B W101-GD double-holder hand-welded head User operation manual

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preface

Dear users:

Thank you for choosing Shanghai Keqiang Automation Technology Co., LTD.

Thank you for using the BW 101-GD double vibration lens hand produced by our company

Holding eld head products.

We are honored to have your trust in our products. In order to facilitate your use, we have specially configured this user operation manual for you. This manual provides you with important information on safety, operation, maintenance, and other aspects. Therefore, before using the product,

Please read this user operation manual carefully first.

The information provided in this manual includes:

The m product structure features and technical features

M Product functional characteristics and maintenance

The m electrical connection

Instructions for the use of the m software

This manual is suitable for the following users:

m mounting or wiring personnel

m commissioning personnel

m Maintenance or inspection personnel

Due to the continuous update of the product features, the product you receive may differ in some ways from the statement in this manual. I hereby apologize! At the same time, in the process of use, if you have any questions, welcome to call for consultation, we will be dedicated to you

affair.

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symbol description:

In order to prevent possible injury or damage to human equipment, this instruction manual indicates the following safety signs,

Please pay attention to the contents of the signs to ensure the safety and proper use of the equipment.

 warn
Laser radiation attention content, there is a risk of laser radiation, please do the laser protection measures!

 danger
Electrical safety attention content, may cause the danger of electric shock, cause personal injury!

 warn
Fire safety pay attention to the content, may cause fire, pay attention to fire prevention!

 pay attention to

General precautions, if not following the instructions, may cause damage and failure of the equipment

Content

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1 Preface

1.1 Company Profile

Thank you for purchasing the BW 101-GD double vibration mirror handheld welding head of Shanghai Keqiang Automation Technology Co., LTD.

Shanghai jia strong automation technology co., LTD., founded in 2009, is the deepening of high-tech enterprises, after more than ten years of technology accumulation and independent innovation, is committed to creating "intelligent laser smart ABC" (AheadTechs intelligent CNC, BeamTools intelligent laser head, CloudAhead cloud services), for integrators and industry customers to provide professional laser plus One-stop work solution.

graph 1.1

1. The nursery business range is wide.
   From small nozzle, lens to large laser comprehensive solutions, more than 5000 categories, including nearly 100 laser head products, can meet the needs of various laser applications.
2. Large customer scale
   With nearly 2000 customers, domestic coverage 30 provinces and cities, international Russia, South Korea, India, Argentina, Ukraine and other more than 100 customers.
3. Strong technical strength

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The company has more than 400 employees, with technology research and development and engineering personnel accounting for 50%, and more than 150 patent Copyrights.

4. Service response is fast

With deep training branch, Wuhan after-sales service center, Jinan office and more than the national after-sales service points, adhering to the 12 hours ring, 8 hours door-to-door service purpose.

2. Safety instructions and preventive measures

2.1 Review

This section summarizes all the information you need to know to safely run your laser equipment. Laser radiation can cause damage to the eyes and skin; it can heat objects and be dangerous if not treated. When using, we must operate correctly, pay attention to the protection.of course,

As long as you use the product in strict accordance with this instructions, this product is not dangerous.

In this section, you will understand the dangers of using laser equipment.

To enable you to safely use laser equipment, descriptions and rules of the measures we have taken as the manufacturer.

For your safety and the health of your operators, you, as a user, must follow and put them into practice.

In other sections, you will find descriptions and instructions for the efficient use of laser equipment. Warning tips and solutions will be given

Now every operation before danger danger.

This operator manual must always be placed in the area of use of the laser equipment.

2.2 Implementation standards

Execution standard for double scope handheld welding head:

Safety of GB 7247.1-2012 Laser Products- -Part 1: Equipment Classification and Requirements

2.3 Safety warning signs and instructions

A warning prompt is a type:

Provide information on the name and source of the danger;

Information indicating the possible consequences if the danger has already occurred;

Provide prompt information to avoid any damage.

If the operating rules are not followed, either of the "danger," "warning," or "caution," or "attention," is alert

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The message means serious consequences.

"Danger" means a major danger. If not avoided, it can lead to death or severe disability;

"Warning" means that permanent injury may result from moderate disability;

"Careful" means that mild disability may not cause permanent injury;

"Attention" means possible material damage;

The "Description" supplements and explains the description of the operation content.

Example of warning information:

 warn
Warning If the laser rays do not deviate from the body itself, the eyes and skin may be exposed to the laser radiation. Laser rays can burn the skin. Direct and scattered laser beams can cause permanent damage to the eye.

2.4, hazard source

Laser products are manufactured according to state-of-the-art standards and accepted safety rules. However, there will be some more during the use process

Hazanger to people and to materials. If you do not comply with these precautions, the hazards may cause harm and damage.

This section describes the possible hazards of your laser product.

In the following section, you will learn that:

How does Shanghai Jia Keqiang take measures to reduce the danger;

You as a user, how to ensure the safe use of laser equipment through effective measures.

2.4.1 Laser beam

The laser beam may damage the glasses and the skin. Laser products are graded according to different damage levels. This product belongs to the damage level four, when welding the light, must wear protective glasses. Laser product manufacturers will not comply with any usage regulations

And be responsible for the loss caused.

Laser products pass the internationally recognized EN 60825-1 and IEC 60825 classification.

Level 4: Eye and skin exposure to the level 4 laser product is dangerous. Even if the diffusive radiation (scattered

The emitted laser beam) may also be dangerous. The fourth stage laser beam will ignite noncombustible objects and will also cause the explosive mixture to explode.

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Laser radiation will cause damage to the eyes and skin. When operating, please wear laser protection glasses and avoid direct laser or reverse
Shoot it on the skin.

2.4.2 Gas, smoke, and dust

When artifacts are processed, harmful gases, smoke and dust may be produced; these substances may be harmful to health.maximal
The risk is that the substance enters the respiratory tract. But even if you touch the skin and the cat membrane in your mouth, the nose or eyes can be dangerous.

Dust: a solid matter less than one micron in diameter

Smoke: a gas with a diameter less than one micron, evenly distributed in solid and liquid particles.

Some diverging substances may cause cancer. The probability of causing cancer depends mainly on the material of the workpiece and the number of diverging substances
measure.

Carcinogens include: wrinkle, zinc.

The quantity and degree of production depends on the type of material, the speed, the laser energy, and the pressure of the protective gas.

2.4.3 Thermal energy

Fire, explosion: Grade 3B or Grade 4 laser beam may ignite flammable materials and cause a fire.

If it may contain explosive gases or smoke (e. g., hydrogen and oxygen mixed gas, wood chips and carbon chips), even if
A laser beam that does not directly hit the solid matter with high energy may also cause an explosion.

. Temperature of the workpiece: the temperature increases by laser beam operation. The temperature of the heating depends on the workpiece during the processing process
Material of and the energy of the laser beam.

 warn
Contact with a hot workpiece may cause burns

terms of settlement:

Suitable tools are required to move the thermal works, and please wear protective gloves
. Thermal surface of the handheld welding head

Since the laser beam reflects on the workpiece, the laser beam may be very hot. Its temperature may be Rising to contact will cause a scald temperature.

take care 
The hot surface of the handheld weld head may burn your skin

terms of settlement:

Avoid direct contact with hot surfaces; wait for the weld to cool down before maintenance and cleaning.

2.4.4 noise

Use noise welding welding welding welding welding to with laser and gas.

Noise sources in the handheld weld head include: gasification of the material under the exposed laser beam; compressive protective gas flow

The nozzle spout.

During laser welding, the compressed protective gas passes through a nozzle coaxially on the laser beam, called the nozzle. The nozzle, it goes

To be the largest source of noise. The noise value given by the measurement is greater than 60dB (A).

warn 
There will be more noise when running the handheld welding head! Noise causes permanent ear damage and other adverse health consequences, especially with prolonged exposure to noise rings Under the environment.

terms of settlement:

Set a protective cover that can effectively reduce the noise around the operating table;

If the noise is high, you can wear a protective ear muffs;

If possible, only run the handheld weld head when the noise reduction shield is closed.

2.5 User guidelines

2.5.1 service regulations

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Hand-held welds are mainly designed to weld solid metals or metal alloys.

Usage rules include:

1. Follow the instructions of this operation manual

2. According to the principle of laser use, the optical fiber head is safely and connected with the welding head scientifically

3. Follow the electromagnetic coordination rules, and connect the line to the handheld welding head

4. Carry out the necessary inspection and maintenance work

Handheld weld head shall not perform the following operation

1. Run the laser with wavelengths not as specified. Laser power is over 2000W.

2. Welding flammable and explosive materials with metal or metal alloy (e. g. containing combustible gases, gasoline and explosives)

3. Run in a gas environment where an explosion is possible

The laser product manufacturer will not be liable for any loss caused by not complying with the use rules.

2.5.2 Technical Criteria

Status of the nursery laser products

Laser products can only be used if they are intact. Any defects, especially those affecting the safety facilities

Parts, they should be repaired immediately!

Garden modification

Do not modify any parts without jia strong permission, otherwise it may affect the safety level of laser products.

Bedtime spare parts

The spare parts must meet the technical requirements of Jiaqiang.

Garden software

Do not modify the software program.

Garden connecting line

Laser fibers and electrical routes must be protected; follow the minimum bending radius of the fiber.

Place the cables away from the transport channel and move the parts with frequent machine parts.

2.5.3 Compliance with standards and regulations

Some of the important rules and regulations that you must follow when operating the laser have been listed in the table below. This form is only

Is used as a reference and may be incomplete.

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As an operator, it is your responsibility to ensure that the standards and regulations of these mandatory requirements are obtained within your jurisdiction
To abide by.

As shown in Table 2.1, international general standards:

IEC 60825	Radiation of the laser products
EN 60825	Safety of the laser products
EN 207	Filter and safety mirrors for protection against laser radiation
EN 60204	Electrical equipment of the machine

graph 1.1

Maintenance and maintenance measures

During maintenance and repair, close all waterways, circuits, airways and ensure they remain closed throughout repairs.

The investigation should be carried out in a clean environment.

According to the use instructions, complete the debugging, maintenance and maintenance of laser products on time. Follow the replacement rules when replacing the parts.

Specific maintenance measures are detailed in the following sections.

Check whether the safety instrument of the laser product is running normally on time.

2.5.4 Urgent safety measures

Emergency situations will include:
1. Unintended laser leakage

2. Unintended movement caused by loss of system parts
3. A fire or an explosion occurs

4. Substances that may affect your health have been leaked
Emergency safety measures:

If you feel that these or other similar events can affect people's health or damage materials, you should take appropriate measures
execute.

If the danger is caused by the laser product, immediately press the emergency stop button to stop the laser radiation and the operation of the machine
More other measures will depend on the situation.

Jia Qiang suggests that, as a user of laser products, you should use the risk assessment to identify the possible hazards and specify the risk assessment
Measures accordingly to minimize the damage or to provide emergency treatment for the injured.

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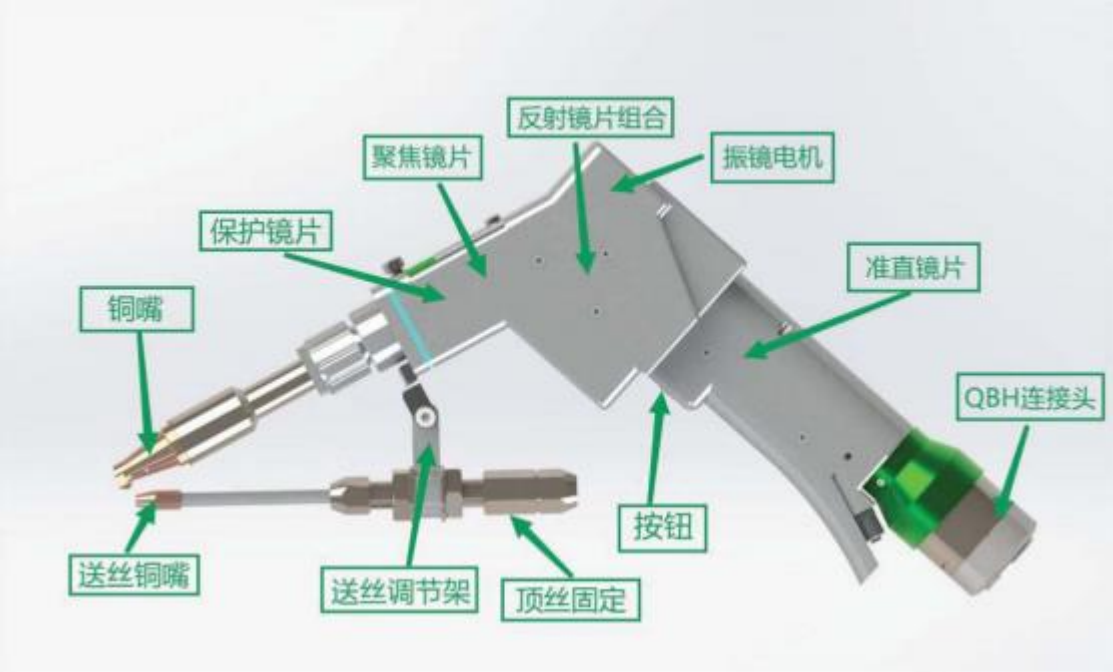
Prepare signs for an emergency. Hang these signs where there may be danger for everyone to see

3 The handheld welding head part

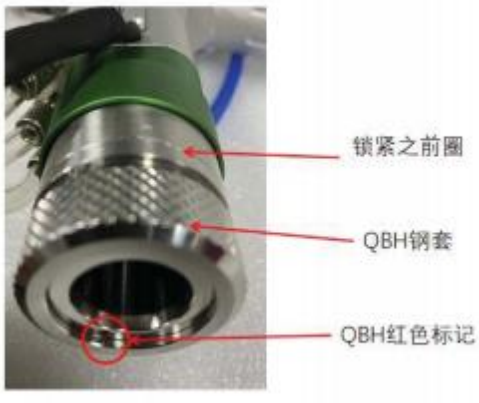


Hand-held welding structure

graph 3.1

3.1 QBH and handheld welding connection

1. Handwelding QBH connector structure is shown in Figure 3.2.



graph 3.2

2. Remove the fiber dust cover and check whether the protective cap protecting the fiber crystal head is locked. Clean the light with dusty cotton swabs and absolute ethanol
Fiber head, to ensure that the optical fiber section is clean and dust-free. See Figure Figure 3.3.

graph 3.3

3. Place the welding head horizontally, and then horizontally align the red mark of the optical fiber output end with the QBH red mark, and insert it in a straight line to the bottom.

4. QBH connector operation guide: remove the sealed transparent protective cover (Figure 3.4) and rotate the steel cover counterclockwise (FIG. 3.5), so that the indicator ring can be adjusted to the "unlocK" state. After inserting the optical fiber head, adjust the lock indicator ring to the "LocK" state (Fig 3.6), and then rotate the steel sleeve clockwise to the end (Figure 3.7). The diagram only shows the steel sleeve status.

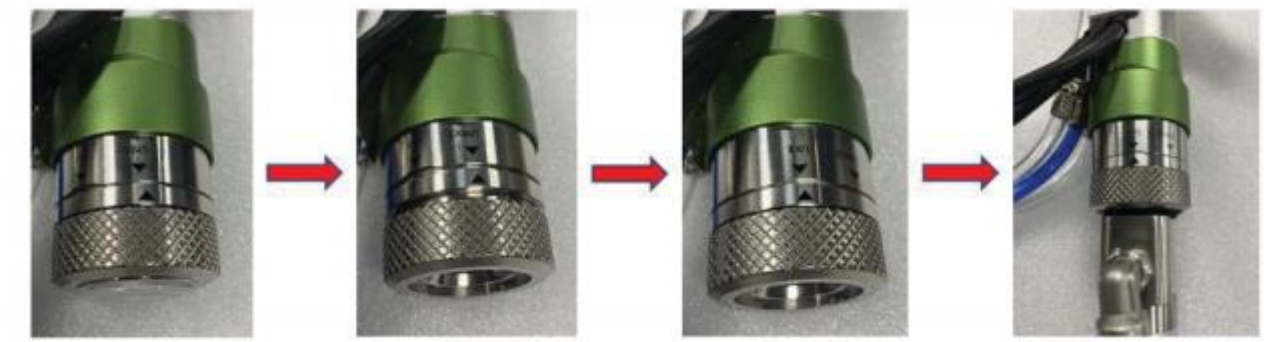


Figure 3.4 Figure 3.5 Figure 3.6 Figure 3.7

3.2 Disassembly and assembly of the outer protective lens

1. Manually release the protective mirror screw, after the screw is removed from the cavity. Pull out the protective mirror drawer. The connection part to the drawer is sealed with beautiful grain paper,

Prevent dust, see Figure 3.8. This protective lens is the outer layer of protective lens in the double protective lens.
2. Remove the pan-plug seal, carefully take out the protective mirror to clean or replace it. Figure 3.9.

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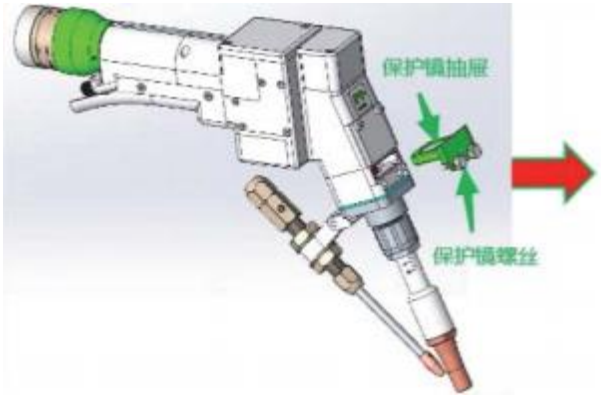


graph 3.8

graph 3.9

3.3 Maintenance and inspection

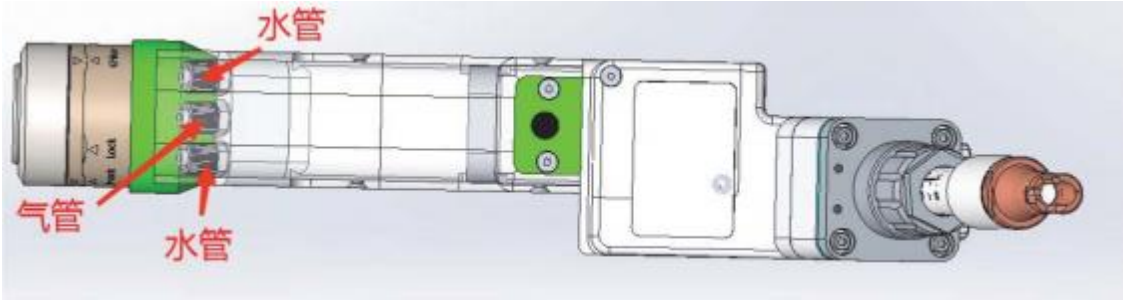
1. Check the protective lens regularly for no pollution

2. Check regularly whether the QBH connector is loose

3. No water can enter the connecting line

4. When connecting water and gas, as shown in Figure 3.10

graph 3.10



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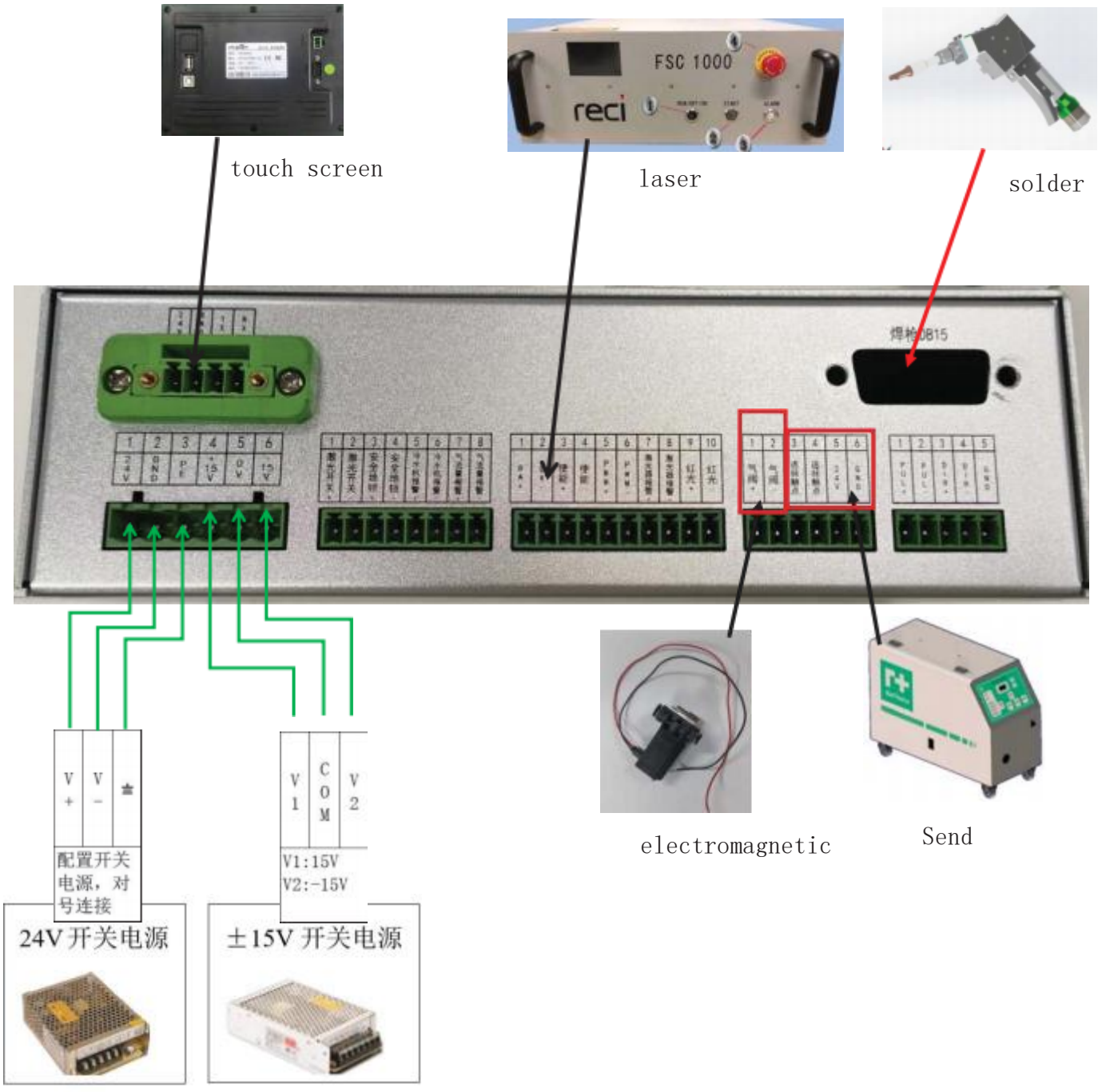
4. Controller section



graph 4.1

4.1 Touch screen is connected to the controller

Large color touch screen:

Connect the touch screen communication line to the controller, as shown.

Touch screen

mode of

graph 4.3

4.2 Connect the laser to the controller

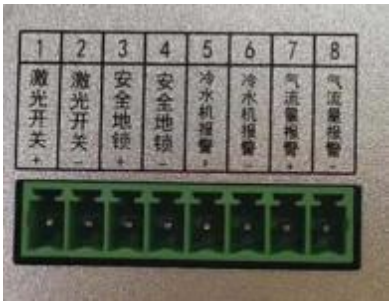
The control box only needs to connect the enabler, PWM and DA of the laser. The laser fault can not be connected. At present, the controller only writes the communication protocol of the spurs laser, and can only identify the alarm signal of the spurs laser. At the same time, the laser is different, the wiring mode is also different, especially some lasers need to be interlocked to light, the specific wiring mode can be referred to the hand-held welding manual control

Instructions instructions of device and different lasers. As shown in Figure Figure 4.4.

graph 4.4

4.3 Hand-held welding and controller connection

DB 15 Connector



Safety lock

alligator clip

graph 4.5

The DB15 connector on the wire of the handheld welding head torch is inserted directly into the welding head connector of the control box, as shown in Figure 4.5.

Safety lock: safety lock- (yellow line in the picture) needs to be connected to the crocodile clip to ensure the hand-held welding head and welding work piece contact light.

4.4 Connect the power supply to the control box

A 24V power supply

Shi-15V power supply

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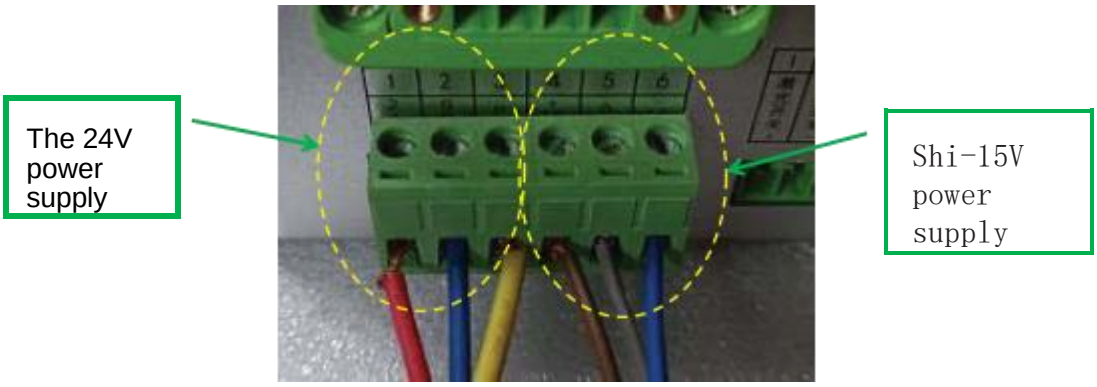


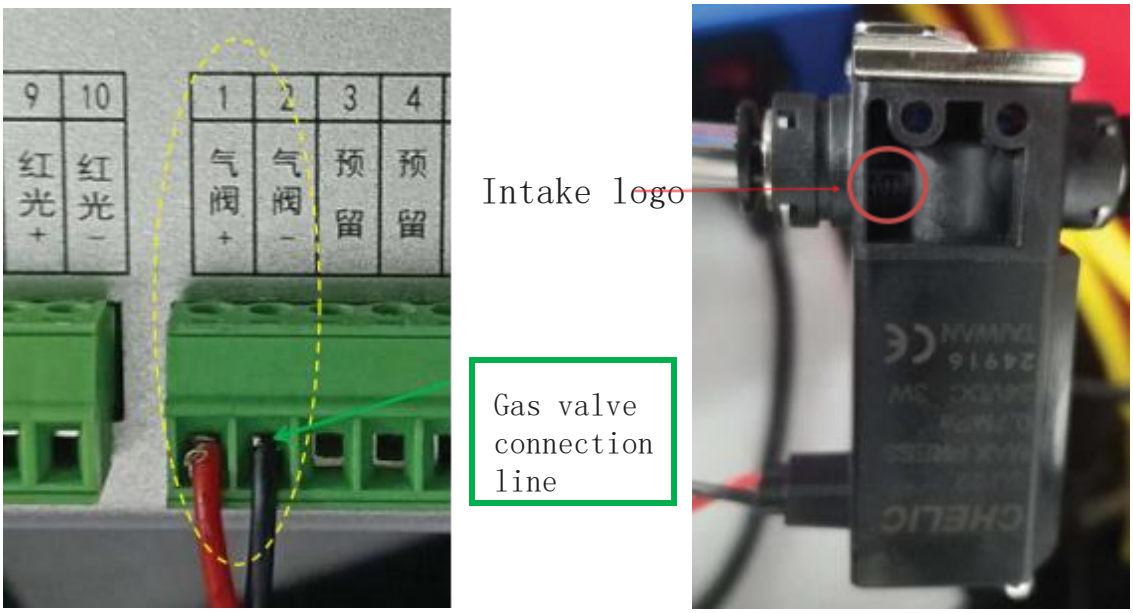
graph 4.6

Figure 4.6,

Si 15v power supply: v1 to 15v +, v2 to 15-, com to GND;

24v power supply: v + to 24v +, v-to GND.

4.5 Connect the air valve and the chiller for water pressure with the controller



graph 4.7

Air valve system is the control protection gas switch, air valve + is 24V + relay output, do not need to use additional relay control, air valve-yes. V, the customer's own solenoid valve has air inlet and outlet, must be clear before connecting the trachea. Water cooler alarm switch signal, if there is no use of water cooler alarm interface, can directly connect the positive and negative water pressure.
Gas flow alarm switch signal, if there is no gas flow alarm valve, can directly connect the gas flow positive and negative short.

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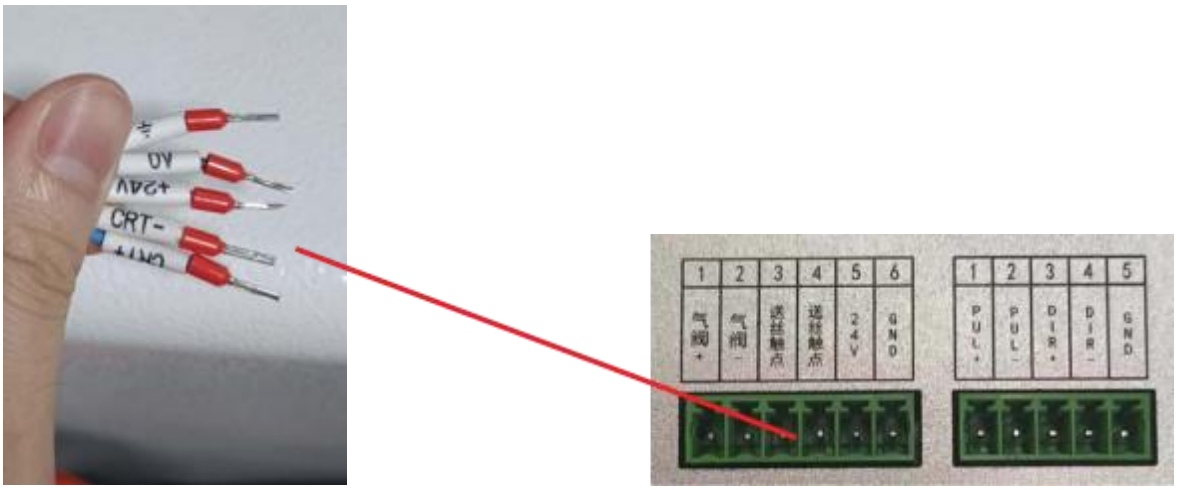
4.6 Connect the wire feeder to the controller



Silk delivery machine control line

Send wire wiring

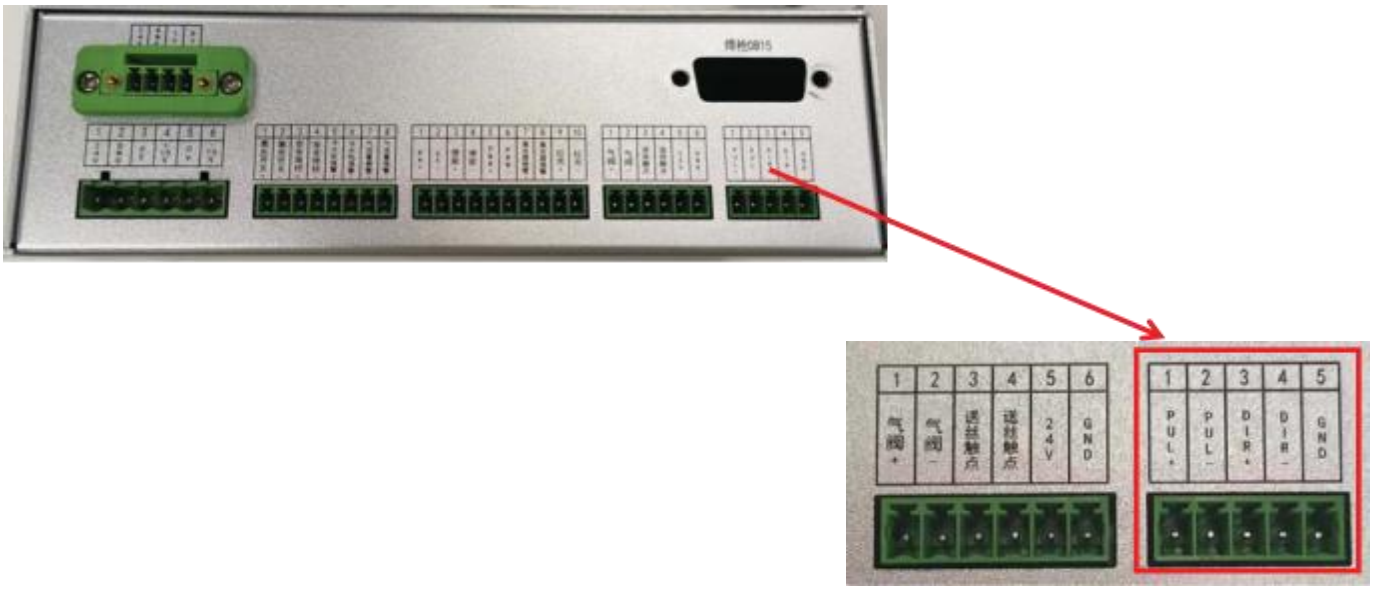
Overall wiring diagram of the wire feeder

graph 4.8

24V / 0V: wire feeder power supply, power cord 24V and 0V connected to the 24V switch power supply.

CRT + / CRT-: Send the wire signal, connect CRT + and CRT-to the controller for SS1 and SS2.(principle: CRT + and CRT-contact start wire, disconnect stop wire)

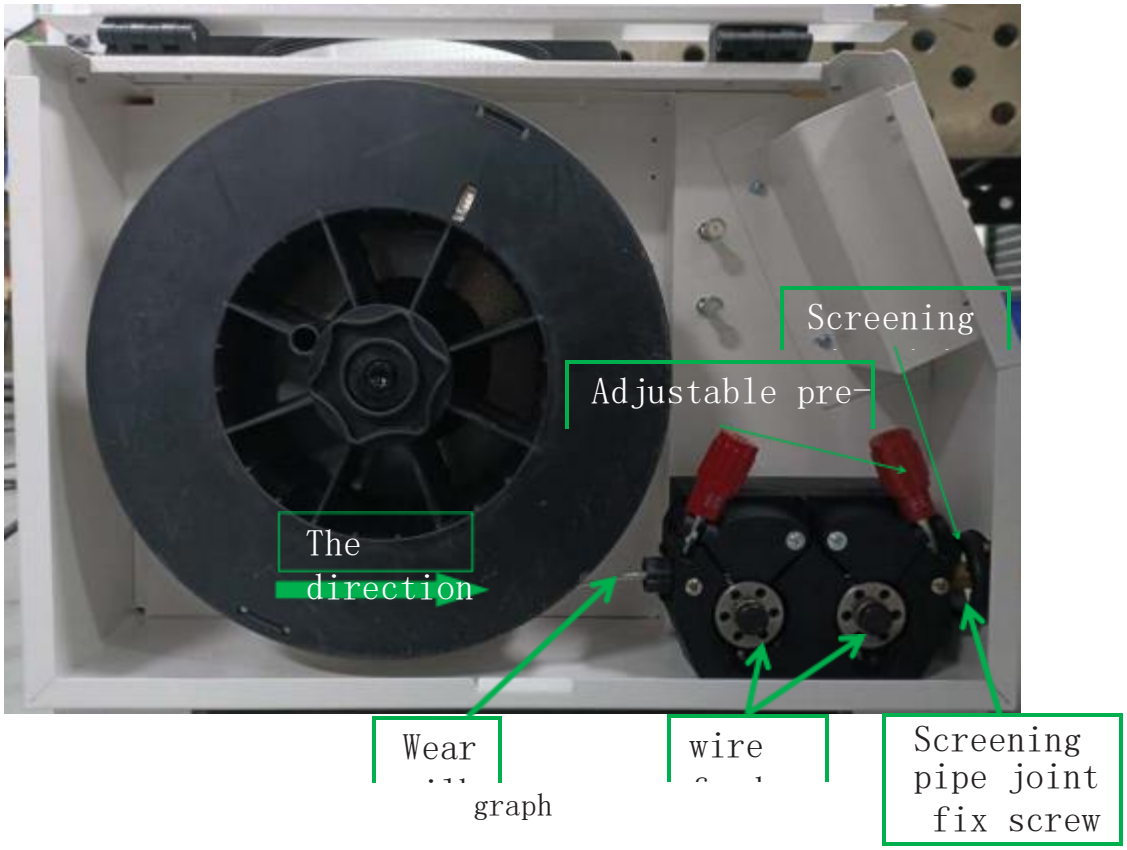
4.7 Port connection of step wire feeder



foot position	Signal name	direction	Line color	remarks
1	DIR+	O	green	Direction 5V
2	DIR -	O	black	
3	PUL+	O	red	Pulse 5V
4	PUL -	O	blue	
5	GND	O		the earth

Definition of the step-in motor wiring

5 Silk-feeding machine assembly



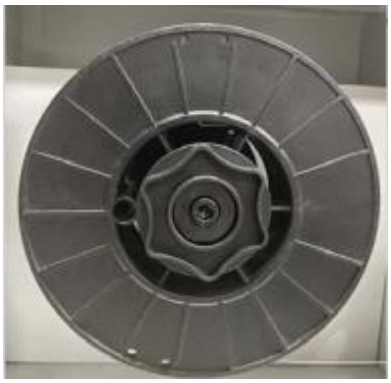
graph

5.1 Install the wire feeder

1. The wire feeding machine shall connect the 24V power supply of the laser welding machine. As shown in Figure Figure 5.2:

graph 5.2

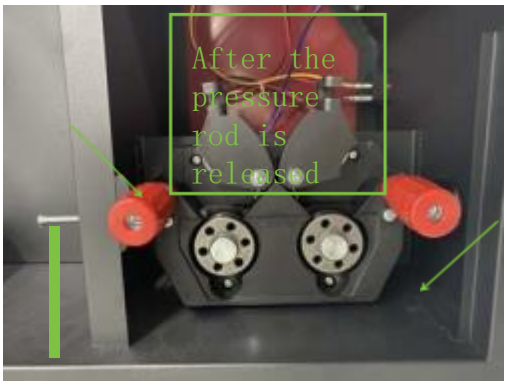
2. Hang the welding wire tray on the plate shaft in the wire delivery machine. As shown in Figure 5.3, Figure 5.4:

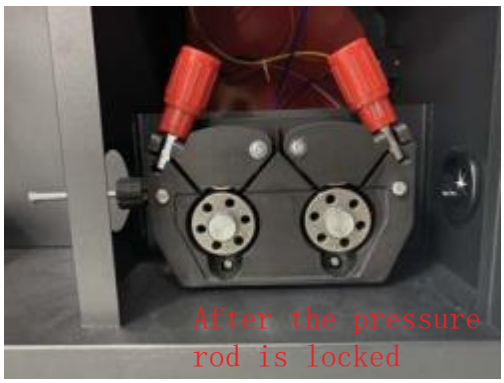


graph 5.3 graph 5.4

3. Select the groove diameter of the wire feeder, loosen the pressure regulator of the wire feeder (as shown in Figure 5.5), and realign the wire through the wire nozzle

Silk wheel groove, press the pressure regulator (Figure 5.6).





Guide

graph 5.6

4. Assemble the wire guide pipe interface (see Figure 5.7), manually send the welding wire out of the wire guide pipe interface based on the panel, and insert the interface of the wire guide pipe (see Figure 5.8), and fix the inlet end of the wire guide pipe on the wire supply mechanism. The final internal installation of the wire feeder is shown in Figure 5.9.

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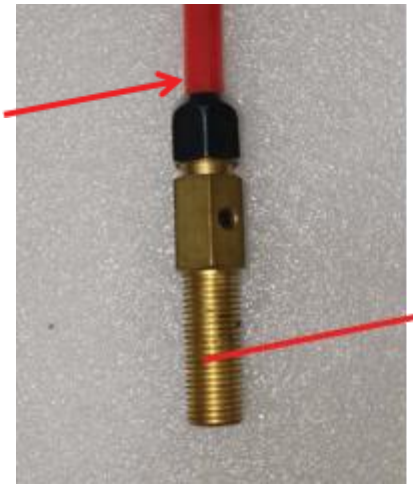
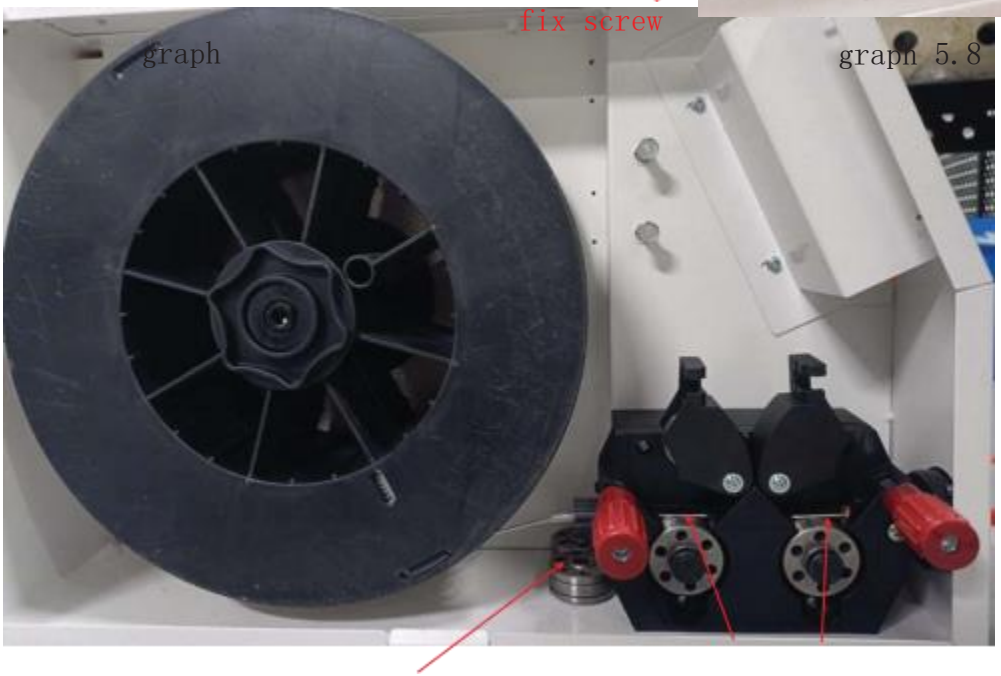
Send silk tube



fix screw

graph



graph 5.8

Wear silk

graph 5.9

The welding wire is stuck with the wire wheel

5. Adjust the pressing rod pressure to send the welding wire smoothly, and send the welding wire to the nozzle position in manual mode.

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5.2 Introduction of operation panel of wire feeder

graph 5.10

5.2.1 Description of key and indicator light

1, "function" key: function cycle switch key, can be switched through the cycle mode of several indicators display, select which indicator light that set of data is in the adjustable parameter state, at this time can be changed through the infinite knob parameters. In the wire state
The knob quickly changes the wire speed.

2. Stepless knob: the rotation knob changes the parameters when the relevant data indicator light is on.

3. "Manual wire delivery" key: press and hold the continuous wire wire, release and stop the wire, and run at the wire delivery speed.

4. "Manual withdrawal" key: press and hold the continuous drawing wire, release and stop the drawing. The speed runs at the return speed.

5. "wire delay" indicator: set the switch after selected, can adjust the wire delay through the stepless knob.

6. "Silk speed" indicator: set the switch after selected, can adjust the wire speed through the stepless knob.

7, "back speed" indicator: set the switch after selected, the back speed can be adjusted through the stepless knob.

8. "Return distance" indicator: set the switch after being selected, the return distance can be adjusted through the stepless knob.

9. "Silk delay" indicator: set the switch after being selected, and the wiring delay can be adjusted through the stepless knob.

10. "Wire distance" indicator: set the switch after being selected, it can be adjusted through the stepless knob.

11, "power supply" indicator light: the wire feeder power state indication, the power is bright.

12. "Alarm" indicator light: the light is on when the wire feeder is faulty.

13. "Three-bit digital tube" display: select according to the Settings, display the function parameters, and fixed in working state

Displays the wire speed.

5.2.2 Description of key and indicator light

Parameter items	Set the range	unit	Suggest setting
Send wire delay	0-500	ms	002
wire feed rate	5-100	mm/s	015
Back pumping speed	100	mm/s	100
Back to draw distance	0-100	mm	010
Filming delay	0-500	ms	005
Fill the wire distance	0-100	mm	010

Main technical parameters	
model	RT-HWS-YB80A
voltage	DC24V
power	80W
any power-generating or power driven machine	DC permanent magnet motor
mode of speed regulation	The PWM open-loop speed regulation

Weld size	0.6/0.8/1.0/1.2/1.6/2.0（mm）
wire feed rate	5-100（mm/s）
outline dimension	Length 580 * width 310 * height 460 (mm)
weight	15kg

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5.3 Fault and handling method of automatic wire feeder

order	fault phenomenon	failure cause	processing method
E1	The power supply indicator light is not on	Poor power supply of 24VDC	Check whether the air penetration contact is good and whether 1 and 2 holes have 24VDC.
		Poor contact from navigation to circuit board socket	Open the chassis side panel and check the socket connection.
E2	Press the torch switch not to send wire	The torch switch plug is poorly welded / disconnected	Replace the plug and check the connecting cable.
		Send wire motor is bad	Replace the wire motor.
		The welding wire exhausted	Replace the wire disc.
		Drive board motor plug is loose	Replug the socket.
		Weld knot	Release the pressing wheel and plate the wire again.
		Send silk tube knot	Straighten out the silk tube.
		The welding wire is blocked at the outlet of the wire feeder	Adjust the guide tube to the wire outlet.
		The silk tube is blocked	Put the wire tube again.
		The pull is not enough	Release the welding wire disc and brake.
		The main control board is bad	Replace the main control board.
E3	The speed of sending wire is unstable Send silk is not smooth	The welding wire is tied in the welding wire tray	Remove the knot and rewire the wire.
		Delivery pipe is not matched or worn	Replace the silk tube.
		It is not appropriate to send silk wheels	Replace the silk wheel.
		The pressing wheel pressure is incorrect	Adjust the pressing wheel pressure.
		The wire transfer motor is abnormal	Replace the wire motor.
		Exception of drive board	Replace the drive main control board.
		The silk tube is blocked	Replace or clean the delivery tube.
		The bending angle of the feeder tube is less than 30 degrees	Put the delivery tube as straight as possible.

		The wire supply tube is deformed after extrusion	Replace the silk tube.
E4	Panel key display fault	Panel failure	Replace the circuit board.
E5	The wire speed is not adjustable Has been the fastest	Speed reverse loop failure	Replace the encoder row at the back of the wire machine, line, can not replace the motherboard, and finally replace the whole wire machine.
E6	Other faults	It is not easy to describe	Send it back to the manufacturer for repair.

Table 5.3

5.4 Daily maintenance and precautions of automatic wire delivery machine

5.4.1 Daily maintenance of the automatic wire delivery machine

1. When not in use, the wire delivery machine should be placed in a cool, dry, far away from dust.
2. Do not put other objects on the wire feeding machine to avoid damage.
3. Before installing the new wire tray, blow the wire pipe with compressed air to remove impurities inside the wire pipe.
4. The wire tube is kept smooth and can not be squeezed, deformed or folded.
5. Clean up the dust in the machine regularly, and check the smooth rotation situation and noise of the motor.

5.4.2 Precautions for automatic wire feeder

1. Set up the use place

Please use the wire delivery devices in the places where the following conditions are met.

This machine is an indoor machine, and its protection grade is IP2X. Do not put it where there are water drops and raindrops.

Please use it at the ambient temperature from-10 to 40 school.

Do not set it on the table with strong vibration or large impact.

2. Pay attention to use

2.1. When installing the welding wire tray or inserting the welding wire into the guide wire pipe, do not wear gloves to avoid the rotation of the rotating parts
Around the accident.

2.2 Please confirm the weight of the wire tray. The weight of the wire shall not be greater than 20kg, otherwise the wire tray may fall.

2.3 During welding, please close the right side plate, otherwise there may be electric shock accident and winding due to the rotation of rotating parts
malfunction.

2.4 Before welding, please confirm whether the end cover of the disc shaft is tightened, otherwise the welding wire may occur due to the tilt of the wire disc
Discharge accident.

5.5 Automatic wire delivery speed adjustment

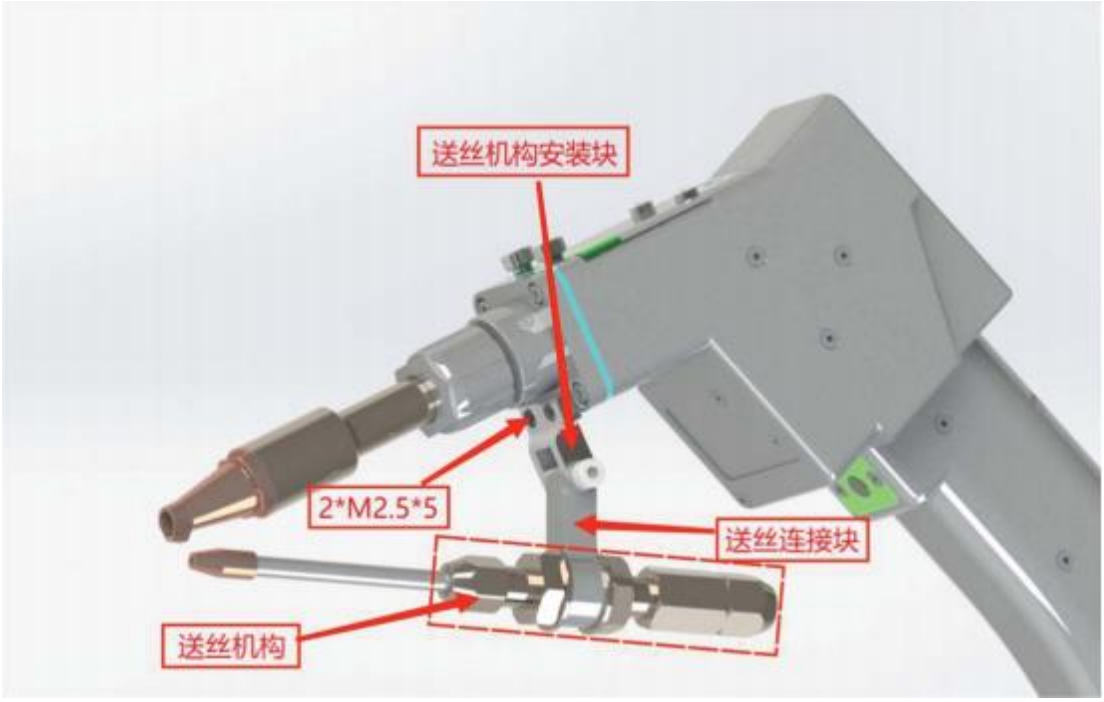
Open the wire delivery switch on the touch screen, adjust the power to 0, hold the handheld welding head switch, adjust the wire delivery speed at low speed

(about 15%), rotate according to the tightness of the wire, and rotate until the wire plate turns at a uniform speed

Until now (we must make sure that the wire delivery pipe is smooth, and there is no bending situation).

6 Connect the wire rack with handheld welding

1. Use M2.5 * 5 hexagon screw to fix the wire connection block on the handheld welding base. As shown in Figure 6.1.



graph 6.1

Note: the installed wire plate should ensure that the welding wire is not knotted. If there is this phenomenon, the welding wire must be straightened out again.

Finally, determine the welding focus, adjust the wire center to align with the laser swing center, and lock all the screws.

7 Software description

Software main interface

graph 7.1

7.1 Parameter description

1. Laser switch state display: real-time display whether the laser is out of the light

2. Communication and alarm: real-time monitoring whether the system is abnormal and giving relevant alarm signals.

3. Laser power: the percentage of the laser output power, that is, 10% -100%, corresponding to 0.1V-10V of the laser simulation amount, respectively.

4. Duty cycle: the ratio of pulse duration to pulse period.

5. Laser frequency: the number of laser pulses emitted by the laser per second.

6. Procedure number: 16 program numbers (1-16), each program number corresponds to one welding parameter, including laser and protection
Gas and wire delivery parameters.

7. Swing frequency: the swing frequency is set at 0-200 HZ

8. Graph size: adjust the length of the swing line segment during the swing welding.

9. Ground lock: display the security ground lock status, green when leading, and red without leading.

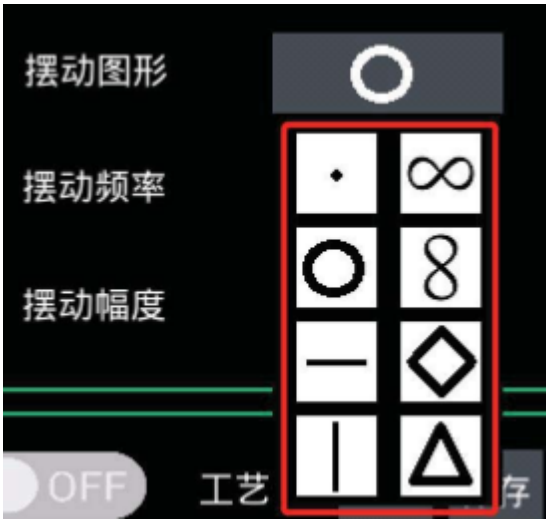
10. Laser light on: Laser light on and off.

11. Silk supply switch: open and close the wire supply.

12. Spot welding switch: when it is necessary to use the spot welding mode, open the spot welding switch.

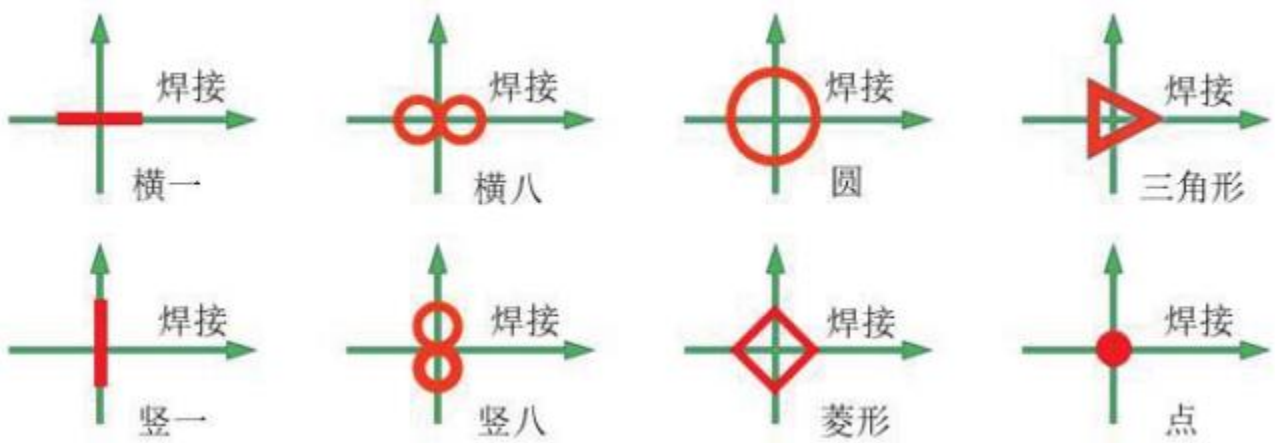
13. Manual blow air switch: in separate testing, open to blow all the time.

7.2 Swing mode:



graph 7.2

Support for eight swing modes, as shown:



7.3 Monitoring

graph 7.3

Input / output status:

IO. O shows the status of the handheld gun push-button switch

IO.3 Indicate whether the hand-held gun is in contact with the welding workpiece, IO.3 Contact, to allow the light, used for safe production

QO.2 The laser enable signal output state

QO.4 Air valve output status

Q1.1 Inlet wire signal of the wire feeder

I3.O Vibrator scope IO input

alerting signal:

Touch screen-laser control card communication: green under normal state, abnormal alarm is red.

Touch screen-scope control card communication: green under normal state, abnormal alarm is red.

Laser: it is green under normal condition and abnormal alarm is red.

Chiller: green under normal condition, and abnormal alarm is red.

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7.4 Laser settings

graph 7.4

Laser alarm level: select whether the laser alarm is low or high level is effective, select. N is 24V high level effective.

Weleld relaxation time: allow the welding nozzle to leave the workpiece for a short time; such as bad contact between welding and workpiece

Situation, when the workpiece disconnection time is greater than the protection time will stop the light.

Slow rise time: the time for the laser light and the power rises from the lowest value to the set value.
Slow drop time: time to stop laser light and reduce the power from set value to zero.

Blowing in advance: the laser switch is pressed to the laser light, the air valve blowing in advance time.
Blow delay: the time when the laser switch stops until the air valve stops blowing.

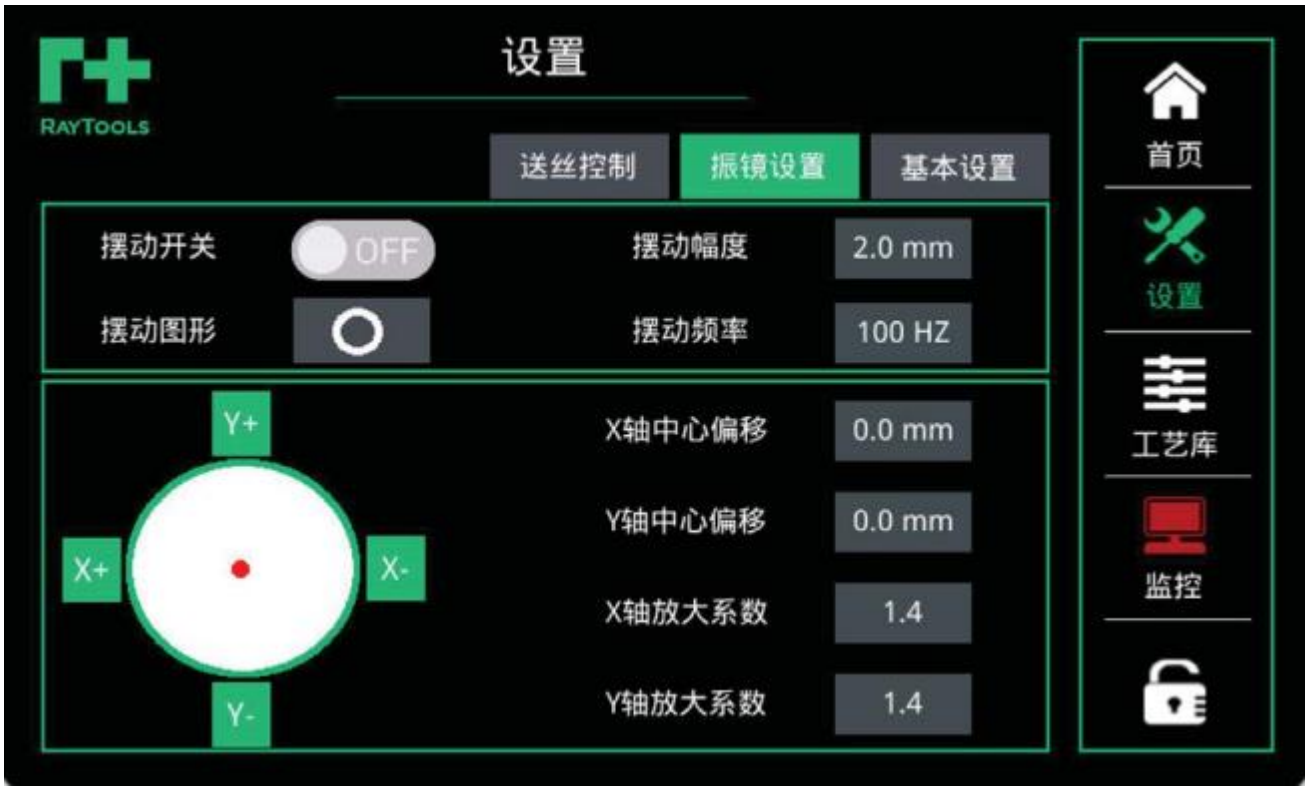
Open light power: the starting power of the laser power slow rise, combined with the slow rise time adjustment.
Light off power: stop power of laser power slow drop, with slow drop time adjustment.

Laser power: set according to the maximum power of the laser.(Laser power: 0-2000W)
Light off delay: after the laser switch is disconnected, the time of light is also allowed to fuse the welding wire.

Spot welding mode parameters are set as follows;

Spot welding duration: adjust the light duration according to the actual use.
Spot welding interval time: stop time interval during the working mode of spot welding. Type of spot welding: fish scale welding can be set up.

7.5 Microscope setting



graph 7.5

Swing switch: open and close the welding head red light swing function.(The actual light will swing normally, here only for red light debugging
effect)

Note: When red light is found off the copper nozzle, there are two solutions.
1 Check the line, open the red light swing, remember not to turn on the laser switch, through this way to confirm whether the motor
power on.
2. Cut to the lens setting interface, change the swing amplitude to 5mm (the maximum swing amplitude of the welding interface), and the swing pattern is., spear
Push the mouth vertically down to complete the red light from the center of the copper mouth by clicking the touch screen XY offset button.
Swing pattern: the double vibration mirror handheld welding torch swing pattern supports eight swing modes.
Swing amplitude: adjust the length of the swing line segment, the range is 0-5mm 。

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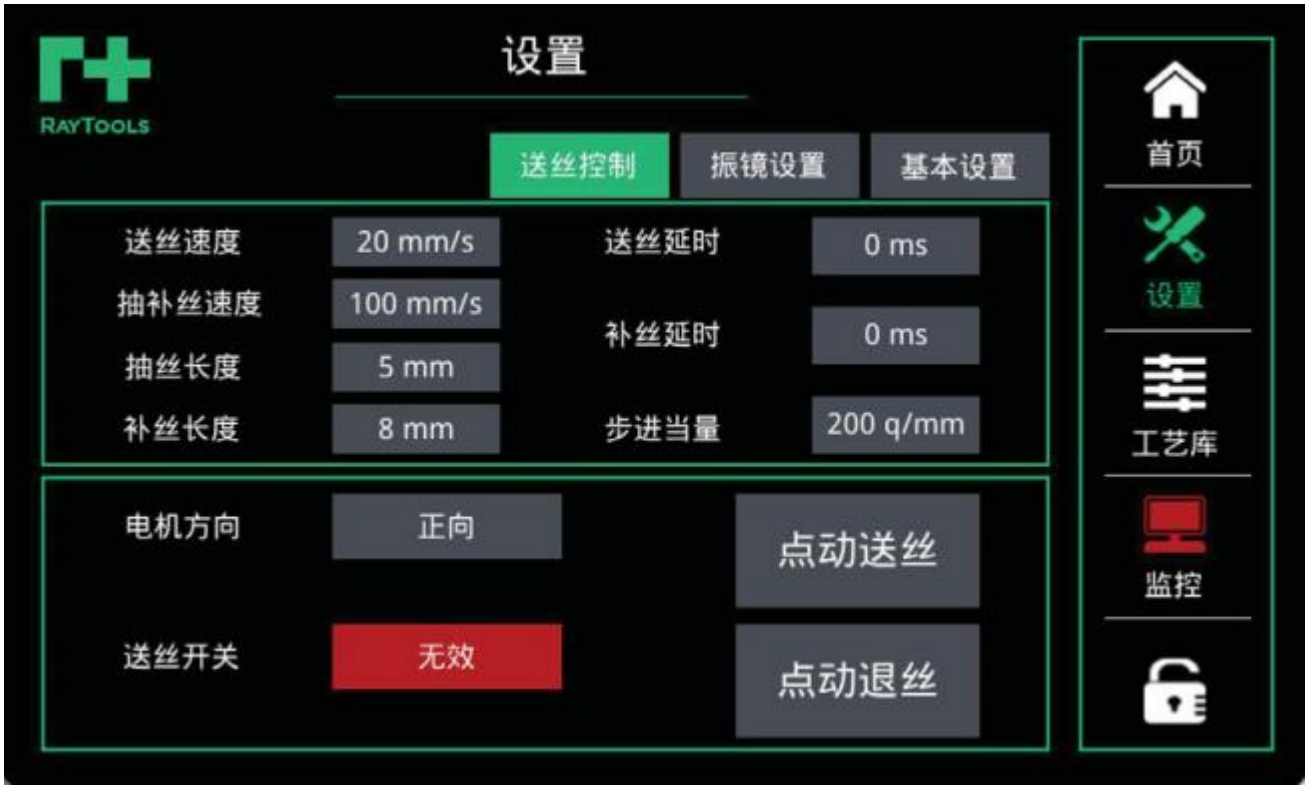
Swing frequency: According to the welding process requirements, change the frequency of the welding head swing, ranging from 0-200 HZ.
X-axis center offset: vibrator center correction, has been corrected before the factory, the actual use in the wire delivery work is necessary, and then fine-tuning
Align with the welding wire center.(No Disorderly Party Adjustment)
Y-axis center offset: lens center correction, has been corrected before the factory, the actual use of the wire delivery work is necessary, then fine tuning
Align with the welding wire center.(No Disorderly Party Adjustment)
Amplification factor: it has been corrected before leaving the factory, and then fine-tuning when the actual use is necessary.(No Disorderly Party Adjustment)

7.6 Feed wire control



graph 7.6

Wire speed: adjust the motor wire speed.

Tap speed: adjust the filament speed after finishing the light.
Wire length: wire length after adjusting the light.

Wire length: adjust the length of filament after drawing.
Delivery delay: adjust the delay time during light output.

Filiring delay: adjust the delay time of filament after stopping withdrawal.

Step equivalent: set according to the actual configuration of the wire feeding mechanism.

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Motor direction: can change the motor running direction.

Feed switch: open and close the feed.

Tap wire / tap wire: press and hold the continuous wire / wire wire, release the stop wire / wire, and run at the wire speed.

7.7 Process Parameters

graph 7.7

Process parameters: it can intuitively reflect the parameters corresponding to each program number, including material, thickness, power, frequency, and occupation

Empty ratio.

Current program number: the program number in use, you can select the program number you want to use, and the program number of the main interface will correspond

change.

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7.8 About the version

graph 7.8

Display the version of the touch screen and the control card, each generation of the product has the corresponding version. The corresponding version is V30.00.

The two QR codes correspond to the wechat official account and official website of Huaqiang Company, and follow the wechat official account and official website of Huaqiang Company to obtain relevant product introduction and new product information.

7.9 Lock screen

graph 7.9

Lock screen: that is, lock the screen, can not operate the interface, mainly to prevent the operator is operating, others mistakenly touch the screen,
Cause the welding product or the operator debugging light, to ensure the safety of the operator.

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Attached Table 1: Fault analysis table

Fault analysis table		
Possible failure	Phenomenon analysis	terms of settlement
Touch-screen communication alarm	The line is not good	Check all the harness and then power off for 2 minutes before starting
The laser does not shine	Laser alarm	1. Restart
		2. Check whether the wiring is correct
		3. Internal control to check whether the laser is encrypted and should be decrypted
		4. If the internal control is QBH alarm, check and fix the QBH connection part
		5. If the QBH alarm is broken or the alarm is constant, it should be replaced
	The laser does not alarm	1. If the red light indicator is normal, make the red light swing to see if it is correct
		2. Check the setting of process parameters if it can swing normally
		3. Check whether the light is locked and whether the focus is wrong
		4. Check whether there is dirt inside the welding torch, and check whether the laser is normal alone work
Copper nozzle will not be selected	Use strange	Please refer to Schedule Table 1: copper mouth selection table
The silk conveyor does not work	The wiring problem	Check the wiring according to Chapter 5 of the manual, and it is recommended to switch the power supply independently
	Installation problem	There may be some running-in in the structural installation of the wire feeding assembly to the wire feeding machine, which needs to be followed Manual installation step by step, you can learn from the guide video

Table 2: Connection indication diagram of the controller and the fiber laser

1, Kaplin BWT, laser DB25

序号	定义	功能	说明
1	使能+	外部使能输入信号+	高电平 5V-24V 有效
2	使能-	外部使能输入信号地	
3	AD+	模拟量输入正	0V-10V 控制激光器的输出功率大小，10V 对应 100%的输出功率
4	AD-	模拟量输入地	
5	Bias+	偏置电流+	最大偏置电压为 1V
6	Bias-	偏置供电地	
7	外部输入 24V+	外部输入 24V+供电	当激光器故障时，通过 9/10 端口输出由 7/8 提供的外部 24V 信号
8	外部输入 24V-	外部输入供电地	
9	故障信号-	故障信号输出的地	当激光器故障时，将 7、8 端口的外部输入 24V 信号输出
10	故障信号+	故障信号输出的+	
11	PWM+	外部调制输入信号+	激光器调制出光控制，高电平 10V-24V 有效
12	PWM-	外部调制输入信号地	

手持控制器			凯普林 BWT 激光器 DB25	
1	DA+	→	3	AD+
2	DA-	→	4	AD-
3	使能+	→	1	使能+
4	使能-	→	2	使能-
5	PWM+	→	11	PWM+
6	PWM-	→	12	PWM-
7	故障+(输入)	←	10	故障信号+
8	故障-(输入)	←	9	故障信号-

2. Heat spur laser

管脚	定义	备注
1	RS485-A。	485 接口用于装置参数设置，故障查询与程序更新
2	RS485-B	
3	远程启动负(REM_START-)	24V 高电平有效,用于装置远程启动（功能与前面板 POWER 按钮一致）
4	远程启动正(REM_START+)	
5	出光使能正 (LASER_EN+)	24V 高电平有效，用于 AD 模式下出光使能
6	出光使能负 (LASER_EN-)	
7	KEY_LOCK 外部安全锁定信号	正常时短接，断开后会报 KEY_LOCK 故障。（此功能需用后台软件设置使能）
8	KEY_LOCK 外部安全锁定信号	
9	EX_ALARM_OUT+	故障信号输出正端
10	EX_ALARM_OUT+	故障信号输出正端
11	EX_ALARM_OUT-	故障信号输出负端
12	外调制信号输入负（MOD_SW-）	24V 高电平有效
13	外调制信号输入正（MOD_SW+）	
14	出错信号输出（开漏），高表示出错（ERROR_OUT）	高电平由 15 脚上拉决定。
15	外部上拉电平，可外接适合电平（5V、12V、24V）（ERROR_OUT_PULL）	
16	EX_ALARM_OUT-	故障信号输出负端

手持控制器	
1	DA+
2	DA-
3	使能+
4	使能-
5	PWM+
6	PWM-
7	故障+(输入)
8	故障-(输入)

热刺激光器 2PIN（AD 接口）	
	AD+
	AD-

热刺激光器 16 芯航插 CTRL	
5	出光使能正 (LASER_EN+)
6	出光使能负 (LASER_EN-)
13	外调制信号输入正 (MOD_SW+)
12	外调制信号输入负 (MOD_SW-)

3. Create a stupid laser with a 12-core interface

CTRL 接口插孔序号	接线颜色	功能	说明
1	红色	使能输入 +	24VDC 高电平有效
2	红白	使能输入 -	
3	黑色	调制输入 +	24VDC 高电平有效
4	黑白	调制输入 -	
5	黄色	外部出光 +	24VDC 高电平有效（此功能与启动开关 START 功能一样）
6	黑黄	外部出光 -	
7	绿色	DA（0-10V）输入 +	0-10V 模拟信号，控制输出功率
8	绿白	DA（0-10V）输入 -	
9	棕色	故障输出 1	有报警故障输出 1 和 2 常闭 无报警故障输出 1 和 2 常开
10	棕白	故障输出 2	
11	蓝色	NC	
12	蓝白	NC	

CTRL 接口插孔序号	接线颜色	功能	说明
1	红色	使能输入 +	24VDC 高电平有效
2	红白	使能输入 -	
3	黑色	调制输入 +	24VDC 高电平有效
4	黑白	调制输入 -	
5	黄色	外部出光 +	24VDC 高电平有效（此功能与启动开关 START 功能一样）
6	黑黄	外部出光 -	
7	绿色	DA（0-10V）输入 +	0-10V 模拟信号，控制输出功率
8	绿白	DA（0-10V）输入 -	
9	棕色	故障输出 1	有报警故障输出 1 和 2 常闭 无报警故障输出 1 和 2 常开
10	棕白	故障输出 2	
11	蓝色	NC	
12	蓝白	NC	

序号	手持控制器		创鑫激光器航插 12 芯	
1	DA+	→	7	DA（0-10V）输入+
2	DA-	→	8	DA（0-10V）输入-
3	使能+	→	1	使能输入+
4	使能-	→	2	使能输入-
5	PWM+	→	3	调制输入+
6	PWM-	→	4	调制输入-
7	故障+(输入)	←	10	故障输出 2
8	故障-(输入)			
序号	手持控制器			
1	24V	→	9	故障输出 1
2	GND	←		
3	故障灯			
4	准备灯			
5	运行灯			

4. Rayke 380 / 220V DB25 needle

PIN	名称	输入输出	功能		典型	最小	最大	电流
6	LASER EN	输入	激光器出光使能信号	使能	24V	15V	28V	<8mA
				禁止	0V	0V	3V	
7	ADEN	输入	外部 AD 模式使能	使能	24V	15V	28V	<8mA
				禁止	0V	0V	3V	
8	Laser Ready	输出	激光器准备好	Ready	24V			<100mA
				Not Ready	0V			
9	EXGND		6,7,8,20,24 的参考地					
20	EXVCC		24V（给 PIN8 PIN24 输出提供电源）		24V	20V	28V	<500mA
22	Analog	输入	外部功率给定模拟量			0V	10V	<10mA
23	Laser Power	输出	激光器功率指示			0V	5V	<20mA
24	Alarm	输出	激光器异常	异常	24V			<100mA
				正常	0V			
25	AGND		22,23 的参考地					
其他	NC		不允许连接					

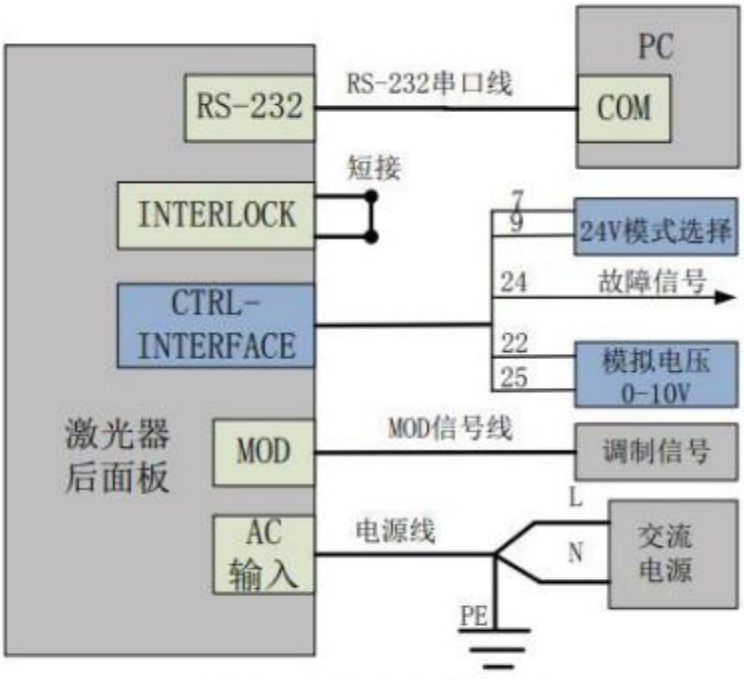
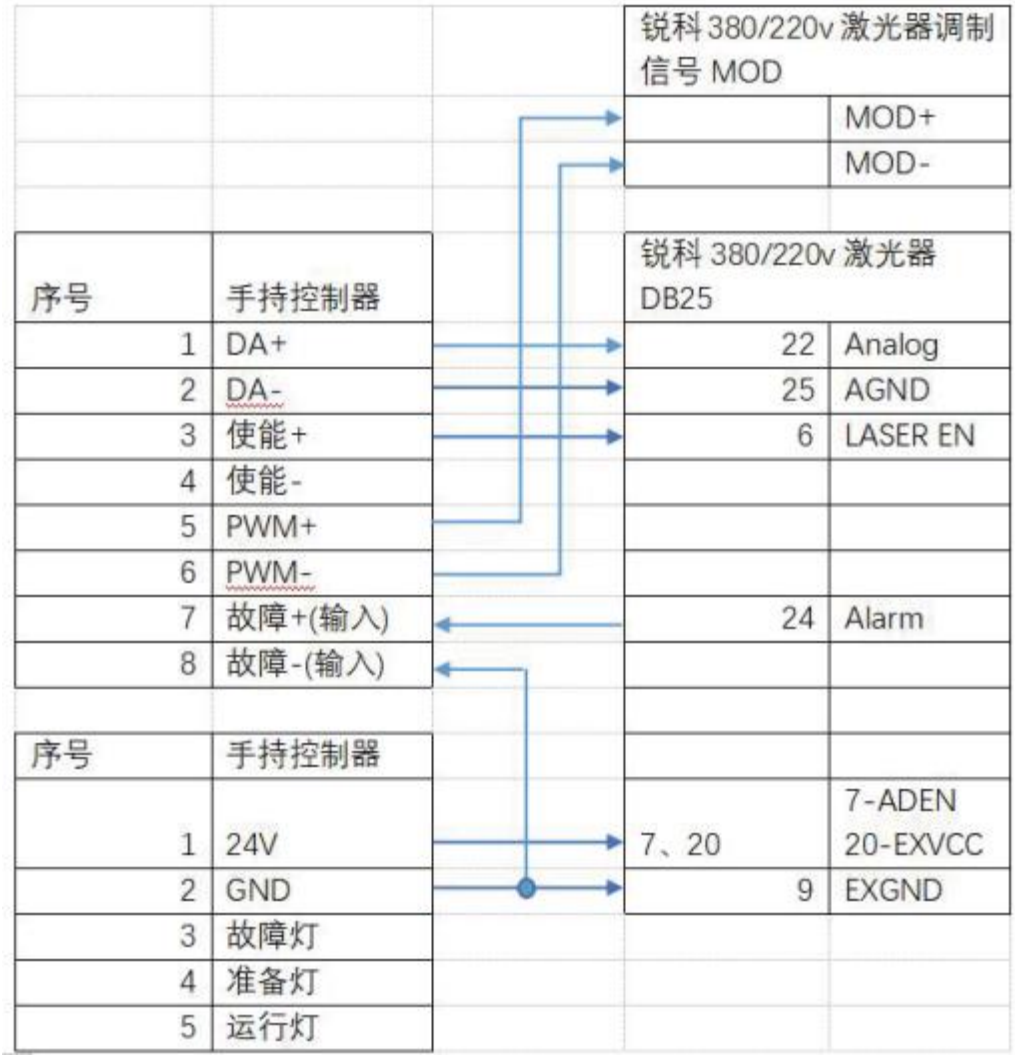


图 22 AD 模式下接线图



序号	手持控制器
1	DA+
2	DA-
3	使能+
4	使能-
5	PWM+
6	PWM-
7	故障+(输入)
8	故障-(输入)

序号	手持控制器
1	24V
2	GND
3	故障灯
4	准备灯
5	运行灯

锐科380/220v激光器调制信号MOD	
	MOD+
	MOD-

锐科380/220v激光器DB25	
22	Analog
25	AGND
6	LASER EN
24	Alarm
7、20	7-ADEN 20-EXVCC
9	EXGND

5, the JPT fiber laser 24 PlN

引脚	信号名称	信号类型	信号电平	描述
1				
2				
3	互锁通道+	闭合触点输入		预留
4	互锁通道+			
5				
6				
7				
8				
9				
10	远程启动按钮+	24VDC		本控制口可取代START 按钮启动
11	远程启动按钮-			
12				
13	0-10V+	模拟输入	1-10 VDC	功率控制输入：1-10V=10-100%功率
14	0-10-/模拟输入地			12、13 公共地
15	调制+	24VDC		PWM 调制
16	调制-			
17				
18	使能+	24VDC		
19	报警输出	24VDC		故障时为高电平
20	使能-/报警输出			18、19 公共地
21				
22				
23				
24				
PE	地线			连接大地

手持控制器			JPT 激光器 24PIN	
1	DA+	→	13	0-10V+
2	DA-	→	14	0-10V+模拟输入地
3	使能+	→	18	使能+
4	使能-	→	20	18、19 公共地
5	PWM+	→	15	调制+
6	PWM-	→	16	调制-
7	故障+(输入)	←	19	报警输出
8	故障-(输入)			

6. Paragraph of lpG YLR-Y14

YLR-Y14接口定义_Han 24

附: YLR-Y14接口定义_Han 24

引脚	信号名称	信号类型	信号电平	驱动能力	典型响应	描述
1	安全互锁通道1A	闭合触点输入	内部24Vdc	<1A	<500 ms	无源触点，不得外接电压或接地。（依据“EN 954-1”或“ISO 13849-1 Cat.3 PLd”）
2	安全互锁通道2A					
3	安全互锁通道2B					
4	安全互锁通道1B					
5	RS232 Tx				120 ms	数据发送
6	RS232 Rx					数据接收
7	RS232 Com	返回端				RS-232返回端
8	远程钥匙开关	闭合触点输入	内部5 Vdc或24 Vdc		20s	远程模式下，启动内部主控制板供电
9						
10	远程启动按钮	瞬时闭合触点输入	24 Vdc		1s	远程模式下，启动激光泵浦主电源
11						
12	电流控制(功率)输入	模拟输入	1-10 Vdc	1 mA (sink)	100 μs	电流设置模拟输入：1-10Vdc = 10 – 100% 电流
13	激光功率指示输出	模拟输出	0-5Vdc	11 mA (source)	20 μs	模拟输出0-4Vdc = 0 - P_{nom}
14	模拟公共地(隔离)	返回端				12和13脚的公共地
15	调制 +	数字输入	5-24 Vdc	6 mA (sink)	20 μs	5 -24 Vdc PWM信号输入
16	调制 -	返回端				15脚信号的返回端
17	引导红光控制	数字输入	5-24 Vdc	6 mA (sink)	120 ms	远程模式下，上升沿有效
18	激光使能	数字输入	5-24 Vdc	6 mA (sink)	120 ms	远程模式下，上升沿有效
19	错误/就绪	数字输出	24 Vdc	100 mA (source)	120 ms	低电平=报警，高电平=准备就绪
20	系统公共地	返回端				17/18/19/21/22/23/24脚的公共地
21	错误复位	数字输入	5- 24 Vdc	6 mA (sink)	120 ms	上升沿复位（可复位的报警）
22	系统已上电	数字输出	24 Vdc	100 mA (source)	120 ms	高电平=系统已上电
23	主电源已启动	数字输出	24 Vdc	100 mA (source)	120 ms	高电平=主电源已启动
24	激光已发射	数字输出	24 Vdc	100 mA (source)	120 ms	高电平=激光已使能

7. Feibo laser

引脚	信号	信号描述
1	INTLK1A	联锁开关 1A，1A1B 闭合有效
2	INTLK2A	联锁开关 2A，2A2B 闭合有效
3	INTLK2B	联锁开关 2B，2A2B 闭合有效
4	INTLK1B	联锁开关 1B，1A1B 闭合有效
5	RS232 RX	RS232 接收，与 DB9-RS232 不可同时使用
6	RS232 TX	RS232 发送，与 DB9-RS232 不可同时使用
7	CASE	RS232、RS485 信号地
8	RS485_D+	备用通信接口（RS485）
9	RS485_D-	备用通信接口（RS485）
10	NC	内部测试信号，请勿连接
11	NC	内部测试信号，请勿连接
12	IFWD_SET	功率设定输入（最大范围：0-10V） 1-10V 模拟电压对应输出功率 10-100% 0-1V：视为 0V，高于 10V：视为 10V
13	IFWD_FB	保留
14	CASE	模拟电压（Pin12）信号地
15	GATE	外部触发信号输入，16~24 有效
16	GND_IO	外部接口信号地（Pin15~Pin24）
17	RED_EN	指示光使能输入 24V：指示光开、0V：指示光关
18	EX_EN	外部使能输入 24V：外部控制使能、0V：外部控制禁止
19	FAULT	故障指示输出信号
		24V：有故障、0V：无故障
20	GND_IO	外部接口信号地（Pin15~Pin24）
21	WARNING	警报指示输出信号 24V：有警报、0V：无警报
22	PWR	上电指示输出信号 24V：系统上电正常、0V：系统上电异常
23	EN_ON	使能指示输出信号 24V：使能；0V：未使能
24	EM_ON	出光指示输出信号 24V：出光中；0V：未出光
25	NC	

手持控制器			飞博激光器 DB25	
1	DA+	→	12	IFWD_SET
2	DA-	→	14	CASE
3	使能+	→	18	EX_EN
4	使能-	→	20	GND_IO
5	PWM+	→	15	GATE
6	PWM-	→	16	GND_IO
7	故障+(输入)	←	19	FAULT
8	故障-(输入)			