

Be sure to read the manual before using the system

- This manual is the user manual of double swing handheld laser welding system
- Read the manual carefully first to ensure the correct electrical connection

BWT20E

Qilin double swing handheld laser welding system user manual

E20 control box + BWT20E welding head



Shenzhen Qilin Laser Application Technology Co., LTD

Address: Second floor, Building 8, Panmao Industrial Zone, Shuimeng Road, Gongming Village, Gongming Street, Guangming New District, Shenzhen

Tel. : 0755-27999931

mail:

address:www.qilinlaser.com

Version update record

S3.2	Repair the abnormal laser head status
S3.3	Add a pop-up reminder when entering the cleaning page
S3.4	OLED display cleaning LOGO (OLED requires V23 version software)
	Cleaning mode increases the cleaning strength selection
	Hardware configuration page adds 3kW laser support
S3.5	Optimize the compatibility of different display models
S3.6	Optimize the system parameter storage problem
	Support for the eleven languages
	Support forcing wire and wire through the head button in welding mode
	Add boot default mode selection interface (welding / cleaning)
	The hardware configuration page adds the motor rotation angle option
	Optimization display cleaning page can jump to the SN and hardware configuration page
	Note: Version 3.5 modifications are not supported

Copyright Statement

Shenzhen Qilin Laser Application Technology Co., LTD. (hereinafter referred to as Qilin Laser) reserves all powers.

Qilin Laser has the patent copyright and intellectual property rights of this product. Without the authorization and permission of Qilin Laser, it shall not directly or indirectly copy, manufacture, process and use the product and its related parts, otherwise Qilin Laser will be investigated for relevant legal liabilities according to law.

Qilin Laser retains the right to modify the documents included in this manual without prior notice, while retaining the right to modify any documents attached to this product.

Users should read this manual carefully when using the products described in this article. Qilin Laser shall not bear the direct, indirect, special, incidental or corresponding losses or liabilities caused by the improper use of this manual or this product. Qilin Laser does not bear the following direct or indirect liabilities or losses:

- User shall improperly use this manual or this product
- The loss caused by the user does not follow the relevant safety operation procedures

The loss caused by natural force makes the machine in the movement dangerous, the user has the responsibility to design an effective error handling and safety protection mechanism in the machine, and Qilin laser has no obligation or responsibility to be responsible for the incidental or corresponding losses caused thereby.

Certification statement

The CE Certification Statement

This product has passed the European Union CE (Communate Europene) safety, certification, has passed the corresponding conformity assessment procedures and the manufacturer's declaration of conformity, in accordance with the relevant EU directives.

ROHS, the certification statement

This product has been approved by the European Union legislation on restricting the use of certain Hazardous ingredients in electronic and Electrical Equipment (Restriction of Hazardous Substances) safety certification, in accordance with the relevant environmental regulations of the European Union.

FCC Certification statement

This product has been certified by the Federal Communications Commission (Federal Communications Commission) and complies with the relevant safety regulations of American electronic products.

security information

When using the system, please ensure that the operation is correct and safe. Some signs or words will be used to remind you of dangerous matters and some important information.



danger:

Represents a serious danger. In the process of use, if the operation is improper or the use method is wrong, it may lead to serious injury or even death, please users and related personnel do not operate easily, until to ensure that the operation method and the correct way of use.



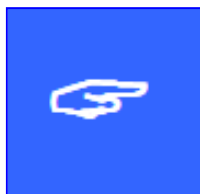
warn:

Indicates that a danger exists. In the process of use, if the operation is improper or the use method is wrong, which may cause injury to the personnel, please do not operate easily, until you ensure that the operation method is correct and the use method is correct.



prudent:

Represents a product potential risk. During use, if the use method is wrong or improper operation, the product or some parts may be damaged. Please users and related personnel do not operate easily until the operation method is correct and the use method is correct before use.

**important:**

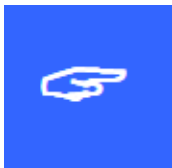
Represents an important information to note during the product. Please do not ignore this information, which provides effective operational help.



This label indicates laser radiation, which will generally be affixed to the product output of laser. Please, be careful of laser and safety when using such equipment.

Receiving goods, unpacking and inspection

The product uses shock-proof soft packaging. If the package has any external damage marks, please check the damage to the equipment and notify the carrier and the carrier of the damage in written documents.



important:

After receiving the product, please check whether the outer package is in good condition, and check whether the product is complete and all parts are intact after unpacking. If any damage is found, please contact Qilin Laser immediately.

Remove all the goods from the packaging, and keep the packaging materials and wiring spare parts. When dismantling the package and removing the goods,

Please be careful of the goods for safety. After removing the goods, please check if the parts are complete and intact. If missing parts or parts are damaged, please contact Qilin Laser immediately. If any obvious damage to the equipment, do not install or debug the equipment.

BWT 20E The delivery list of the user's manual is shown in the following table: (As the product will be updated and upgraded, the delivery list may also be adjusted.)

	component	quantity	explain
1	BWT 20E Hand-held welding torch	1	
2	E20 control box	1	
3	7-inch LCD screen (HMI)	1	
4	7-inch display cable (DB9 head)	1	
5	Plus or minus 15V power supply	1	
6	Plus or minus 15V power cord	1	

7	24V power cord	1	
8	Trigger the guide line	1	
9	DB15 + 3P air plug	1	
10	Safety clip (with clip)	1	
11	Set of wire protection box	1	
12	laser goggles	1	
13	protective glass	3	
14	caution light	1	

catalogue

Chapter 1 Overview	9
1.1 BWT 20E Qilin double swing handheld laser welding system brief introduction	10
1.2 Product installation size drawing	10
1.2.1 Touch-screen installation dimensions	10
1.2.2 Control box, and the installation size of the alarm lamp	11
1.2.3 15V switch power supply installation size	12
Chapter 2. System Wiring	13
2.1 Control box wiring	14
2.2 Structural diagram of the gun and the pipe interface	15
2.3 Power joggle	17
2.4 human-computer interface HMI	19
2.5 Laser-decoding interface	19
2.6 Double-swing handheld laser welding head connector	20
2.7 Urgent stop trigger line	20
2.8 Introduction to the fan interface	20
2.9 Control interface of the wire feeder	21
2.10 Description of the wire feeder button	22
2.11 Gas control, air pressure detection interface	22
2.12 Alarm signal interface	25
2.13 Alarm lamp interface	25
2.14 Dial switch	26
Chapter 3 HMI Introduction	27
3.1 Introduction to HMI function and operation	28
Chapter 3: Precautions	34

Chapter 1 summary

**The main contents
of this section are:**

- Double swing
- handheld laser
welding system

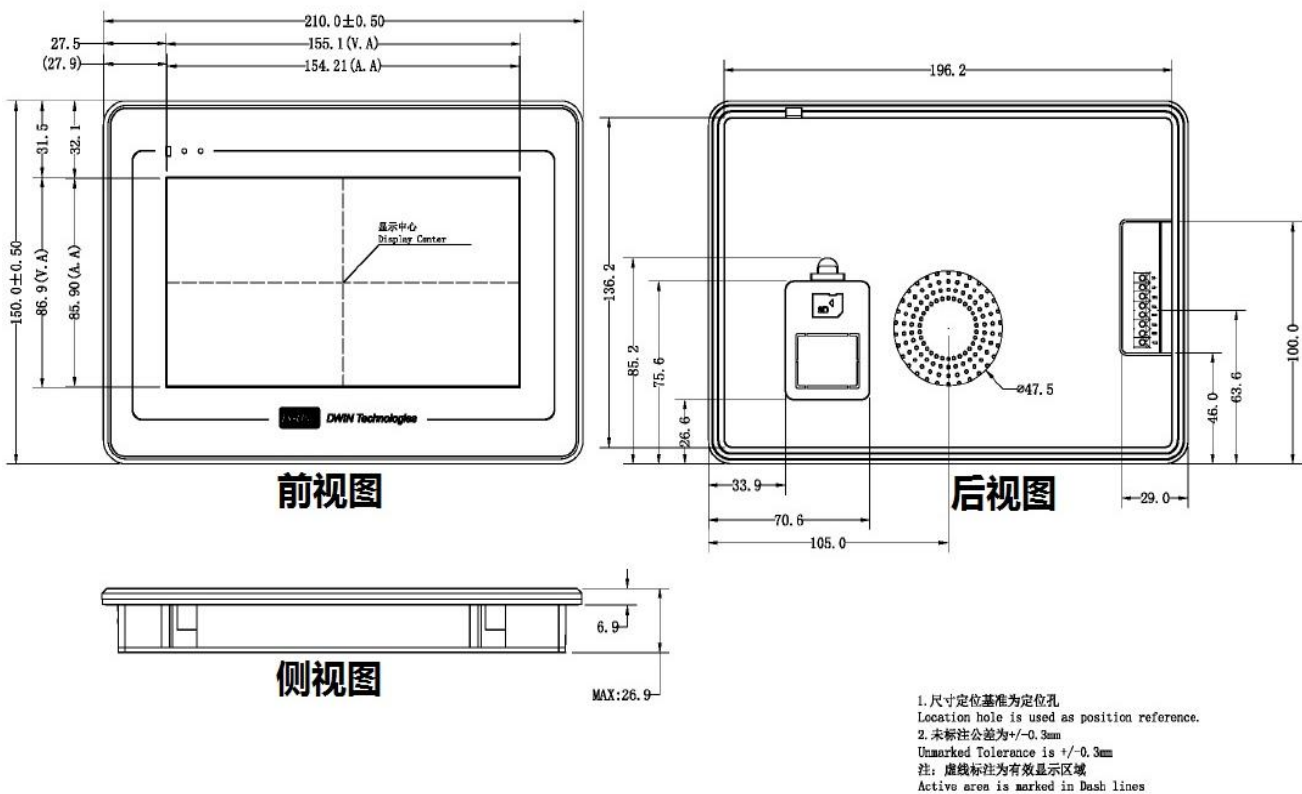
1.1 Qilin double swing handheld laser welding system brief introduction

Qilin double swing handheld laser welding system is a control system specially used for fiber laser welding developed by Qilin laser. Double vibration lens motor control, there are three swing modes: ring, rectangle, filling. Research and development of new light spot mode, to meet the multiple welding effect, to solve the industry problems, to provide more effective solutions for the vast market.

1.2 Product installation size drawing

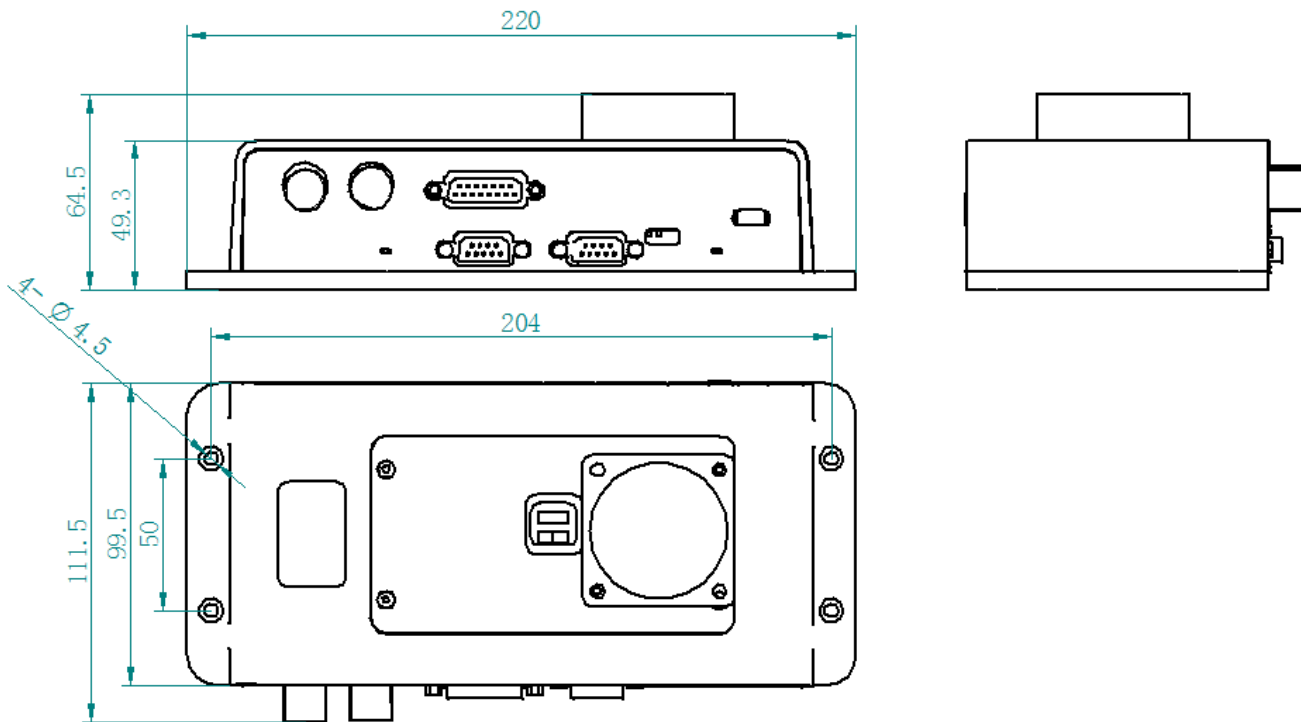
1.2.1 Touch-screen installation dimensions

The installation dimensions of the touch screen are shown below:

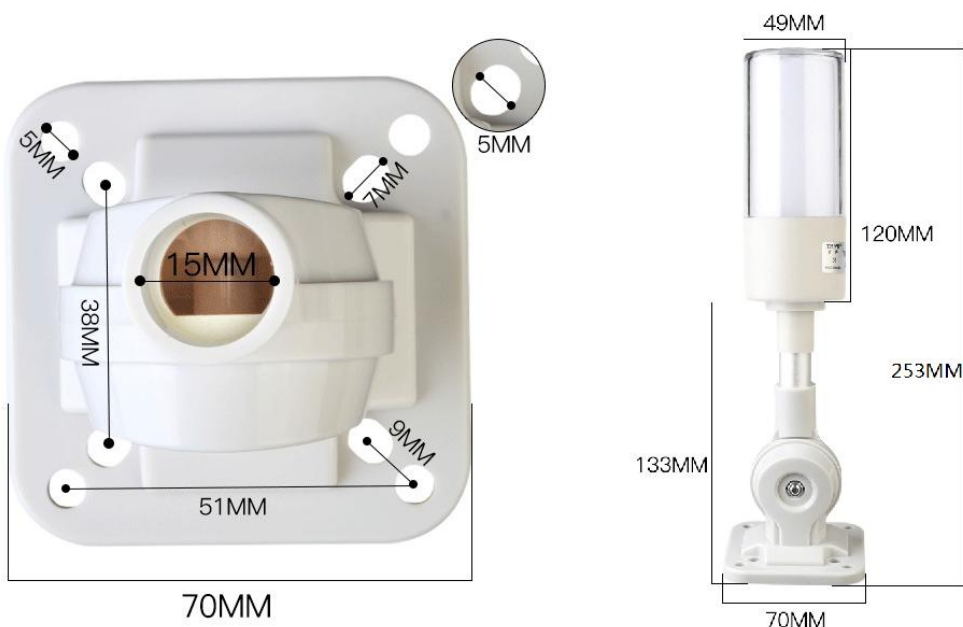


1.2.2 Control box / alarm light, mounting dimensions

The installation size of the control box is shown in the following figure



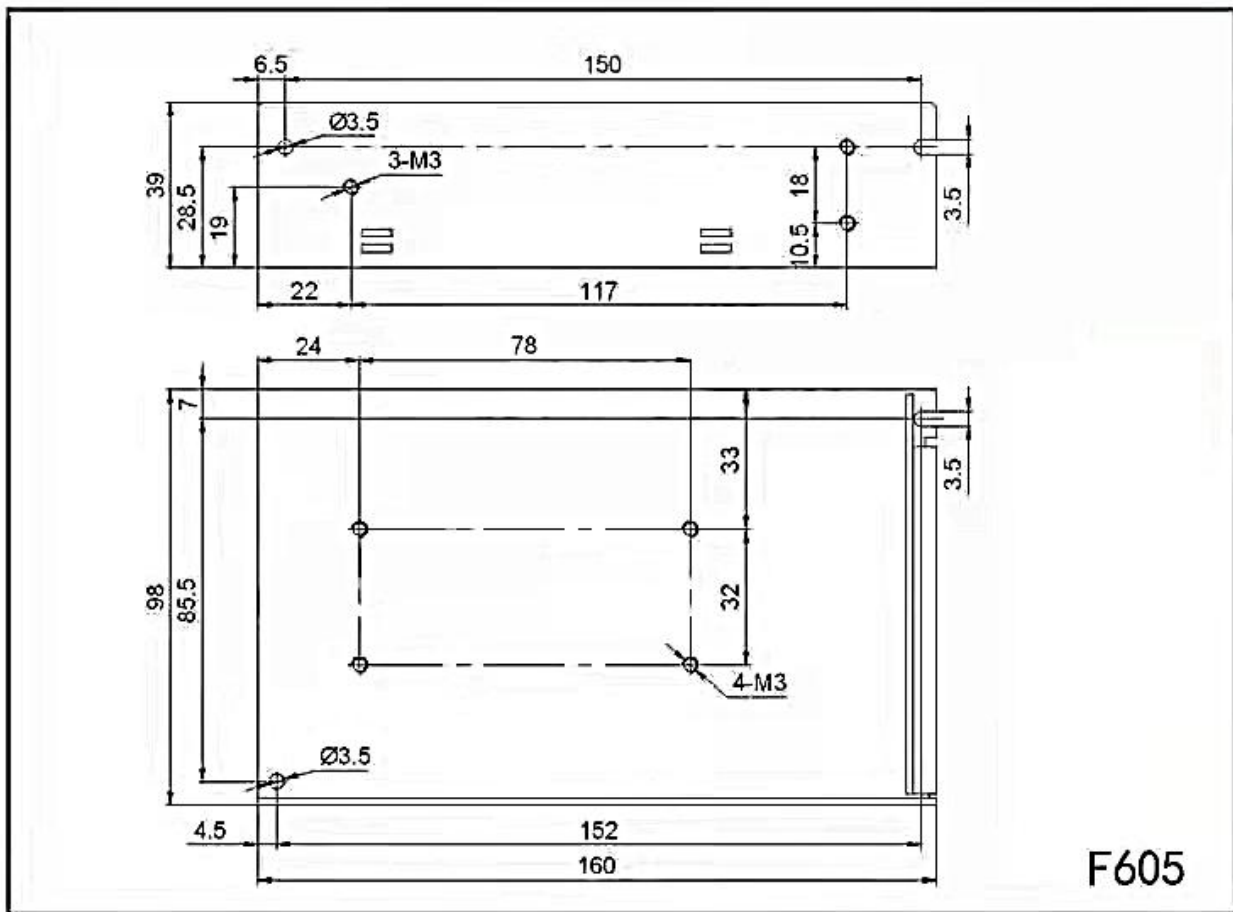
The installation size is shown in the following figure



1.2.3 Installation dimensions of 15 V switching power supply

The installation size of the 15V switching power supply is shown in the following figure

安装尺寸图



深圳

Chapter 2 System wiring

The main contents of this section are:

- Control box
- wiring
- Structural diagram of the gun and the pipe interface
- Power Hface
- HMI
- Double-swing handheld laser welding head connector
- Lead trigger line

- **Fan interface introduction**
- **Control interface of the wire feeder**
- **Gas control, air pressure detection interface**
- **Alarm signal interface**
- **Alarm lamp interface**
- **Dial switch**

2.1 Control box wiring

The following figure shows the wiring diagram of the whole system. The system wiring can refer to the schematic diagram and refer to the relevant chapter for detailed interface definition.

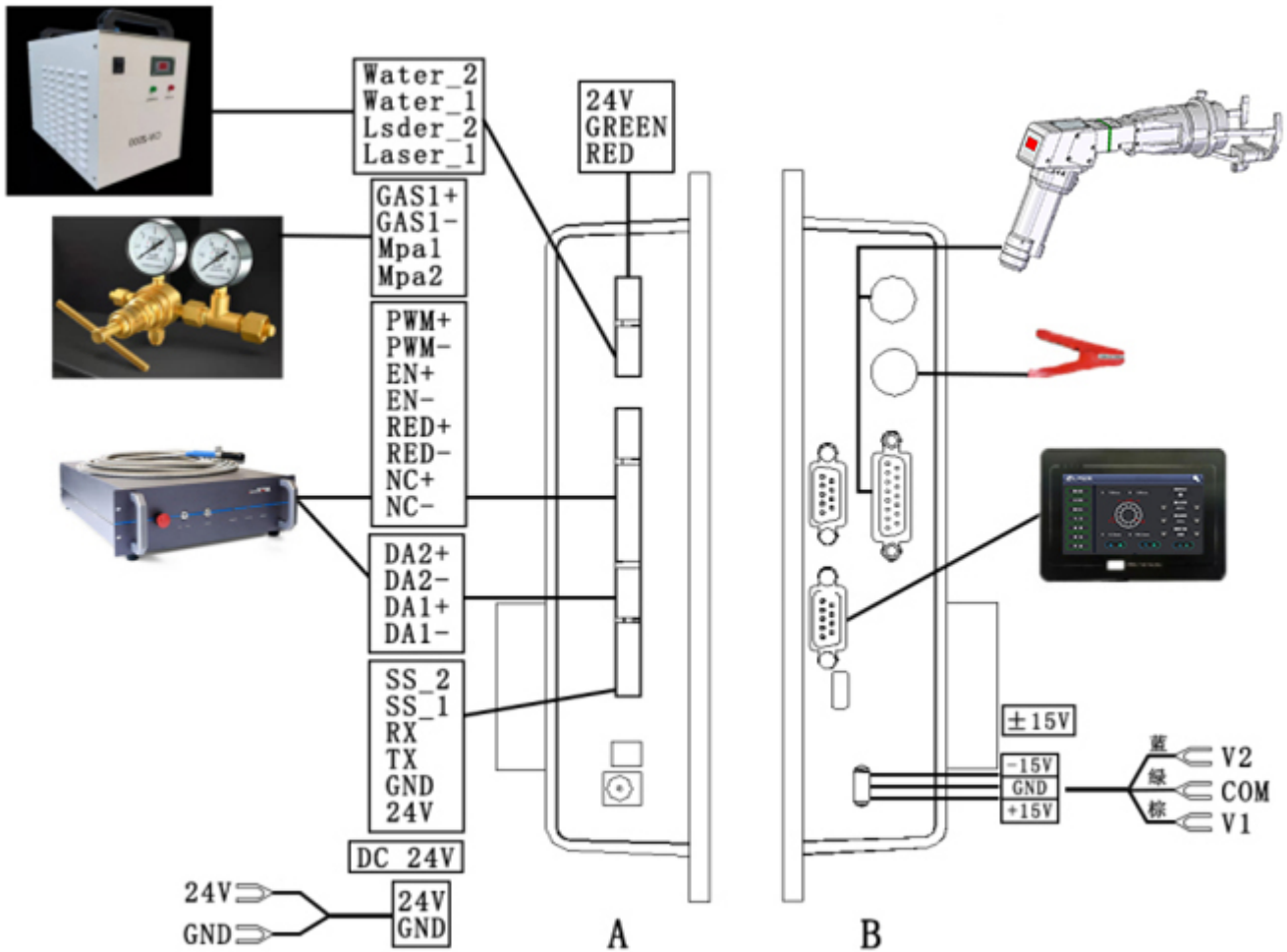


Figure 2.1 Schematic diagram of the system wiring

important:

Do not connect any instructions in the control box to other lines.

2.2 Structural diagram of the gun and the pipe interface

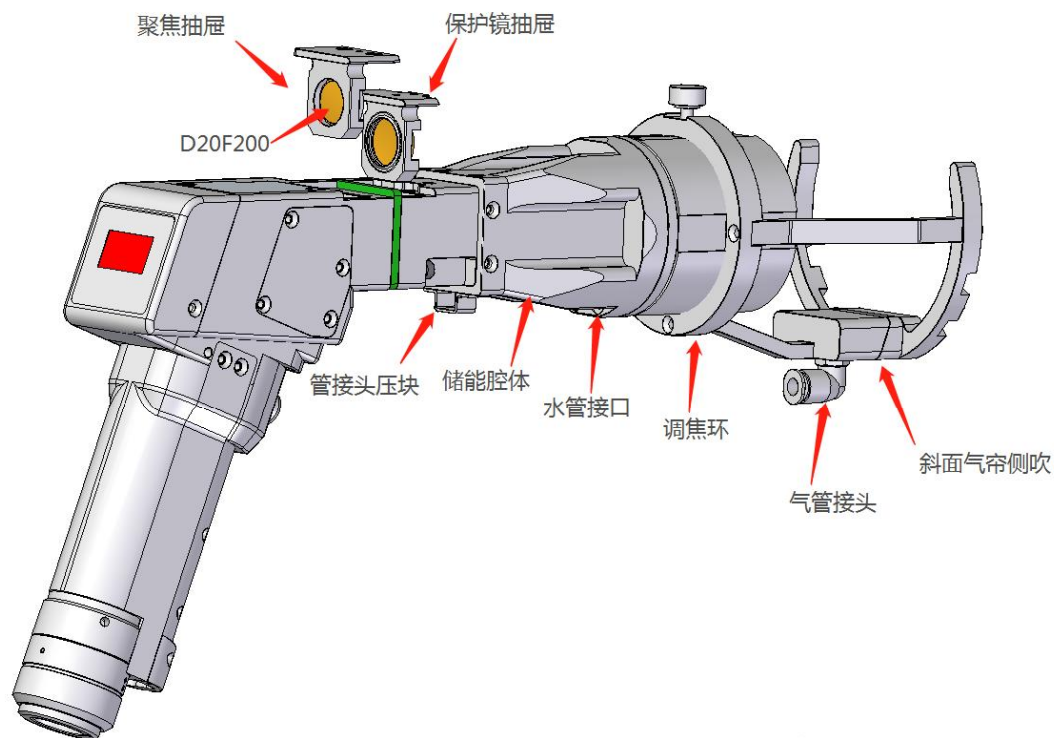


Figure 2.21 Structural diagram of the BWT20E gun

parameter	scope
interface type	QBH
laser power	2000W
Collar focal length	50
Focus focal length	200
Regulate the spot	Ring, rectangle, and fill
Adjustable surface	1-21mm
cooling-down method	hydrocooling
Applicable wavelength	1064-1080nm
Collimine lens	D20F50
Focus on the lens	D20F 200
Reflective mirror	22.5×17T3
Protection mirror specifications	D20T2
Maximum air pressure support	0.6Mpa
Focus of vertical adjustment	±10mm

range	
TBM	.51KG



Figure 2.21 Schematic diagram of gas pipe and water pipe interface

Water pipe: a water pipe in and out, forming a closed water cycle.

Tracheal: single connector, gas output.

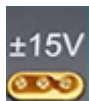
DB15 interface: connect the control system and the gun head communication function.

Samsung Air Plug: Connect the conduction and trigger signal connector.

2.3 Power joggle



graph 2.312.1 A Schematic diagram of the Power interface



+ 15V interface is the interface to provides power for the motor drive inside the control box, the voltage is positive or minus 15V (+ 15V),

Table 2.31 shows the definition of the + 15V interface power line

Table 2.31

pin	signal	defi niti on	expl ain
1	V1	Power supply input is positive at 15V	+ 15 External power input, external power output The current is greater than 2A
2	COM	Power reference	Power to
3	V2	Power supply input is negative for 15V	-15 External power supply input, external power supply output The current is greater than 2A

The DC24V interface is the interface for providing the power supply for the internal control system of the control box. The DC voltage is 24V (DC24V)



Table 2.32 defines the wiring of the POWER 2 power cord

Figure 2.32 shows the schematic diagram of the POWER 2 power supply line



Table 2.32 shows the definition of the + 24V interface power line.

Table 2.32

pin	signal	definition	explain
1	24V	power input	+ 24V external power supply input, the output power requirements of the power supply: above 200W, that is, the output current is greater than 8A (wire supply for mechanical and electrical demand)
2	COM	Power reference	Power to

2.4 human-computer interface HMI

The HMI interface is a DB9 black plug through which the motherboard supplies and communicates to the HMI,



pin	signal	definition	explain
1	24V	Power supply output, 500 mA	HMI supply electricity
2	GND	Power supply output ground	Power reference
3	T XD	The sender of the HMI	Serial port communication with the TXD signal
4	RXD	The receiving end of the HMI	Serial port communication RXD signal

2.5, the laser decoding interface



LASER RS232 The interface is the board card and the laser communication port.

pin	signal	definition	explain
-----	--------	------------	---------

1	DB 9 (public)	Laser and board card communication interface	TBD
---	------------------	---	-----

2.6 Double swing handheld laser welding head interface

The motherboard provides a vibrating scope interface, compatible with the common digital lens interface on the market,

Table 2.6 shows the definition of the vibration scope interface.

Table 2.6

pin	signal	defi niti on	expl ain
1	DB15	Vibrator scope & OLED interface	Control line for communication with the hand-held welding head

2.7 Lead the trigger line

The control box provides a special security trigger signal line interface, which can provide a security guarantee for the operation.

Table 2.7 defines for the safety clip interface.



Table 2.7

pin	signal	definition	explain
1	CF	trigger signal	The light condition is triggered
2	DT	Guide communication number	The light condition are achieved when on

2.8 Introduction of the fan interface

The control box provides a dedicated 24V fan port interface position, independent socket, not easy to insert wrong.



Figure 2.8 Schematic diagram of the fan interface

2.9 Control interface of the wire feeder

The control box provides a special communication interface for the control wire feeder, and the 24V power supply is directly connected to the power input end of the control box and can be provided

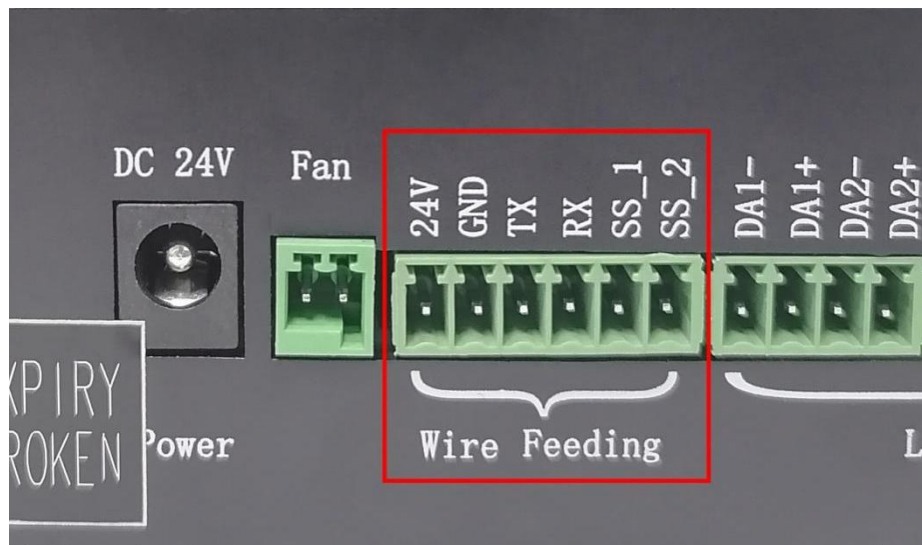


Figure 2.9 Schematic diagram of the control interface of the wire feeder

Table 2.9

pin	signal	definition	explain
1	24V	Power supply output end of wire feeder	Wfeeder 24V + power interface
2	GND	GND	GND
3	TX	Silk feeder and board card communication port	TX signal (for BWT20S)
4	RX	Silk feeder and board card communication port	Wfeeder and control system communication RX signal (for BWT20S)
5	SS_1	Wfeeder trigger signal 1	When short circuit SS_1 and SS_2
6	SS_2	Wfeeder trigger signal 2	When short circuit SS_1 and SS_2

2.11 Laser control interface

The laser interface is an 8 PIN, green terminal + 4 PIN green terminal

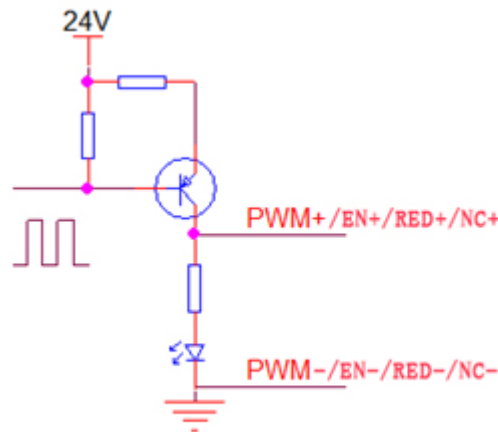


Figure 2.11 Schematic diagram of the laser control interface

Table 2.11 shows the definition of the laser interface.

Table 2.11

pin	signal	definition	explain
1	PWM+	Laser-modulation signal +	Duty cycle 1% -100% adjustable, 24V and 5V switchable
2	PWM-	Laser Modulated signal-	Reference to the power source
3	EN+	Laser enabling signal +	Control laser light signal, high level effective, 24V and 5V can be switched
4	EN-	Laser-enabling signal-	Reference to the power source
5	RED+	Laser red light signal	Laser red light control (optional)
6	RED-	GND	Reference to the power source
7	NC+	The laser enables the backup port	Laser 24V backup port
8	NC-	Laser backup port ground	Reference to the power source

9	DA 1+	Analog voltage output +	For laser peak power regulation, 0-10V and 0-4V analog voltage selection
10	DA 1-	Analog voltage output-	Reference to the power source
11	DA 2+	Analog voltage output	For proportional valve adjustment, 0-10V analog voltage,
12	DA 2-	GND	Reference to the power source

2.12 Gas control and air pressure detection interface

The control box provides a dedicated IO interface, all output IO are using OC output can directly drive the relay, the maximum current can reach

500 mA, the wiring diagram is shown below.



Figure 2.121 Schematic diagram of the gas control interface

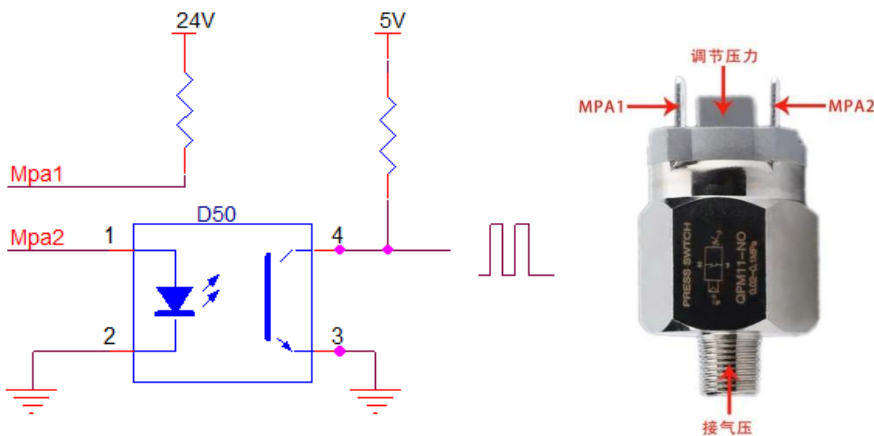


Figure 2.122 Schematic diagram of the air pressure detection interface

Table 2.12 defines the gas control interface

Table 2.12

pin	signal	definition	explain
1	CAS 1+	Used to protect the gas blowing control positive electrode	Air valve + board card GAS 1 +
2	CAS 1-	Used to protect the gas to blow the gas to control the negative electrode	Valvalve-board card GAS 1-
3	Mpa1	Used to detect the air pressure alarm	Air pressure alarm + connecting plate Mpa 1
4	Mpa2	Used to detect the air pressure alarm	Air pressure alarm + connecting plate Mpa 2

2.13 Alarm signal interface

Laser1 And 2 are the laser alarm signal interface, not on the green light, on the red light.

Water1 And 2 are the alarm signal interface of chiller, red light.

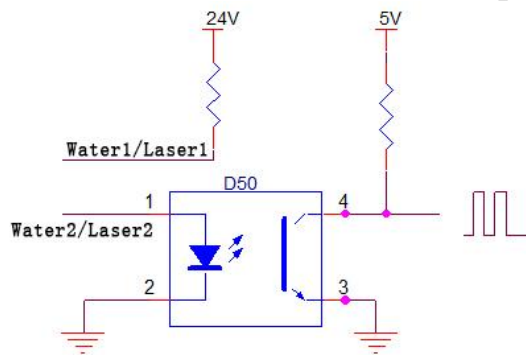


Fig. 2.13, Schematic diagram of the alarm signal interface

Table 2.13 is the definition of the alarm signal.

Table 2.13

pin	signal	definition	explain
1	Laser_1	Laser device alarm signal	Short contact during the laser

			alarm
2	Laser_2	GND	Laser alarm signal ground
3	Water_1	Chiller machine alarm signal	When the chiller alarms, open and break
4	Water_2	GND	Cold water machine alarm

2.14 Alarm lamp interface

When the RED has voltage, the alarm light is red.

When the alarm is removed, the GREEN has a voltage, and the alarm light is green.

Table 2.14 is the definition of the alarm signal light.

Table 2.14

pin	signal	definition	explain
1	24V	Power supply output end of the alarm signal lamp	Connect to the power supply terminal of the alarm signal lamp
2	GREEN	Alarm signal light-green light	Connect the alarm signal light
3	RED	Alarm signal light-red light	Connect the alarm signal light red

2.15, the dial-code switch

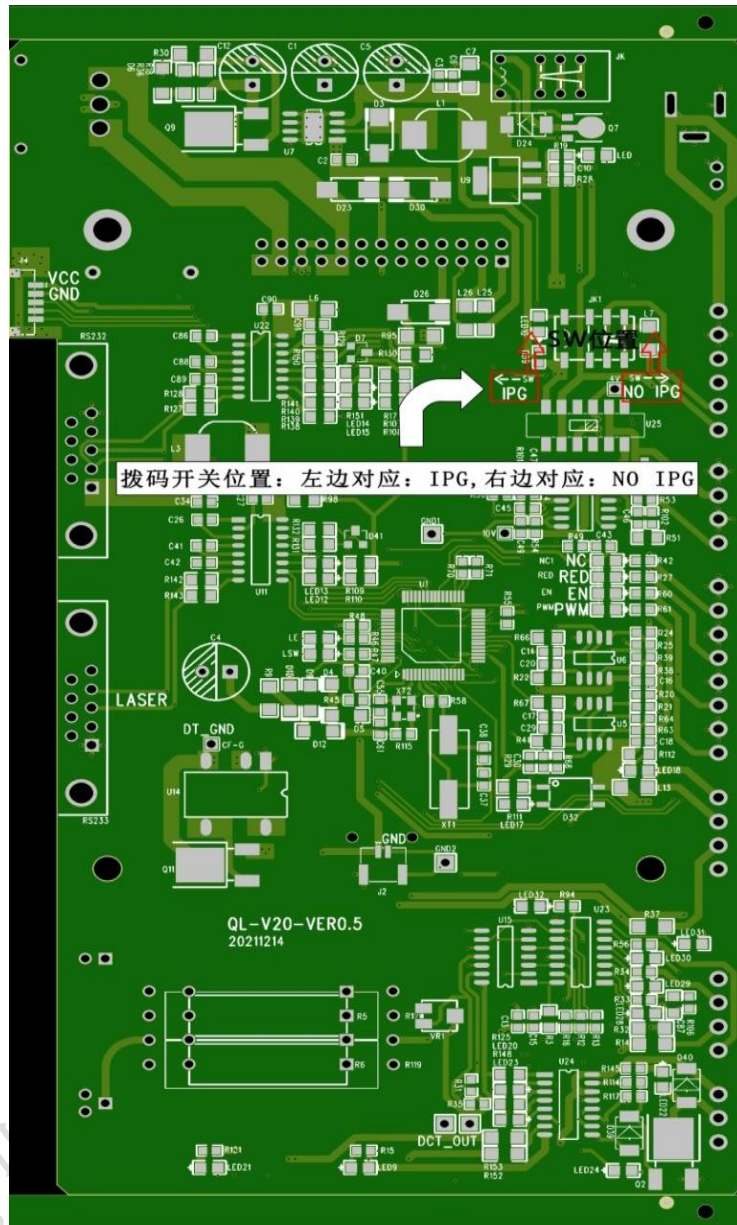


Figure 2.15, schematic diagram of dial switch

order number	characteristic	definition	explain
1	IPG	Laser control signal	PWM, EN, RED, NC output 5V Power adjustment: 0-4V analog voltage adjustable section
2	NO IPG	Laser control signal	PWM, EN, RED, NC output of 24V

			Power adjustment: analog voltage adjustable section 0- 10V
--	--	--	--

Chapter 3 Human-machine

interface HMI introduction

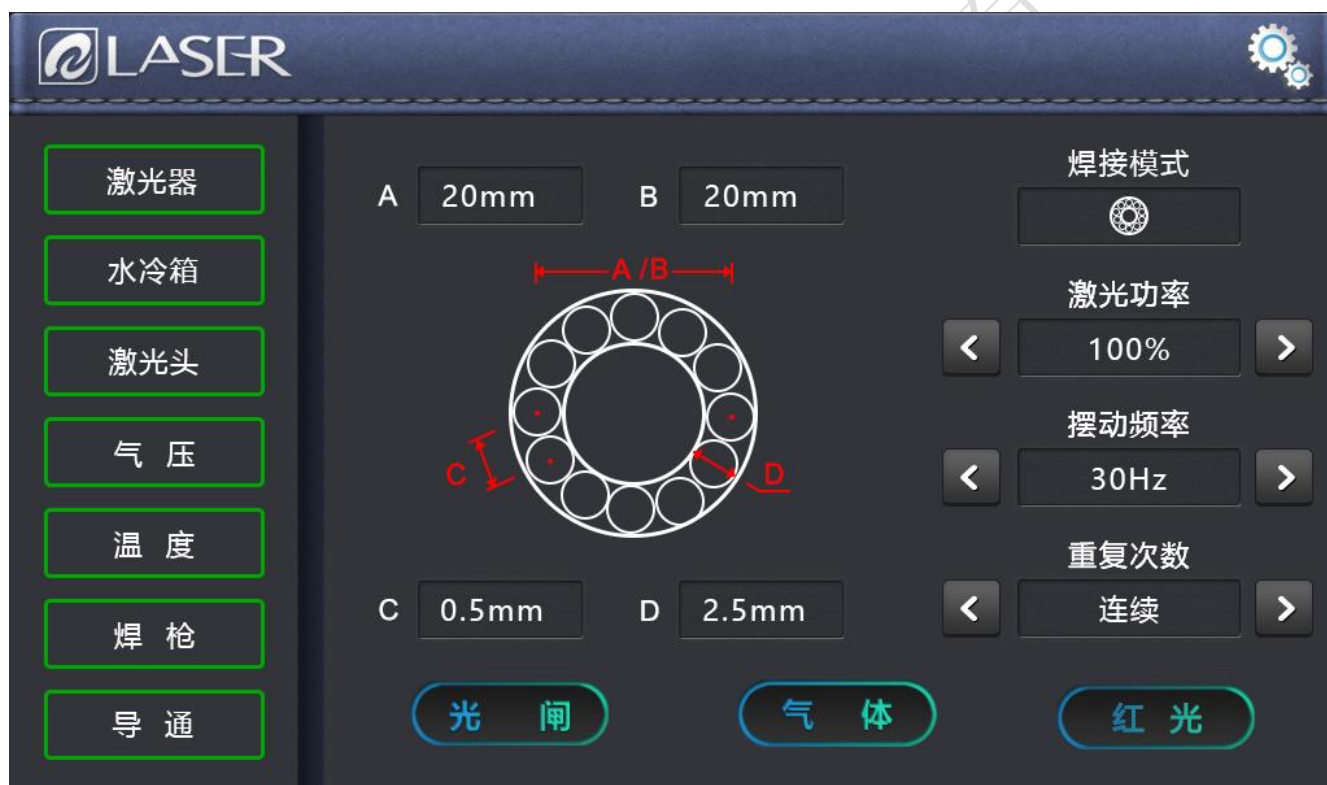
The main contents of this section are:

- Human-machine interface
function and operation
introduction

3.1 Human-machine interface function and operation introduction

Introduction of the main interface function and operation

The operating panel of Qilin double swing handheld laser welding system adopts 7-inch configuration capacitive touch screen, which is dignified, generous and easy to operate. The relevant parameters of laser and laser swing head can be set respectively, and the light mode can also be controlled to realize multi-functional welding.



3.1 Schematic diagram of the main interface 1

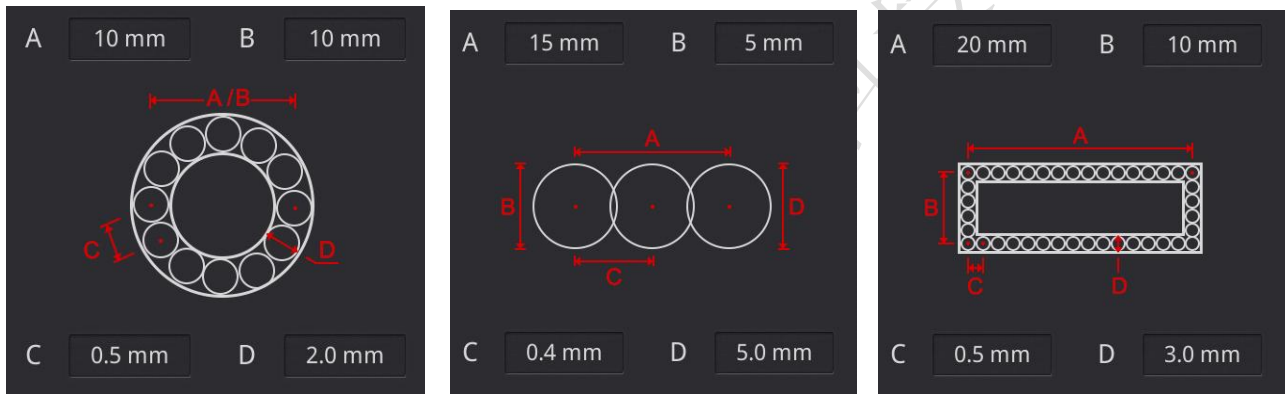
Light lock: the light switch is open to the normal light.

Gas: When the gas opens, the gas valve port will output 24V voltage, no need to open the gas, welding will automatically blow.

Red light: open the red light preview, you can preview the welding position in advance, to achieve the effect of adjusting the position in advance before welding.

Alarm signal light: provide real-time monitoring and reminder, monitor and alarm the temperature of laser head, air pressure, welding torch, conduction and handle. The full alarm state is displayed synchronously on the main screen and alarm light to remind users and quickly check problems.

Welding mode: ring, rectangle, filling welding mode.



AB: Diameter of the center of the circular ring mode A: diameter of the center of the filled mode A: diameter of the center of the rectangular mode
 C: Space between the outer ring circle BD: diameter of the outer ring circle B: diameter of the central point of the outer ring in the rectangular mode
 D: Diameter of the outer ring circle C: spacing between the outer ring circle C: spacing between the outer ring circle and the circle
 D: Diameter of the outer ring circle

Laser power: Set the peak power of the laser at welding.

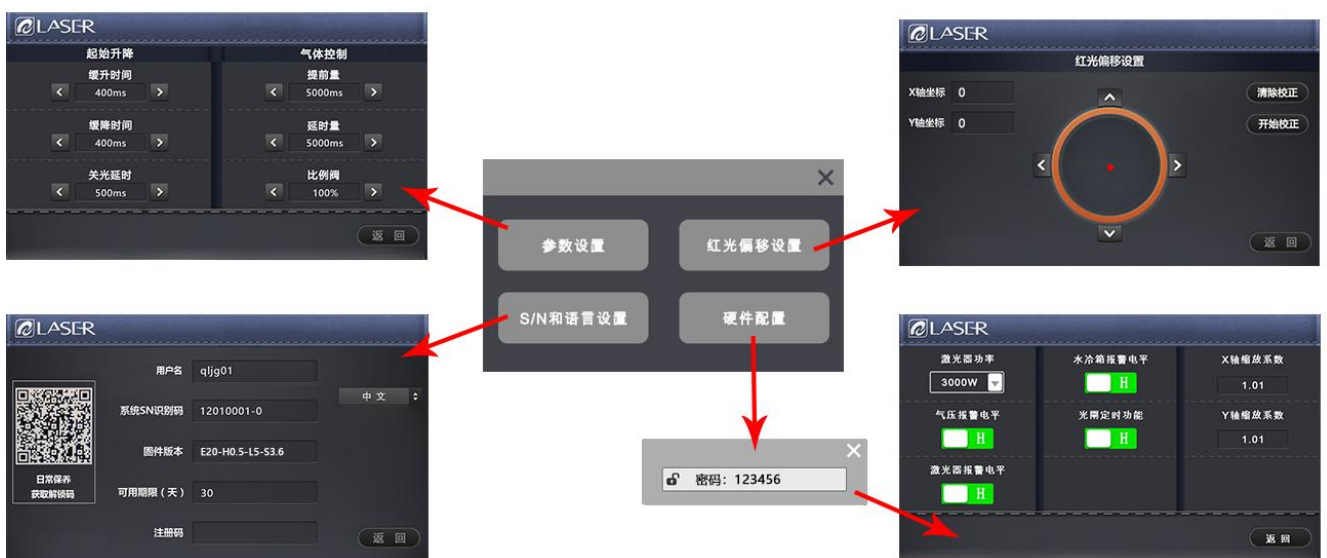
Swing frequency: set the swing frequency of the outer ring, the faster the

frequency, the faster the running speed.

Repeat times: can set 1-9 welding times, can also set continuous welding,



Press the " " on the main interface to enter the setting interface, as shown in the figure below



parameter setting:

Start lift:

Slow rise time: the laser power slowly reaches the peak power after the set slow rise time.

Slow descent time: After the laser power is turned off, the laser energy is slowly turned off.

Light off delay: When the laser is closed for 100ms, there is a full power input of 100ms to optimize the wire breaking function.

gas control:

Advance quantity: when starting processing, it can be set.

When the external start button is pressed, the air blow delays for a period of time, and then the laser starts.

Delency: When stopping processing, the delay gas can be set. When the processing is stopped, the laser output is stopped first,

After a time delay, then stop blowing.

Proportional valve: if the equipment has a proportional valve, it can control the size of the gas.

Red light offset setting:

Red light offset setting: When the red light is not in the central position of the nozzle, it can be adjusted through the red light offset setting position of X and Y coordinates.

Start correction: save the set offset parameters to the system and zero the display coordinates.

Clear correction: Clear the set offset parameters and reset the display coordinates.

SN and language settings:

System SN identification code: Product Serial number.

Firmware version: is the version currently used by the system.

Available period (days): usable period, all functions are invalid after expiration. (Automatic reminder within 7 days)

Registration code: used for decryption. After receiving the registration code, enter and click confirm to decrypt.

Language: English, Russian, Korean, Vietnamese, Japanese, Chinese

hardware configuration:

Password: 123456.

Laser power: The laser power used can be selected to retrieve the process package of this laser.

Alarm point level conversion: can choose high and low level to remove the laser, chiller and air pressure alarm.

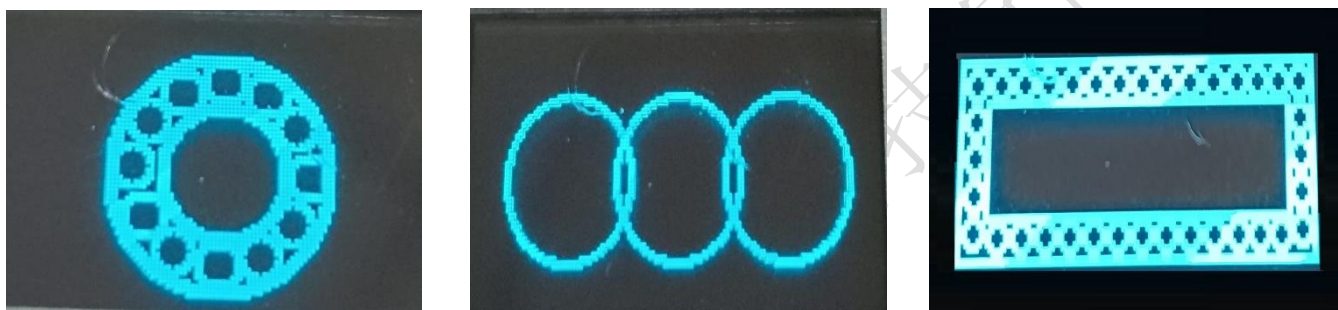
Optical lock timing function: After opening this function, the optical lock will automatically close for 15 minutes without operation. Closing this

function requires you to manually close the optical lock.

X-axis zoom coefficient: the knob can set the motor swing X-axis zoom coefficient, adjust the size of the figure, the range of 0.5-1.5 times adjustable;

Y-axis zoom coefficient: the knob can set the motor swing X-axis zoom coefficient, adjust the size of the figure, the range of 0.5-1.5 times adjustable;

3.2.2 Introduction of OLED display interface



Ring mode, fill mode, rectangular mode

Ring mode: Round spots are welded in a ring shape.

Fill mode: Fill welding with circular spot.

Rectangular mode: Round spots are welded in a rectangular shape.

Process Package of Reference Parameters:

1500W laser control										
order number	Material and thickness	Welding mode	laser power	hunting frequency	number of replication	A	B	C	D	gas pressure
1	Stainless Steel 1.0	Ring, fill, rectangle	35%	16hz	2	10	10	0.4	1.5	0.3Mpa
	Stainless Steel 1.5	Ring, fill, rectangle	50%	14hz	2	10	10	0.3	1.5	0.3Mpa
	Stainless Steel 2.0	Ring, fill, rectangle	67%	10hz	2	10	10	0.3	2	0.3Mpa
	Stainless Steel 2.5	Ring, fill, rectangle	75%	8hz	2	10	10	0.3	2	0.4Mpa
	Stainless Steel 3.0	Ring, fill, rectangle	85%	6hz	2	10	10	0.2	2.5	0.4Mpa
	Stainless Steel 3.5	Ring, fill, rectangle	95%	6hz	2	10	10	0.2	2.5	0.4Mpa
2	Carbon steel 1.0	Ring, fill, rectangle	35%	16hz	2	10	10	0.4	1.5	0.3Mpa
	Carbon steel 1.5	Ring, fill, rectangle	50%	14hz	2	10	10	0.3	1.5	0.3Mpa
	Carbon steel 2.0	Ring, fill, rectangle	67%	10hz	2	10	10	0.3	2	0.3Mpa
	Carbon steel 2.5	Ring, fill, rectangle	75%	8hz	2	10	10	0.3	2	0.4Mpa
	Carbon steel 3.0	Ring, fill, rectangle	85%	6hz	2	10	10	0.2	2.5	0.4Mpa
	Carbon steel 3.5	Ring, fill, rectangle	95%	6hz	2	10	10	0.2	2.5	0.4Mpa

3	Galvanized plate 1.0	Ring, fill, rectangle	35%	16hz	2	10	10	0.4	1.5	0.35Mpa
	Galvanized plate 1.5	Ring, fill, rectangle	50%	14hz	2	10	10	0.3	1.5	0.35Mpa
	Galvanized plate 2.0	Ring, fill, rectangle	67%	10hz	2	10	10	0.3	2	0.35Mpa
	Galvanized plate 2.5	Ring, fill, rectangle	75%	8hz	2	10	10	0.3	2	0.45Mpa
	Galvanized plate 3.0	Ring, fill, rectangle	85%	6hz	2	10	10	0.2	2.5	0.45Mpa
	Galvanized plate 3.5	Ring, fill, rectangle	95%	6hz	2	10	10	0.2	2.5	0.45Mpa
4	Aluminum plate 1.0	Ring, fill, rectangle	40%	16hz	2	10	10	0.4	1.5	0.2Mpa
	Aluminum plate 1.5	Ring, fill, rectangle	55%	14hz	2	10	10	0.3	1.5	0.2Mpa
	Aluminum board 2.0	Ring, fill, rectangle	72%	10hz	2	10	10	0.3	2	0.2Mpa
	Aluminum board 2.5	Ring, fill, rectangle	80%	8hz	2	10	10	0.3	2	0.2Mpa
	Aluminum board 3.0	Ring, fill, rectangle	90%	6hz	2	10	10	0.2	2.5	0.2Mpa
	Aluminum board 3.5	Ring, fill, rectangle	98%	6hz	2	10	10	0.2	2.5	0.2Mpa
The above parameters are provided for your reference only										

Description: For different lasers, other parameters in the process package parameters remain unchanged, only the power modification, can be set according to this formula:

When selecting 1000W laser: $P(1000W \text{ laser}) = P(1500W \text{ laser}) * (1000 / 1500)$

When selecting 2000W laser: $P(2000W \text{ laser}) = P(1500W \text{ laser}) * (2000 / 1500)$

Use the laser welding system precautions

1. The handheld double pendulum welding head includes multiple control modules of laser, water cooler, laser welding system and laser welding head. In order to avoid interference, the argon arc welding machine and related equipment with large interference can ensure that the safe distance is kept at more than 5 meters. Ensure that the laser welding machine has independent space when conditions permit.
2. In order to reduce leakage or static equipment, ensure that the handheld double pendulum welding head equipment uses effective earth wire.
3. Please repeatedly confirm whether the cable joint is connected and locked normally. After locking, it can be wrapped with insulation tape.
4. Check whether the laser head and the optical fiber are locked and connected. After confirming that it is normal, the beautiful strip tape can be sealed and wound to ensure that the dust does not enter the laser head cavity.
5. Check whether there is water seepage in the cavity and many waterways in the cavity. Do not loosen screws without professional training to prevent water droplets from entering the cavity.
6. Check whether the protective lens drawer is normal, ensure that the sealing ring is normal and effective, when replacing the protective lens, ensure that the alcohol wipes the external stains of the laser head, at least 5 times, and ensure that the lens environment is clean and clean before the lens is replaced.
7. The laser head is so complex. To avoid short circuit, stay away from the water

source and make sure that no liquid can be sprayed on the laser head.

8. Laser head refuses to use strong wind to blow and clean the laser head, and can only be wiped with alcohol and dust-free cloth.

9. The laser head is installed with a digital motor. When used, it must be put gently to prevent motor failure.

10. When the laser head is not used, please use the system gas blowing air for many times to discharge the dust, and remove the copper nozzle, use the sealing tape to seal, and use the copper nozzle to blow air more than 2 times before using.

11. Continuous interruption of power supply will cause damage to the welding control system. 24V power supply should provide 200W (power voltage 24V, output current is equal to or greater than 8A)!

12. The external safety lock is 24V high level, do not short connect with the aviation plug GND shell of the system cable, or do not pay attention to collide with each other when installing, otherwise the short circuit may burn the power supply or the main control board.

Quality assurance description:

The warranty period of this product is 12 months, starting from the date of factory. If the product is faulty during the warranty period, it can be sent back

Our company, free maintenance, free of labor costs. All lens categories (e. g. collimated lens, focusing lens, mirror, cover

Protection lens, motor lens, etc.), exterior parts (cavity and handle, etc.) and consumables (stainless steel pipe, welding fixture, etc

Wwastage) is not in the warranty scope.



All parts of this description, the property right of the book belongs to Shenzhen Qilin Laser Application Technology Co., LTD. Without the permission of the Company, any unit or individual shall not reprint, copy or spread the relevant content of this product description, if the content information of this product will be changed without notice.

If you have any comments or suggestions on the product and instructions during use, please call for consultation. Tel.:

18018735163

Fax: 0755-27999931

Address: Building 8, Fanmao Industrial Zone, Shuiyin Road,
Gongming Street, Guangming District, Shenzhen

Thank you for using the products of Shenzhen Qilin Laser Application Technology Co., LTD.!