The laser will easily burn nearby combustible materials.
- Some working materials may produce radiation or harmful gases during processing.
- Direct exposure to the laser will cause bodily harm, including serious burns and irreparable eye damage.
- **NEVER** interfere with the laser beam.

• **DO NOT** place any part of your body under the laser lens during operation. Use screens or personal protective equipment to protect yourself from potentially reflected laser beams.



• **NEVER** attempt to view the laser directly without protective eyewear. **ALWAYS** wear safety goggles or glasses designed to filter the specific wavelength of your engraver's laser with an optical density (OD) of 5+. As even seemingly matte materials can produce harmful reflected beams, care should be taken to keep anyone without protective eyewear from observing the machine during operation. **EVEN WITH** protective eyewear, do not stare or allow others to stare continuously at the laser beam during the operation.

• **DO NOT** leave potentially combustible, flammable, explosive, or corrosive materials nearby where they could be exposed to the direct or reflected laser beam.

• **DO NOT** use or leave sensitive EMI equipment nearby. Ensure the area around the laser is free of strong electromagnetic interference during any use.

• ONLY use this machine as described in the MATERIAL SAFETY SECTION of this manual. The laser settings and engraving process must be properly adjusted for specific materials.

• ENSURE the area is kept free of airborne pollutants, as these might pose a similar risk of reflection, combustion, etc.

• **NEVER** use this marking machine with the fiber source's housing opened, as the closed laser light path is necessary to prevent laser radiation leakage.

• **DO NOT** modify or disassemble the laser and do not use the laser if it has been modified or disassembled by anyone except trained and skilled professionals. Dangerous radiation exposure and other injury may result from the use of adjusted, modified, or otherwise incompatible equipment.

2.4 Electrical Safety Instructions

• **ONLY** use this device with a compatible and stable power supply with less than 5% fluctuation in its voltage.

- DO NOT connect other devices to the same fuse, as the laser system will require its full amperage.
- DO NOT use standard extension cords or power strips. Use only surge protectors rated over 2000J.

• ONLY turn on the power via a firm connection to a 3-prong outlet.

• Turn the device on and off using its power buttons in the correct order. Pushing all the buttons at once, too quickly, or in the wrong order may send electrical current to an ungrounded component, causing short circuits and other electrical hazards.



• **ONLY** use this device with one hand at a time. The laser is powered by an extremely high voltage connection and placing two hands on the machine at one time during operation has the potential to create a closed circuit with the human body, resulting in electrical shock.

• The area around this laser marking device should be kept dry, well-ventilated, and environmentally controlled to keep the ambient temperature between $32-104^{\circ}F$ (0-40°C). The ambient humidity should not exceed 70%.

• Adjustment, maintenance, and repair of the electrical components of this device must be done **ONLY** by trained and skilled professionals to avoid fires and other malfunctions, including potential radiation exposure from damage to the laser components. Because specialized techniques are required for testing the electrical components of this marking system, it is recommended such testing only be done by the manufacturer, seller, or repair service.

• Unless otherwise specified, **ONLY** undertake adjustment, maintenance, and repair of the device when it is turned off and disconnected from its power supply.

2.5 Material Safety Instructions

• Users of this fiber marking machine are responsible for confirming that the materials to be processed can withstand the heat of the laser and will not produce any emissions or by-products harmful to people nearby or in violation of any local or national laws or regulations. In particular, **DO NOT** use this device to process polyvinyl chloride (PVC), Teflon, or other halogen-containing materials under any circumstances.

• Users of this fiber laser are responsible for ensuring that every person present during operation has sufficient PPE to avoid any injury from emissions or by-products of the materials being processed. In addition to the protective laser eyewear discussed above, this may require goggles, masks or respirators, gloves, and other protective outer clothing.

• Users must exercise special caution when working with conductive materials, as the build-up of their dust and ambient particles may damage electrical components, cause short circuits, or produce other effects, including reflected laser radiation.

This machine can be safely used with the following materials:

- Aluminum
- Brass
- Carbide
- Gold
- Silver
- Steel
- Stone, including Granite, Marble, etc.
- Titanium
- Tungsten

This machine can be used with some other metals, hard plastics, and other materials with some care. For other materials, if you are unsure about their safety or laser compatibility with this device, seek out its material safety data sheet (MSDS). Pay special attention to information about safety, toxicity, corrosiveness, reflectivity, and reactions to high heat. Alternatively, contact our support department for further guidance.

See section **4.4 Instructions for Specific Materials (Page 24)** for the recommended parameters for the most commonly engraved materials.

This machine CAN NOT be used with the following materials or with any materials which include them:

- Artificial leather containing Hexavalent Chromium (Cr[VI]), due to its toxic fumes
- Astatine, due to its toxic fumes
- Beryllium oxide, due to its toxic fumes
- Bromine, due to its toxic fumes
- Chlorine, including Polyvinyl Butyral (PVB) and Polyvinyl Chloride (PVC, Vinyl, Cintra, etc.), due to its toxic fumes
- Fluorine, including Polytetrafluoroethylene (Teflon, PTFE, etc.), due to its toxic fumes
- Iodine, due to its toxic fumes
- Paper and paperboard, due to their high flammability when exposed to the concentrated laser
- Phenolic resins, including various forms of epoxy, due to their toxic fumes
- Wood, including MDF, plywood, balsa, birch, cherry, oak, poplar, etc., due to its high flammability

3. Installation

3.1 Overview

A complete working system consists of the following parts:

- Fiber laser source
- Laser arm with the galvanometer lens
- Computer (not included) with BslAppSimple software
- All applicable connection cables
- Support column
- Working platform



Users can also configure additional accessories (such as a rotary axis) to suit their needs. Use only the hardware, wiring, and power sources that came with or are compatible with this device. Installing equipment that your device is not designed to work with can lead to poor performance, shortened service time, increased maintenance costs, property damage, and personal injury.

Please note the specific requirements of your system's installation. Every customer must understand these notes before installation to execute a proper setup and achieve safe laser performance. If you have any installation questions or problems, contact our technicians and customer support team.

Any auxiliary equipment must be adjusted to the base machine. Queries may be directed to the dealer or manufacturer of such equipment.

3.2 Location Selection

Before assembling your laser marking machine, select an appropriate location for its use, meeting the following conditions:

- Be sure that it meets all the requirements discussed in the Safety Information above.
- The location should be stable, level, dry, and climate-controlled to ensure an ambient temperature of $32-104^{\circ}F$ (0-40°C) and an ambient humidity under 70%.
- In particular, the temperature and humidity together should **NOT** be close to the dew point.

• It is also advisable to use a windowless room or use blinds and/or curtains to avoid exposure to the potential additional heat of direct sunlight.

• The location should be free of dust and other airborne pollutants and well-ventilated enough to process any fumes produced by the engraving process in accordance with all applicable laws and regulations. Depending on the materials to be processed, this may require the construction of a dedicated ventilation system.

• It should be away from children; combustible, flammable, explosive, or corrosive materials; and sensitive EMI devices.

• The power cord should be plugged into a compatible and stable power source via a grounded 3-prong outlet. No other item should be drawing current from the same fuse.

• There should be firefighting equipment nearby, and the local fire station's phone number should be clearly displayed.

• It is highly recommended to have an extra work table nearby to avoid placing objects on or directly adjacent to the machine, which could become a fire or laser hazard.

3.3 Electrical Grounding

This device uses a powerful laser and operates at extremely high voltage, making proper grounding crucial for safety. To prevent the build-up of static electricity, users must securely ground the device.

(1) Using a Standard Outlet: Plugging the device into a standard 3-prong outlet provides sufficient grounding.

(2) Alternative Grounding Method: Use the included grounding cable if a 3-prong outlet is unavailable. Ensure the far end of the cable is securely connected to a metal rod driven at least 8 feet (3 m) deep into the soil, located at least 5 feet (1.5 m) from the machine. The resistance along the grounding line should not exceed 5Ω .



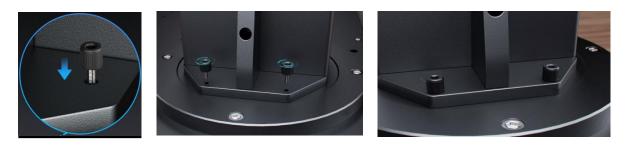
Failure to properly ground the device **WILL** lead to equipment failure and pose a serious electrical shock risk. The manufacturer and/or seller(s) do not bear responsibility or liability for any damage, accidents, or injuries resulting from improper grounding connections

3.4 Step-by-Step Assembly

- If you buy a GA series product.
- Prepare the two screws for securing the bracket.
- Lift the folded bracket.



• Align the two holes, insert and tighten the screws.



4. Operation

4.1 Operation Overview



Operate this laser marking machine only in accordance with all the instructions provided in this manual. Failure to follow the guidelines detailed here can result in property damage and personal injury.

This section addresses only some of the options and features provided by the operation software. Before using the machine, ensure you have read this entire manual (particularly the Safety Information section), the separate software manual, and any warnings provided on the machine itself.

4.2 Software Installation

4.2.1 Connecting Computer Equipment

①Connect the machine to the power supply using the provided power cord.

(2)Connect the machine to your computer using the provided USB cable.

Note: The computer should not be placed more than 15 feet (4.5 meters) from the laser marker to avoid possible signal interference.

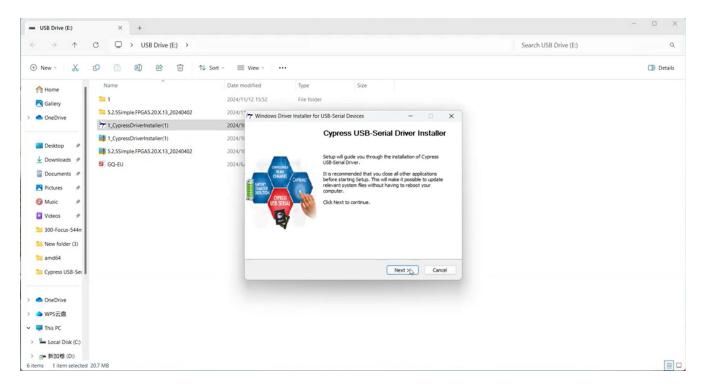
4.2.2 Installing BslAppSimple

Drive installation

①Double-click the software (as shown in the picture);

USB Drive (E) × +					- 0
\rightarrow \uparrow \bigcirc \square \rightarrow USB Drive (E) \rightarrow				Search USB Drive (E:)	c
∋New∽ 🏑 🗘 🗋 🕲 î 1	NJ Sort ~				🚺 Detail
A Home Name	Date modified	Туре	Size		
🔁 Gallery 🚞 1	2024/11/12 15:52	File folder			
S2.5Simple.FPGAS.20.X.13_20240402	2024/11/5 17:08	File folder			
1_CypressDriverInstaller(1)	2024/19/8 11:04	Application	21,212 KB		
1_CypressDriverInstaller(1)	2024/10/18 11:25	360压缩 ZIP 文件	21,153 KB		
Desktop # 5.2.5Simple.FPGA5.20.X 13_20240402	2024/10/18 11:26	360压缩 ZIP 文件	100,391 KB		
∠ Downloads	2024/6/7 11:49	WPS PDF 文档	2,748 KB		
Music					
● OneDrive ● WPS云盘 ■ This PC ■ Local Disk (C:)					
☞ 新加楼 (D:) ems 1 item selected 20.7 MB					

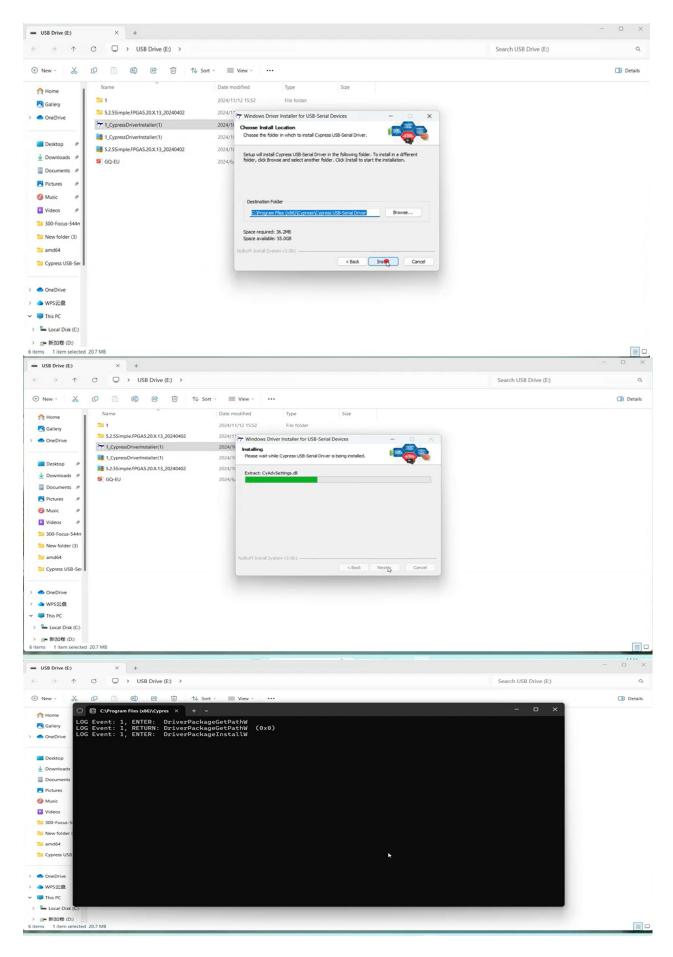
②Click Next;



③Click "I Agree ";

New - X C New - X C Name Date modified Type Size A Home Name Date modified Type Size Concertified Size Concertified New folder (3) amd64 Cyperses USB-Set Videos Size Videos (A) Cyperses USB-Set Videos (C) Cy		C Q > USB Drive (E:) >	Search USB Drive (E)	<
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(4) Click Next;



USB Drive (E:)	× +			- • ×
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€ New ~ 🔏	0 ⊡ @ @ ∿	Sort 🗸 📰 View 🗸 🚥		Details
A Home	Name	Date modified Type Size		
Gallery	1	2024/11/12 15:52 File folder		
OneDrive	5.2.5Simple.FPGAS.20.X.13_20240402	2024/1 😽 Windows Driver Installer for USB-Serial Devices - O ×		
	↑ 1_CypressDriverInstaller(1)	2024/11 Cypress USB-Serial Driver Installer		
Desktop #	1_CypressDriverInstaller(1)	2024/11		
	5.2.5Simple.FPGA5.20.X.13_20240402	2024/11 Cypress US8-Serial Driver Installer utility has installed the		
⊥ Downloads	SQ-EU	2024/6/ USB Serial Windows Drivers Successfully.		
Documents 🖈		United Carlos		
Pictures 🖈		Salation Contras		
🚱 Music 🛛 🖈		UCB SEILA		
Videos 🖈				
200-Focus-544m		•		
New folder (3)				
amd64				
Cypress USB-Sei		<back cancel<="" fring="" td=""><td></td><td></td></back>		
 OneDrive 				
→ WPS云盘				
This PC				
Local Disk (C:)				
- 新加卷 (D:)				
items 1 item selected	20.7 MR			

⑤Click "Finish" to complete the drive installation;

Software installation

This software is a green software that can be used directly or copied to a designated location on the computer after inserting a USB drive.

(6) After inserting the USB flash drive into the computer, the file list shown in the following figure will be displayed;

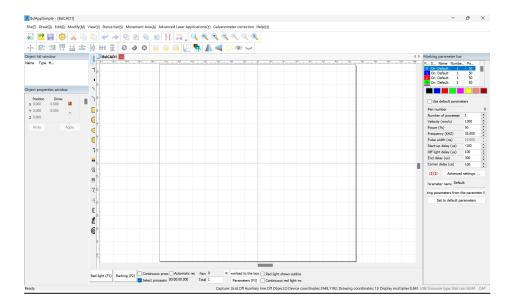
ONext, double-click the folder that the arrow points to;

5.2.5Simple.FPGA5.20.X.13_20240402	2024/11/7 15:45
1_CypressDriverInstaller(1)	2024/10/8 11:04
🚝 1_CypressDriverInstaller(1)	2024/10/18 11:25
a 5.2.5Simple.FPGA5.20.X.13_20240402	2024/10/18 11:26
GQ-EU	2024/6/7 11:49

⁽⁸⁾After entering the folder, double-click "BslAppSimple " pointed by the arrow;

📁 Lang	2024/11/7 15:45
🔁 Log	2024/11/7 15:46
📁 Plug	2024/11/7 15:45
💴 res	2024/11/7 15:45
SIAppSimple	2024/10/8 11:04
Calib.dll	2023/11/24 9:15
💭 crashrpt_lang	2023/11/24 9:15
🗟 CrashRpt1403.dll	2023/11/24 9:15
🔊 CrashSender1403	2024/10/8 11:04
🐁 crypto3.dll	2023/11/24 9:15

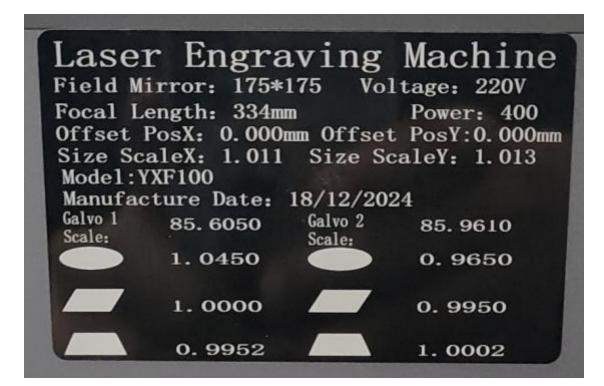
⁽⁹⁾After entering the software, the operation interface as shown below is displayed;



(1) Set device parameters (device parameters are already set at the factory, if parameter errors occur due to misoperation, you can refer to the following steps for correction);

8slAppSimple - [BslCAD1]		-	0	×
File(F) Draw(D) Edit(E) Modify(M) View(V) Sta	tatus bar(\$) Movement Avis(A) Advanced Laser Applications(Y) Galvanometer correction Help(H)			
 ◆ 등 등 등 등 ◆ 등 등 등 ◆ 등 등 ◆ 	ビ ≫			
	d b Marking	ng parameter bar		
Name Type Ma. Object properties window Image: State			teers 1 1300 50 35.000 10.000 -100 100 300 100 settings. k	
		Set to default par	ameters	
Red light (F1)	karlang (72) Continuous proc Automator e Part 0 R anticed be bob Part Bed light shows outline Partang (72) Select processi 00:00:00.000 Total 1 Contractor (73) Contractor (74) Contractor (75) Contractor (ware twee Not on	NUM	CAP

(1) Each device will have a separate parameter nameplate, as shown in the following figure;



Area part:

Appearance Area size 175.000 mm	Offset X	0.0000	mm	Go to specified position after proce
	Offset Y	0.0000	mm	Centre of oscillator
Maximum 2 mm		0.0000	•	Top left corner of object
Use of correction file E:\wo	rkd\5 2(Sim	nle BI \\Rel	eac >>	O Top right corner of the object
		picibe)(ivei	cu.	O Bottom right corner of object
XY interchange 🗌 X re	verse	Y rever	se	O Bottom left corner of object
x	Y			◯ Specified position
Propc 85.605003 >>		85.960999	>>	X 0.000
1.045000	ர	0.965000		Y 0.000
<u> </u>	ψ	0.90000		Calculate recommendation
1.000000	ЩЩ	0.995000		
/ 0.995200	山	1.000200		Password
	1			Password
Equiproportional method				
O				
Use of profiles		>>	ave nara	imeters a
			ave para	interes a

Red light indication part:

rea Laser co	ntrol Port	Other Red lig	ght indication
Red light style	External re	ectangular box	Suilt-in red light mode
Red light	7000	mm/s	Enables red light to be output all the
Offset X	0.0000	mm	
Offset Y	0.0000	mm	
Size scale X	1.0110		
Size scale Y	1.0130		Red light preview

If you purchase GA MOPA or G Pro series products, you will also add the following settings:

Configuration parameters[default]	×
Area Laser control Port Other Red light indication	
Laser type 1 CO2 YAG Fiber UV PWM Max PWM signal 3000.0C KHZ Min. PWM signal 1 KHZ 2 Power mapping 2 Power mapping 1 CO2 VAG Fiber Type IPG-YLPM 3	3
Enable pulse width setting 4	
Test las	Close

4.2.3 Installing LightBurn

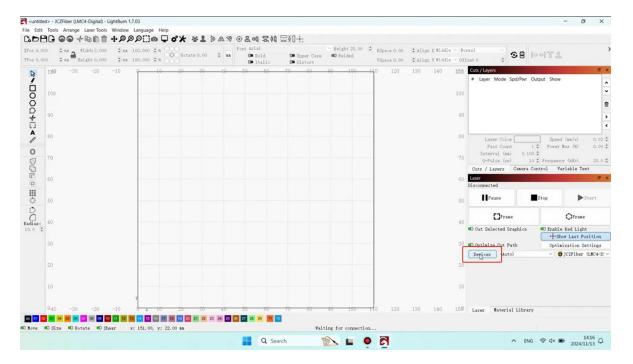
- Download and install LightBurn software from the website.
- Note: It is not compatible with our machine if your LightBurn version is lower than V1.7.00. Please download the latest version and reinstall. LightBurn is a paid software with a 1-month free trial; you need to purchase the license key for the Pro version.

The following tutorial uses the GA as an example:

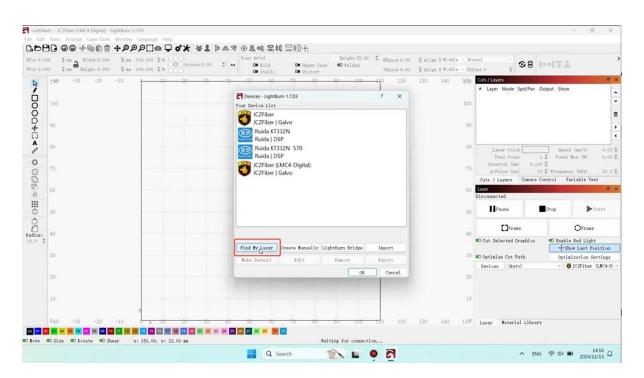
(1) Download the software from the website:

https://lightburnsoftware.com/pages/trial-version-try-before-you-buy

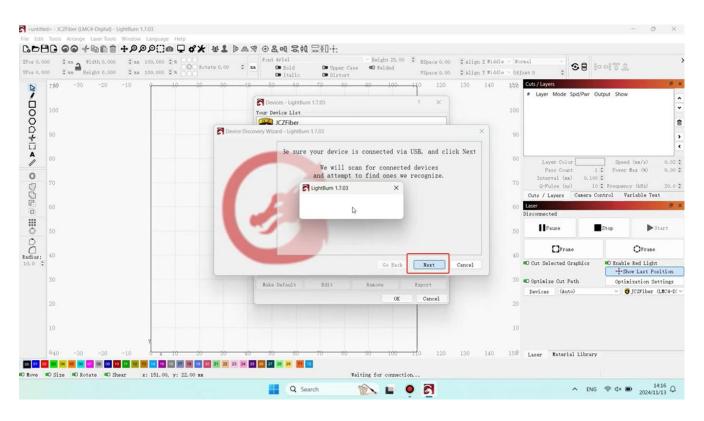
- 2 Run lightburn after installation;
- ③ Click "Devices ";



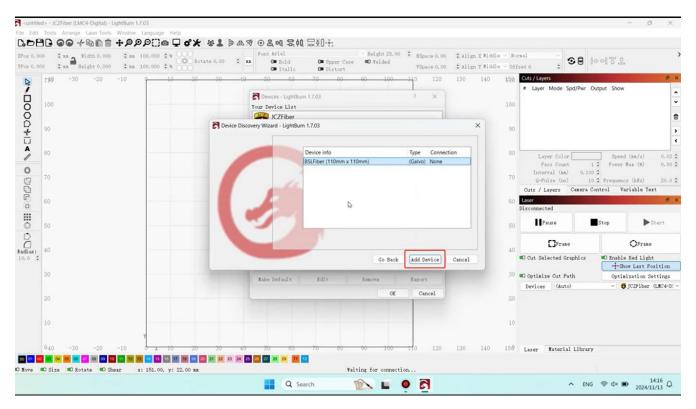
(4) Click "Find My Laser ";



5 Click "Next ";



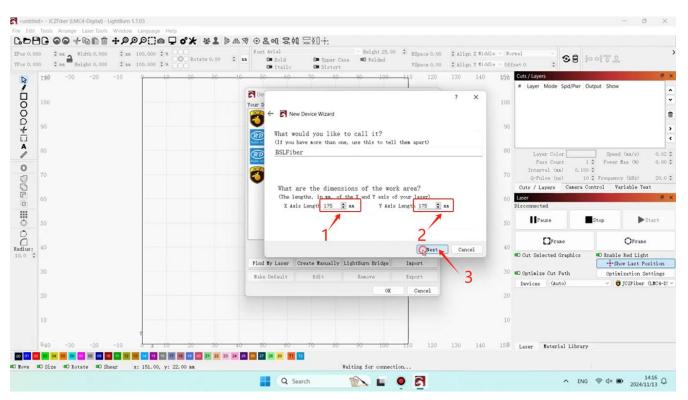
6 Click " add Device ";



<untitled> - ICZFiber (LMC4-Digital) - LightBurn 1.7.03
 theight 0.000
 theight eight 25.00 🗘 ______ BSpace 0.00 C Align X Middle . 38 0072 Bold C Velded Distort VSpace 0.00 C Align Y Middle ~ Offset 150 Cuts / Layers 140 140 # Layer Mode Spd/Pwr Output Show a 2 × Rew Device Wizard ŝ 0 > RD . To configure settings manually, skip the import and click next. To Import existing SEACad configuration follow these steps: Layer Color [Pass Count RI • Click the 'Import' button below • Navigate to SEACad application directory • Open 'config' directory if there is one • Select the correct of file • It is typically BelCAD ofg or LadPar.ofg 0 Pass Count 1 5 Interval (am) 0.100 5 00000 20.0 \$ / Layers Camera Control Variable Text Pause Stop Start Import SEACad Config []Frane OFrame Next Cancel Cut Selected Graphics C Enable Red Light Find My Laser Create Manually LightBurn Bridge Import 30 Coptimize Cut Path Optimization Settings Make Default Reacte Devices (Auto) JCZFiber (LMC4-D: OK Cancel 140 150 Laser Material Library

⑦ Display the following interface and continue to click " Next ";

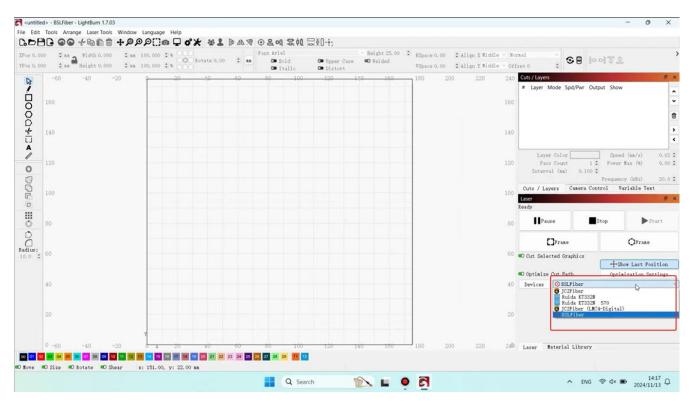
(8) After the following interface is displayed, according to the actual processing range of the equipment, modify the parameters according to the positions 1 and 2 shown. The processing range of the equipment shown in the figure is 175*175. Click Next to continue after modification;



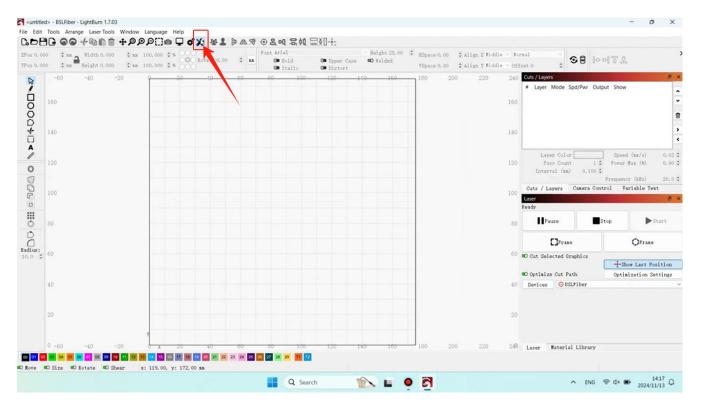
💦 <untitled> - JCZFiber (LMC4-Digital) - LightBurn 1.7.03 ✓ Reight 25.00 C Bighere 0.00 C Align X Hiddle → Normal Ø Bistort V Space 0.00 C Align X Hiddle → Normal XPog 0.000 0 ma Hidth 0.000 0 ma 100.000 2 M Retate 0.00 0 ma P VSpace 0.00 C Align Y Hiddle ~ Offset 0 C D Bold D Italic 150 Cuts / Layers 140 -30 -20 130 140 ×-0000+0 Layer Mode Spd/Pwr Output Show 20 × ? 100 ← 🛃 New Device Wizard 1 0 90 That's it - you're done. Here's a summary: 📀 BSLFiber 🂾 None RD BSLFiber Pass Count Power Max (%) 0 Interval (am) Q-Pulse (nm) -175mm x 175mm, origin at front left 000 122-Cuts / Layers Camera Control Variable Text Laser . Disconnected Click "Finish" to add the new device. Radius: Pause Stop Start OFTARO []Frame Finish Cancel Cut Selected Graphics C Enable Red Light Find My Laser Create Manually LightBurn Bridge Import +Show Last Position C Optimize Cut Path Optimization Settings Make Default Renove JCZFiber (LMC4-D Devices (Auto) OK Cancel 120 130 140 150 Laser Material Library CO 01 02 04 04 05 04 07 04 09 09 11 12 19 14 05 10 11 18 19 29 21 22 23 24 25 29 24 29 11 12 Waiting for connection ... C Nove C Size C Rotate C Shear x: 151.00, y: 22.00 mm Q Search 🐑 🖬 🔍 🛐 ^ ENG ♥ d× ■ 14:16 2024/11/13 Q cuntitled> - JCZFiber (LMC4-Digital) - LightBurn 1.7.03 Beight 25.00 BSpace 0.00 Align X Hiddle ~ Hormal Welded VSpace 0.00 Align Y Hiddle ~ Offset 0 IFog 0,000 C mm Width 0.000 C mm 100,000 C M C Attact 0.00 C mm . 38 0072 t Arial Bold Italio O Upper Case Distort 150 Cuts / Layers 190 140 Layer Mode ^ • Devices - LightBurn 1.7.03 × ? Your Device List JCZFiber JCZFiber | Galvo ŝ 90 > < Ruida KT332N Ruida | DSP Ruida KT332N 570 Ruida | DSP Speed (aa/a Pass Count Power Hax (%) 0 JCZFiber (LMC4-Digital) JCZFiber | Galvo Interval (mm) 0,100 C Q-Pulse (nm) 10 C 000 Variable Text Cuts / Layers Camera Control BSLFiber BSLFiber | Galvo Laser i i Pause Stop Start OFTARE []Frane ESLFiber - None 175am x 175am, origin at front left 40 Cut Selected Graphics C Enable Red Light +Show Last Position Find My Laser Create Manually LightBurn Bridge Import 30 ඟ Optimize Cut Path Optimization Settings Edit Make Default Reacyre Export Devices (Auto) JCZFiber (LMC4-D: Cancel 9K 130 140 150 Laser Material Library C Rove ඟ Size ඟ Rotate ඟ Shear x: 151.00, y: 22.00 mm Waiting for connection... Q Search ▲ ENG ♥ d× ■ 14:16 Q 🐑 🖬 🔍 🛃

(9) Click " Finish "and it will appear in the device list;

10 Click "BSLFiber ";



(1) Click on the set icon;



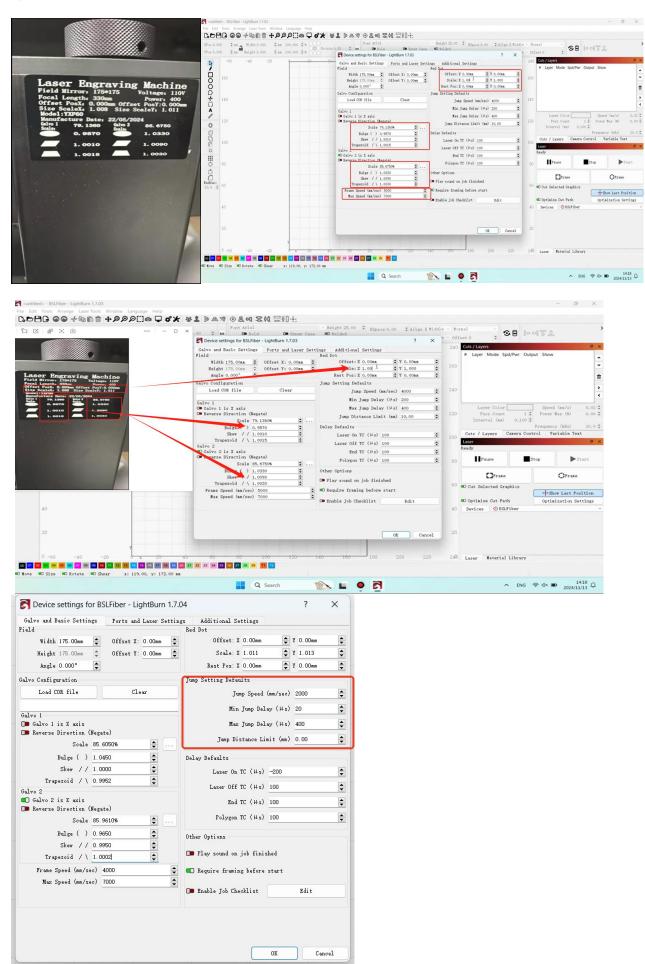
12 Enter the icon screen and modify parameters;

0.000	2	100.000 \$ % OC Rotate 0	.00 C an OB Bold OB Upper Case	Height 25.00 BSpace 0.00 Align X Hiddle Telded		frat 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2
		1000 W # # 0000	Device settings for BSLFiber - LightBurn 1.7.03	? ×			
	-60 -40 -20	2 20 10	Galvo and Basic Settings Ports and Laser Sett		240	Cuts / Layers # Layer Mode Spd/Pwr Output Sho	
1			Field Width 175.00mm C Offset X: 0.00mm C	Red Dot Offset: X 0.00mm 🗘 Y 0.00mm 🎝		- cayer move sporter output sho	
5	60		Height 175.00mm C Offset Y: 0.00mm C	Scale: X 1.000 \$ Y 1.000 \$	160	1	
] } ;			Angle 0.000*	Rest Pos: X 0.00an 🗘 Y 0.00an 🗘			
× .		D.	Galvo Configuration	Jump Setting Defaults			
	40		Load COR file Clear	Juap Speed (ma/sec) 4000	140		
				Min Jump Delay (µs) 200			
			Galvo 1 Calvo 1 is X axis	Wax Jump Delay (µs) 400		Layer Color Spe	ed (ma/s) 0.02
	20		Cm Reverse Direction (Negate)	Jump Distance Limit (mm) 10.00	120		r Hax (%) 0.00
			Scale 100.0000% 🔹			Interval (am) 0.100 C	
			Bulge () 1.0000	Delay Defaults			ncy (kBz) 20.
	00		Skew / / 1.0000 C Trapezoid / \ 1.0000 C	Laser On TC (µg) 100	100	Cuts / Layers Camera Control	Supercontrol of the second
			Calvo 2	Laser Off TC (µs) 100		Laser Ready	8
			Cm Calvo 2 is X axis	End TC (µs) 100		Reauy	
1	0		Scale 100.0000%	Polygon TC (µs) 100	80	Pause Stop	▶ Start
			Bulge () 1.0000	Other Options			
			Skev / / 1.0000 \$			France	OFrame
1	0		Trapezoid / \ 1.0000	Cm Play sound on job finished	60	Cut Selected Graphics	
			Frame Speed (mm/sec) 4000	C Require framing before start			Show Last Position
			Max Speed (mm/sec) 7000	Cm Enable Job Checklist Edit		C Optimize Cut Path Opti	imization Settings
	10				40	Devices OBSLFiber	
	:0				20		
				OK Cancel	4.0		
	-60 -40 -20	0 x 20 40	60 80 100 120	140 160 180 200 220	240	Laser Material Library	

(1) Click on the icon position.

00 0 ma Vidth 0.000 0 ma 100.000 0 M 00 0 ma Height 0.000 0 ma 100.000 0 M	O Estate 0,00 Casa O Esld O Upper Case O Velded
-60 -40 -20 20 160 140 140 140 120 100 140 140 100 100 100 100 80 100 100 100 60 100 100 100 40 100 100 100	C Device settings for BSLFBer - LightBurn 17.03 C Device Setting for BSLFBer - LightBurn 17.03 C Device SEt
20 0 -60 -40 -20 0 x 20	0K Cancel 20 40 60 60 100 120 140 160 180 200 220 240 Laser Material Library

(14) Modify the device parameters according to the device nameplate (left in the picture).



(15) Modify the parameters and click the icon position. Red Dot :Click to change to 0;Check "Red Dot alvays on".

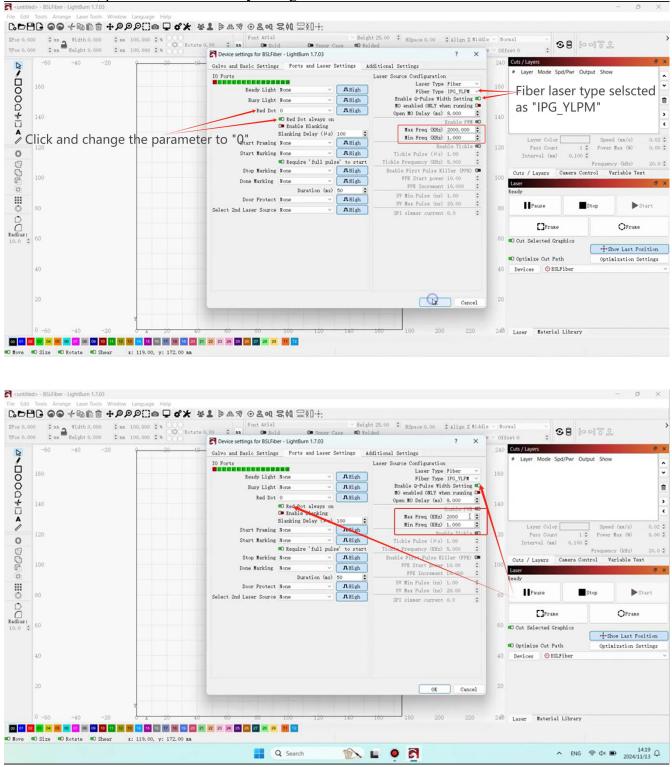
Pos 0,000 C am Width 0,000 C am 100,000 C %	Rotate 0.00 C am De Bold De Doper Case 40 Welded	■ ESpace 0.00 C Align X Middle ~	Normal V Offset 0 0	에 집 요
-60 -40 -20 22 160 140 140 120 100 100 100	Galwo 1 Bin Ju Go Calwo 1 is X axis Bin Ju Go Calwo 1 is X axis Control 1 Scale 79.1300% C Bulge () 0.9570 Control 1 Skew / 1.0015 Control 2 Trappeoid / 1.0015 Control 2 Golavo 2 States (Scale 70.1300% Golavo 2 Scale 79.1300% Golavo 1 Scale 79.1300% Golavo 2 Scale 79.1300% Golavo 2 Scale 70.100% Golavo 2 Scale 70.100% Golavo 2 Scale 70.100% Scale 70.100% Scale 70.100% Golavo 2 Scale 70.100% Golavo 2 Scale 70.100%	1 X Settings 2 0.00ma V 0.00ma 10 0.00ma 0.00ma V 1.011 10 0.00ma 0.00ma V 0.00ma 11 10 0.00ma V 0.00ma 11 11 Speed (ma/sec) 4000 11 11 speed (ma/sec) 4000 11 10 12 10 13 10.00 14 10 15 (Hs) 100 11 100 11 100 11 100 11	200 Cuts / Layer * Layer 40 20 Layer 20 Pass Count 1.0 Interval Cuts / Layers Casera Conterval Ready 80 Image: Prase	Speed (an/s) 0.0 Pover Bax (b) 0.0 Frequency Odit) 20. Variable Text 5
	Fras Speed (sa/sec) 5000 © Fras Speed (sa/sec) 7000 © Rax Speed (sa/sec) 7000 © Image: Speed (sa/sec) 7000 © <	iklist Edit	O Out Selected Graphics Optimize Out Path Devices OBSLFiber	+ Show Last Position Optimization Setting

Click OK to complete the setup and start using the device.

If you purchase GA MOPA series products, you will also add the following settings:

Click on "Fiber Type" and select "IPG _YLPM".

Frequency (KHz) adjustment range " $1\sim3000$ ", in order to ensure that you can enjoy the best engraving results, we recommend the frequency(KHz) adjustment range of " $1\sim1000$ ", of course, if you have your own use needs, please make sure that your lightburn software version is in the latest version.



4.2.4 Software Usage Instructions

For detailed instructions on using BslAppSimple, please refer to the separate software manual.

4.3 Instructions for Specific Materials

When engraving a new material, it can be helpful to engrave a test matrix of small boxes produced with various speed, power, and frequency settings to determine the exact effect you are looking for. Here are some general guidelines for commonly engraved materials.

However, these are only guidelines for your convenience, and it is the responsibility of the user to consult material safety data sheets and other sources to ensure the safety of working with various materials and setups.

Some of the materials listed may require additional workspace and personal protective equipment in addition to this engraver:

<u>Metals</u>

When engraving metals, generally use high power, low frequency, and low to medium speed settings. To avoid using your marker at greater than 80% power for extended periods, you can achieve similar effects by reducing the power somewhat while increasing the number of passes or decreasing the engraving speed.

Be mindful that some metals produce conductive, reflective, and/or toxic dust. Softer metals naturally produce more dust during engraving, while harder metals can require higher power settings that also produce more dust. In addition to the risk to the user's skin and eyes, there may be enough dust produced (especially for repetitive industrial applications) that a full ventilation system is required to address the problem. Operators and others in the work area may need to use breathing PPE such as masks and respirators.

Aluminum: Bare aluminum requires a somewhat higher frequency than other metals and will never produce a strong black mark similar to those created by engraving steel. For darker marking, consider employing anodization or producing a deep engraving that can be darkened with black epoxy or other filler. Anodized aluminum requires a little more speed but a very low frequency.

Powder-Coated Metals: Metals with a powder coating usually require a very high frequency and, for best results, at least three passes to remove the coating and polish the bare lower layer.

Precious Metals: Gold and similarly soft metals should be engraved with less power but at a moderate speed. Silver and other semi-durable metals are best engraved at slightly higher power and slightly slower speed but not at the same power and speed as steel or aluminum.

Plastics

When engraving plastics, generally use low power and high-speed settings. Marking and engraving with too much power or at too low a speed can concentrate too much energy at the point of contact, causing the plastic to melt. This may produce poor engraving quality, noxious fumes, and even fires.

Stone

When engraving various kinds of stone, generally use moderate power and speed at low frequency. As with ceramics and metals, be mindful of the dust created (especially for repetitive industrial applications) and take similar measures to ensure the safety of users and others in the work area.

5. Maintenance

5.1 Maintenance Overview



Unless otherwise specified, perform adjustment and maintenance of this device only when the power is turned off and the power supply has been disconnected. Only trained and skilled professionals should modify or disassemble this device.

5.2 Regular Maintenance Procedures

- Keep the workroom clean and dust-free at all times.
- Ensure the device is fully powered off when not in use.
- Cover the galvanometric lens when it is not in use.
- Clean the worktable after use with a cloth wetted with more than 75% rubbing alcohol.
- Never clean this device with abrasive or caustic cleansers, aerosol sprays, or enough water to enter any electrical component. Always allow surfaces to fully dry before further use.
- When removing dust from the device's vents using a vacuum, **ONLY** use the lowest power setting to avoid damage to internal components.

No other servicing should be done by the operator. Do not attempt to service or replace other parts yourself.

Potential Problems	Possible Solutions
	Correct the focus by adjusting the height of the laser arm.
	Correct the software parameters if they are invalid or mistaken.
No Laser Output	Have a technician fix or establish the connection between the laser and the mainboard.
	Have a technician fix or establish the connection between the laser and its power supply.
	If either the fiber laser source or its power supply has worn out, have a technician replace them.
No Engraving despite Laser Output	Confirm that the material can be safely engraved with this device.
	Correct the focus by adjusting the height of the laser arm.
	Adjust the software parameters to create greater intensity.
	Have a technician check the control panel, scanning lens, and their power supply. Correct any problems or replace the parts.
Other Laser Errors	Have a technician check the fiber. Have a technician check the fiber laser source and the mainboard. Correct any problems or replace the parts.

5.3 Troubleshooting Guidance

5.4 Disposal Instructions



Electrical products should not be disposed of with household waste. In the EU and UK, according to Directive 2012/19/EU, used electrical products must be collected separately and disposed of at designated collection points.

Canada and the US may have similar regulations. Contact your local authorities or dealer for disposal and recycling advice.

6. Contact Us

Thank you again for choosing our laser equipment for your needs!

If you're satisfied with the machine's performance, please consider leaving a positive review on the website where you made your purchase. If you encounter any problems with this engraver, please contact us with your order ID.

Monport Laser Customer Support email: support@monportlaser.com.

Amazon/eBay Customer Support email: support@monportlaser.com.

Our customer service team will respond within 24 hours.

Thank you, and we hope you will choose us again for your next purchase!

