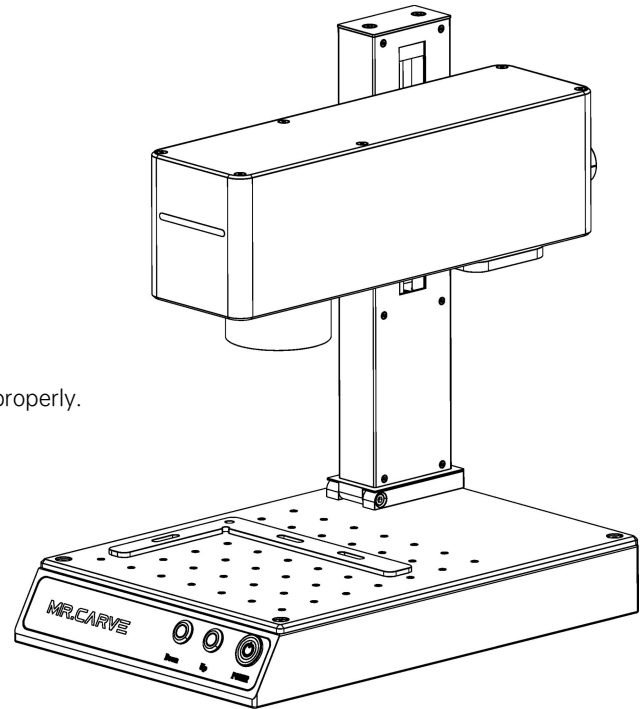


M4 PRO-APP Operations Manual

Please carefully read this Operations Manual before use and keep it properly.



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Safety Precautions

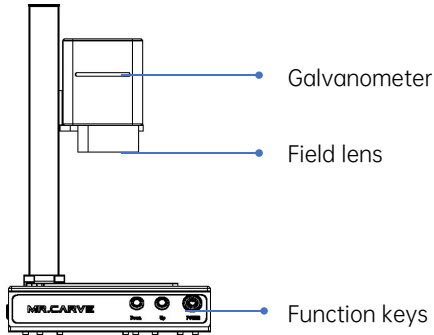
In order to prevent damage to your personal and property safety and to use this product safely and correctly, please read the user manual carefully and follow the steps in the user manual.

Safety Precautions

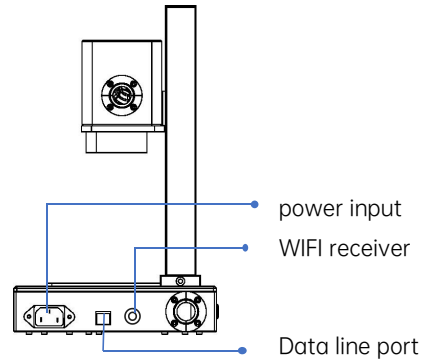
- ★ Before operating the equipment, users must carefully read the user manual and strictly abide by the operating procedures.
- ★ Laser processing may be risky, and users should carefully consider whether the object to be processed is suitable for laser operations.
- ★ Processing objects and emissions should comply with local laws and regulations.
- * This equipment uses a Class IV laser (intense laser radiation). This laser radiation may cause the following conditions:
 - ① Ignite surrounding flammable materials;
 - ② During laser processing, other radiation and toxic and harmful gases may be produced depending on the processing objects;
 - ③ Direct exposure to laser radiation can cause human injury. The place of use must be equipped with fire-fighting equipment. It is prohibited to stack flammable and explosive items around the workbench and equipment. At the same time, good ventilation must be maintained.
- * The environment where the equipment is located should be dry, free of pollution, vibration, strong electricity, strong magnetism and other interference and influence. Working environment temperature 10-40°C, working environment humidity 5-95% (no condensation)
- ★ Equipment working voltage: AC100-240V.
- * The engraving machine and other related equipment must be safely grounded before it can be powered on.
- ★ When the equipment is powered on, it needs to be on duty at all times. All power supplies must be cut off before personnel leave to prevent abnormal conditions from occurring. If any abnormality occurs, please cut off the power immediately!
- * It is strictly prohibited to place any irrelevant total reflection or diffuse reflection objects in the device to prevent the laser from being reflected on the human body or flammable objects.
- * The equipment should be kept away from electrical equipment that is sensitive to electromagnetic interference and may cause electromagnetic interference to it.
- * There are high voltages or other potential dangers inside the laser equipment, and non-professionals are strictly prohibited from dismantling it.

Product structure accessories

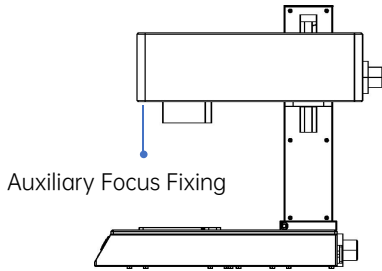
01



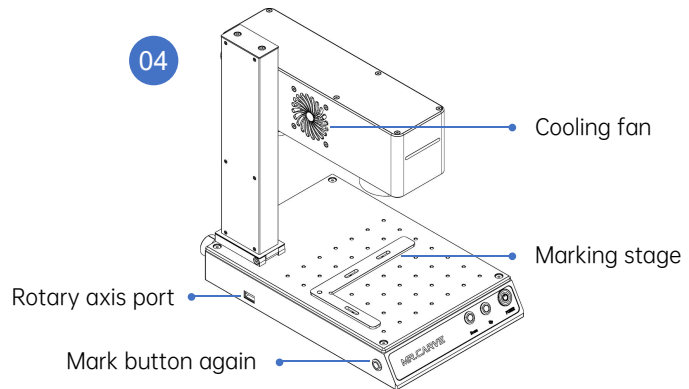
02



03



04



Parts List



External antenna



Auxiliary positioning tools



goggles



test card



U disk



Allen wrench



focus paper



data cable



power cable



Product parameters

Detailed Parameters of Machine M4	
Laser power	Blue Light: 5W / Red Light: 2W
ambient temperature	-10°C~45°C
Repeat accuracy	≤0.001mm
Marking depth	0.015-0.2mm
Marking accuracy	≤0.001mm
Marking speed	≤10000mm/s
cooling method	Built-in fan
Laser wavelength	Blue Light: 455nm / Red Light: 1064nm
Marking format	70*70mm
Marking line width	0.001-0.05mm
Machine net weight	6.26kg
Machine size	300mm* 200mm* 320mm (L*W*H)

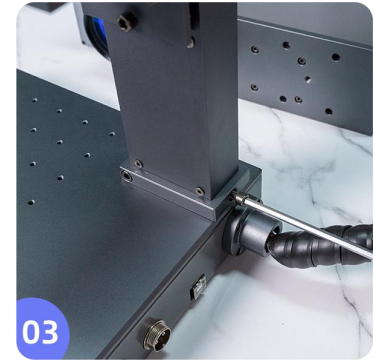
Assembly steps



1. Place the machine on a flat surface



2. Move the Y-axis upward and snap it into the base



3. Tighten the screws to fix the Y-axis



4. Place the lens on the right angle plate of the Y-axis and aim it at the four screw holes in the rear

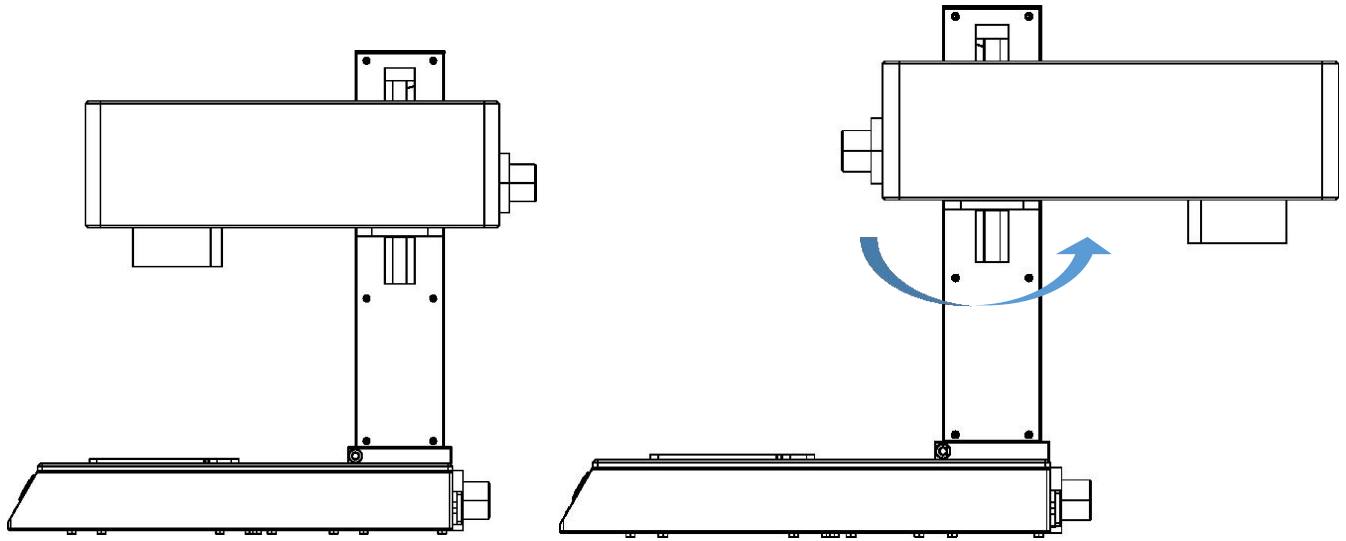


5. Tighten the screws to fix the X-axis



6. The installation is complete

180° rotation instructions



Loosen the fastening screws and tighten the screws after rotating the X-axis of the engraving machine by 180 degrees. Note: After rotating by 180 degrees, the laser head must keep an effective distance of 120mm from the engraving surface when carving the table top or other high objects, otherwise it cannot be focused.

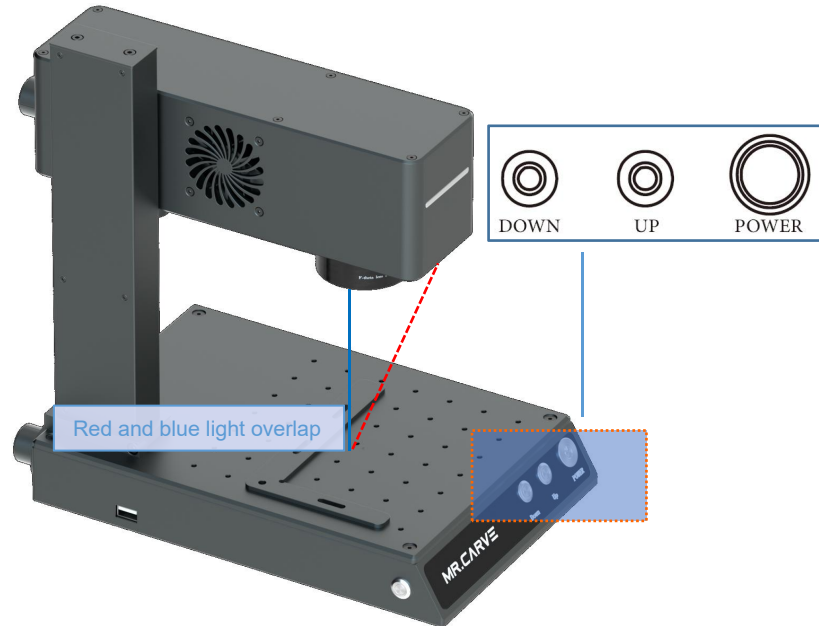
Focus

1. Click "Focus" in the software, and "Focusing..." will appear. At this time, two red light spots will appear on the machine.



2. Insert the test card, lightly press the "Down" and "Up" buttons to adjust, and the two red lights will converge into a red dot to complete the focus.

3. The standard distance between the laser head and the engraving object is 120mm, which is subject to actual measurement.



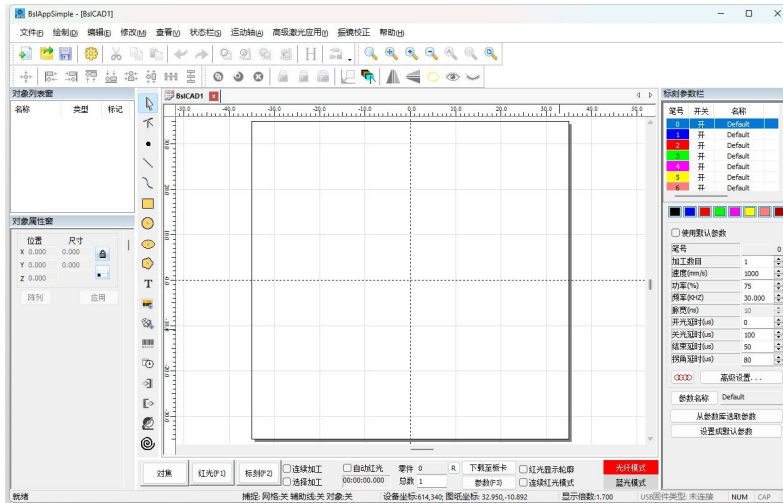
Software acquisition and installation

method one:

- 1.Install the driver files in the USB flash drive"Drive\CypressDriverInstaller.exe"
- 2.Move the folder in the USB flash drive"*Engraving software*" Copy it to your computer desktop, open the folder, and double-click"*MR CARVE.exe*", Start the software;

Method Two:

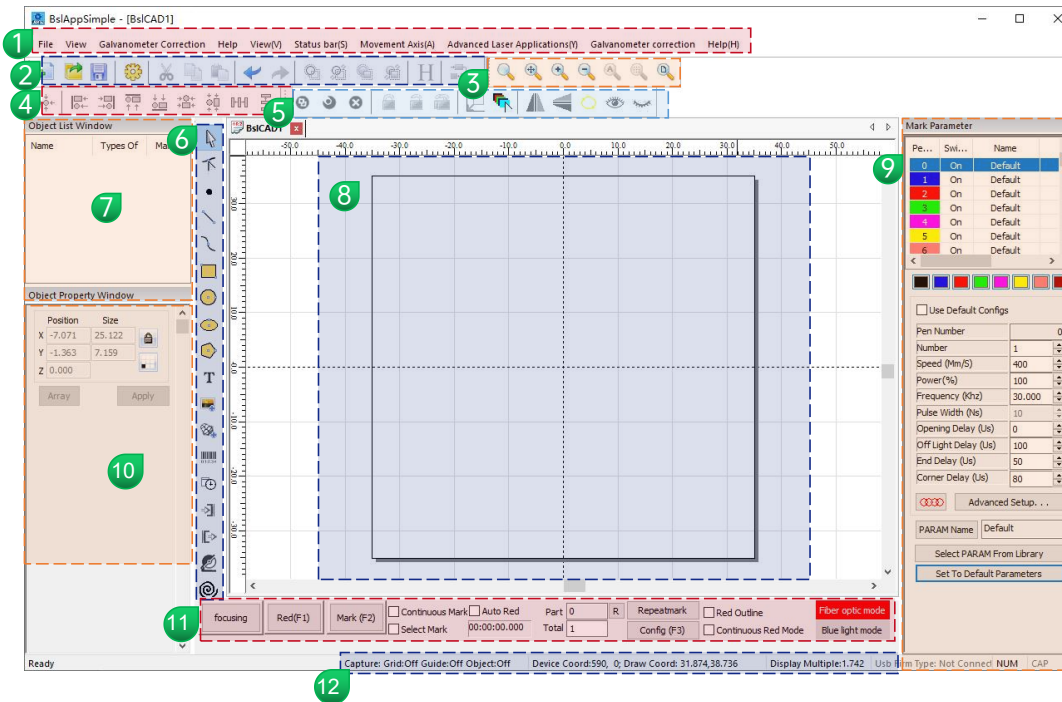
If the supplied USB flash drive is accidentally lost, or the software is accidentally deleted. You can visit the official website"<http://www.mrcarve.cn/download>"Obtain and install steps are the same as method 1.



Software opening status page

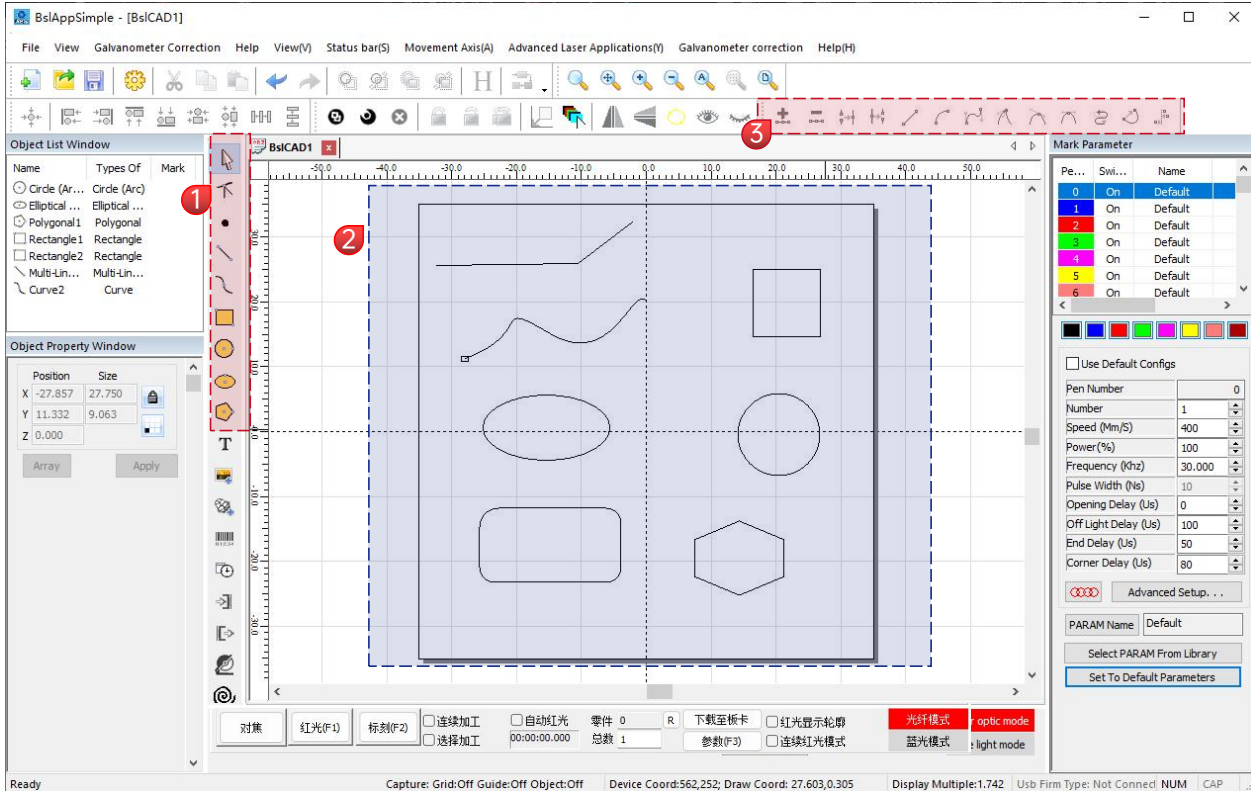
Software Description

When the mouse stays on a function icon, the usage instructions corresponding to the icon will be displayed.



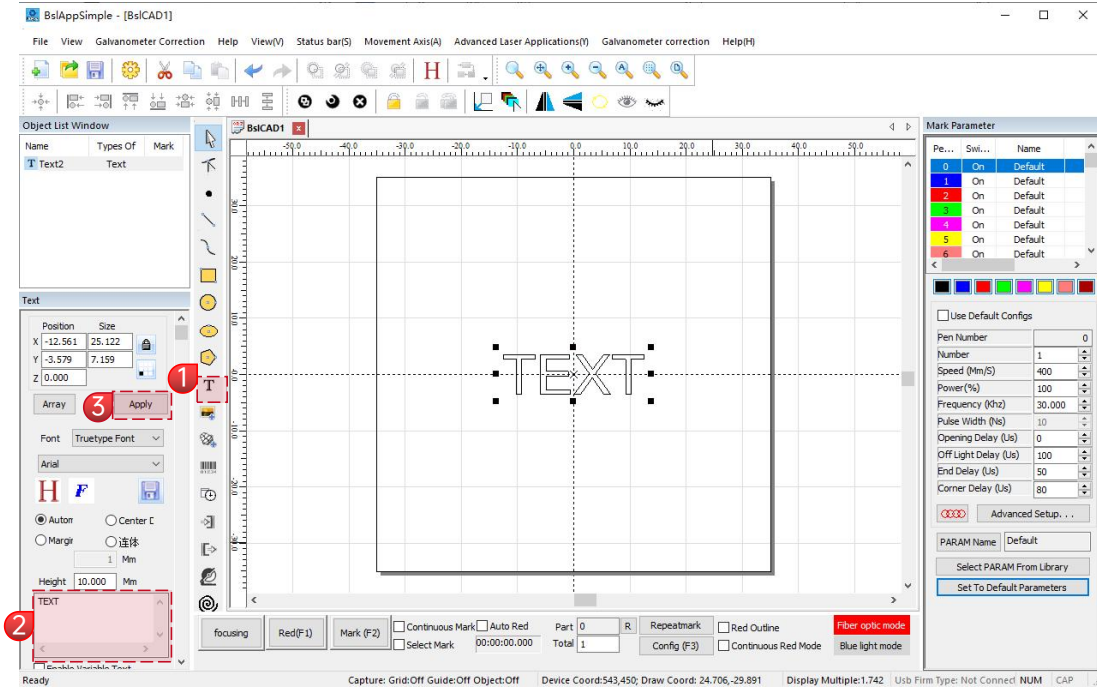
- 1 Menu Bar
- 2 System toolbar
- 3 Zoom toolbar
- 4 Align toolbar
- 5 Auxiliary toolbar
- 6 Drawing toolbar
- 7 object list window
- 8 content display box
- 9 Marking parameter column
- 10 Object property bar
- 11 Mark control bar
- 12 Status Bar

Draw graphics



- 1 Drawing Bar: Draw lines, curves, rectangles, circles, polygons
- 2 content display box
- 3 Node editing bar: Edit nodes on the drawn graphics

Draw text

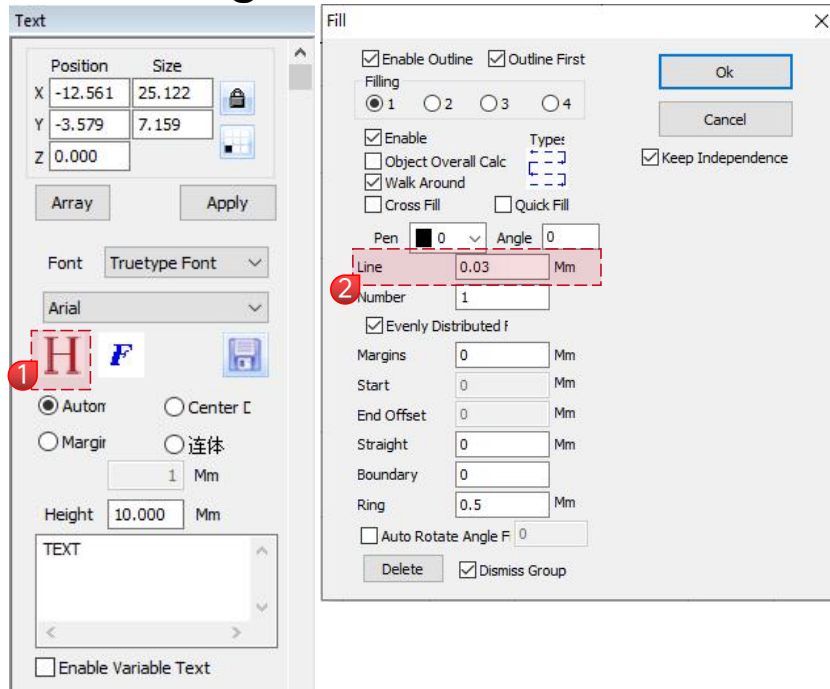


1. Click "TEXT" will appear by default, enter the relevant text in the text input box, and click "Apply" text input.

H Text filling needs to be filled before it can be applied to the engraving;

F Text tool, set alignment, character spacing, arc text, angle and other parameters.

Text filling

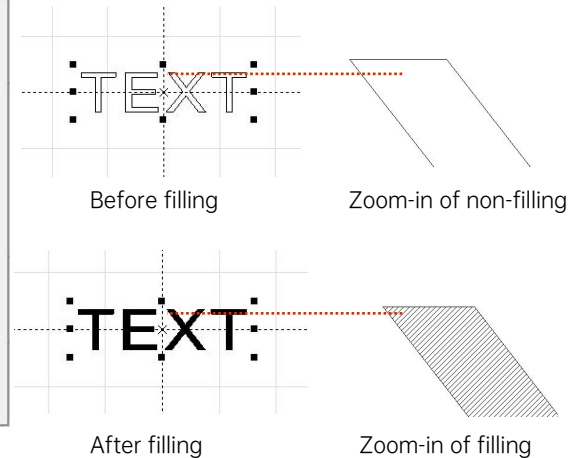


1. Click **H** pen the fill settings window;

2. There is no need to set other parameters for text marking. You only need to modify the "Line". The default parameter is 0.03;

Note: Line spacing is the text fill density. The larger the value, the faster the marking speed and the lighter the engraving color; conversely, the smaller the value, the slower the marking speed and the darker the engraving color;

The best effect is achieved when marking on primary metal, spray paint, oxidized paint, electroplated metal, plastic, leather, and other painted materials.



Import pictures

The screenshot displays the BslAppSimple software interface. The main window shows a grid with a picture of a husky dog holding red roses. The Object List Window on the left shows the imported file 'test.jpg' as an 'Image'. The Object Property Window below it shows the position and size of the object. A red circle with the number '1' highlights the 'Open image file' icon in the Object List Window. The Mark Parameter window on the right shows various settings for the mark, including Pen Number, Number, Speed, Power, Frequency, Pulse Width, Opening Delay, Off Light Delay, End Delay, and Corner Delay. The bottom status bar shows 'Ready' and various coordinates and settings.

Object List Window

Name	Types Of	Mark
test.jpg	Image	

Object Property Window

Position	Size
X: -30.000	60.000
Y: -24.129	48.258
Z: 0.000	

Mark Parameter

Pe...	Swi...	Name
0	On	Default
1	On	Default
2	On	Default
3	On	Default
4	On	Default
5	On	Default
6	On	Default

Pen Number: 0
Number: 1
Speed (Mm/S): 400
Power(%): 100
Frequency (kHz): 30.000
Pulse Width (Ns): 10
Opening Delay (Us): 0
Off Light Delay (Us): 100
End Delay (Us): 50
Corner Delay (Us): 80

Advanced Setup...
PARAM Name: Default
Select PARAM From Library
Set To Default Parameters

focusing Red(F1) Mark (F2) Continuous Mark Auto Red Part 0 R Repeatmark Red Outline Fiber optic mode
Select Mark 00:00:00.000 Total 1 Config (F3) Continuous Red Mode Blue light mode

Ready Capture: Grid:Off Guide:Off Object:Off Device Coord:754,385; Draw Coord: 56.885,-17.386 Display Multiple:1.742 Usb Firm Type: Not Connect NUM CAP

1. Click  Open image file

Picture Processing (Portrait/Colored Photo)

The screenshot displays the BslAppSimple software interface. On the left, a color portrait of a man with glasses is shown. A green arrow points from this image to the 'Image' window in the software, which is labeled with a red '1'. The 'Image' window shows the image's position (X: -20.000, Y: -29.647, Z: 0.000) and size (40.000 x 59.294). Below this, the 'Picture Setting' panel is highlighted with a red dashed box. It includes checkboxes for 'Reverse' and 'Grayscale', sliders for 'Contrast' and 'Brightness', input fields for 'Fixed DPI' (X: 500, Y: 500), and checkboxes for 'Outlets', 'Two-Way Scanning', and 'Adjustment Ptc'. The 'Dotting Time' is set to 0.400 ms. On the right, the 'Mark Parameter' window is shown with a red '2' next to it. It contains a table of parameters:

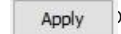
Pe...	Shi...	Name
0	On	Default
1	On	Default
2	On	Default
3	On	Default
4	On	Default
5	On	Default
6	On	Default

Below the table, there are various configuration options: 'Use Default Configs' (unchecked), 'Pen Number' (1), 'Speed (Mm/S)' (500), 'Power (%)' (100), 'Frequency (Hz)' (30.000), 'Pulse Width (ns)' (10), 'Opening Delay (µs)' (0), 'OffLight Delay (µs)' (100), 'End Delay (µs)' (50), and 'Corner Delay (µs)' (80). There are also buttons for 'Advanced Setup...', 'PARAM Name', 'Select PARAM From Library', and 'Set To Default Parameters'. At the bottom of the software window, the status bar shows: 'Select: 1 Object is Selected Object:Image Size: 40.000, 59.294', 'Capture: Grid:Off Guide:Off Object:Off', 'Device Coord:365,254; Draw Coord:-2.050,1.464', 'Display Multiple:1.814', and 'Usb Firm Type: Not Connected NUM CAP'.

1. Adjust the image to the appropriate size;

*. In the left window, check "Reverse", "Grayscale", "Fixed DPI" (fill in the parameters 500 for XY respectively), and "Outlets";

*. In the left window, check "Two-Way Scanning" and fill in 0.4 in "Dotting Time". Click

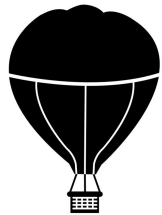


2. Marking parameter settings, "Speed (mm/s)" is set to 500, "Power (%)" is set to 100;

Note: People photos/color photos are best engraved on spray painted metal/oxidized painted electroplated metal.

The higher the DPI value, the clearer the engraving effect; the longer the dotting time, the deeper the engraving effect.

Picture Processing (Ordinary Bitmap)



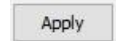
1

The screenshot shows the BslAppSimple software interface. On the left, the 'Object List Window' shows 'test2.png' as an image. Below it, the 'Image' properties are set to X: -15.000, Y: -15.000, Z: 0.000. The 'Picture Setting' panel is highlighted with a red dashed box and contains the following settings: Reverse, Grayscale, Contrast: 0, Brightness: 0, Fixed Dpi (X: 500, Y: 500), Outlets (Threshold: 128), Two-Way Scanning (Dotting Time: 0.400 ms), and Adjustment Pc. A red circle with the number '1' is placed over the 'Picture Setting' panel. In the center, the 'BslCAD1' workspace shows the hot air balloon image on a grid. On the right, the 'Mark Parameter' panel is visible, with 'Speed (mm/s)' set to 500 and 'Power (%)' set to 100. A red circle with the number '2' is placed over these two parameters. At the bottom, the 'Apply' button is highlighted with a gray box.

1. Adjust the image to the appropriate size;

*. In the left window, check "Grayscale", "Fixed DPI" (fill in the parameters 500 for XY respectively), and "Outlets";

*. In the left window, check "Two-Way Scanning" and fill in 0.4 in "Dotting Time". Click

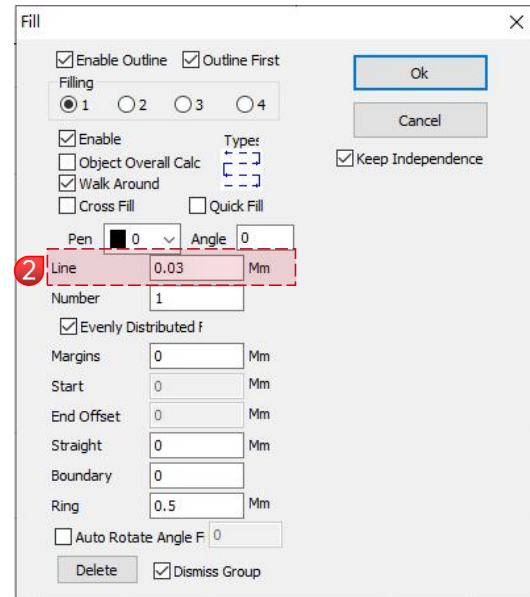
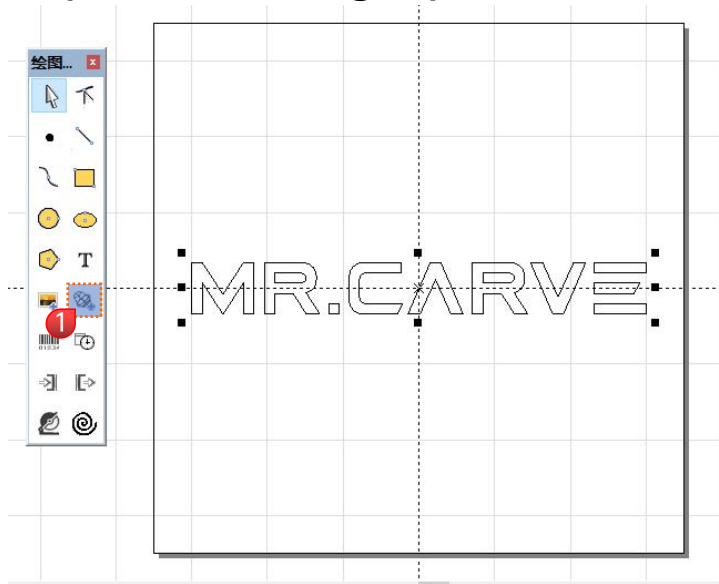



parameters.

4. Marking parameter settings, "Speed (mm/s)" is set to 500, "Power (%)" is set to 100;

Description: The best effect is achieved when engraving on primary metal, spray paint, oxidized paint, electroplated metal, plastic, leather, and other painted materials.

Import vector graphics



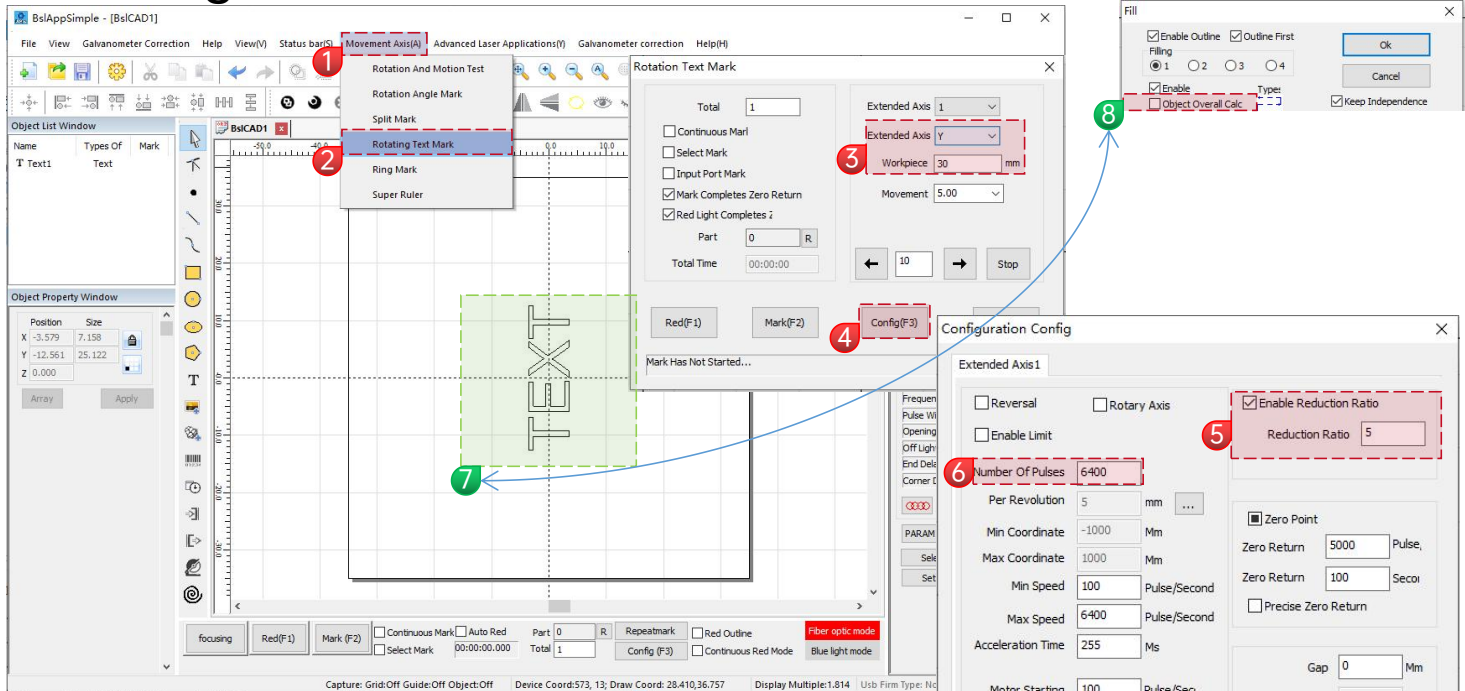
1. Click  Import vector files; support PLT, DWG, AI and other formats;
2. The imported vector file needs to be filled to complete the marking.
3. For vector file filling, there is no need to set other parameters. You only need to modify the "line spacing". The default parameter is 0.03;



Note: The line spacing is the filling density. The larger the value, the faster the marking speed and the lighter the engraving color; conversely, the smaller the value, the slower the marking speed and the darker the engraving color;

The best effect is achieved when marking on primary metal, spray paint, oxidized paint, electroplated metal, plastic, leather, and other painted materials.

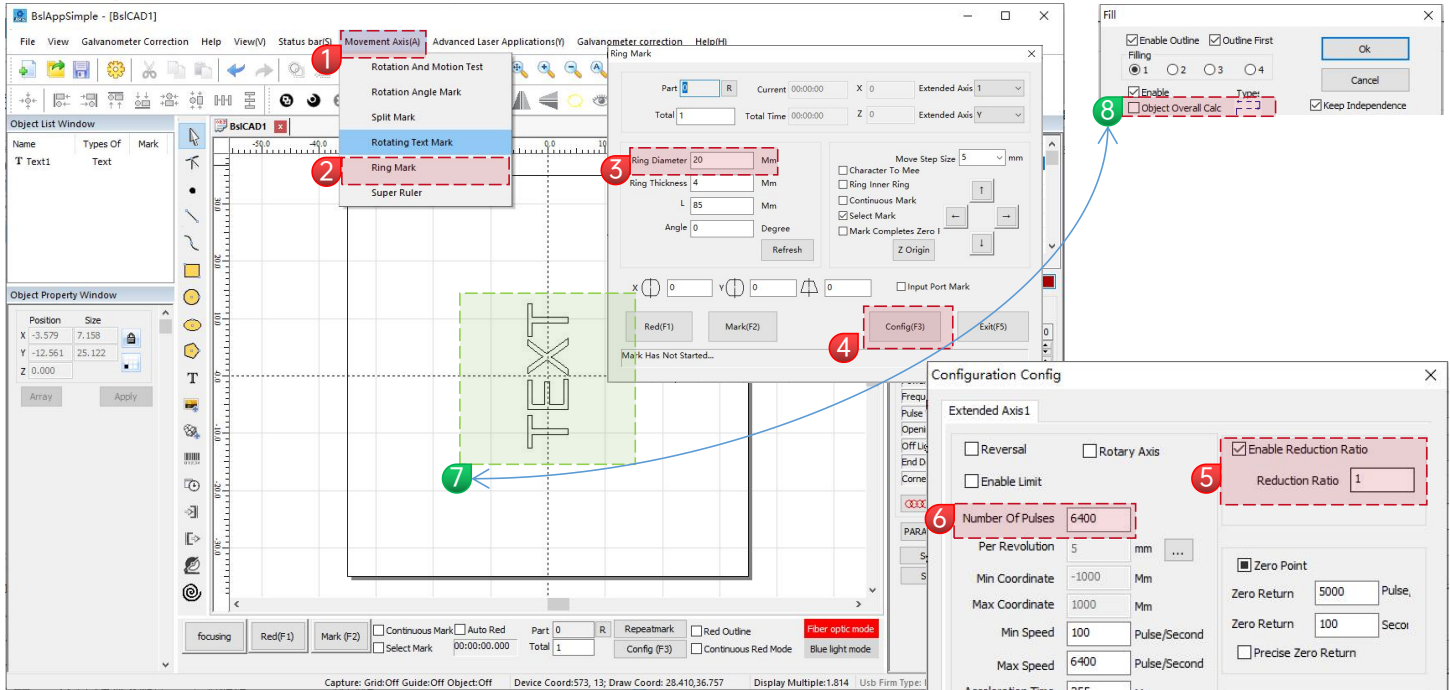
Rotating text Mark



The axis of rotation only supports text engraving

1. Follow the numbering sequence in the picture above;
2. **3** Extended Axis:Y, Enter the diameter of the workpiece to be marked;
3. **5** Enter value **5**; In **6** parameters "**6400**"
4. **7** Text content needs to be rotated 90°, shortcut key "**ctrl**" + Arrow key "**←**"
5. **8** Text filling needs to be unchecked "**Object Overall Calc**"

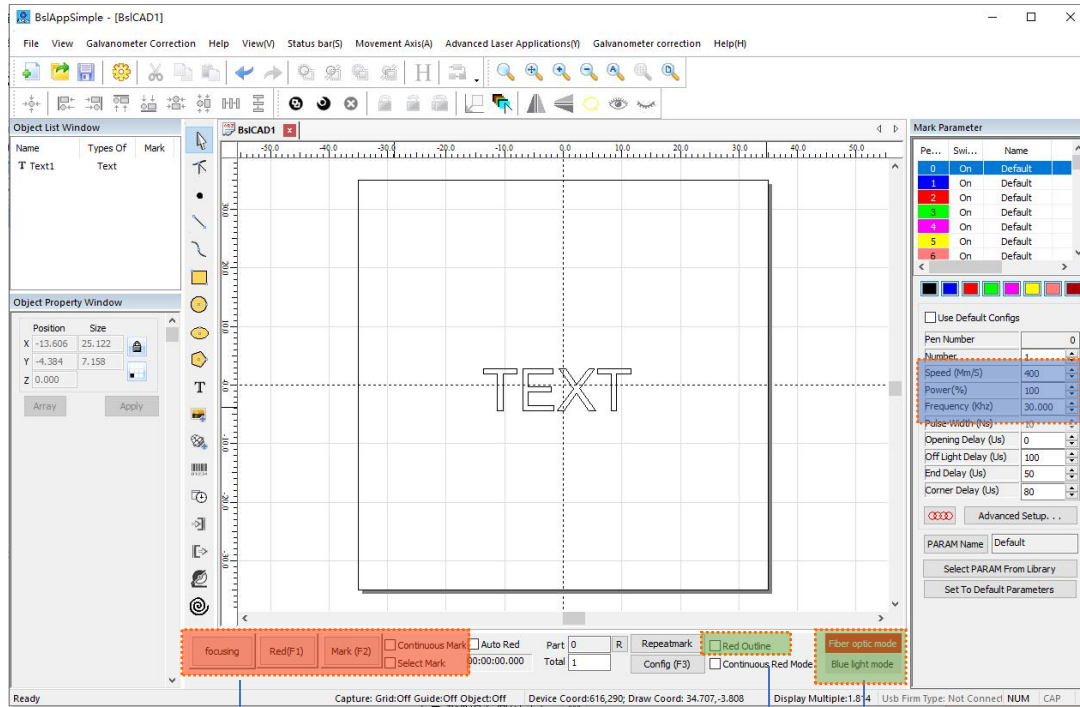
Ring Mark



The axis of rotation only supports text engraving

1. Follow the numbering sequence in the picture above;
2. **3** Extended Axis:Y, Enter the diameter of the workpiece to be marked;
3. **5** Enter value 1; **6** ut parameters "**6400**"
4. **7** text content needs to be rotated 90°, shortcut key "ctrl" + Arrow key "←"
5. **8** text filling needs to be unchecked "Object Overall Calc"

Mark Control



Recommended parameter adjustment:
 Speed(mm/s):500
 Power(%):100
 Frequency(KHZ):30

- Focus: The machine will show two red light spots
- Red (F1):Preview the current engraving position, red light rectangle preview mode
- Mark(F2): Start marking
- Continuous Mark: Repeat engraving
- Select Mark: Multiple objects, select one to engrave

- Switch between blue and red light (M4 model only)
- After checking, set to outline preview mode (movement axis preview must be checked)

Blue light,References of Carving Parameters for Different Materials

Picture, Text and Vector File			
Material	Line Spacing	Power	Speed
Wood	0.05/ 0.01	100	500/700
Bamboo	0.005 / 0.001	100	500/700
Plastic	0.05	100	1000 / 1500
Leather	0.05	100	1000 / 1500
Stone	0.01	100	500
Glass / Ceramic (Need color paper)	0.05	100	500
Paint Surface Material	0.05/0.01	100	200/400

Red light,References of Carving Parameters for Different Materials

Picture, Text and Vector File			
Material	Line Spacing	Power	Speed
Metal	0.01 or 0.005 or 0.001	100	300 or 500
Paint Surface Metal	0.005 or 0.001	100	500
Plastic	0.05	100	1000 or 1500
Leather	0.05 or 0.01	100	1000 or 1500
Stone	0.01	100	500
Paint Surface Glass	0.05	100	500
Paint Surface Material	0.05	100	1000 or 1500

Black and White Picture (Ordinary Bitmap)

Material	Picture Settings	Power	Speed
Metal	Grayscale (Checked) Fixed DPI (x300 y300) Lattice point (Checked) Two-way scanning (Checked) Dotting time (0.4~0.5ms) Adjustment point power (Checked)	100	200
Paint Surface Metal		100	300
Plastic		100	500
Leather		100	500
Stone		100	200
Paint Surface Material		100	500

Colored Picture (Landscape and Portrait)

Paint Surface Metal	Reversal (Checked) Grayscale (Checked) Fixed DPI (x500 y500) Lattice Point (Checked) Two-way scanning (Checked) Dotting time (0.4~0.5ms) Adjustment point power (Checked)	100	500
Electroplated Metal			
Oxidized Metal			
ABS			

FAQ

I. The machine does not respond when powered on.

1. Power connection failure: check the socket, switch and socket on the machine body to ensure that they have been properly plugged and connected to power; check the Power button on the panel to make sure it is pressed and the button light is on.

II. Unable to connect to the computer

1. Not connected to the USB cable: check the computer and machine interface of the USB cable to ensure that it is properly connected. The USB interface on the front panel of some desktop computers is invalid, so it needs to be connected to the socket at the rear of the host.

2. The driver is not installed properly: install the driver according to the instructions. If the computer identifies the device as a serial port after installation, the hardware connection is OK.

3. Other special cases: disconnect the USB cable and power supply. After the equipment is completely powered off for 5 seconds, connect it to the power again.

III. Light carving or no carving

1. Inaccurate focusing: read the focusing section of the Operations Manual for accurate focusing.

2. Carving speed: a result of too high speed or too short burning time. Read the carving parameters section of the Operations Manual to readjust the parameters.

3. Shallow picture: the imported picture needs to be clear. If the lines too fine and the color is too light, the carving effect will be affected directly.

4. Placement of object: as the laser focal distance is fixed, the object to be carved needs to be flat, parallel to the machine body. If the object to be carved is titled, the focal distance is inaccurate, resulting in abnormal carving effect.

1. Mobile App Download

1. Scan the following QR code to download the mobile app



Android



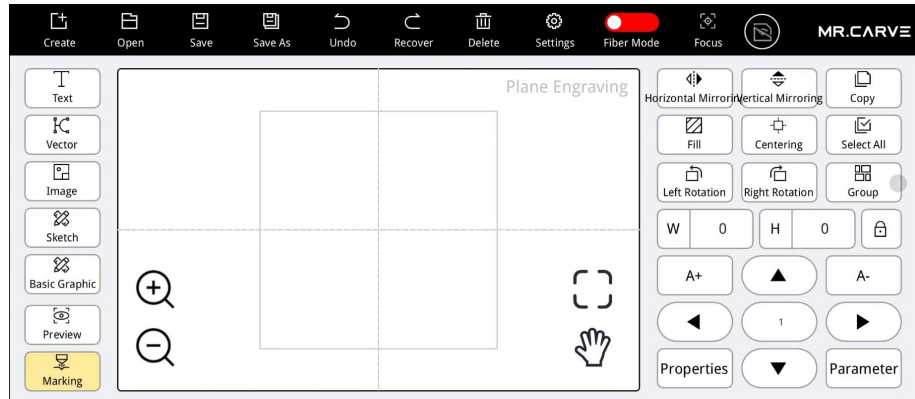
IOS

System Requirements: Android:7.0+, IOS:13.0+

- Tips: 1. Android phones need to use the mobile browser to scan the QR code to download;
- 2. After successful installation, you need to give the corresponding permissions;



MRCARVE



2.Mobile app connection

- 1、 Plug in the External antenna, plug in the power of the machine, and press the power button on the front
- 2、 Connect to WIFI with "ADD" password: 12345678 and stay connected.

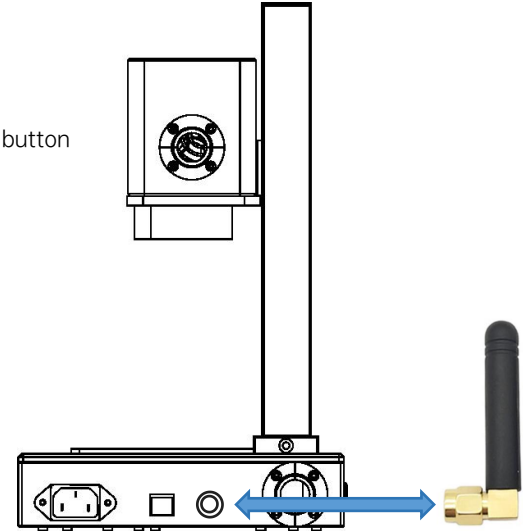


connected



not connected

After connecting to the App, please modify the parameters according to the paper parameter sheet
 Steps: "Param" → "Galvanometer" The picture below indicates the location
 "Param"→"Preview" indicates the location in the figure below



Marking parameters

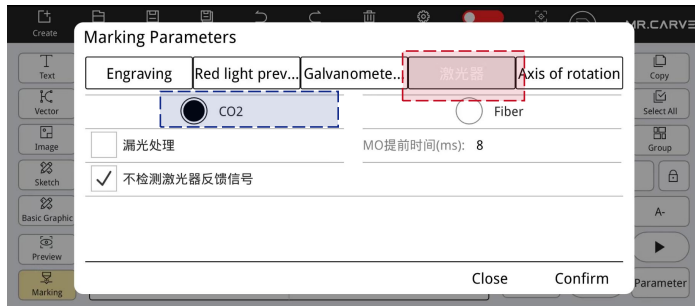
Marking	Preview	Galvanometer	Axis of rotation
Offset X(mm): 0.000 Offset Y(mm): 0.000 Angle(°): 0.000			
<input type="checkbox"/> XY swap	<input type="checkbox"/> X reverse	<input type="checkbox"/> Y reverse	Area size (mm): 70
X: 1.041	1.000	0.995	Scale: 64.600 >>
Y: 0.959	1.000	1.002	Scale: 64.906 >>

Close Ok

Marking parameters

Marking	Preview	Galvanometer	Axis of rotation
Preview method: <input type="radio"/> Outline <input checked="" type="radio"/> Circumscribed rectangle			
Speed of red light (us): 3000			
Offset X(mm): 0.000		Size ratio X: 1.000	
Offset Y(mm): 0.000		Size ratio Y: 1.000	

Close Ok



The laser needs to select "CO2"

3. Software Description

1 Menu Bar

2 Drawing toolbar

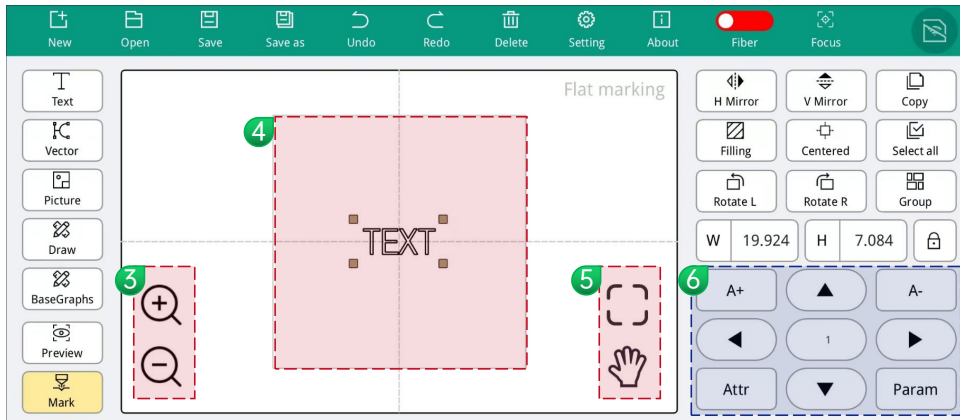
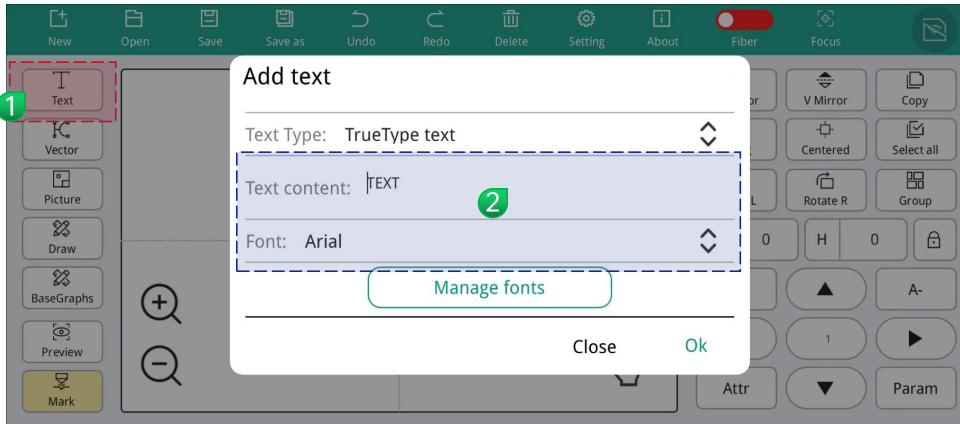
3 Mark control bar

4 content display box

5 Auxiliary toolbar

6 Object property bar

4. Draw text



- 1 Click on the left to add text
- 2 Enter text and select font, click "OK" to complete text editing.

- 3 Workspace size scaling

- 4 Work area, please do not draw content beyond the area

- 5
 -  Show work area
 -  Drag work area

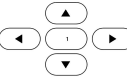
W Width, unit: mm

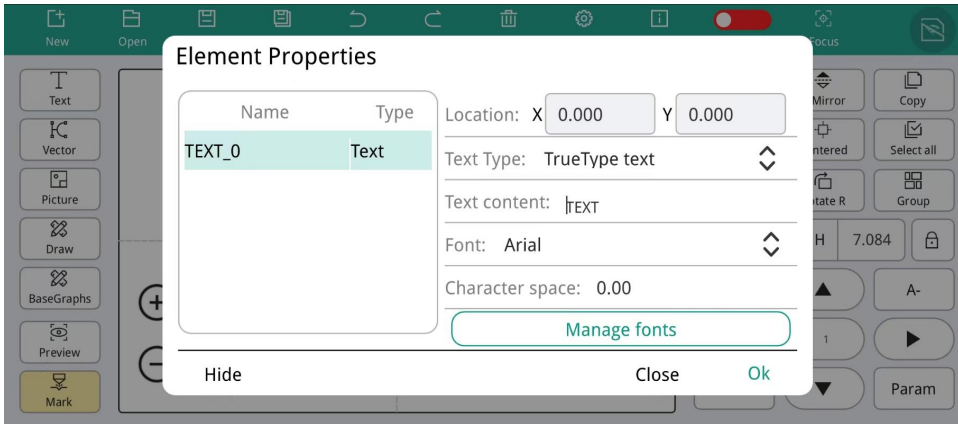
H Height, unit: mm

 lock ratio

A+ Enlarge content

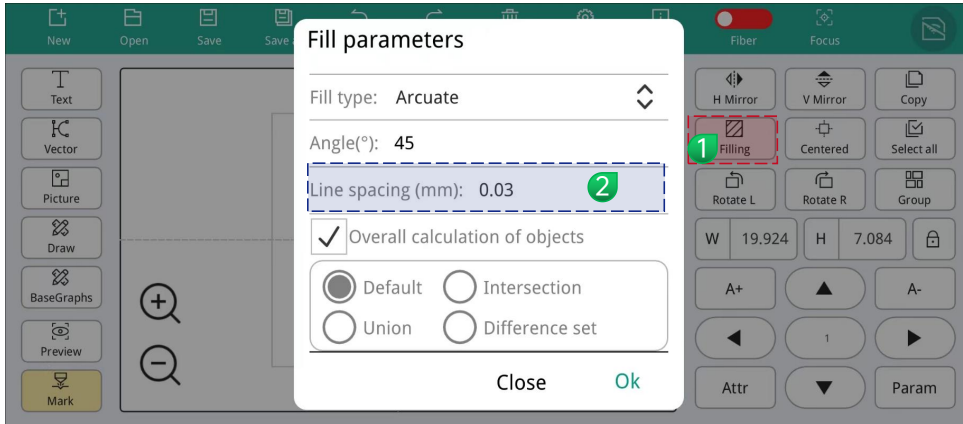
A- Content reduced


- 6
 -  Fine-tune the position up, down, left, and right
The distance is in the middle
Unit: mm

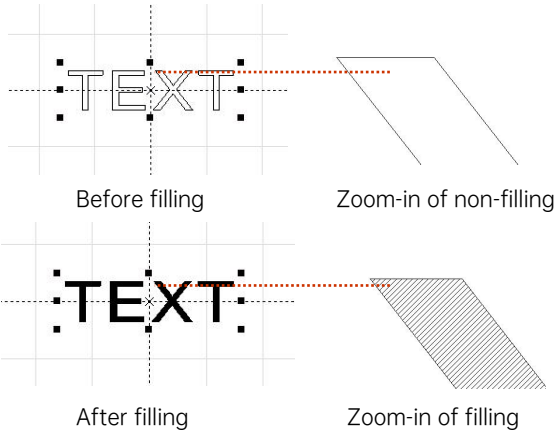


Attr→Element Properties, you can edit text content and fonts twice

5. Text Filling



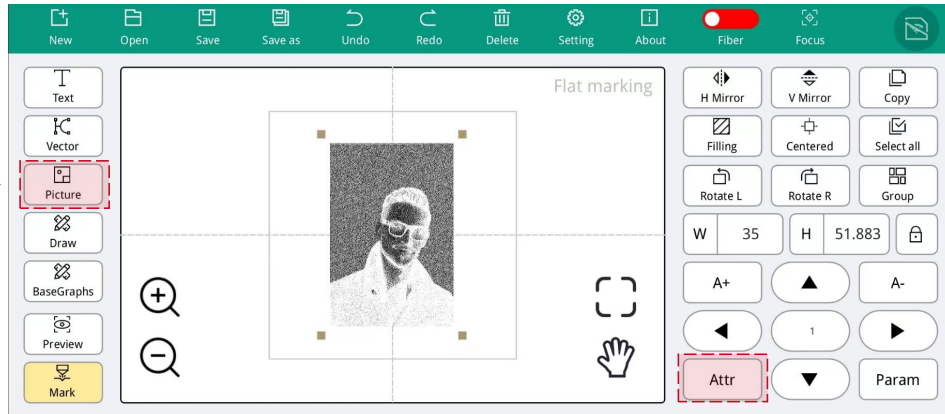
- 1 Click  to open the filling settings window
- 2 There is no need to set other parameters for text marking. You only need to modify the "line spacing". The default parameter is 0.03.



illustrate:

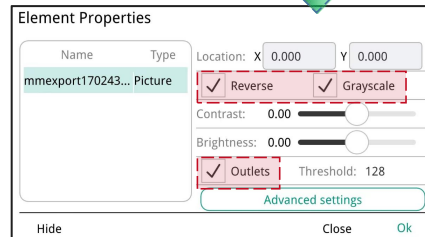
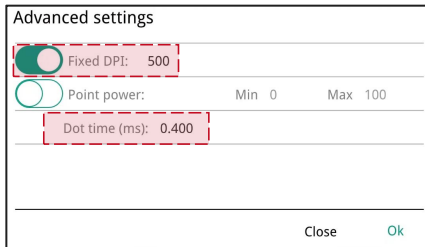
Line spacing is text fill density. The larger the value, the faster the marking speed and the lighter the engraving color; conversely, the smaller the value, the slower the marking speed and the darker the engraving color; The best effect is achieved when marking on primary metal, spray paint, oxidized paint, electroplated metal, plastic, leather, and other painted materials.

6. Picture Processing (Portrait/Colored Photo)



1 Click  enter the image file.
Picture

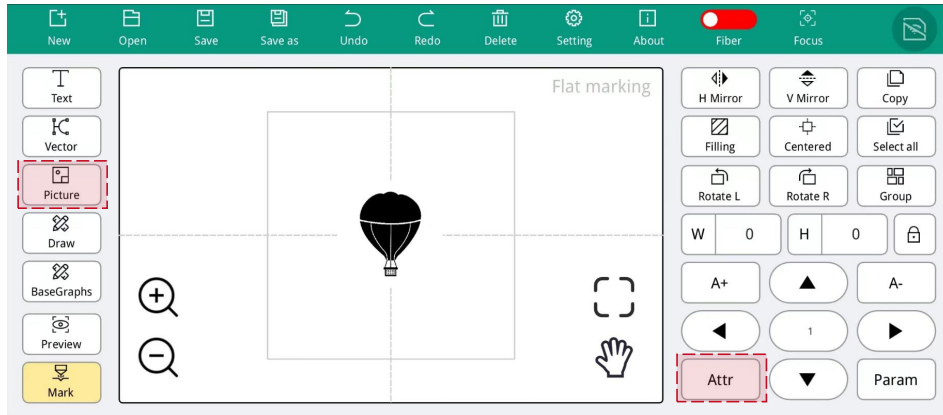
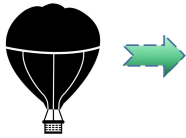
2 Click Attr, check "Reverse", "Grayscale", "Outlets", "Advanced settings" in the "Element Properties" window
window
"Change "Fixed DPI" to 500, Dot time (ms): 0.4



illustrate:

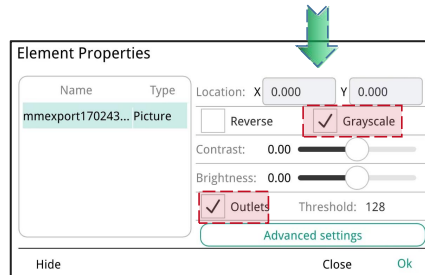
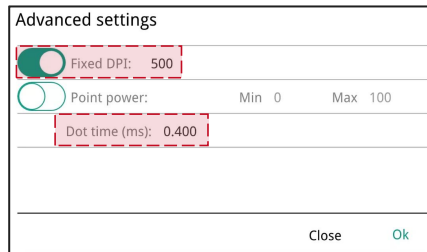
People's photos/color photos are best engraved on spray-painted lacquered metal/oxidized lacquered electroplated metal. The higher the DPI value, the clearer the engraving effect; the longer the dotting time, the deeper the engraving effect.

7. Picture Processing (Ordinary Bitmap)



1 Click  enter the image file.
Picture

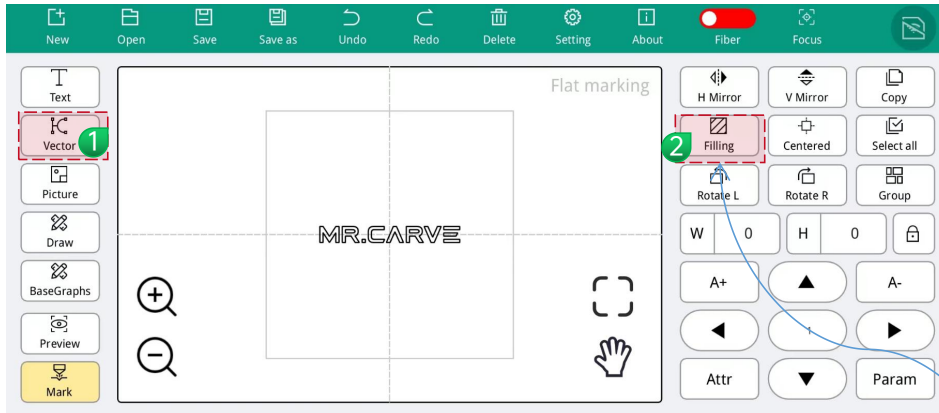
2 Click Attr, check "Grayscale", "Outlets", "Advanced settings" in the "Element Properties" window
"Change "Fixed DPI" to 500, Dot time (ms): 0.4



illustrate:



People's photos/color photos are best engraved on spray-painted lacquered metal/oxidized lacquered electroplated metal. The higher the DPI value, the clearer the engraving effect; the longer the dotting time, the deeper the engraving effect.

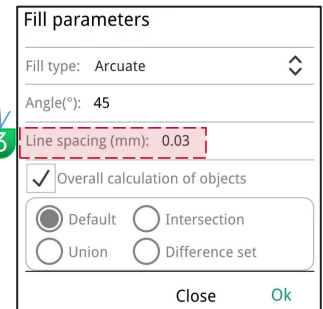
8.Import vector graphics



illustrate:

People's photos/color photos are best engraved on spray-painted lacquered metal/oxidized lacquered electroplated metal. The higher the DPI value, the clearer the engraving effect; the longer the dotting time, the deeper the engraving effect.

- 1 Click  for the vector file
Vector
Supports "PLT", "DXF", "AI" and other formats
- 2 Click  to open the filling settings window
- 3 There is no need to set other parameters for text marking. You only need to modify the "line spacing". The default parameter is 0.03.



Once the setting is complete, you can focus and mark.

For detailed steps, please refer to the "Focus" and "Start Marking" pages of the manual.

9.RT5 Rotary Axis-Text Marking

System settings

Moving step (mm): 1 Rotation angle (°): 15
 Screen scaling: 0.1 Element scaling: 0.1
 Language: English Marking Mode: Rotary axis marking

Bind Unbind

Close Ok

Rotary axis marking

H Mirror V Mirror Copy
 Filling Centered Select all
 Rotate L Rotate R Group

W 0 H 0 Lock
 A+ ▲ A-
 ◀ 1 ▶
 Attr ▼ Param

Shaft movement test

Pulse: 16625
 Rotation angle (°): 15

Emergency stop

Close

Marking parameters

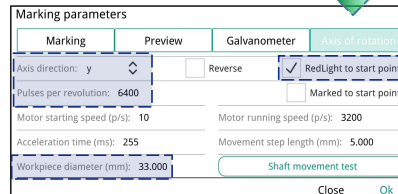
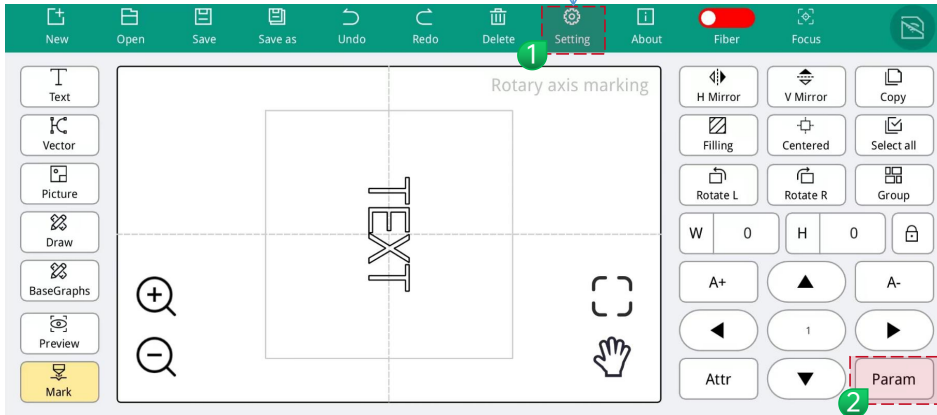
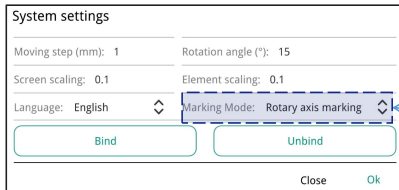
Marking	Preview	Galvanometer	Axis of rotation
Axis direction: y	<input type="checkbox"/> Reverse	<input checked="" type="checkbox"/> RedLight to start point	
Pulses per revolution: 16625		<input type="checkbox"/> Marked to start point	
Motor starting speed (p/s): 10		Motor running speed (p/s): 3200	
Acceleration time (ms): 255		Movement step length (mm): 5.000	
Workpiece diameter (mm): 33.000		Shaft movement test	

Close Ok

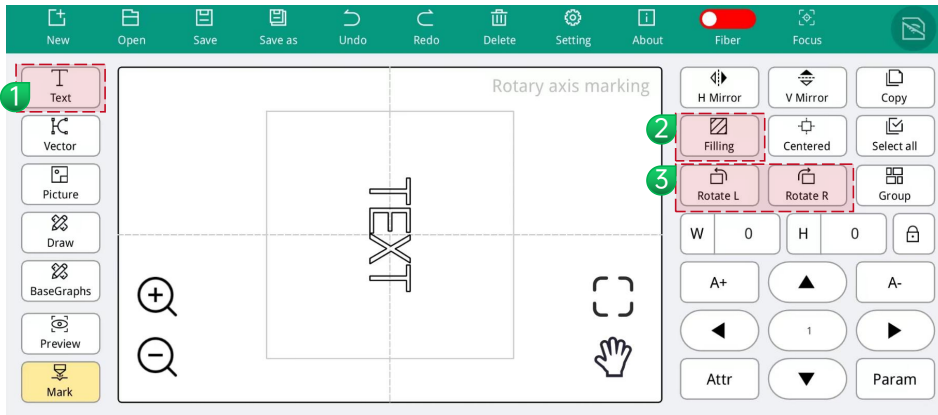
- 1 "Setting" → Marking Mode: "Rotary axis marking"
- 2 "Param" → "Axis of rotation", modify the following parameters:
 Axis direction: y;
 Check RedLight to start point;
 Enter diameter value
- 3 Open the "Shaft movement test" window, Select "Pulse" and fill in a value, such as 16625
 Click the left or right arrow
 Observe whether the roller drives the object (such as a cup) to rotate one circle. If it does not rotate one circle, increase the value of "pulse". If it exceeds one circle, decrease it until it rotates exactly one circle.
 The "pulse" value of one revolution is the "number of pulses per revolution"
 Finally, fill in the tested pulse value into the "number of pulses per revolution".

illustrate:
 The diameter of the workpiece is different, and the number of pulses per revolution is different. You need to modify the number of pulses per revolution according to the above method. Please contact customer service for a video tutorial.

10.RF2 Rotary Axis-Text Marking

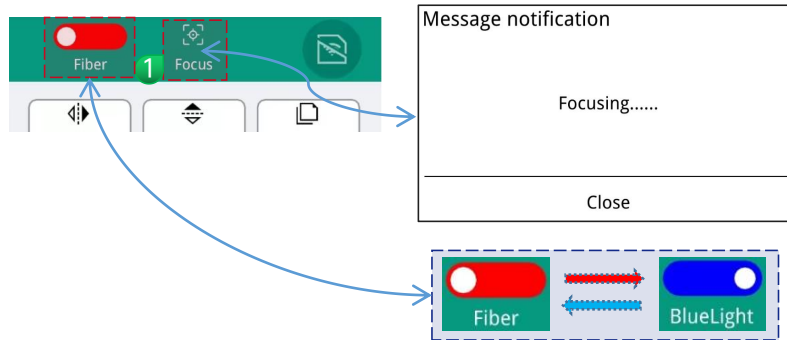


- 1 "Setting" → Marking Mode: "Rotary axis marking"
- 2 "Param" → "Axis of rotation", modify the following parameters:
 - Axis direction: y;
 - Check RedLight to start point;
 - Pulses per revolution: 6400 (RF1 rotation axis only)
 - Fill in the workpiece diameter according to the actual marked object;



- 1 Click "Text" and enter the engraving content
- 2 Click "Filling" to fill the content solid (only outlines will be carved out without filling)
- 3 Click "Rotate L" and "Rotate R" to make the text vertical as shown in the picture above.

11.Focus and switch Blue/Red light

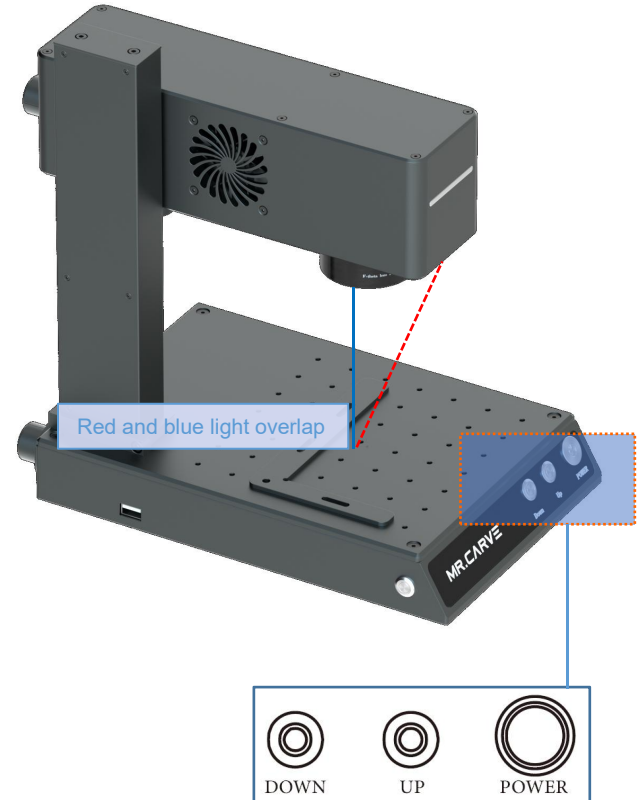


M4-pro model device, you can switch between "Fiber" and "BlueLight" here
Dual light switching, adaptable to more engraving materials

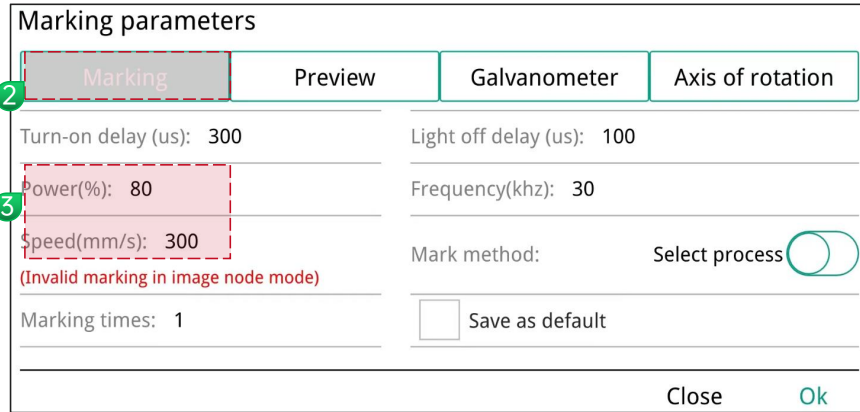
1.Click "Focus" in the upper right corner of the App, and "Focusing..." will appear. At this time, two red light spots will appear on the machine.

2.Insert the test card, lightly press the "Down" and "Up" buttons to adjust, and the two red lights will converge into a red dot to complete the focus.

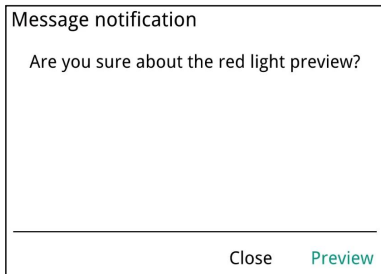
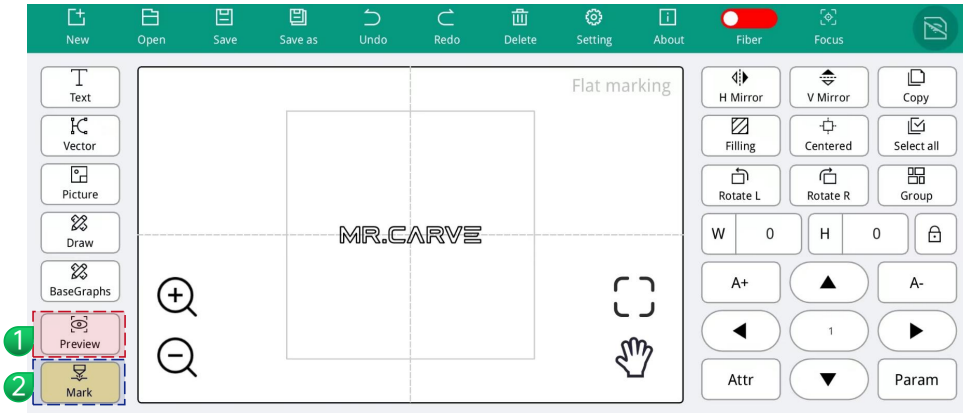
3.The standard distance between the laser head and the engraving object is 120mm, which is subject to actual measurement.



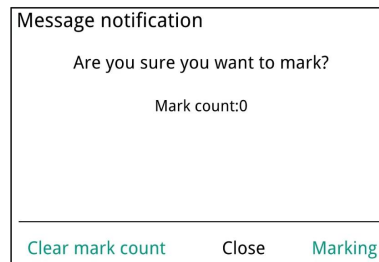
12.Start marking



- 1 After drawing "text", "vector graphics", "pictures" and other content, click "Param" in the lower right corner
- 2 In the marking window, enter the power, speed, and fill line spacing. Please refer to the manual "Engraving Parameter Reference for Each Material" (p22)
- 3 Enter the corresponding engraving parameters



- 1 Click "Preview" to display the preview window. At the same time, the machine displays a preview red light. Place the carved objects, ready for marking.



- 2 Click "Marking" to complete marking.



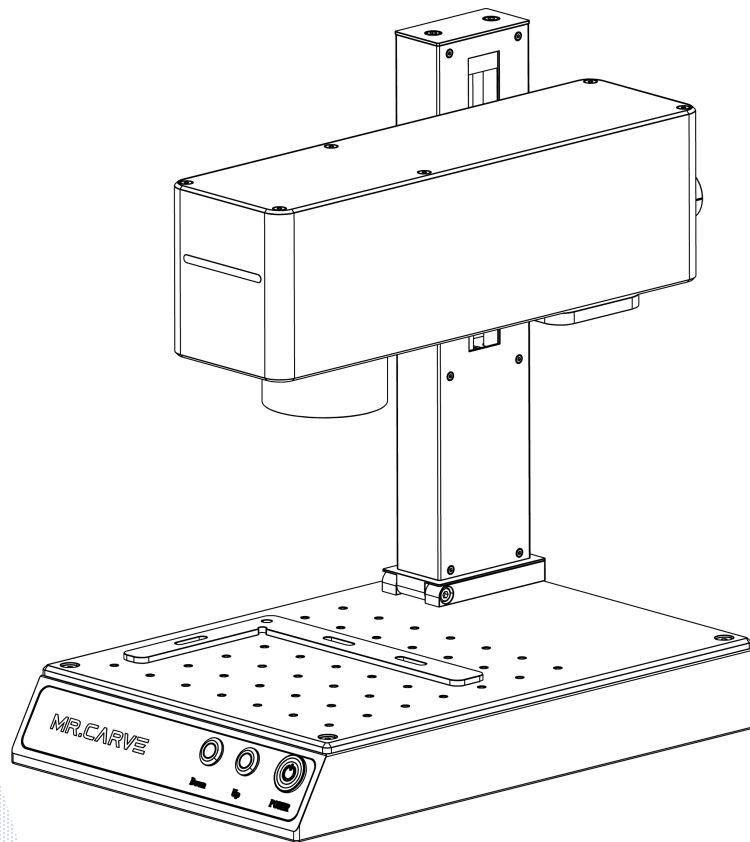
All contents in this document have been carefully checked. If there are any printing errors or misunderstandings in the content, please consult our company.

Note: If there are any technical improvements to the product, they will be added to the new version of the manual without prior notice. If there are any changes in the product appearance and color, the actual product shall prevail.

MR.CARVE

M4 PRO-APP使用说明书

使用产品前请仔细阅读本使用说明书，并妥善保管。



型号: M4 PRO-APP

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安全注意事项

为了防止给您的人身及财产安全造成损害，为了您可以安全正确地使用本产品，请仔细阅读使用手册，并按照使用手册的步骤操作。

安全注意事项

★在操作设备之前，用户务必认真阅读使用手册，严格遵守操作规程。

★激光加工可能存在风险，用户应慎重考虑被加工对象是否适合激光作业。

★加工对象及排放物应符合当地的法律、法规要求。

*本设备使用四类激光器（强激光辐射），该激光辐射可能会引起以下情况：

①点燃周边的易燃物；

②激光加工过程中，因加工对象的不同可能会产生其它的辐射及有毒、有害气体；

③激光辐射的直接照射会引起人体伤害，使用场所必须配备消防器材，禁止在工作台及设备周围堆放易燃、易爆物品，同时务必保持通风良好。

*设备所处环境应干燥，无污染、无震动、无强电、强磁等干扰和影响。工作环境温度10-40℃，工作环境湿度5-95%（无凝水）

★设备工作电压：AC100-240V。

*雕刻机及其相关联的其它设备都必须安全接地，方可开机操作。

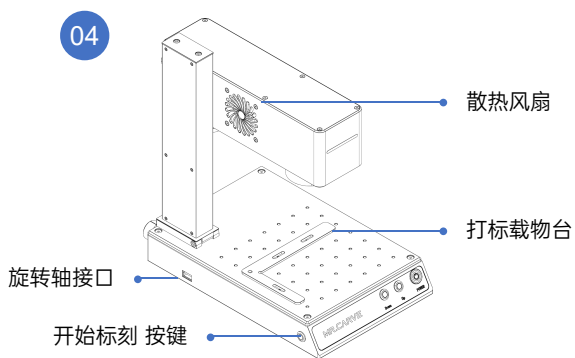
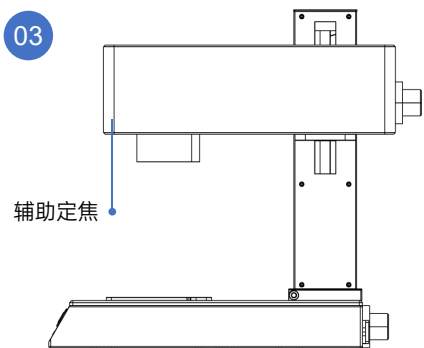
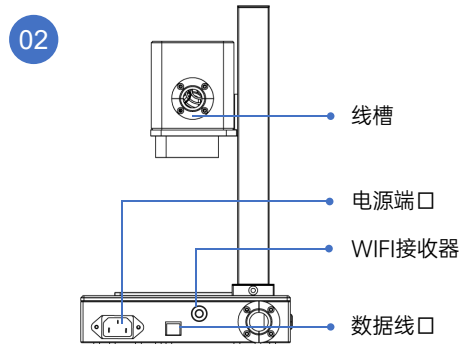
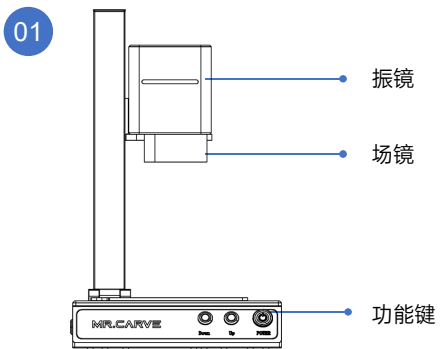
★设备在开机状态下，需全程值守，人员离开前必须切断所有电源，防止异常状况发生，如有发生请立即断电处理！

*严禁在设备中放置任何不相干的全反射或漫反射物体，以防激光反射到人体或易燃物品上。

*设备应远离对电磁干扰敏感之电气设备，可能对其产生电磁干扰。

*激光设备内部有高压或其它潜在的危險，非专业人员严禁拆卸。

产品结构配件



配件明细

		
胶棒天线	定位板	护目镜
		
定焦测试片	U盘	六角扳手
		
调焦片	数据线	电源线



产品参数

机器详细参数	
激光功率	蓝光：5W / 红光：2W
环境温度	-10°C~45°C
重复精度	≤0.001mm
打标深度	0.015-0.2mm
打标精度	≤0.001mm
打标速度	≤10000mm/s
冷却方式	内置风扇
激光波长	蓝光：455nm / 红光：1064nm
打标幅面	70*70mm
打标线宽	0.001-0.03mm
机器净重	6.26kg
机器尺寸	300mm* 200mm* 320mm (L*W*H)

组装步骤



01 1.将机器放置于平面



02 2.将升降轴立起来



03 3.安装螺丝，固定升降轴



04 4.将光路装置放置于升降轴的直角板，对准后四个螺丝孔

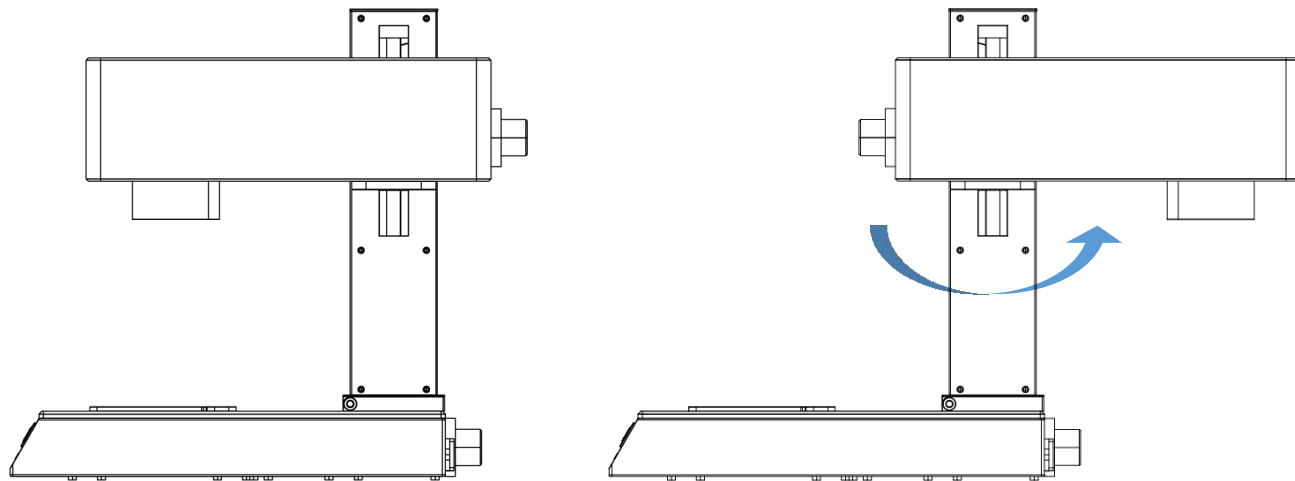


05 5.固定光路装置，安装螺丝



06 6.安装完成

180°旋转使用说明



拧松固定螺丝,将雕刻机X轴旋转180°后拧紧螺丝固定。

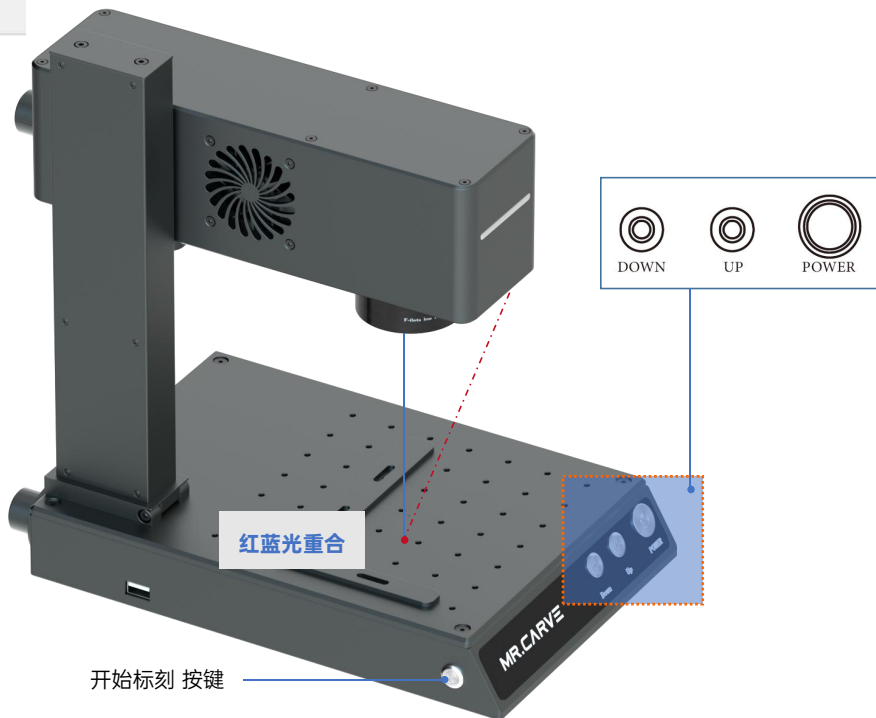
注意:旋转180°后雕刻桌面或雕刻其它有高度的物品时激光头与雕刻面必须保持120mm有效距离,否则无法聚焦。

对焦与切换蓝/红光

- 1.放入测试卡片，轻按“Down”及“Up”按键调整，两道红光重合，完成对焦。
- 2.切换蓝光/红光，在软件里边设置；



- 3.激光头距离雕刻物的标准:
两道红光汇合一点，即完成对焦。



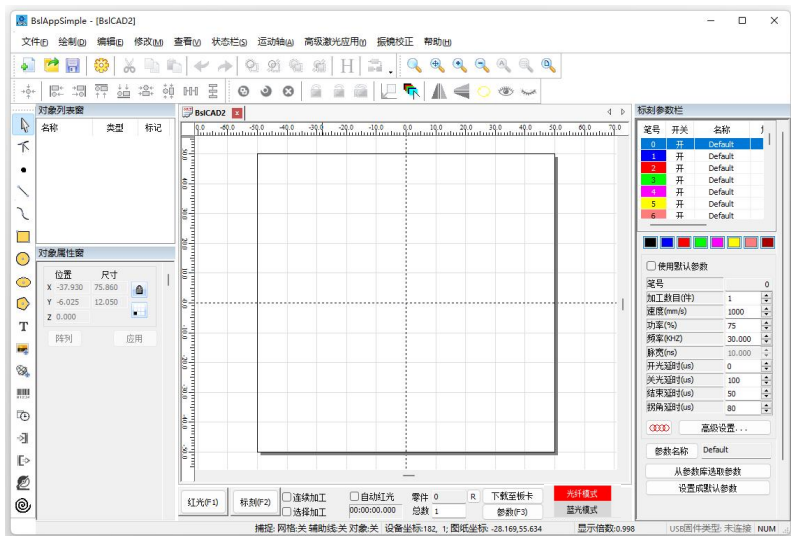
软件获取与安装

方法一：

- 1.安装U盘里的驱动文件“Drive\CypressDriverInstaller.exe”
- 2.将U盘里的文件夹“[软件BslAppSimple](#)”复制到电脑桌面，打开该文件夹，双击“[BslAppSimple.exe](#)”，启动软件；

方法二：

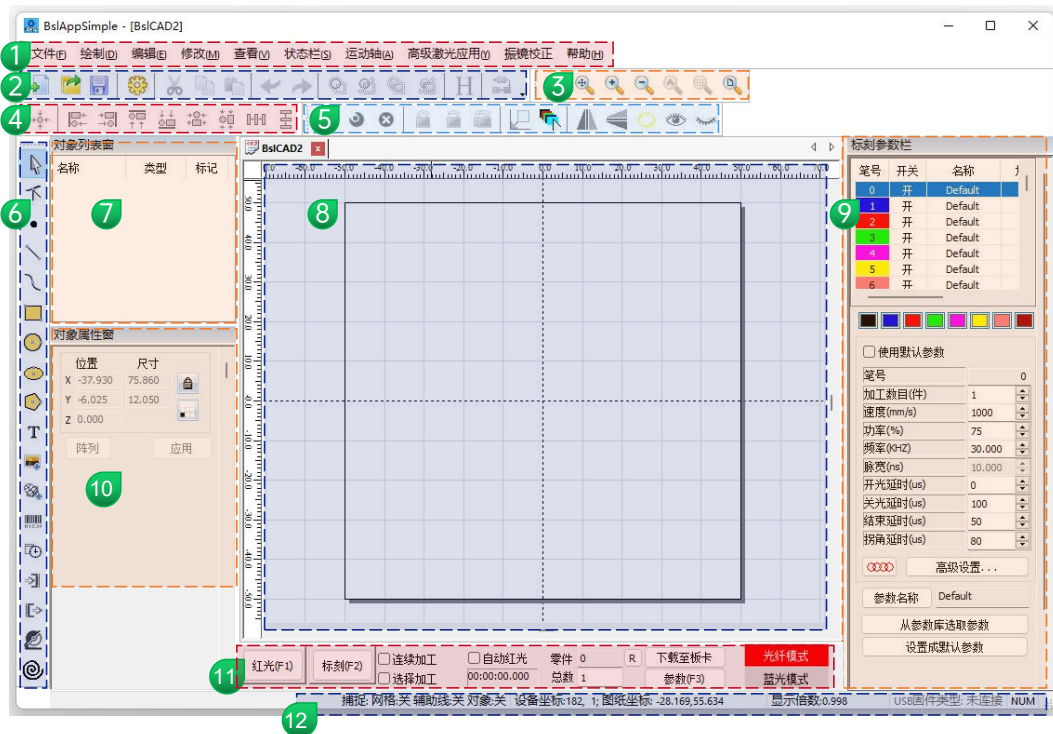
如果随机附赠的U盘不慎遗失，或者软件误删除。可通过访问官网“<http://www.mrcarve.cn/download>”获取，安装步骤与方法一相同。



软件打开状态页面

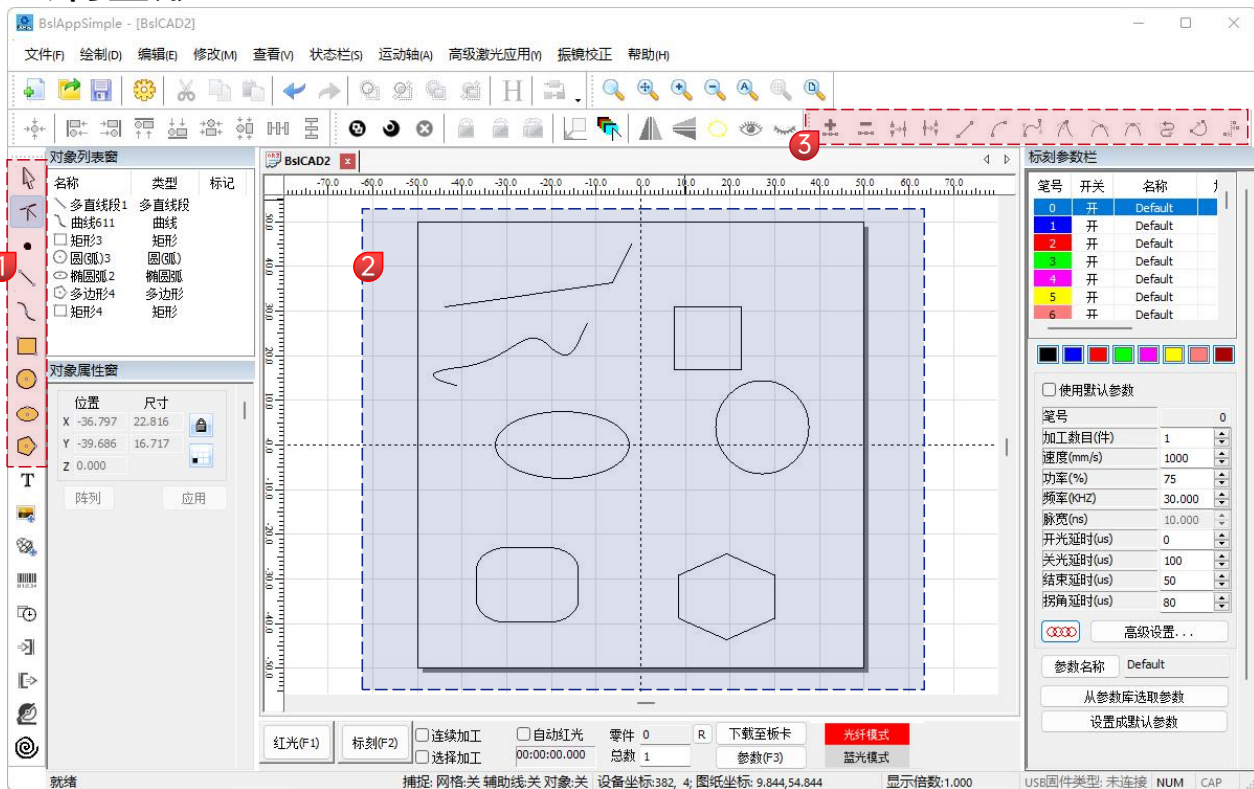
软件各功能简介

鼠标在功能图标上停留，会显示该图标对应的使用说明



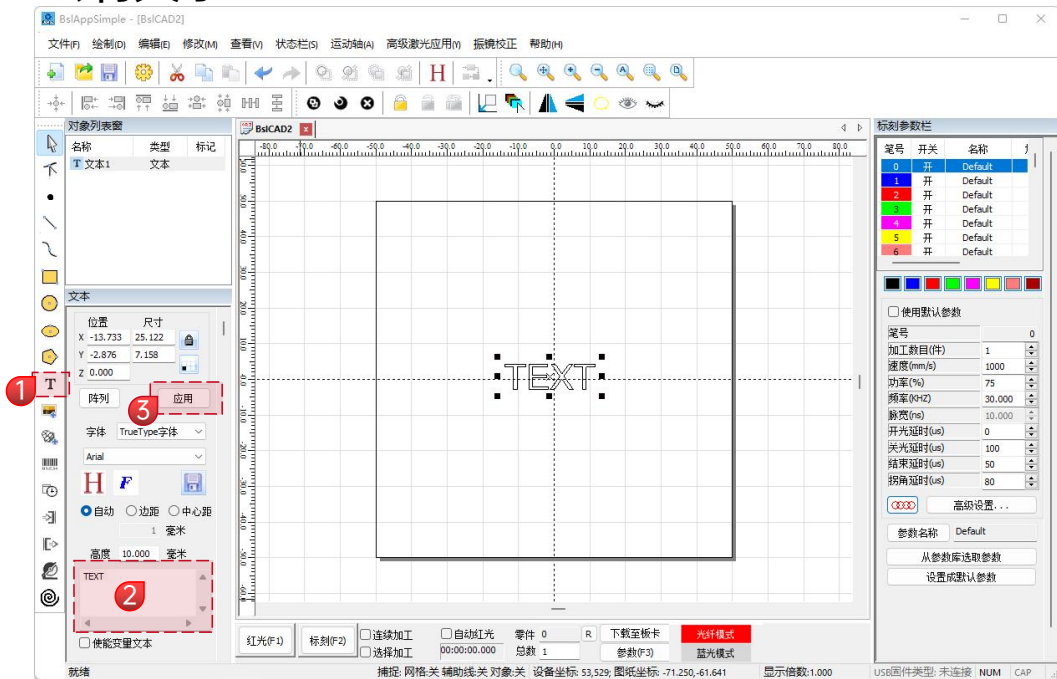
- 1 菜单栏
- 2 系统工具栏
- 3 缩放工具栏
- 4 对齐工具栏
- 5 辅助工具栏
- 6 绘图工具栏
- 7 对象列表窗
- 8 内容显示框
- 9 标刻参数栏
- 10 对象属性栏
- 11 标刻控制栏
- 12 状态栏

绘制图形



- 1 绘图栏：绘制直线、曲线、矩形、圆形、多边形
- 2 内容显示框
- 3 节点编辑栏：对绘制的图形，进行节点编辑

绘制文字

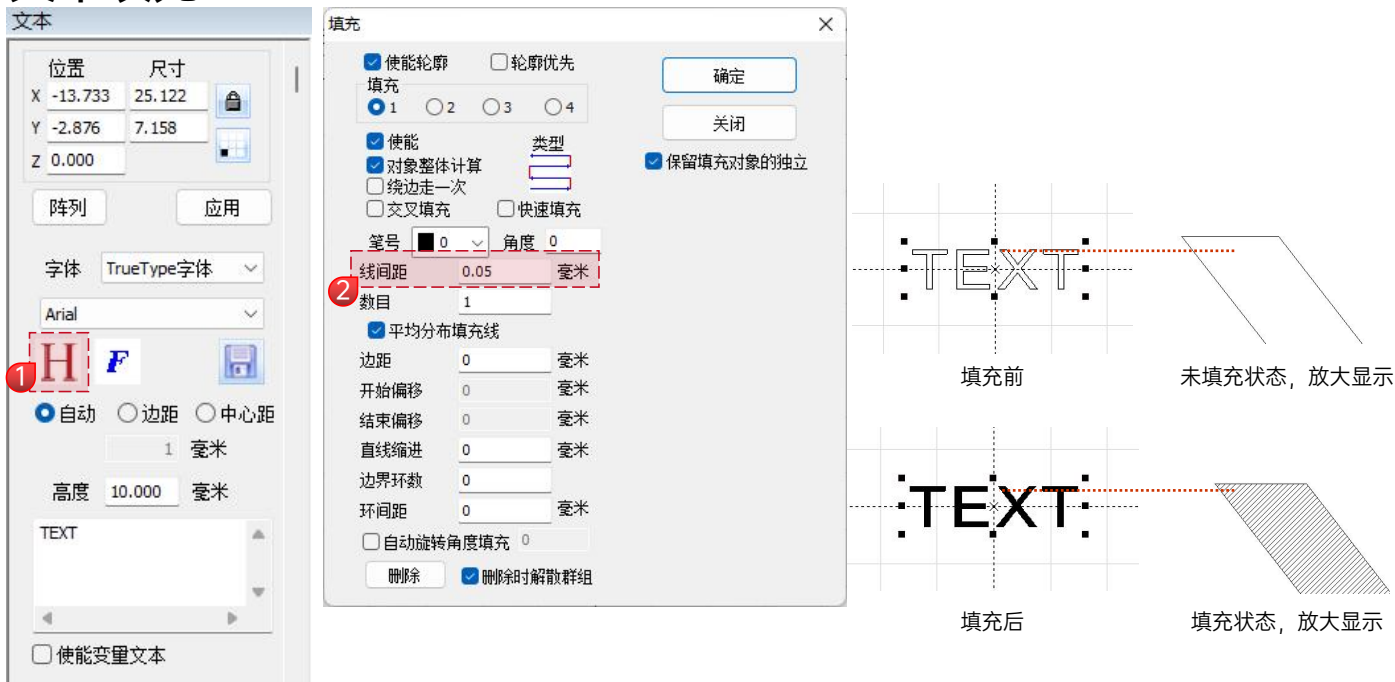


1. 点击 **T**，默认出现“TEXT”，在文本输入框内输入相关文字，点击 **应用**，完成文本输入。

H 文本填充，需要填充才能作用到雕刻物上；

F 文本工具，设置对齐方式、字符间距、圆弧文本、角度等参数。

文本填充

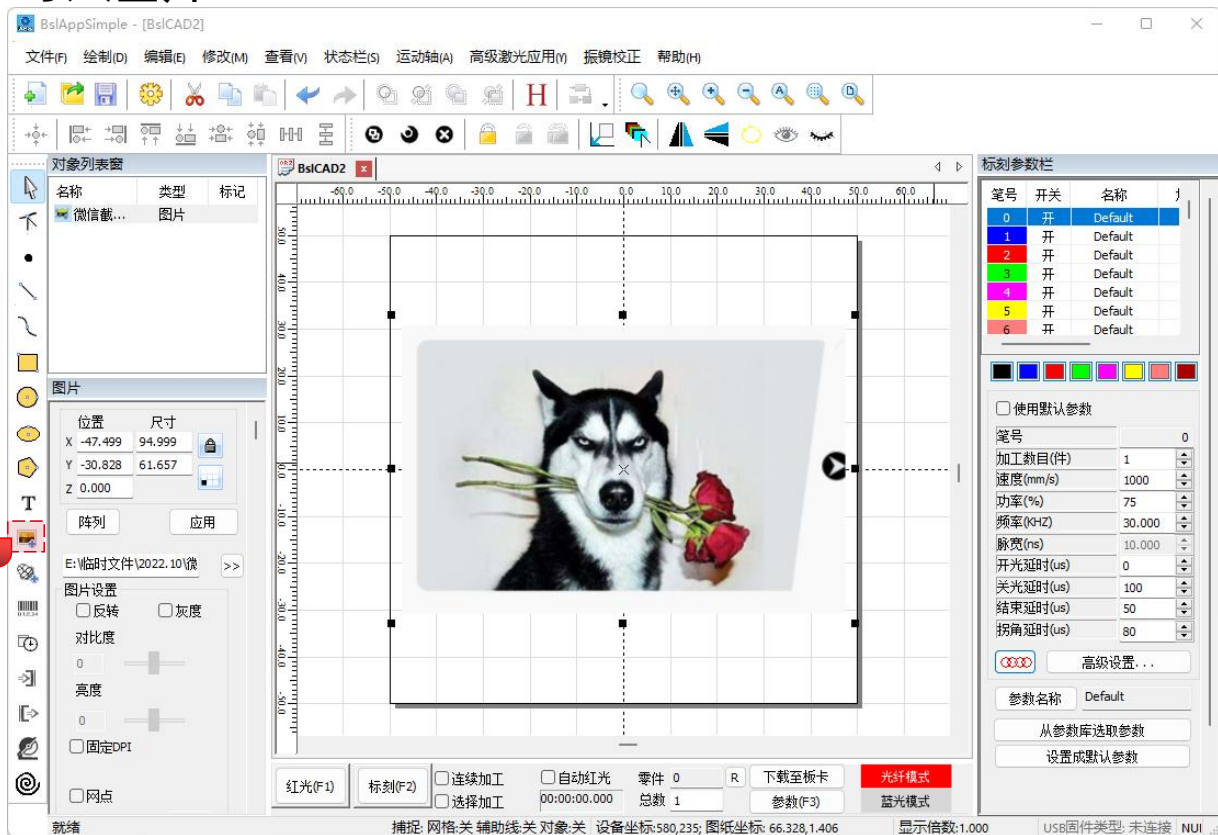


1. 点击 **H**，打开填充设置窗口；

2. 文字打标不需要设置其他参数，只需要修改“线间距”，默认参数为0.05；

说明：线间距是文字填充密度。数值越大，打标速度越快，雕刻颜色越浅；反之数值越小，则打标速度越慢，雕刻颜色越深；在原色金属、喷漆烤漆、氧化漆面、电镀金属、塑料、皮革、其它漆面材质上标刻，效果最佳。

导入图片



1. 点击 ，弹出“图片属性”窗口，选择自己所需的图片，点击 打开(O) 导入图片。

图片处理（人物照片/彩色照片）



对象列表窗

名称	类型	标记
图片1.png	图片	

图片

Ev3文艺复兴镜面图片 >>

图片设置

反转 灰度

对比度

高度

固定DPI

X 500 Y 500

网点

阈值 128

标刻参数

双向扫描

打点时间 0.4 ms

调整点功率

点功率映射

扩展...

动态输入图片

标刻参数栏

笔号	开关	名称	加工
0	开	Default	
1	开	Default	
2	开	Default	
3	开	Default	
4	开	Default	
5	开	Default	
6	开	Default	

使用默认参数

笔号

加工数目(件)

速度(mm/s)

功率(%)

频率(KHZ)

脉宽(ns)

开光延时(us)

关光延时(us)

结束延时(us)

拐角延时(us)

高级设置...

参数名称 Default

从参数库选取参数

设置成默认参数

红光(F1) 标刻(F2) 连续加工 自动红光 零件 0 R 下载至板卡 选择加工 00:00:00.000 总数 1 参数(F3) 光纤模式 蓝光模式

捕捉: 网格: 关 辅助线: 关 对象: 开 设备坐标: 603.475; 图纸坐标: 69.844, 45.703 显示倍数: 1.000 USB固件类型: 未连接 NUM

1.调整图片至合适的大小尺寸；

2.在“图片设置”窗口里，勾选“反转”、“灰度”，“固定 DPI”(XY分别填入参数500)，“网点”；

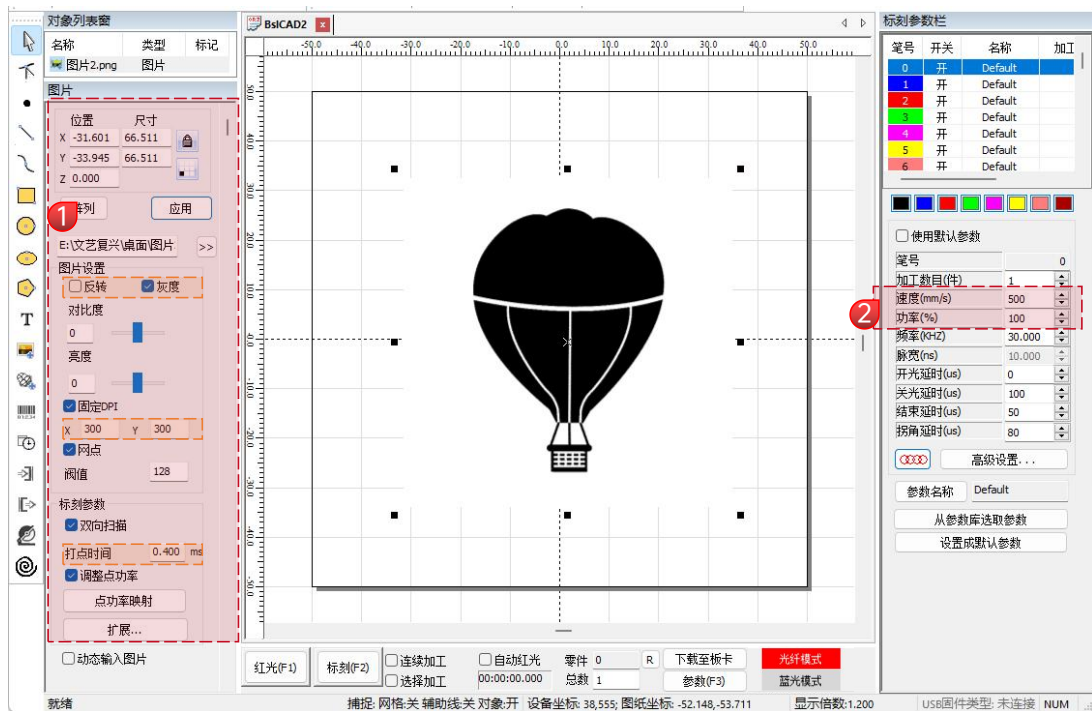
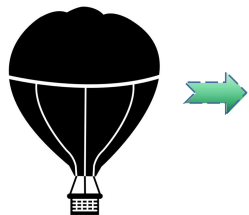
3.在“标刻参数”窗口里，勾选“双向扫描”、在“打点时间”填入0.4，点击 确定输入参数；

4.标刻参数设置，“速度(mm/s)”设置为500，“功率(%)”设置为100；

说明：人物照片/彩色照片在喷漆烤漆面金属/氧化漆面电镀金属上雕刻，效果最佳。

DPI数值越高，雕刻效果越清晰；打点时间越大，雕刻效果越深。

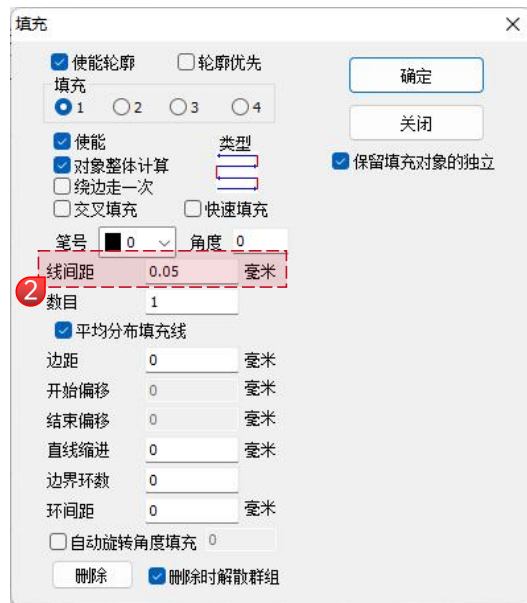
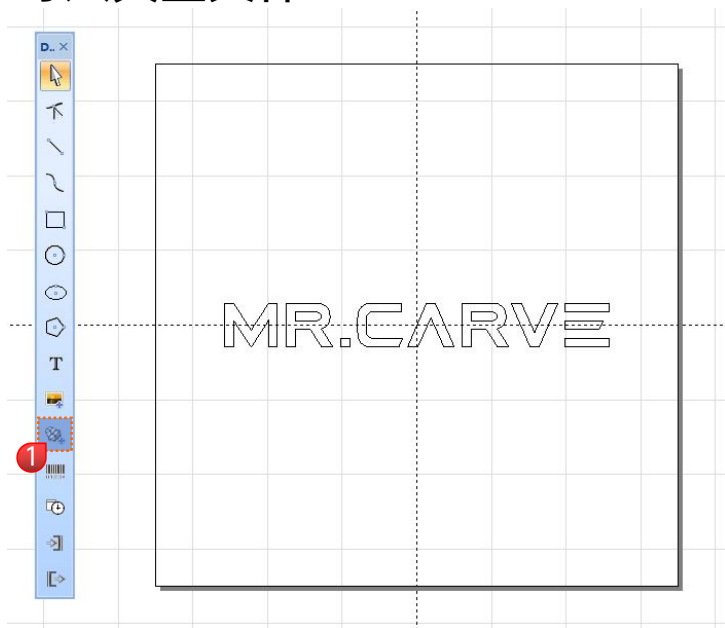
图片处理（普通位图）




- 1.调整图片至合适的大小尺寸；
- 2.在“图片设置”窗口里，勾选“灰度”，“固定 DPI”(XY分别填入参数300)，“网点”；
- 3.在“标刻参数”窗口里，勾选“双向扫描”、在“打点时间”填入0.4，点击 确定输入参数；
- 4.标刻参数设置，“速度(mm/s)”设置为500，“功率(%)”设置为100；

说明：在原色金属、喷漆烤漆、氧化漆面、电镀金属、塑料、皮革、其它漆面材质上雕刻，效果最佳。

导入矢量文件



1. 点击 ，导入矢量文件；支持PLT、DWG、AI等格式；

2. 导入的矢量文件，需要填充才能完成标刻。

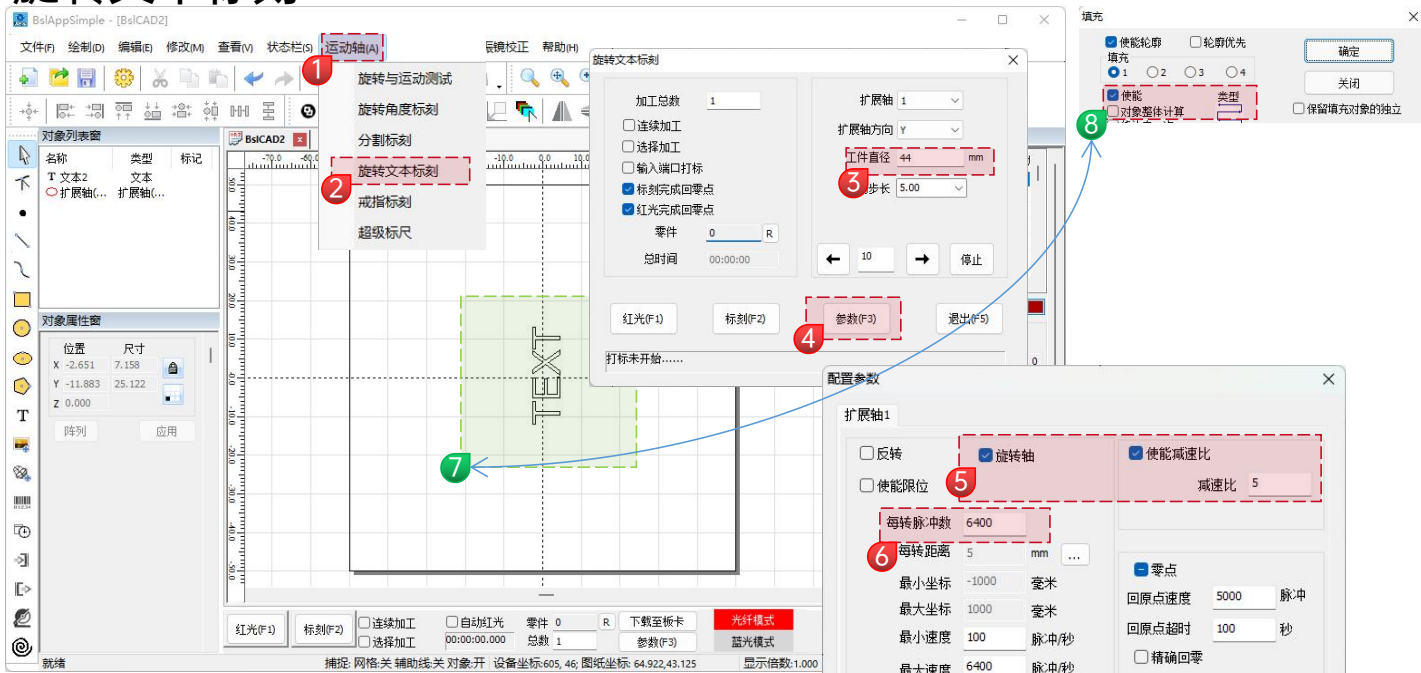


3. 矢量文件填充，不需要设置其他参数，只需要修改“线间距”，默认参数为0.05；

说明：线间距是填充密度。数值越大，打标速度越快，雕刻颜色越浅；反之数值越小，则打标速度越慢，雕刻颜色越深；

在原色金属、喷漆烤漆、氧化漆面、电镀金属、塑料、皮革、其它漆面材质上标刻，效果最佳。

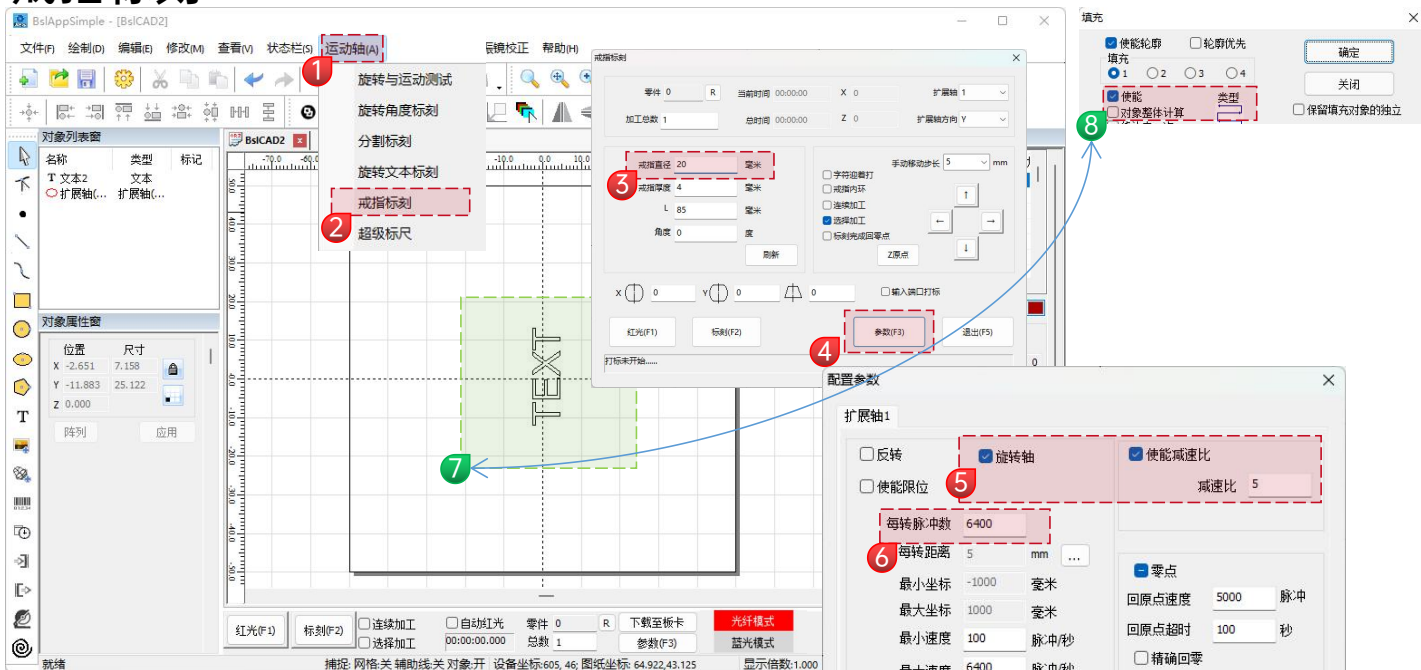
旋转文本标刻



旋转轴只支持文本雕刻

1. 按上图编号顺序操作；
2. ③ 步骤输入需要打标工件的直径；
3. ⑤ 勾选，输入数值5；⑥ 输入参数“6400”
4. ⑦ 文本内容需要旋转90°，快捷键“ctrl”+方向键“←”
5. ⑧ 文本填充需要取消勾选“对象整体计算”

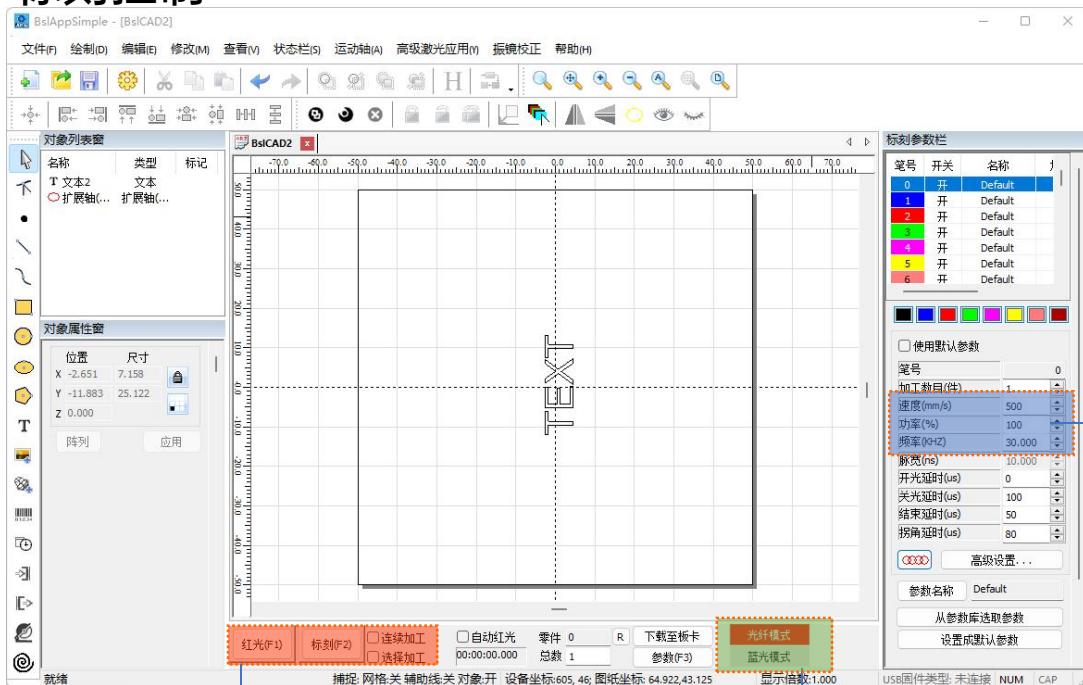
戒指标刻



旋转轴只支持文本雕刻

1. 按上图编号顺序操作;
2. **3** 步骤输入需要打标工件的直径;
3. **5** 勾选, 输入数值**5**; **6** 输入参数 "**6400**"
4. **7** 文本内容需要旋转90°, 快捷键 "**ctrl**" + 方向键 "**←**"
5. **8** 文本填充需要取消勾选 "**对象整体计算**"

标刻控制



- 红光 (F1):预览当前雕刻位置，红光矩形的预览模式
- 标刻(F2): 开始标刻
- 连续加工: 重复雕刻
- 选择加工: 多个对象，选择其中一个雕刻

切换蓝红光

建议参数调节:
速度(mm/s):500
功率(%):100
频率(KHZ):30

蓝光，各材质雕刻参数参考

图形、文字、矢量图			
材料	线间距	功率	速度
木材	0.03/ 0.01	100	500/700
竹子	0.005 / 0.001	100	500/700
塑料	0.03	100	1000 / 1500
皮革	0.03	100	1000 / 1500
石材	0.01	100	500
玻璃 陶瓷（需要配合色纸）	0.03	100	500
漆面材料	0.03/0.01	100	200/400

红光，各材质雕刻参数参考

图形、文字、矢量图			
材料	线间距	功率	速度
金属	0.01 / 0.005 / 0.001	100	300 / 500
漆面金属	0.005 / 0.001	100	500
塑料	0.03	100	1000 / 1500
皮革	0.05 / 0.01	100	1000 / 1500
石材	0.01	100	500
漆面玻璃	0.03	100	500
漆面材料	0.03	100	1000 / 1500

黑白图(普通位图)

材料	图片设置	功率	速度
金属	灰度 (勾选) 固定DPI (x300 y300) 网点 (勾选) 双向扫描 (勾选) 打点时间 (0.4~0.5ms) 调整点功率 (勾选)	100	200
漆面金属		100	300
塑料		100	500
皮革		100	500
石料		100	200
漆面材料		100	500

彩色图(风景、人物图像)

漆面金属	反转 (勾选) 灰度 (勾选) 固定DPI (x500 y500) 网点 (勾选) 双向扫描 (勾选) 打点时间 (0.4~0.5ms) 调整点功率 (勾选)	100	500
电镀金属			
氧化金属			
ABS塑料			

常见问题

I、机器通电无反应

1. 未通电：检查插座、开关、机身电源插座等，确保已插接到位且正常通电；检查面板上面的Power电源键，确保该键按下且机身灯光亮起。

II、无法连接电脑

1. USB线未连接：检查USB数据线电脑端和机器接口，确保插接到位，部分台式电脑前面板USB接口无效，需连接机身后方的插口。
2. 驱动未正常安装：按照操作指引完成驱动安装，安装完成后电脑将设备识别成串口则说明硬件连接OK。
3. 其他特殊情况：拔出USB数据线和电源，设备完全断电5S后，重新进行连接操作。

III、雕刻效果很浅或没有痕迹

1. 对焦不准：阅读使用手册对焦部分进行准确对焦。
2. 雕刻速度：过快，灼烧时间过短所致，阅读使用手册雕刻参数部分重新调整参数。
3. 图片过浅：导入的图片要清晰，线条过细，颜色过浅会直接影响雕刻效果。
4. 雕刻物摆放：被雕物体倾斜放置，激光的焦距是固定的，所以被雕物体要放平，与机身平行，反之则焦距不准，导致雕刻效果异常。

1.手机App下载

1、扫码以下二维码下载手机app



安卓
Android



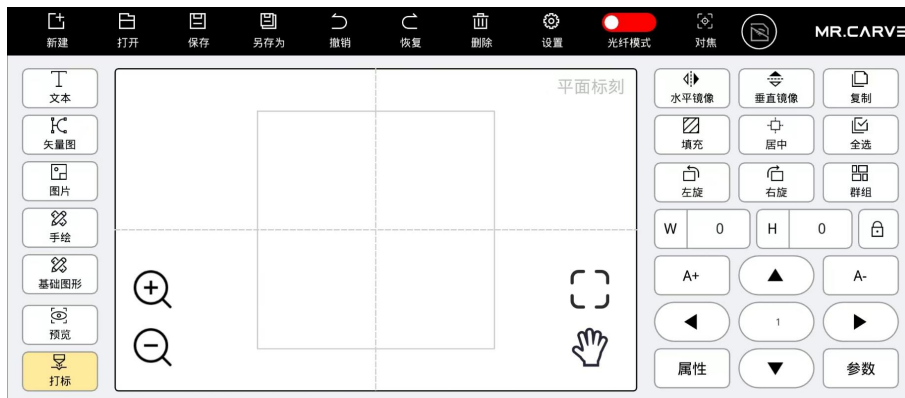
苹果
IOS

系统要求：Android:7.0+, IOS:13.0+

注：1、Android手机需要使用手机浏览器扫码二维码下载；
2、安装成功后需要给予相对于的权限；



MRCARVE



2.手机app连接

- 1、插上手机连接接收器，插上机器电源，按下前面开机按键
- 2、手机打开WiFi搜索，连接上“ADD”密码：12345678
- 3、连接后手机会提示“当前WLAN不可上网，是否继续使用此WiFi？”请选择“使用”

查看APP界面是否连接成功：



已连接

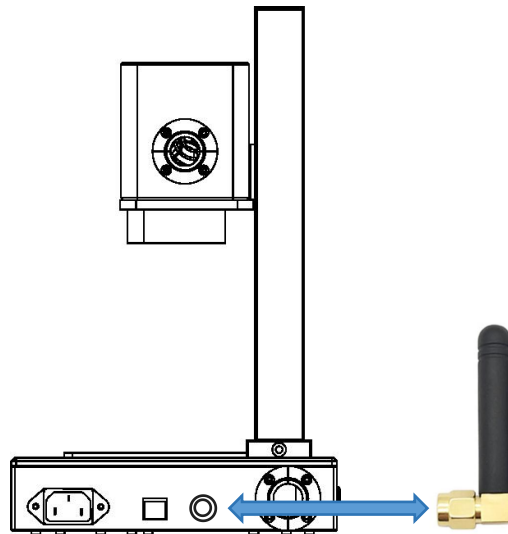


未连接

连接上App后，请按照纸质参数表修改参数

步骤：App右下角“参数”→“振镜”下面指示位置

App右下角“参数”→“红光预览”下面指示位置



打标参数

标刻	红光预览	振镜	旋转轴
偏移X(mm): 0.000	偏移Y(mm): 0.000	角度(°): 0.000	
<input type="checkbox"/> XY互换	<input type="checkbox"/> X反向	<input type="checkbox"/> Y反向	区域尺寸(mm): 70
X方向: 1.000	1.000	1.000	比例: 100.000 >>
Y方向: 1.000	1.000	1.000	比例: 100.000 >>

关闭 确定

打标参数

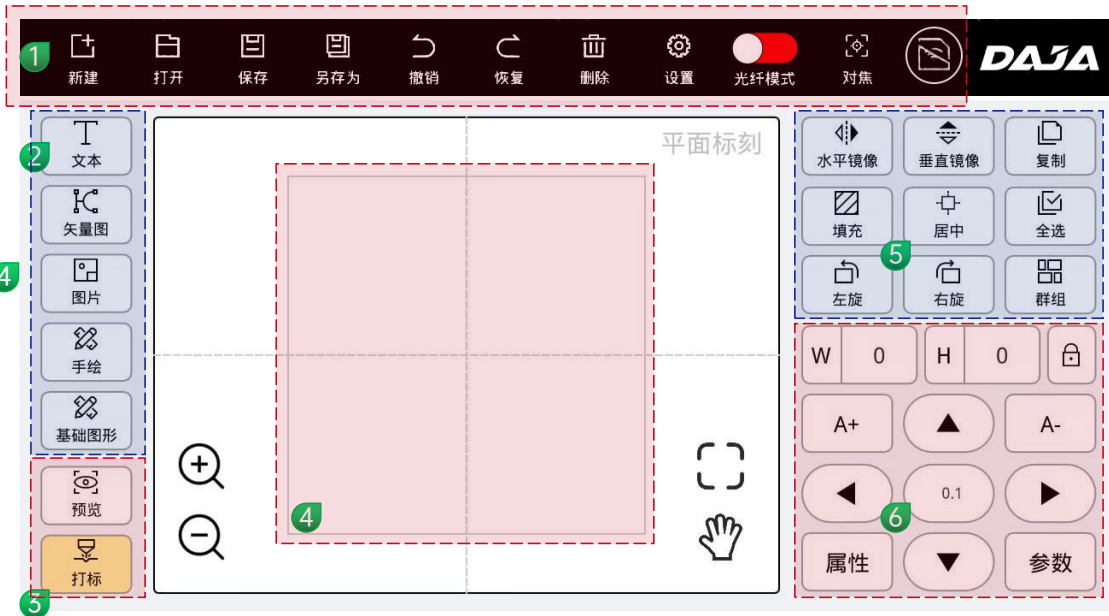
标刻	红光预览	振镜	旋转轴
预览方式: <input type="radio"/> 轮廓线	<input checked="" type="radio"/> 外接矩形		
红光速度(us): 3000			
偏移X(mm): 0.000	尺寸比例: 1.000		
偏移Y(mm): 0.000	尺寸比例Y: 1.000		

关闭 确定



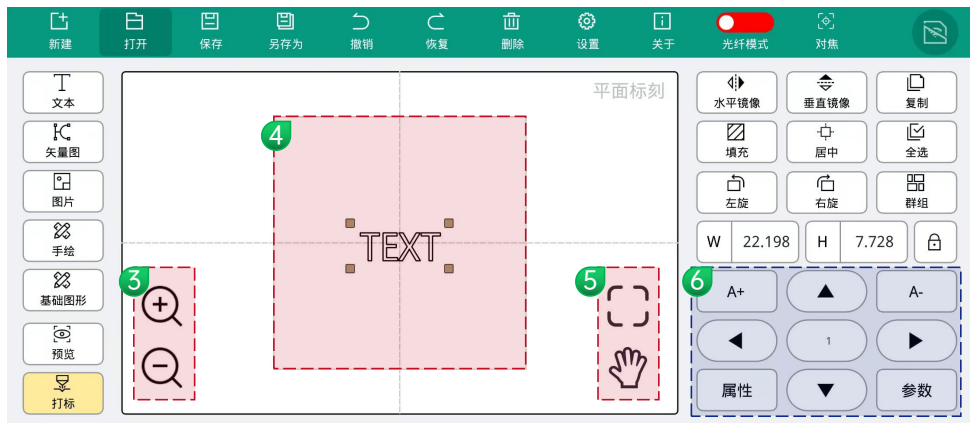
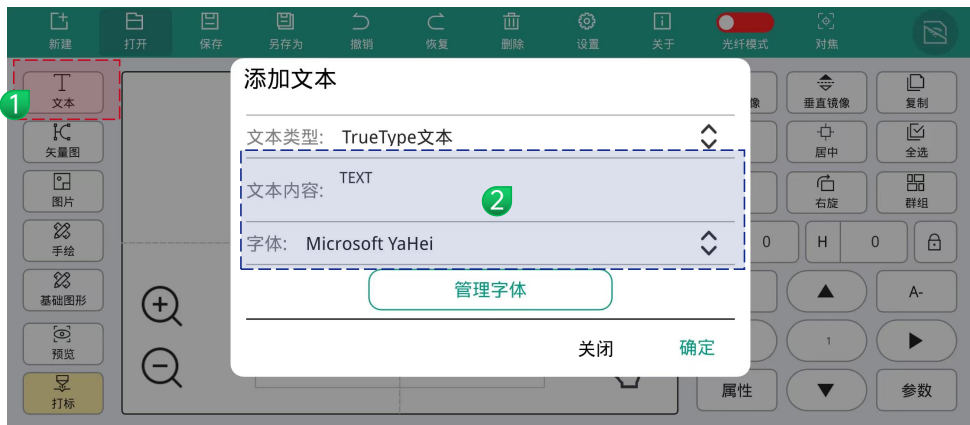
激光器需要选择"CO2"

3.软件各功能简介



- 1 菜单栏
- 2 绘图工具栏
- 3 标刻控制栏
- 4 内容显示框
- 5 辅助工具栏
- 6 对象属性栏

4. 绘制文字



- 1 点击左侧添加文本
- 2 输入文字以及选择字体，点击“确定”文字编辑完成。
- 3 工作区大小缩放
- 4 工作区域，绘制内容请勿超出区域

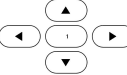
- 5  显示工作区域
 拖动工作区域

- 6 **W** 宽度，单位：mm
H 高度，单位：mm

- 6  锁定比例

- 6 **A+** 内容加大

- 6 **A-** 内容减小


- 6  上下左右微调位置
中间是距离
单位：mm



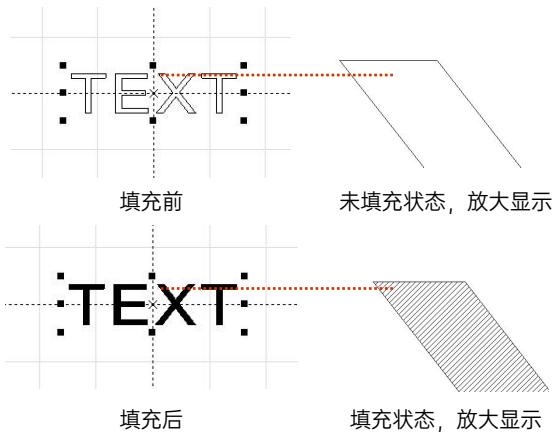
属性，图元属性
可二次编辑文字内容和字体

5.文本填充



1 点击  填充，打开填充设置窗口

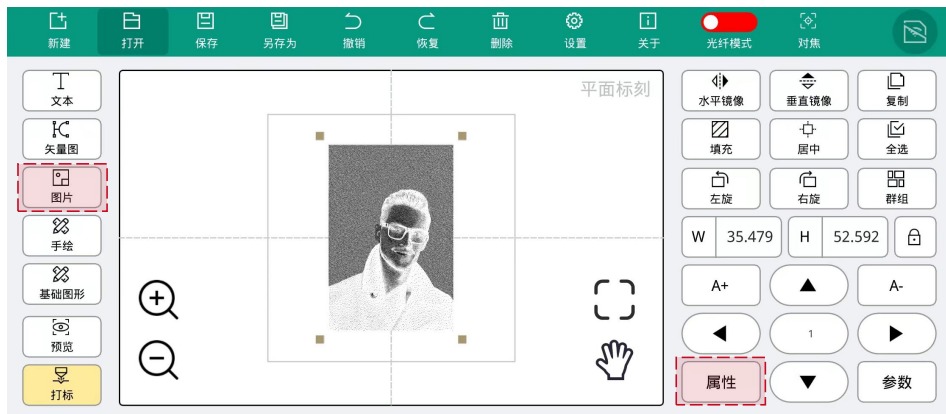
2 文字打标不需要设置其他参数，只需要修改“线间距”，默认参数为0.03




说明：

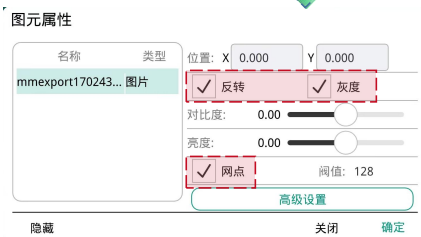
线间距是文字填充密度。数值越大，打标速度越快，雕刻颜色越浅；反之数值越小，则打标速度越慢，雕刻颜色越深；在原色金属、喷漆烤漆、氧化漆面、电镀金属、塑料、皮革、其它漆面材质上标刻，效果最佳。

6. 图片处理（人物照片/彩色照片）



1 点击 ，选择自己所需的图片
图片

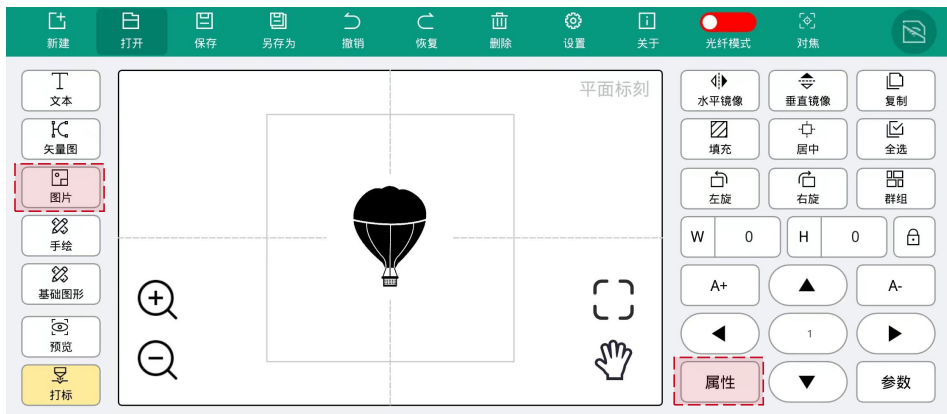
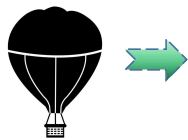
2 点击属性，在“图元属性”窗口
里面勾选“灰度”、“网点”，“高
级设置”里面“固定DPI”修改成
500，打点时间修改成0.4




说明：

人物照片/彩色照片在喷漆烤漆面金属/氧化漆面电镀金属上雕刻，效果最佳。DPI数值越高，雕刻效果越清晰，打点时间越大，雕刻效果越深。

7. 图片处理（普通位图）



① 点击 ，选择自己所需的图片
图片

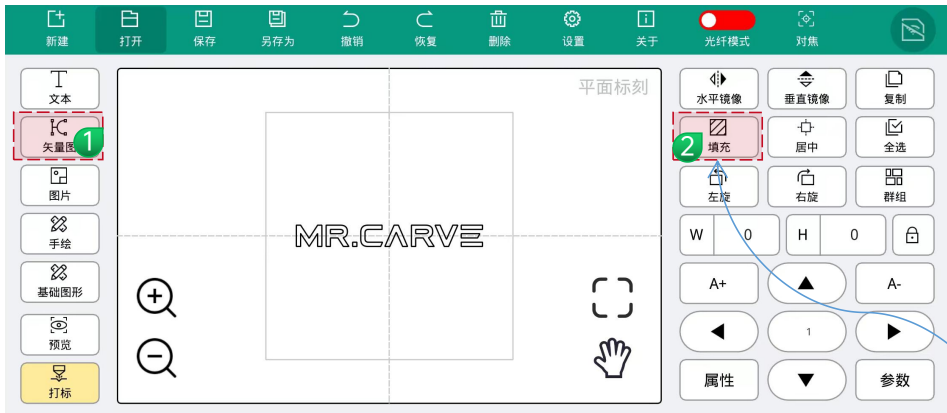
② 点击属性，在“图元属性”窗口
里面勾选“灰度”、“网点”，“高
级设置”里面“固定DPI”修改成
500，打点时间修改成0.4





说明：

人物照片/彩色照片在喷漆烤漆面金属/氧化漆面电镀金属上雕刻，效果最佳。DPI数值越高，雕刻效果越清晰，打点时间越大，雕刻效果越深。

8.导入矢量文件雕刻



- 1 点击  选择所需的文件
支持“PLT”“DXF”“AI”等格式
- 2 点击  打开“填充参数”窗口
填充
- 3 矢量文件填充，不需要设置其他参数，只需要修改“线间距”，默认参数为0.03



说明：

人物照片/彩色照片在喷漆烤漆面金属/氧化漆面电镀金属上雕刻，效果最佳。DPI数值越高，雕刻效果越清晰;打点时间越大，雕刻效果越深。

设置完成即可对焦和标刻，步骤详见说明书“对焦”和“开始标刻”页面

9.RT5旋转轴-旋转文本标刻

系统设置

移动步长(mm): 1 旋转角度(°): 15
屏幕缩放比例: 0.1 图元缩放比例: 0.1
语言: 中文 标刻模式: 旋转轴标刻

绑定 解绑

关闭 确定

1

新建 打开 保存 另存为 撤销 恢复 删除 **设置** 关于 光纤模式 对焦

文本 矢量图 图片 手绘 基础图形 预览 打标

平面标刻

水平镜像 垂直镜像 复制
填充 居中 全选
左旋 右旋 群组
W 0 H 0 锁
A+ ▲ A-
◀ 1 ▶
属性 ▼ **参数**

2

轴运动测试

脉冲: 16625
旋转角度(°): 15
急停

关闭

打标参数

标刻	红光预览	振镜	旋转轴
旋转方向: y	<input type="checkbox"/> 是否反转	<input checked="" type="checkbox"/> 红光完成回起始点	<input type="checkbox"/> 标刻完成回起始点
每转脉冲数: 16250			
电机启动速度(p/s): 10		电机运行速度(p/s): 3200	
加速时间(ms): 255		运动半径(mm): -5.000	
工件直径(mm): 33.000			轴运动测试

关闭 确定

3

- 1 第一步点击“设置”→“系统设置”里面修改标刻模式为“旋转轴标刻”；
- 2 打开参数→旋转轴，修改以下参数：
旋转轴方向：y；
勾选红光完成回到起始点；
按照实际打标物件填写工件直径；
- 3 打开“运动轴测试”窗口，
选择“脉冲”后面填写一个数值，比如16625
点击左或者右箭头
观察滚漆是否带动物体（如杯子）转动一圈，
如果没有转动一圈，把“脉冲”的数值加大，
如果超过一圈，就减小，直到刚好转动一圈
转动一圈的“脉冲”值，即是“每转脉冲数”
最后，将测试好的脉冲值填入“每转脉冲数”
即可。

说明：

工件直径不同，每转脉冲数不同，需要重新按照以上方法修改每转脉冲数，视频教程请联系客服索取。

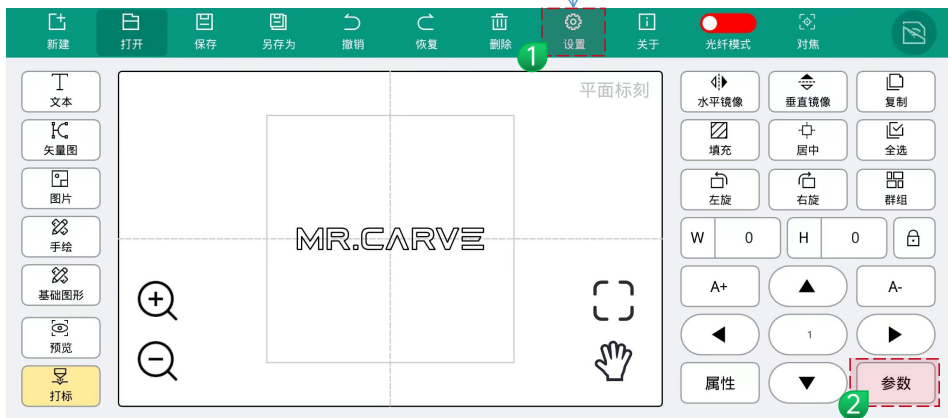
10.RF2旋转轴-旋转文本标刻

系统设置

移动步长(mm): 1	旋转角度(°): 15
屏幕缩放比例: 0.1	图元缩放比例: 0.1
语言: 中文	标刻模式: 旋转轴标刻
<input type="button" value="绑定"/>	<input type="button" value="解绑"/>
<input type="button" value="关闭"/>	<input type="button" value="确定"/>

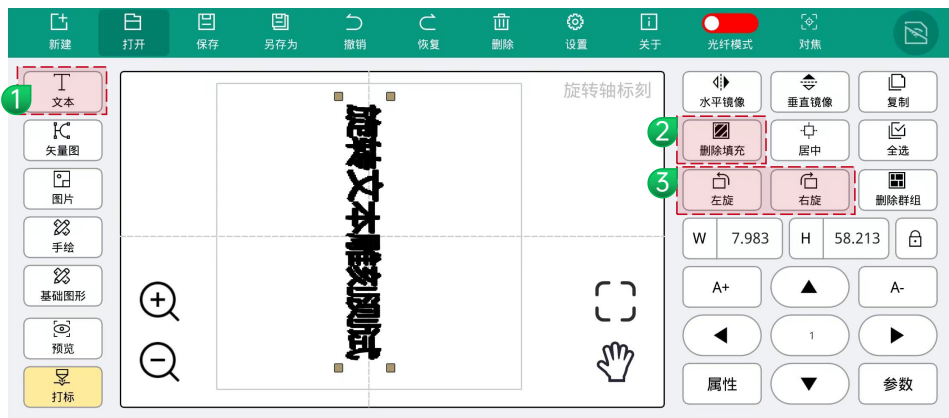
1 第一步点击“设置”→“系统设置”里面修改标刻模式为“旋转轴标刻”；

2 打开参数→旋转轴，修改以下参数：
旋转轴方向：y；
勾选红光完成回到起始点；
每转脉冲数固定为：6400（仅RF1旋转轴）
按照实际打标物件填写工件直径；



打标参数

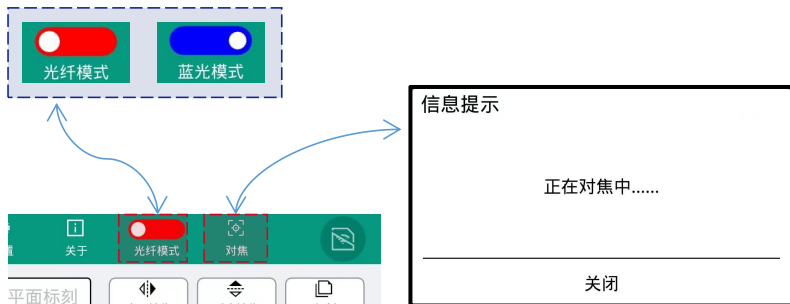
标刻	红光预览	振镜	旋转轴
旋转轴方向: y	<input type="checkbox"/> 是否反转	<input checked="" type="checkbox"/> 红光完成回起始点	<input type="checkbox"/> 标刻完成回起始点
每转脉冲数: 6400			
电机启动速度(p/s): 10		电机运行速度(p/s): 3200	
加速时间(ms): 255		运动步长(mm): 5.000	
工件直径(mm): 33.000		<input type="button" value="轴运动测试"/>	



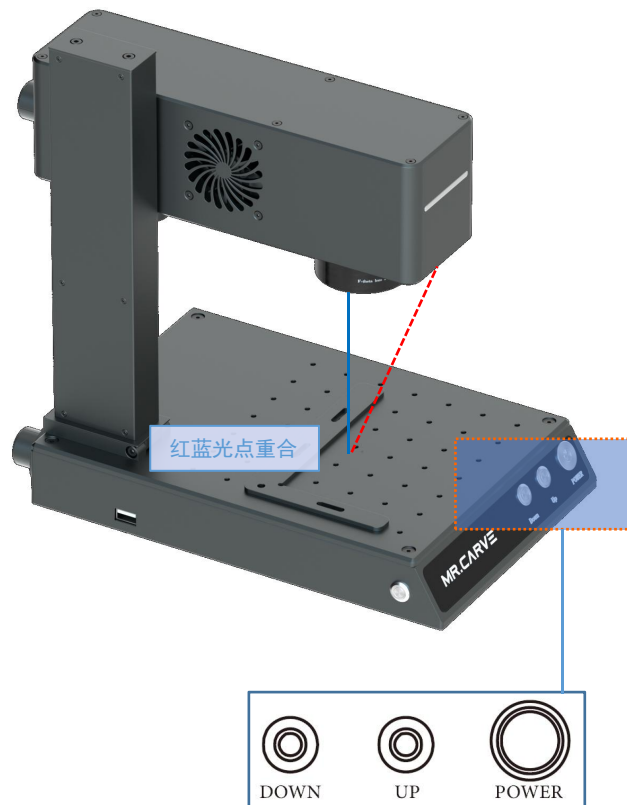
- 1 点击“文本”，输入雕刻内容
- 2 点击“填充”，将内容填充成实心（不填充雕刻出来只有轮廓线）
- 3 点击“左旋”“右旋”，将文字如上图所示垂直。

11.对焦与切换蓝/红光

M4-pro型号设备，可在此处切换“光纤模式”、“蓝光模式”
双光切换，适应更多雕刻材质。



- 1.点击App右上角“对焦”,出现“正在对焦中.....”此时，机器会出现两个红光点。
- 2.放入测试卡片，轻按“Down”及“Up” 按键调整，两道红光汇聚成一个红点，完成对焦。
- 3.激光头距离雕刻物的标准：
距离为120mm，以实测效果为准。



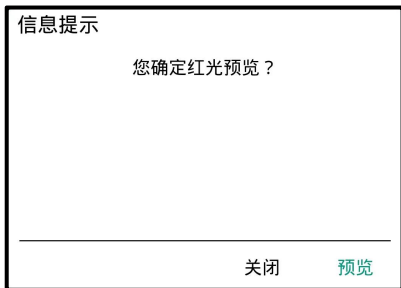
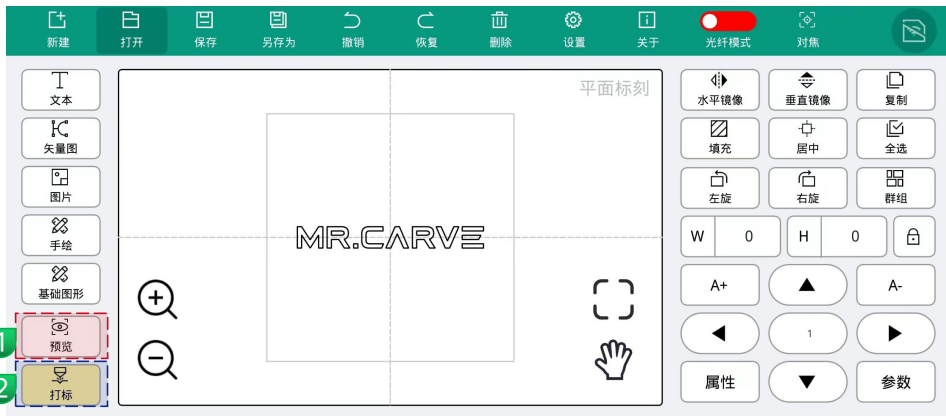
12.开始标刻



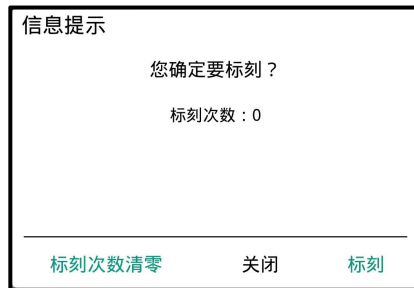
打标参数

标刻	红光预览	振镜	旋转轴
2			
3	功率(%): 80 速度(mm/s): 300 (图片网点模式打标无效)	关光延时(us): 100 频率(khz): 30	
	标刻次数: 1	标刻方式: <input checked="" type="checkbox"/> 选择加工	
		<input type="checkbox"/> 保存为默认值	
			关闭 确定

- 1 绘制“文本”，“矢量图”，“图片”等内容后，点击右下角“参数”
- 2 在标刻栏目，输入功率、速度、填充线间距，可参考说明书“各材质雕刻参数参考”
- 3 输入相对应的雕刻参数



- 1 点击“预览”出现预览窗口，同时机器出现预览红光，摆放好雕刻的物体，即可打标。



- 2 点击“标刻”即可完成打标。



本资料上所有内容均经过认真核对，如有任何印刷错漏或内容上的误解，可向本公司咨询。

注：产品若有技术改进，会增进新版手册中，恕不另行通知。产品外观，颜色如有改动，以实物为准。