Shenzhen Worthing Technology Co., Ltd

Laser Welding System

User Manual

WSX Software Department
2019/11/20

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Contact us

Shenzhen Worthing Technology Co., Ltd
Address: Floor 3, Building 3, Langkou Industrial Zone, Dalang, Longhua District, Shenzhen Guangdong PRC
Tel: 0755-27702280
Fax: 0755-27702881
Email: info@wsxlaser.com
Website: www.wsxlaser.com

Preface

Thank you very much for using our laser welding system! Before using, please read the manual carefully to ensure the correct use of our equipment, please keep the manual properly, so that you can refer to them at any time. Due to different configurations, some models do not have some of the functions listed in this book, please follow the actual products, due to the continuous upgrading and improvement of the products, some of the contents of this book may have some deviation from the actual products, please follow the actual products.

This manual provides user installation, parameter setting, processing operation related instructions and matters needing attention. In order to ensure that the system can be installed and operated correctly, please read this manual in detail before installation, and properly save or hand it over to the user of the software.

WSX laser welding system is the operating system of precision equipment. For the safety of operators and machinery and equipment, please be sure to install and operate the equipment by a professional process engineer. If you have any questions, please contact us in time. Our professionals will be happy to serve you!

Contents

Safety Caution

 注意	Before operating the equipment, the user must carefully read this manual and the relevant operation instruction, strictly abide by the operating procedures, non-professional personnel are not allowed to operate.
 警告	This equipment uses types four lasers (strong laser radiation), which may cause: Ignite the surrounding flammable matter; In the process of laser processing, radiation and toxic and harmful gases may be produced because of the different processing objects; The direct irradiation of laser radiation will cause human injury. Therefore, the equipment must be equipped with fire fighting equipment. It is strictly forbidden to pile flammable and explosive items around the worktable and equipment. At the same time, it must be kept well ventilated. Non-professional operators are prohibited from approaching this equipment.
 提示	Processing objects and emissions should comply with local laws and regulations.
 警告	There may be risks in laser processing, and users should carefully consider whether the processed object is suitable for laser operation. There are high voltage or other potential hazards in laser equipment, and disassembly is strictly prohibited by non-manufacturer professionals. The machine and its associated other equipment must be securely grounded before starting the operation. It is strictly forbidden to open any end cover when the equipment is working. During the operation of the equipment, the operator must observe the operation of the equipment at any time. If an abnormal condition occurs, all power sources shall be cut off immediately, and the corresponding measures shall be taken. When the equipment is in the on state, special personnel must be assigned to watch, and it is strictly forbidden to leave without authorization. All power supplies must be cut off before the personnel leave.
 注意	In the section of this book "Safety rules", with more detailed instructions on the use of equipment, be sure to read it carefully and follow it.

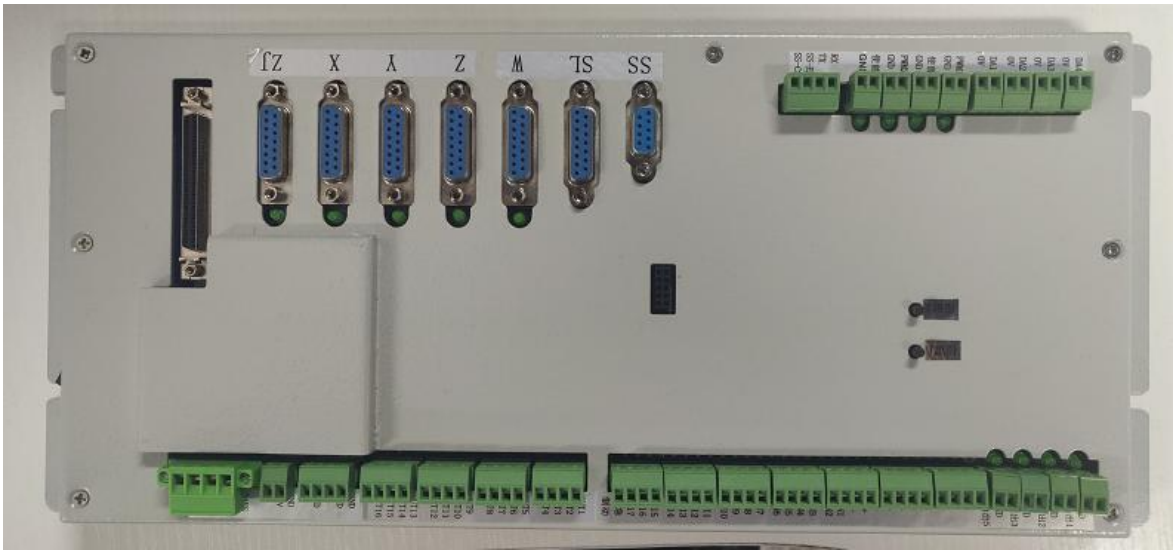
One、Hardware connection

1. Product accessories

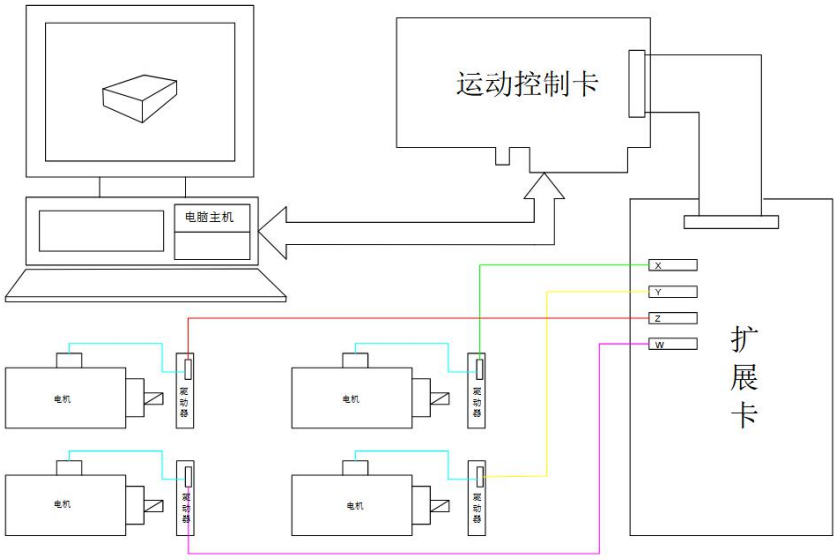
Item	Type	PCS	function
Motion control card	PCB circuit board	1	Connect to the host to compute control data
Expansion card	PCB circuit board	1	Receive motion control card data and control each drive.
Hardware	SCSI fix screw	4	Fixed connecting end
	Control card fixed iron sheet	1	Fixed connecting end
Terminal	DB15 terminal	6	Connect X, Y, Z, W-axis motor, galvanometer, handle
	DB9 terminal	1	Connecting wire feeder
Cable	SCSI68PIN cable	1	Connection control card and expansion card

Note: the quantity and type of accessories in product packaging are based on the actual object. If you have any doubts, you can contact our sales staff.

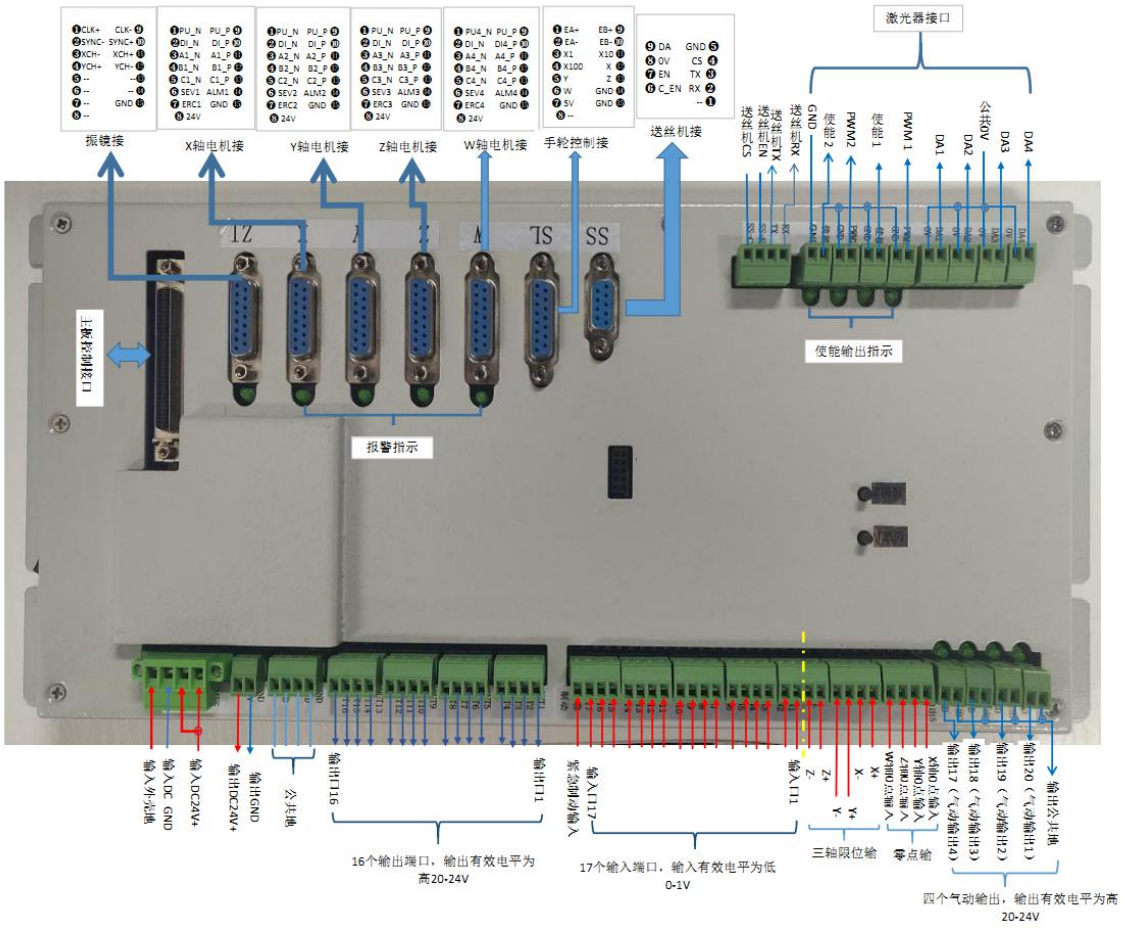
2. Connect card driver

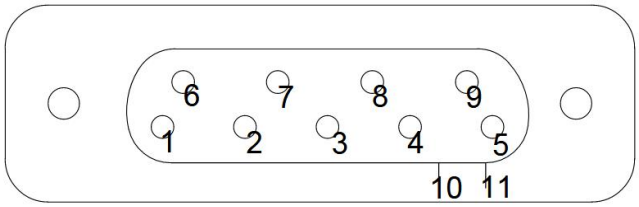


Connect the terminal block and the drive according to the actual control requirements



3.Interface and definition

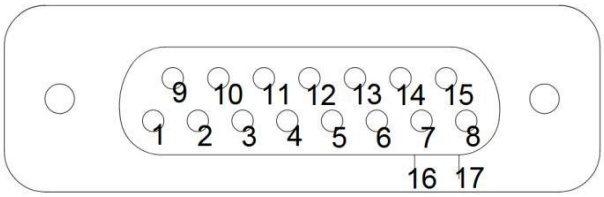




Wire feeder 9pin interface

9pin interface of wire feeder is defined as follows:

Pin	Signal	Description	Pin	Signal	Description
1	--	--	7	EN	
2	SX_RX	serial port receive signal	8	0V	Analog ground
3	SX_TX	Serial port sending signal	9	Aout1	analog output 0-10v
4	CS	CS	10	NC	
5	GND - S	Power ground	11	GND - S	Power ground
6	C_EN	Reserved enable			

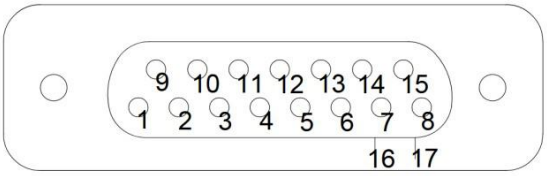


Hand wheel
15pin interface

15pin interface of hand wheel is defined as follows:

Pin	Signal	Description	Pin	Signal	Description
1	HAND EA+	Handwheel phase A	9	HAND EB+	Handwheel phase B
2	HAND EA-	Handwheel phase A	10	HAND EB-	Handwheel phase B
3	HR-X1	1 time	11	HR-X10	10 times
4	HR-X100	100 times	12	HR-X	X gear
5	HR-Y	Y gear	13	HR-Z	Z gear

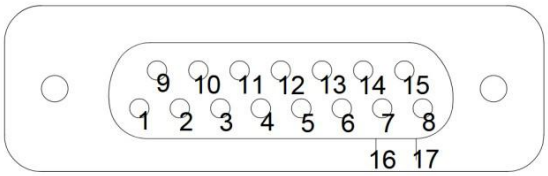
6	HR-W	W gear	14	GND	
7	5VD	5V power	15	GND	Power ground
8	NC				



Servo driver 15pin interface

15pin interface of servo driver is defined as follows:

Pin	Signal	Description	Pin	Signal	Signal
1	PUL-N	Pulse output	9	PUL-P	Pulse output
2	DIR-N	Pulse output	10	DIR-P	Pulse output
3	EA-N	Equivalent encoder input	11	EA-P	Equivalent encoder input
4	EB-N	Equivalent encoder input	12	EB-P	Equivalent encoder input
5	EC-N	Equivalent encoder input	13	EC-P	Equivalent encoder input
6	SRVON	Servo enable	14	ALM	Servo alarm output
7	ERC	Servo alarm release	15	GND-S	Power ground
8	24V-S	24v Power	16	Shield GND	Shield ground



Galvanometer 15pin interface

15pin interface of galvanometer is defined as follows:

Pin	Signal	Description	Pin	Signal	Description
1	ZJX_CLK+	Clock output	9	ZJX_CLK-	Clock output
2	ZJY_SYNC-	Synch signal	10	ZJY_SYNC+	Synch signal
3	ZJZ_XCH ANNEL-	X axis signal	11	ZJZ_XCH ANNEL+	X axis signal
4	ZJ_YCHA NNEL+	Y axis signal	12	ZJ_YCHA N	Y axis signal

				NEL-	
5	NC		13	NC	
6	NC		14	NC	
7	NC		15	GND-S	Power ground
8	NC		16	Device ground	
17			18		

Two、Quick Guide

2.1 Function and features

1. Convenient operation improves the efficiency of work and avoids misoperation;
2. Simple installation interface and convenient wiring; the control card can be directly installed on the guide rail, all of which use pluggable connection ports.
3. Dynamic Extensible processing function plug-in, Such as hand wheel control, round pipe welding, etc.
4. Advanced drawing engine Provides rich drawing and editing functions;
5. Simple and easy teaching mode, processing, idling, dotting mode, supporting straight line, circle, arc, curve machining path editing process;
6. The XYZW four-axis can be provided with a straight-line shaft, a rotating shaft, a fastest return rotation shaft, a non-return rotation shaft;

2.2 Get and install the software

2.2.1 System configuration requirements

You can contact the supplier or customer service staff for the software installer. Before installing, check that your system meets the following configuration requirements:
windows 7 operating system or higher

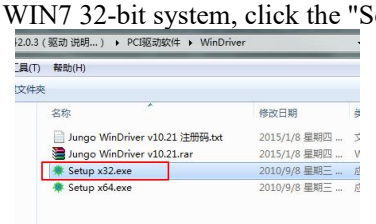
1.0G main frequency i5 CPU or higher

4GB memory or higher

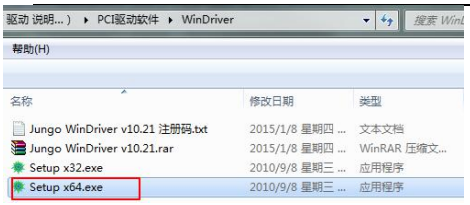
1GB independent graphics card or higher
17 inch wide screen display or higher
The above configuration is recommended for use. In order to ensure the running fluency of the system software, please run the WSX laser welding system according to the recommended configuration.

2.2.2 Installation guide of whole motion control card drive

Before installing the PCI card driver, turn off the antivirus software such as 360. unzip the installation package "WinDriver";
WIN7 32-bit system, click the "Setup x 32" script under the x86 folder;



WIN7 64-bit system, click on the "Setup x64" script under the x64 folder;



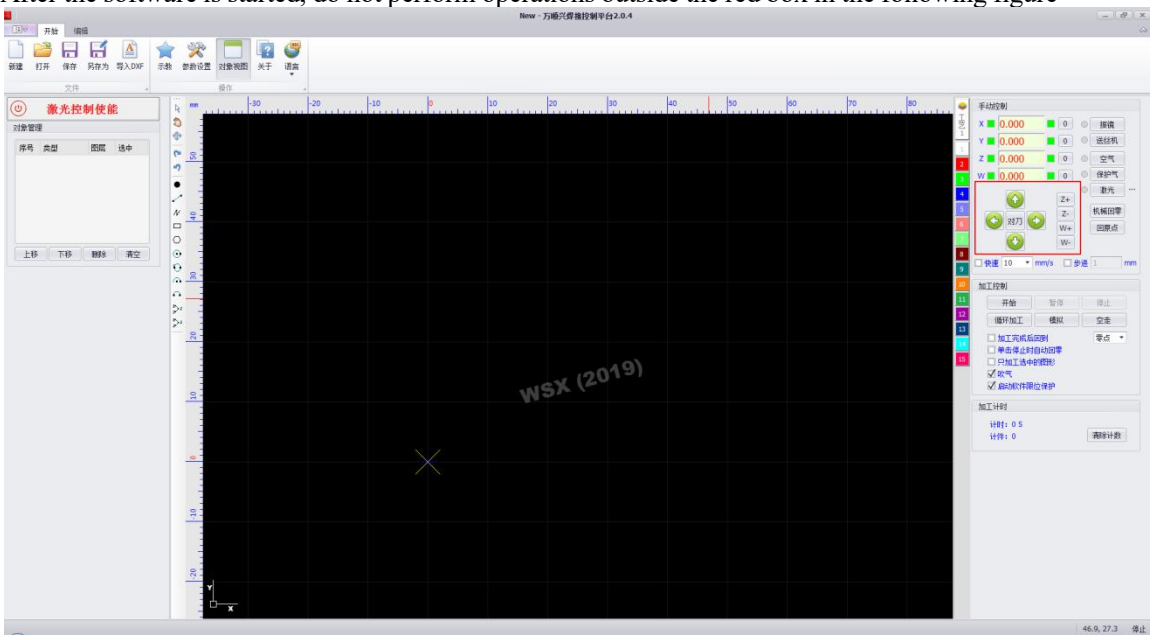
3. After installation, if there is a "Jungo/ WinDriver" in the equipment manager, the installation is successful;

If the installation is unsuccessful, rule out that the antivirus software was not turned off or the wrong version was selected (for example, a 64-bit version was selected on a 32-bit system).

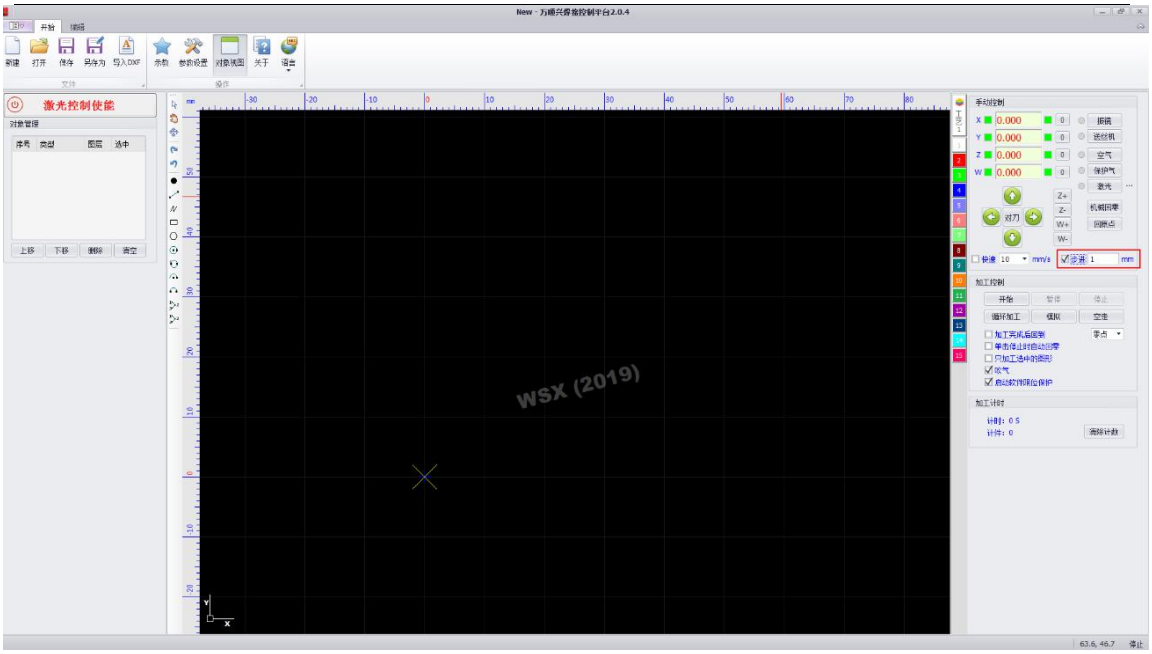
2.2.3 Welding software parameter configuration

First-time use of software, modify the configuration file as follows:

1) After the software is started, do not perform operations outside the red box in the following figure



A. Set step value, check the "step" box, move the appropriate axis, measure the distance the motor actually passes through; Take the X-axis as an example

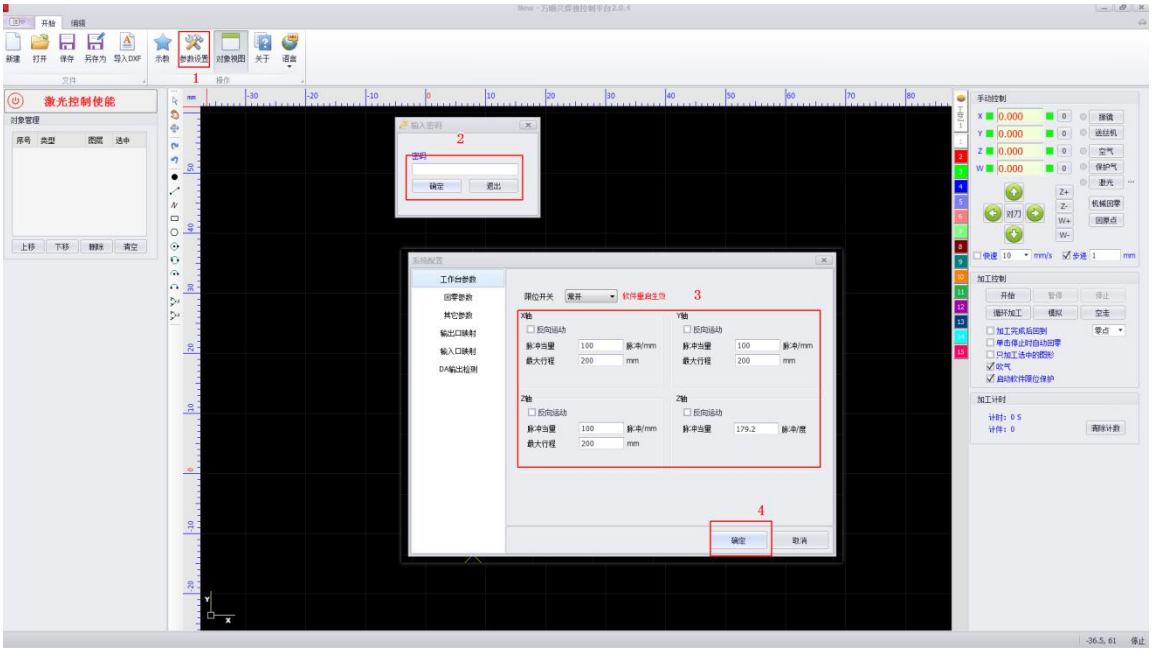


The pulse equivalent of the X axis preset is recorded as A, the default is 100 pulse / mm, the step (on the UI) of the X-axis is recorded as B, the actual step of the X axis (actual measurement) is recorded as C (unit: mm).

Actual pulse equivalent = (A * B)/ C

Measure the stroke of the X axis, distance between two limit switches(unit: mm), this parameter is related to two aspects: one is the absolute displacement value of the forward zero writing motor, and the other is the size of the reference frame on the canvas

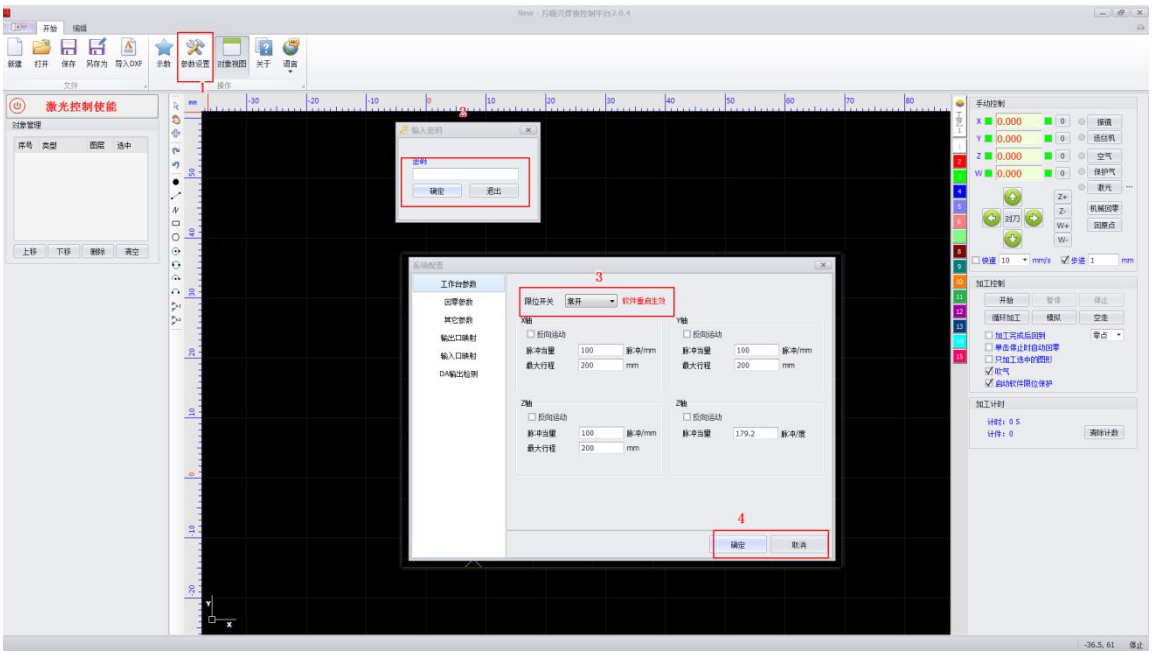
B. Open the parameter settings dialog box, modifies the pulse equivalent, and the axis travel



C. Configure the pulse equivalent of the remaining shaft as well as the shaft travel in accordance with the above method

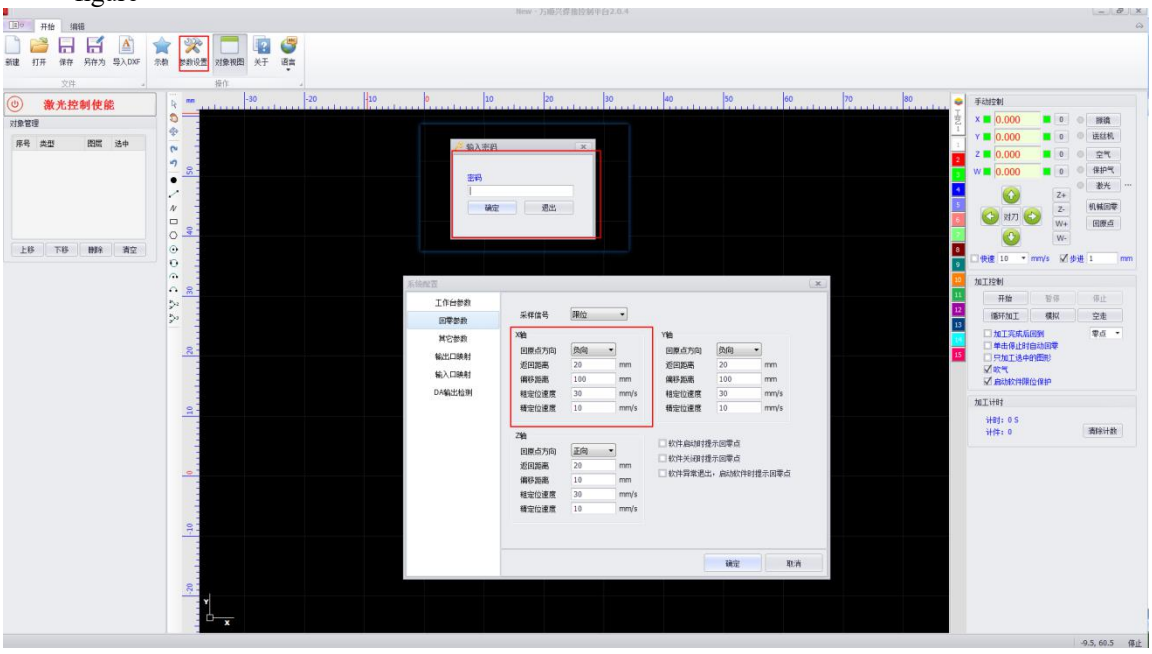
D. Set the step, move the corresponding axis, and check that the step value set on the UI matches the actual movement distance

2. Set limit switch parameters

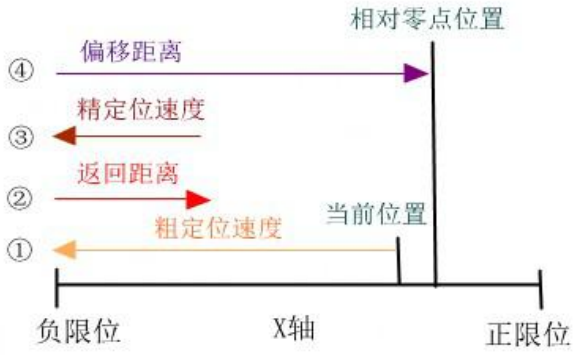


The default limit switch of the software is normally on. If the limit switch state is replaced, the software must be restarted to take effect.

3. Configure the zero-zero parameter, the zero-zero process and the parameter meaning are shown in the following figure



The mechanical zero sampling signal is divided into limit and origin. The following is a motion schematic diagram in which the sampling signal is limit.



The offset distance is typically set to half the axis travel distance so that the relative zero point is located at the center of the shaft

After setting this parameter, click the "mechanical zero-return" to see if the zero return is in accordance with the set parameter

Mechanical back-to-zero can also be set to operate automatically at different actions, currently support:

A. Prompt to return to zero when the software starts

B. Prompt for zero point when the software is turned off

C. The software is abnormally exited, and the zero point is indicated when the software is started.

The above only needs to be selected to make a mechanical zeroing prompt.

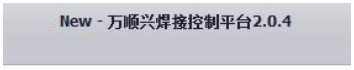
2.3 Introduction of Software Interface and function

2.3.1 Desktop shortcut

The WSX welding system is the installation-free, export the unzipping package to your computer and send the exe file creation shortcut in the folder to the desktop. After that, the figure shown on the right will appear on the desktop  , double click icon to run WSX laser welding Connect control software.

2.3.2 User interface

2.3.2.1Software name and version number



Displays the software name and the current software version number

2.3.3 File menu

The file menu is divided into "new", "open", "save", "save as", "import dxf" function.

New: create a blank .wxd file

Open: Open a already existing. wxd file

Save: store the currently displayed document data in a .wxd file

Save As: Save the currently displayed document data in a new one. wxd file

Import DXF: Import files in DXF format.

2.3.4 Operation Bar

The toolbar is divided into "teaching", "Parameter setting", "Object View", "about", and "language" functions.

2.3.4.1 Teaching

Teaching: Teaching is the most commonly used drawing software in welding software, and the trajectory drawing of any curve of the three-dimensional space can be realized through the WYSIWYG mode. Click on the "teaching" button to enter the teaching programming mode.

1. Continuous drawing points: show whether to draw graphics continuously when drawing graphics. Check the continuous drawing point, the end of the previous drawing is the starting point of the next graph; If you do not check the continuous pick-up point, the different drawing is independent.
2. Point: teach to draw a point
3. Straight line: teach to draw a straight line. Drawing method: move to the starting point where need to be taught, click on the line-draw location, move the corresponding axis again on the software, reach the specified location, click the line again, then user can draw a straight line.
4. Idling: draw a dotted line, this dotted line is not processed, only as a processing path.
5. Arcs: drawing a circular arc at three points, drawing method reference straight line
6. Circle: drawing a circle at three points, drawing method reference straight line.
7. Move forward: move the drawing point in the same graph. Method: Double-click the node on the drawing interface. The interface will move to the selected drawing. There is a yellow point on the current drawing. Click to move forward, and then move the node of the current drawing counter-clockwise.
8. Move back: move the drawing point in the same drawing. Double-click the node on the drawing interface, the interface will move to the selected graph, there is a yellow point on the current graph, click move forward, then move the node of the current graph clockwise.
9.Edit: Re - edit the current graphics. Method: double-click the node of the drawing that need to edit, when moving to the yellow point on the graph, this point can be edited, the corresponding axis can be moved to the appropriate location, click edit, you can redraw the graph.
10. Delete: Delete the node of the current graph. Specific method: Double-click the node of the graph to be deleted. When moving to the graph, a yellow point appears. This point can be deleted. Move the corresponding axis to a suitable position and click delete. The graph correspondingly reduces the nodes, and the graph will be redrawn.
11. Redo: This function will clear all graphics in the teaching area
12. Complete: This function is the last operation after the teaching is finished. After clicking, the teaching graphics will be displayed on the final drawing interface before the graphics can be processed.

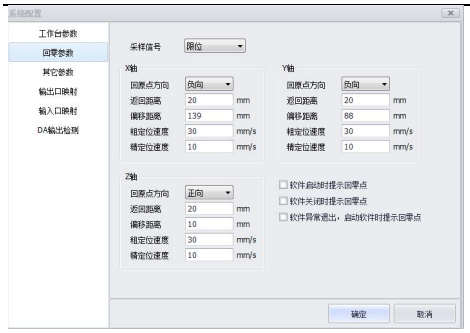
2.3.4.2 parameter settings

parameter settings：Click the button to enter the parameter setting interface, and enter the password (666666 or 88888888)

Workbench parameters: This is the interface for setting the parameters of the software workbench

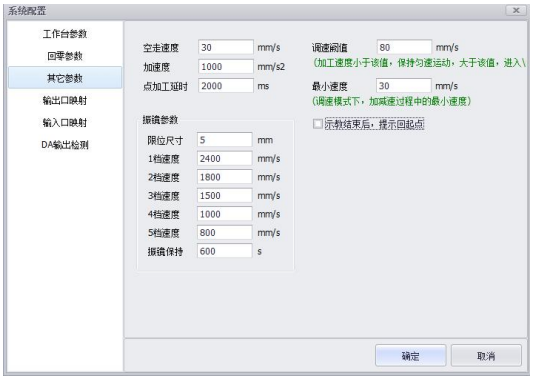
The settings of this workbench refer to the configuration process settings.

2. Zero-return Parameter



Sampling signal: This is the reference value of the mechanical zero return signal. By default, the limit switch signal is used as the sampling signal. Software provides limit and origin.

Other parameters: software idling speed, acceleration, point processing delay, speed adjustment threshold, minimum speed galvanometer parameters, and whether to return to the origin after teaching is prompted.



3. Output port mapping: This provides the mapping function of the output port and the interface test of the output port; it provides the mapping of laser 1 enable, laser 2 enable, wire feeder enable, air enable, and protective gas enable.

Introduction to output port mapping function: For example, if air enable option 1 is selected, air enable is connected to output port 1 and air enable can be automatically controlled during the firing or processing.

Output interface test introduction: Click the corresponding number button to enable the output port on the corresponding product; if it is an output port directly starting on the product, you can click Read Output Port Status to read the status of the output port of the product, green To enable, gray to disable

5. Input port mapping: This function provides the input port mapping function and input port interface reading. It also provides the foot shot function mapping. For specific operations, refer to the output port mapping.

6.DA output detection: This function provides detection of DA .

2.3.4.3 Object view

Object view: Open and close the object management interface.

2.3.4.4 About

About: Display software version number, copyright information, software technical support contact information

2.3.4.5 Language

Language: The software can be switched to a different display language. Click to switch to a different display language. You need to restart after switching languages to take effect.

2.3.5 Graphics Transformation

Horizontal mirroring: click to mirror the selected graphic horizontally;
Vertical mirror: click to mirror the selected graphic vertically;
Array: Array the selected graphics, click to set the number of rows, columns, array mode, direction and other parameters;

Size: scale the selected graphic
Rotate: Rotate the selected graphic, provide clockwise 90 ', counterclockwise 90', clockwise 45 ', counterclockwise 45', 180 ', and rotate at any angle
Leader: Set lead-in and lead-out for selected graphics

2.3.6 Aligned

Left justify: Left justify the selected figure

Right align: right-align the selected graphic

Top Alignment: Align the selected graphic to the top

Bottom alignment: Bottom alignment of the selected graphic

Center alignment: center the selected graphics

Center horizontally: center the selected graphic horizontally

Center vertically: center the selected graphic vertically

2.3.7 Craft

Starting point: Set the starting point for graphic processing

Reverse: Set the graphic processing direction to reverse

Overwelding: Set the overwelding length of the selected graphic

Clear Overwelding: Clear overwelding process of selected graphics

2.3.8 Laser control enable

This button is software overall laser control. Red is the laser is not enabled, no matter the software cannot enable the laser during spot firing or processing; green is the laser enable, you can control the laser enable during the spot firing and processing.

2.3.9 Processing file information column

The processing file information column contains "object management", "graphic information"

Object management: plan and display the processing path, you can choose to modify or process at any time

Graphic information: display the information of processing graphics, click to modify the graphic parameters, change the parameters to achieve the processing purpose

2.3.10 Drawing toolbar

Use your left mouse button to click to draw points, lines, arcs, circles, quads, etc. As shown below

Drawing and using methods are as follows: Click the drawing function to draw the corresponding graphic directly on the canvas.

2.3.11 Manual processing console

The manual processing console displays the manual control area for processing, which is convenient for daily use, as shown in the figure below:

1. X, Y, Z, W display the corresponding axis position and limit status in software, green is unlimited, red is limit alarm status, 0 is to reset the current software coordinates to zero, and the hardware is not moving , This function can set the starting point of processing

2. Galvanometer: To set the parameters of the galvanometer and whether to switch the galvanometer automatically during processing.

3. Wire feeder: In order to set the wire feeder parameters, some hardware does not support the setting of wire feeder parameters.

4. Air: Air shot control. If the air is enabled, the dot in front is green, and gray is the air is disabled.
5. Protective gas: It is controlled by protective gas. If the protective gas is enabled, the dot in front is green, and gray is disabled.
6. Laser: Laser spot control. If the laser is enabled, the dots in front are green, gray is disabled in the air; ... set the parameters of the shot, as follows

7. Mechanical zero return: Perform mechanical zero return according to the zero return parameters in the parameter settings.
8. Return to origin: return to the origin position where XY is 0 on the software, and the corresponding X / Y axis will also move
9. X + / X- / Y + / Y- / Z + / Z- / W + / W-: Click to move according to the corresponding parameters
10. Tool setting: Click for tool setting
11. Fast: After checking, you can set the speed of fast movement. Click the button above to move according to the fast parameters.
12. Step: After checking, you can set the speed of step movement. Click the button above to move according to the parameters of the step.

2.3.12 Process control

Start: start processing according to the process and corresponding graphics
Pause: Pause processing
Stop: Stop processing
Cycle processing: You can set the cycle for processing. Provide cycle number, cycle interval,

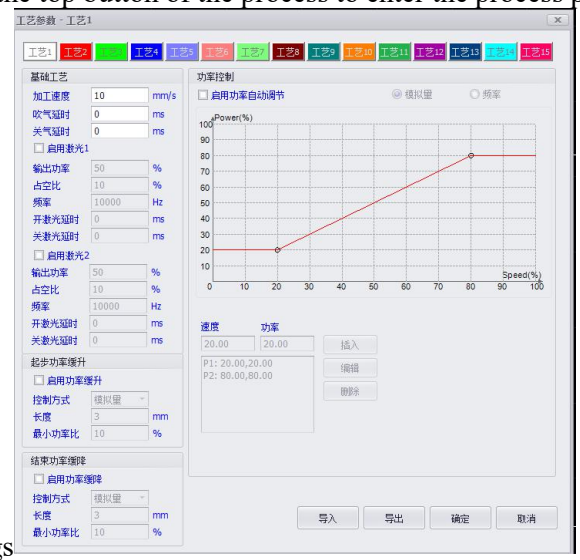
processing mode (control, normal)
Simulation: software simulation of machining path
Empty walk: software and mechanical simulation processing filters
Return to zero / starting point after processing is completed
Automatically return to zero when you click to stop
Process only selected graphics: Click to select only selected graphics styles
Air blow: Turn air blow on or off
Enable software limit protection: tick Enable system limit

Processing timing

Timing: Record the total time of work
Piece Count: Display the currently processed quantity

2.3.13 Processing technology

Click the top button of the process to enter the process parameter settings



The process parameter interface provides basic process, starting power ramp-up, end power ramp-down, and power control parameters. A total of 15 process modes can be set.

In the process of operation, the air is blown first, and then the laser is emitted. The blowing delay and the laser are turned on in order. The delay sequence of gas off / laser 1 delay / laser 2 delay can be set, and the specific setting is that the delay time is relatively small before running.

2.3.14 Status Bar

The status bar is located at the bottom of the operation interface of the welding system, with a coordinate reader on the left, a stop ribbon on the right, and a demo mode in the middle (Not shown in non-demo mode) These three parts are composed as shown below.

2.4 Operation process

2.4.1 Special Note

Axis name:

First axis—X axis; Second axis—Y axis; Third axis (focus axis) —Z axis; Fourth axis (rotation axis) —W axis

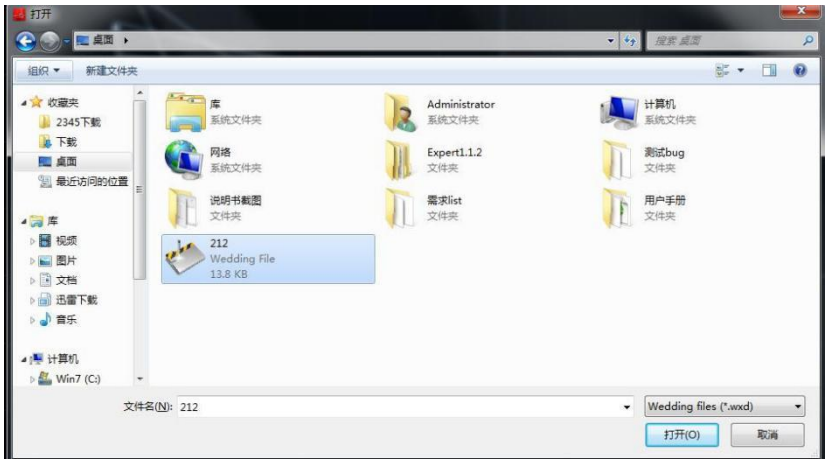
Coordinate system: All coordinates use absolute coordinates. Relative to the origin of mechanical coordinates after returning to zero

2.4.2 step

2.4.3 Importing Graphics

Click the "Open File" “ 

” button on the file menu bar in the upper-left corner of the interface. The Open File dialog box pops up, and selects the graphic you want to open. Click on the file to import into the graphics work bar

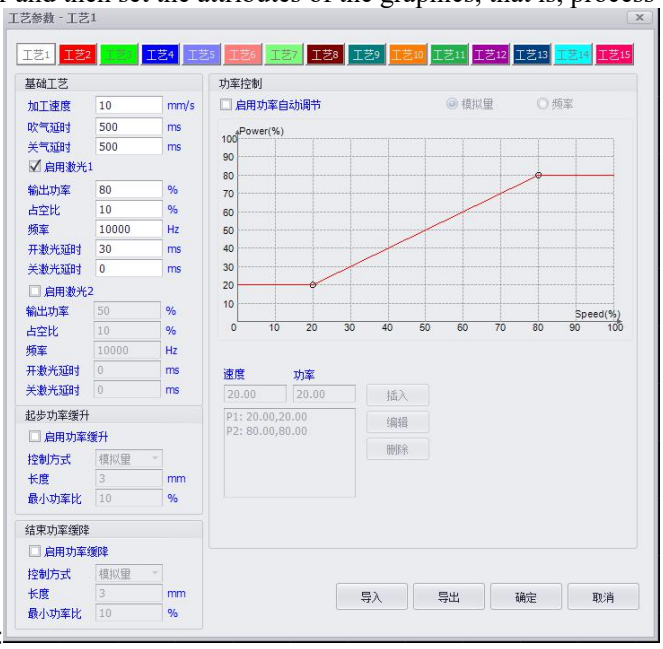


If you want to draw a part on the spot through the WSX automated laser welding system software, click the "New" button, and then use the buttons on the left drawing toolbar to draw pictures. For details, see the use of the drawing toolbar; you can also draw the machining path. Refer to the teaching function for details.

2.4.4 Processing editor

2.4.4.1 Process settings

Each processing path has its own process attributes (that is, graphic attributes). You can set the processing path (that is, graphics) to a certain layer and then set the attributes of the graphics, that is, process parameters. The interface is as follows:



The software provides 15 layers, which can edit 15 different graphic motion attributes. The method for editing graphic motion attributes: Select the target graphic, and click the color block on the left to set the selected graphic to the specified layer. Layer color display, each layer has its own process settings
Processing speed: the movement speed of the platform when processing the outline of this layer;
Blowing delay: the delay time of blowing before the laser switch;
Gas off delay: the delay time of laser off after laser off;
Output voltage: the percentage of the maximum output energy set by the laser relative to the rated power of the laser;
Duty cycle: the maximum output power of the laser output laser, that is, the PWM value;
Frequency: The frequency of the laser output can be set arbitrarily within the maximum range of the laser according to requirements;
Laser delay: the delay time of the system before the laser is turned on;
Off laser delay: After the laser is emitted, the system's delay time, during which the motion platform will stop.

2.4.4.2 Power Control

Start up power slowly

This function can set the analog quantity, frequency and analog quantity (time) control mode, length, minimum power ratio, and the welding starting point is required not to form a welding pit in the welding process. We can achieve this by setting various parameters of this option reasonably.

Start-up power decreases slowly

This function can set the analog quantity, frequency and analog quantity (time) control mode, length, minimum power ratio, and the welding starting point is required not to form a welding pit in the welding process. We can achieve this by setting various parameters of this option reasonably.

Automatic startup power adjustment

Length: The minimum power ratio from the minimum power to the working power set by the layer: Generally set to 0.

2.4.5 Inspection before processing

Before the actual welding, the machining trajectory can be checked. Determine the welding path and parameter settings, if necessary, adjust it in time and repeat the inspection, and then process it after confirmation.

2.4.6 Processing Control

Please note that this step must be run on an actual machine tool. Before the formal processing, the corresponding relationship between the graphics on the screen and the actual processed work piece.

Appendix

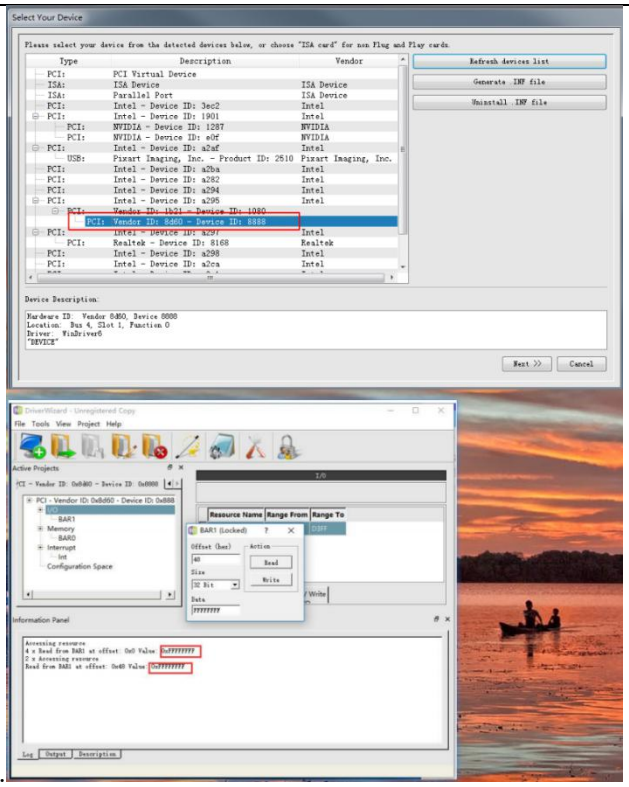
2.5 Error prompts and troubleshooting

2.5.1 Troubleshooting

A. When the software is just started, if the motion control card is not installed or the motion control card driver is not installed or the welding software is not suitable for the operating system, a confirmation window will pop up, as shown in the figure below.

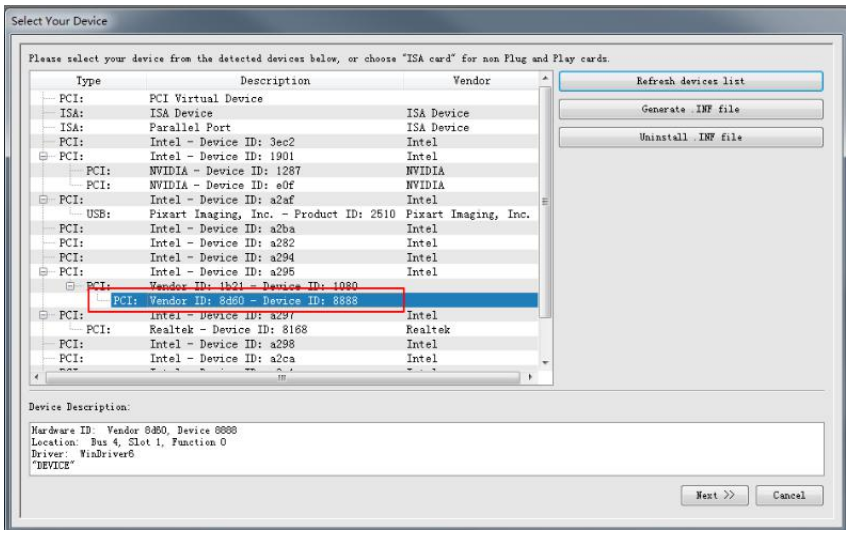
B. When the welding system is started, if it is stuck in the "Initializing the hardware module ..." stage, or an abnormal drive error prompt appears, first check whether the lower motor line is wrong and the limit is wrong. If there is no problem in the above checks , Then execute the Driver Wizard, find the PCI card, perform the following operations, read the returned value is

0XFFFFFFFF.

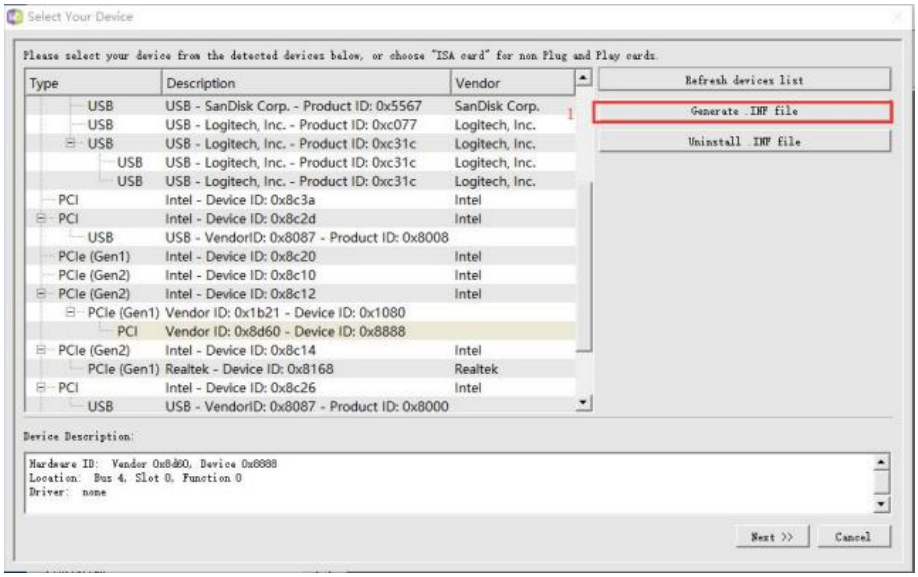


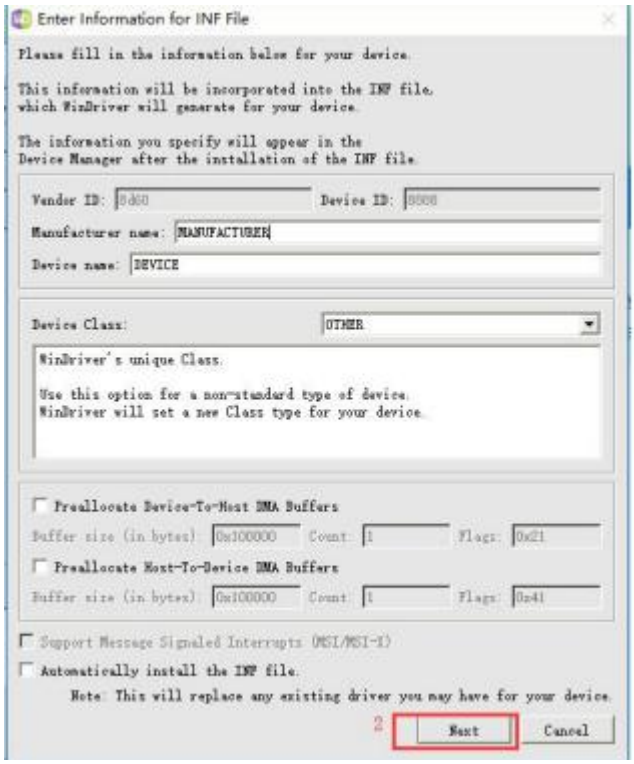
Solution:

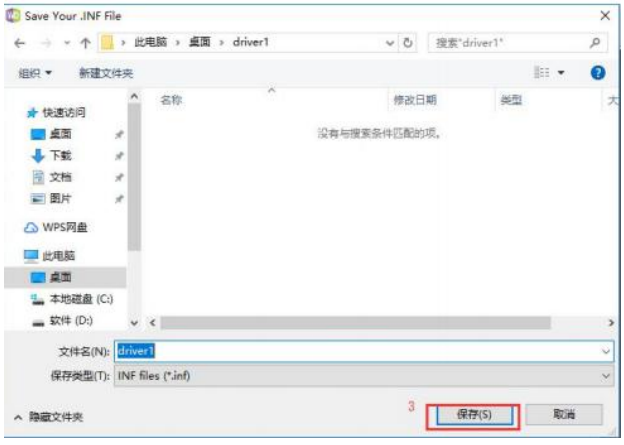
1. Open WinDriver and find the control card;



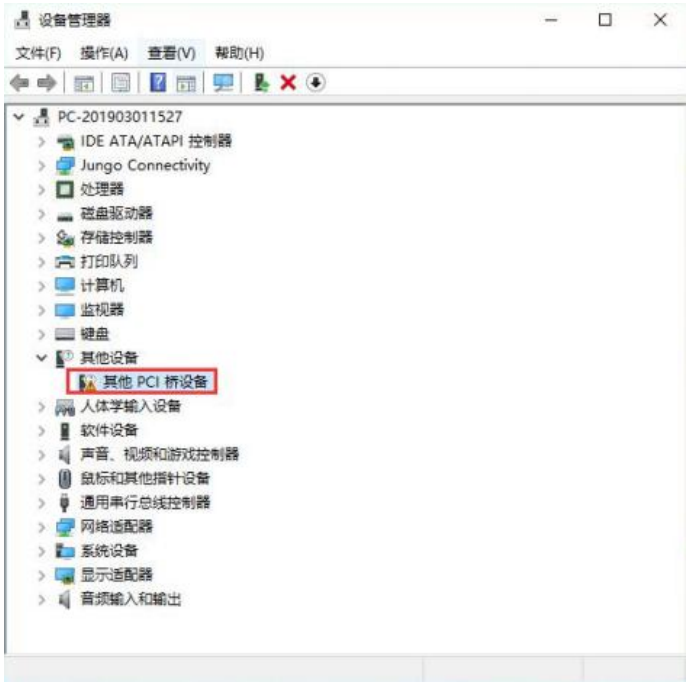
2. Select the PCI control card to generate the inf driver file;


Select Your Device
Please select your device from the detected devices below, or choose "ISA card" for non Plug and Play cards.
Type
Description
Vendor
Refresh devices list
Generate .INF file
1
Uninstall .INF file
USB - SanDisk Corp. - Product ID: 0x5567
SanDisk Corp.
USB - Logitech, Inc. - Product ID: 0xc077
Logitech, Inc.
USB - Logitech, Inc. - Product ID: 0xc31c
Logitech, Inc.
USB - Logitech, Inc. - Product ID: 0xc31c
Logitech, Inc.
USB - Logitech, Inc. - Product ID: 0xc31c
Logitech, Inc.
Intel - Device ID: 0x8c3a
Intel
Intel - Device ID: 0x8c2d
Intel
USB - VendorID: 0x8087 - Product ID: 0x8008
Intel - Device ID: 0x8c20
Intel
Intel - Device ID: 0x8c10
Intel
Intel - Device ID: 0x8c12
Intel
Vendor ID: 0x1b21 - Device ID: 0x1080
Vendor ID: 0x8d60 - Device ID: 0x8888
Intel - Device ID: 0x8c14
Intel
Realtek - Device ID: 0x8168
Realtek
Intel - Device ID: 0x8c26
Intel
USB - VendorID: 0x8087 - Product ID: 0x8000
Device Description:
Hardware ID: Vendor 0x8d60, Device 0x8888
Location: Bus 4, Slot 0, Function 0
Driver: none
Next >>
Cancel


Enter Information for INF File
Please fill in the information below for your device.
This information will be incorporated into the INF file,
which WinDriver will generate for your device.
The information you specify will appear in the
Device Manager after the installation of the INF file.
Vendor ID:
Device ID:
Manufacturer name:
MANUFACTURER
Device name:
DEVICE
Device Class:
OTHER
WinDriver's unique Class.
Use this option for a non-standard type of device.
WinDriver will set a new Class type for your device.
Preallocate Device-To-Host DMA Buffers
Buffer size (in bytes):
Count:
Flags:
Preallocate Host-To-Device DMA Buffers
Support Message Signaled Interrupts (MSI/MSI-X)
Automatically install the INF file.
Note: This will replace any existing driver you may have for your device.
2
Next
Cancel

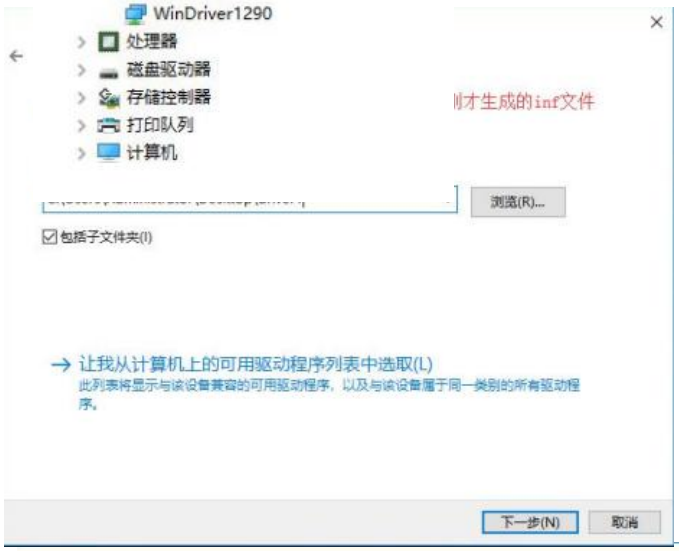

Save Your .INF File
此电脑 › 桌面 › driver1
搜索"driver1"
组织
新建文件夹
名称
修改日期
类型
没有与搜索条件匹配的项。
快速访问
桌面
下载
文档
图片
WPS网盘
此电脑
桌面
本地磁盘 (C:)
软件 (D:)
文件名(N):
driver1
保存类型(T):
INF files (*.inf)
隐藏文件夹
3
保存(S)
取消

3. Enter the device manager, find the PCI device with the question mark, and update the inf file;



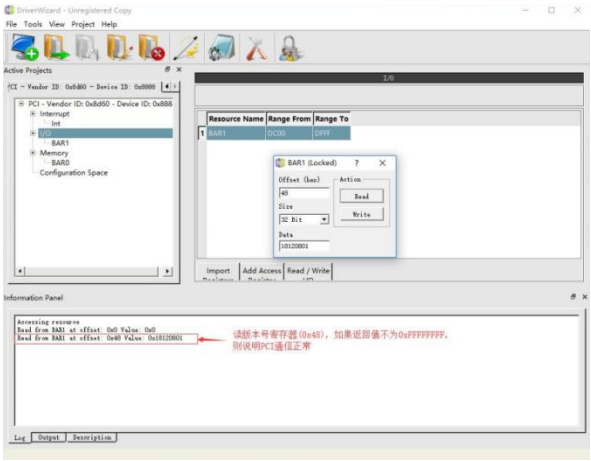

Windows 安全
Windows 无法验证此驱动程序软件的发布者
不安装此驱动程序软件(N)
应查看制造商的网站，获得设备的更新驱动程序软件。
始终安装此驱动程序软件(I)
仅安装来自制造商网站或光盘的驱动程序软件。其他来源的未签名软件可能会损坏你的计算机或窃取信息。
查看详细信息(D)


设备管理器
文件(F) 操作(A) 查看(V) 帮助(H)
PC-201903011527
IDE ATA/ATAPI 控制器
Jungo Connectivity
DEVICE
WinDriver
WinDriver1290
处理器
磁盘驱动器
存储控制器
打印队列
计算机

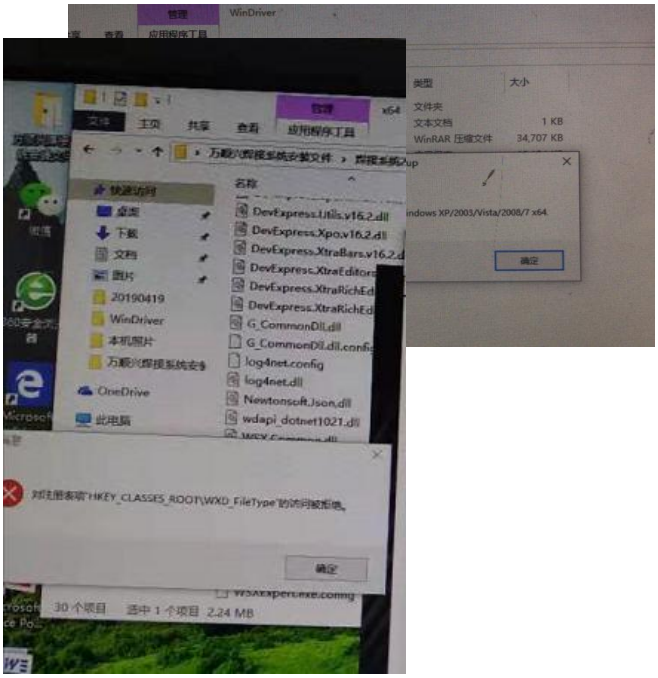

刚才生成的inf文件
浏览(R)...
包括子文件夹(I)
让我从计算机上的可用驱动程序列表中选取(L)
此列表将显示与该设备兼容的可用驱动程序，以及与该设备属于同一类别的所有驱动程序。
下一步(N)
取消


更新驱动程序 - 其他 PCI 桥设备
你要如何搜索驱动程序?
自动搜索更新的驱动程序软件(S)
Windows 将搜索你的计算机和 Internet 以获取适合你设备的最新驱动程序软件，除非你已在设备安装设置中禁用此功能。
浏览我的计算机以查找驱动程序软件(R)
手动查找并安装驱动程序软件。
取消

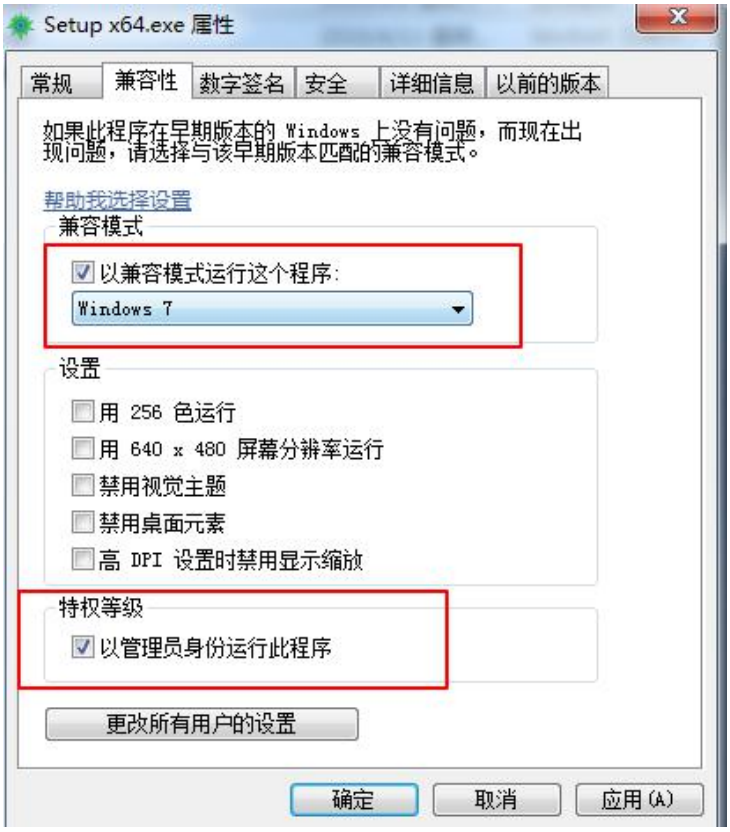
4. Test PCI card read and write;;



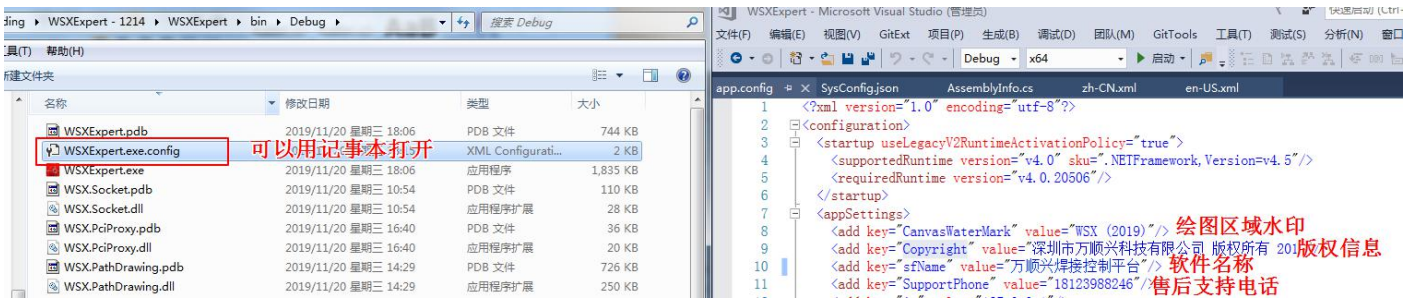
D. The following error occurs when installing Windriver or the following error occurs when running the welding system software



Solution: This problem is caused by the permissions of the operating system. Select the software to be operated, right-click the property, and set the following:



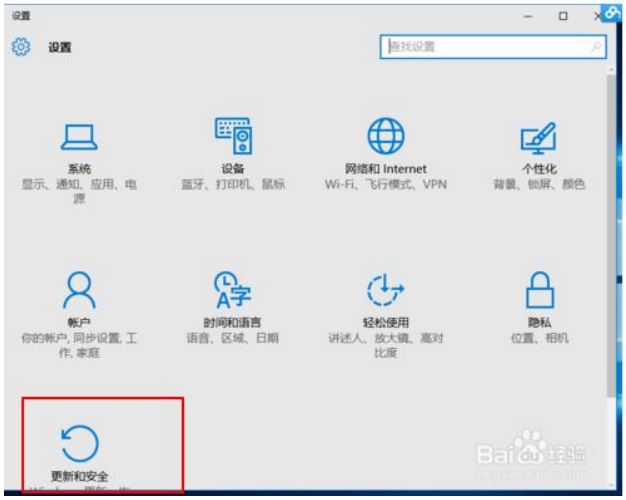
E. Drawing area watermark, copyright information, software name, after-sales support phone settings. Where the watermark of the drawing area can be empty.



F. Some Windows 10 systems cannot install the driver, you need to disable the driver to force signature. The solution is as follows

1. Click the notification, find and go to "All Settings".

2. Find and go to "Updates and Security" in all settings



3. Find Recovery and click "Restart Now" under "Advanced Startup" to restart the computer.

4. Select "Troubleshooting" after restarting.。

5. Select “Advanced Options”

6. Select "Startup Settings".

7. Click “Restart”

8. Enter "7" as prompted to disable driver forced signing.

G. The following error occurred

Solution: Check whether the extended version is powered on and whether the connection is abnormal (whether the

four LED lights on the motherboard are off)