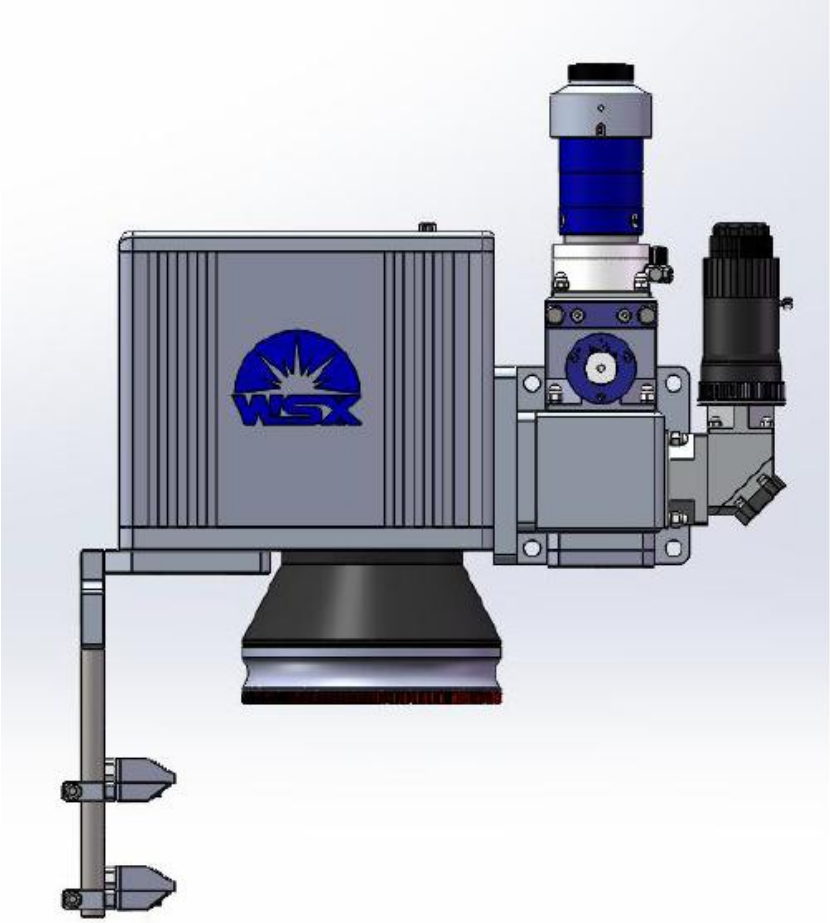
# Galvanometer Welding Head
# ND29



## Guide book

Shenzhen Worthing Technology Co., Ltd.

Please read this manual carefully and make sure you understand its contents before using the laser head.


Keep the eyes or skins from being directly shot or scattered by laser. Do not look directly into the laser beam even if wearing eye protecting equipment. Please wear the goggles which meet the standard of DIN EN 207 & BGV B2.


During maintenance and repair, do not put hands or any other body parts under the laser head or forward direction of the moving axis!


The residual temperature after welding may cause scald!


Laser head is a precision product, do not hit it!

# Product: Galvanometer Welding Head

# Model:ND29

## Product features:

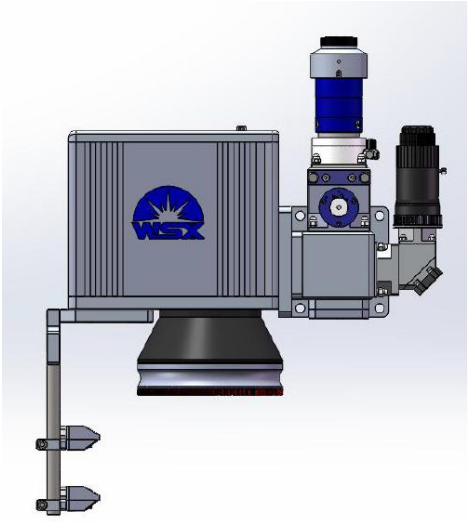
This welding head has the advantages of fast welding speed and high precision, and has high production efficiency in multi-point welding.

The laser head uses the motor driven X, Y-axis vibration lens, focusing through the F-THETA focusing lens group, with a variety of swing modes, which can significantly improve the welding quality.

The internal structure of the welding head is completely sealed to avoid dust pollution of the optical part.

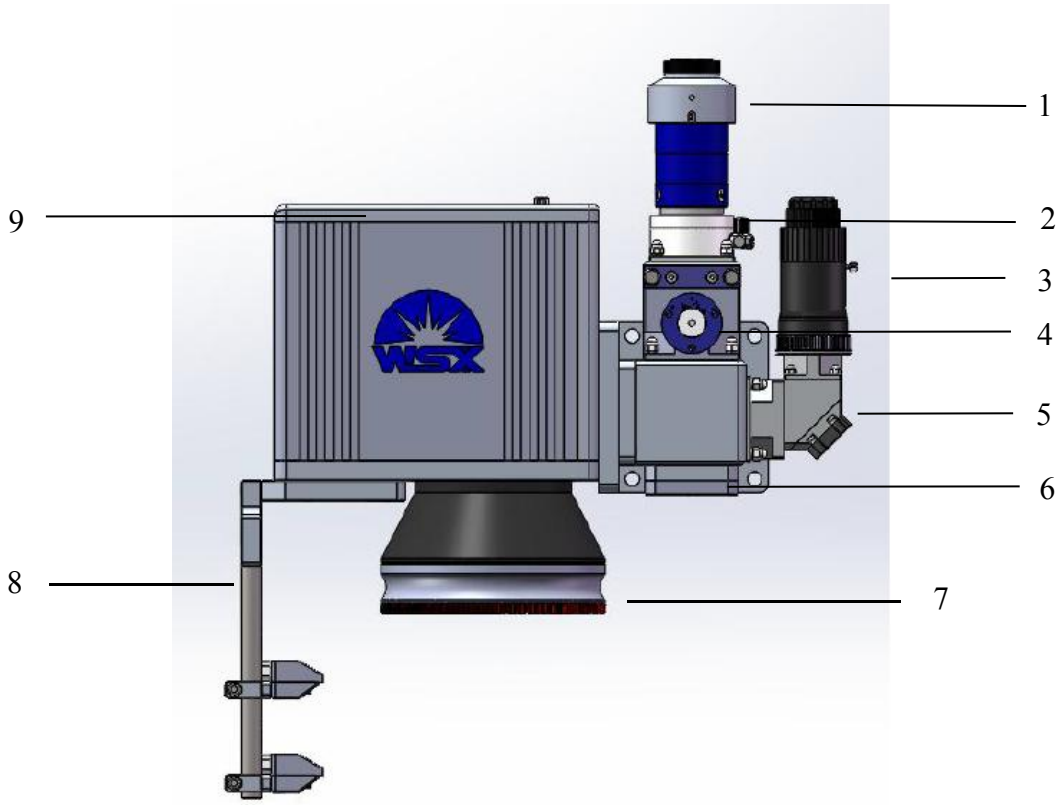
Equipped with air curtain parts to reduce the pollution of welding dust and splashing residue to the lens.

Fits for various laser source with QBH connector.



# 1. Product description

## 1.1Product structure

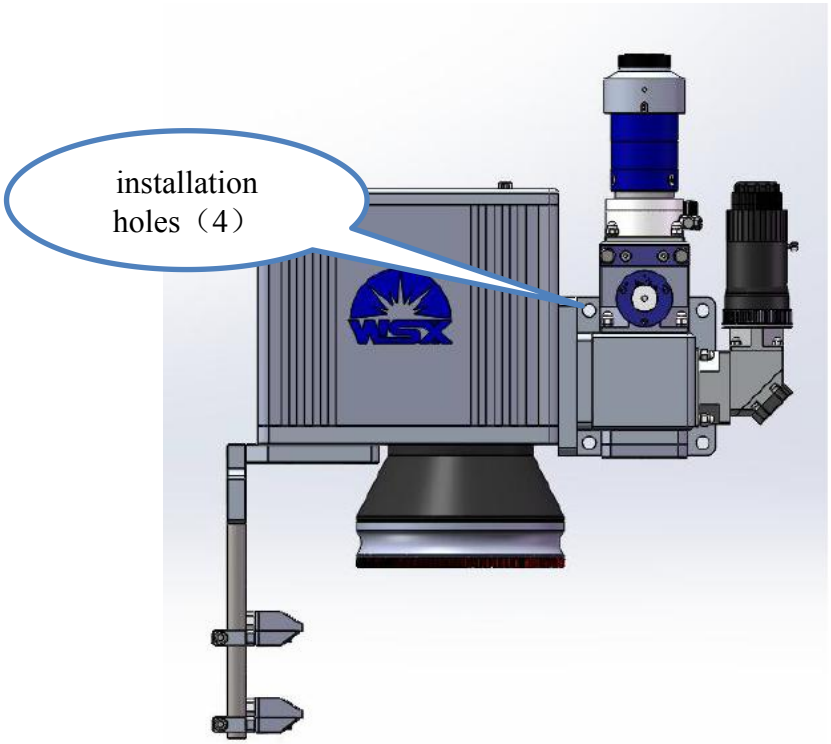


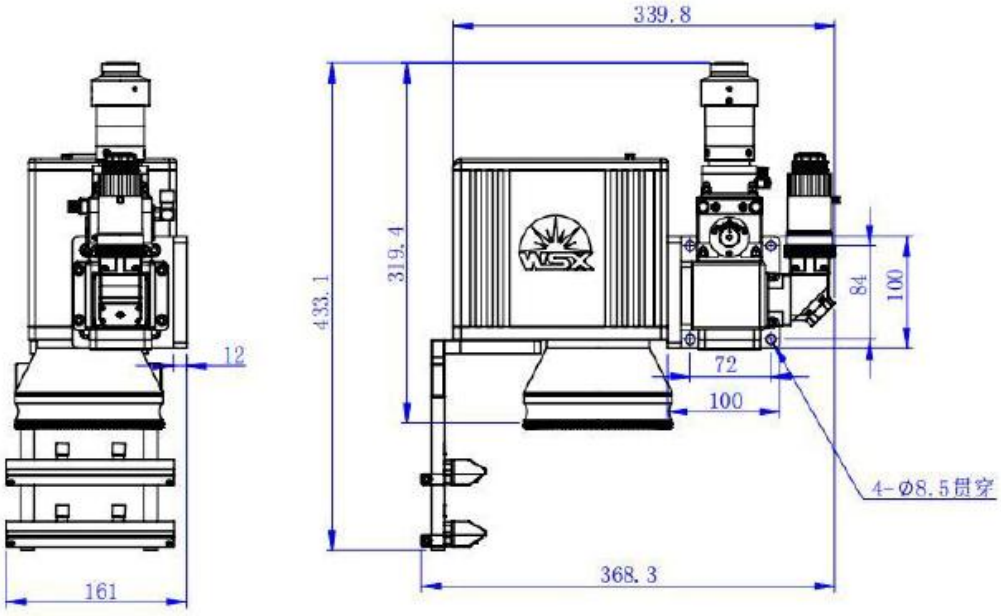

| No | part |
|---|---|
| 1 | QBH |
| 2 | Water cooling assembly |
| 3 | CCD assembly |
| 4 | Collimation component |
| 5 | CCD reflection component |
| 6 | Collimation reflection component |
| 7 | Field lens |
| 8 | Wind blade component |
| 9 | Galvanometer component |

2. Technical parameters

| | Parameter |
|---|---|
| Power/W（max） | 2000 |
| Collimation length/mm | 100/150 |
| Focus length/mm | 254 |
| Scan range/mm | 130x130 |
| Weight/kg | 7.9 |

3. Installation and drawing

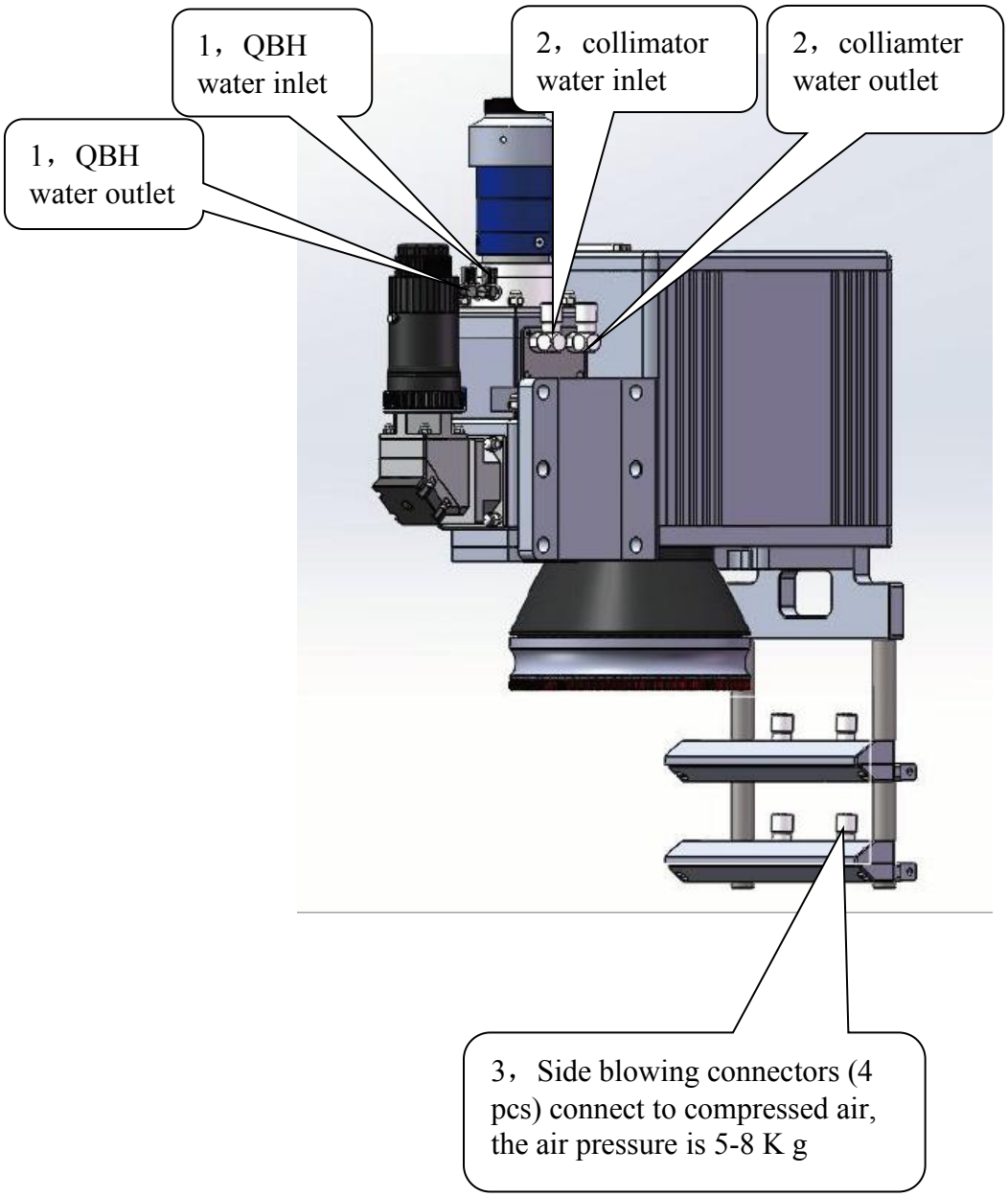



The laser head shall be installed firmly and reliably.
The angle of the laser head in the vertical direction can be set according to the customer requirements.

4. Water and gas connection

diagram of water & air pipe connection



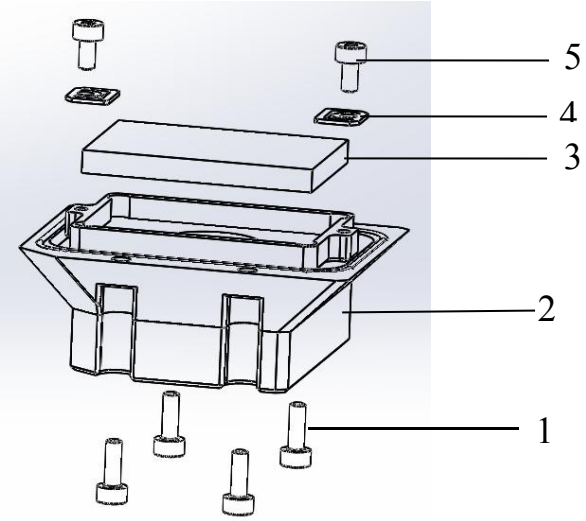

## Note:

1，For 1~2 the water pipe is Φ6mm, the water pressure is above 0.4MPa

2，3 is air pipe Φ6mm

3，Please keep the bending radius of the connected pipeline not less than 30mm.

## 5. Maintenance of the CCD reflection component




1, M2-6 hexagonal screw
2, Mirror tray holder
3, Mirror
4, Buckle
5, M2-4 hexagonal screw

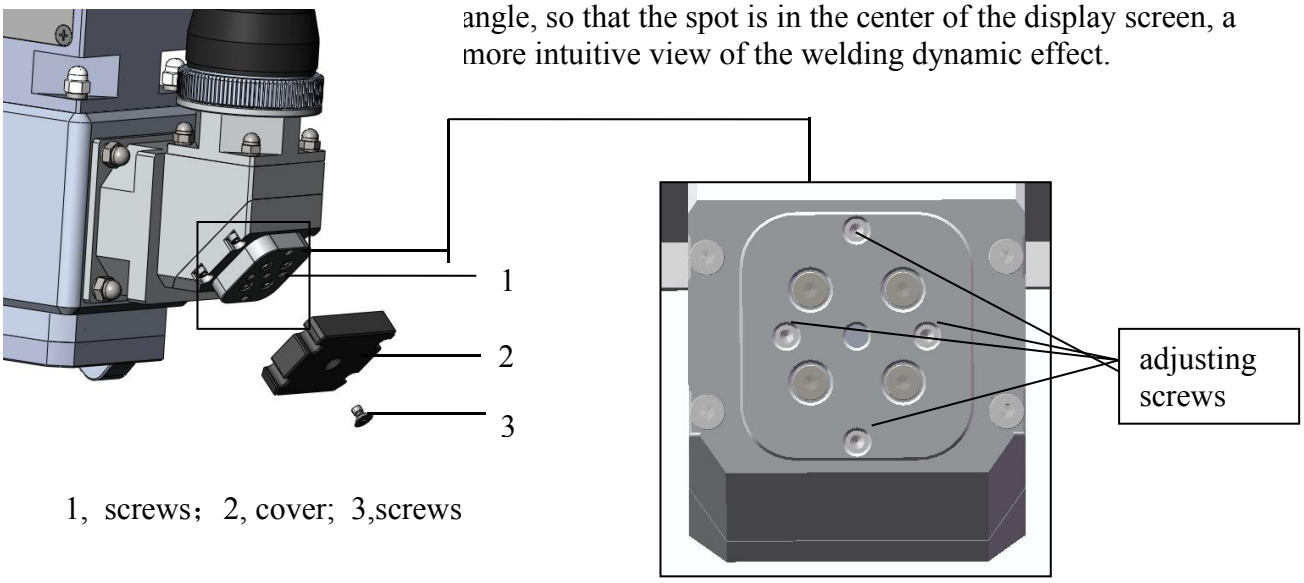
Installation and disassembly steps of CCD reflection component:

1, Remove the 4 M2-6 screws with an internal hexagonal screwdriver;
2, Remove the mirror tray holder from the welding head and place it on the table or flat bench;
3, Remove the 2 M2-4 screws with an inner hexagonal screwdriver and remove the mirror buckle;
4, Gently remove the mirror for maintenance or replacement;
5,After maintenance or replacement, install the mirror and the tray holder into the welding head in reverse steps.

## CCD mirror angle adjustment

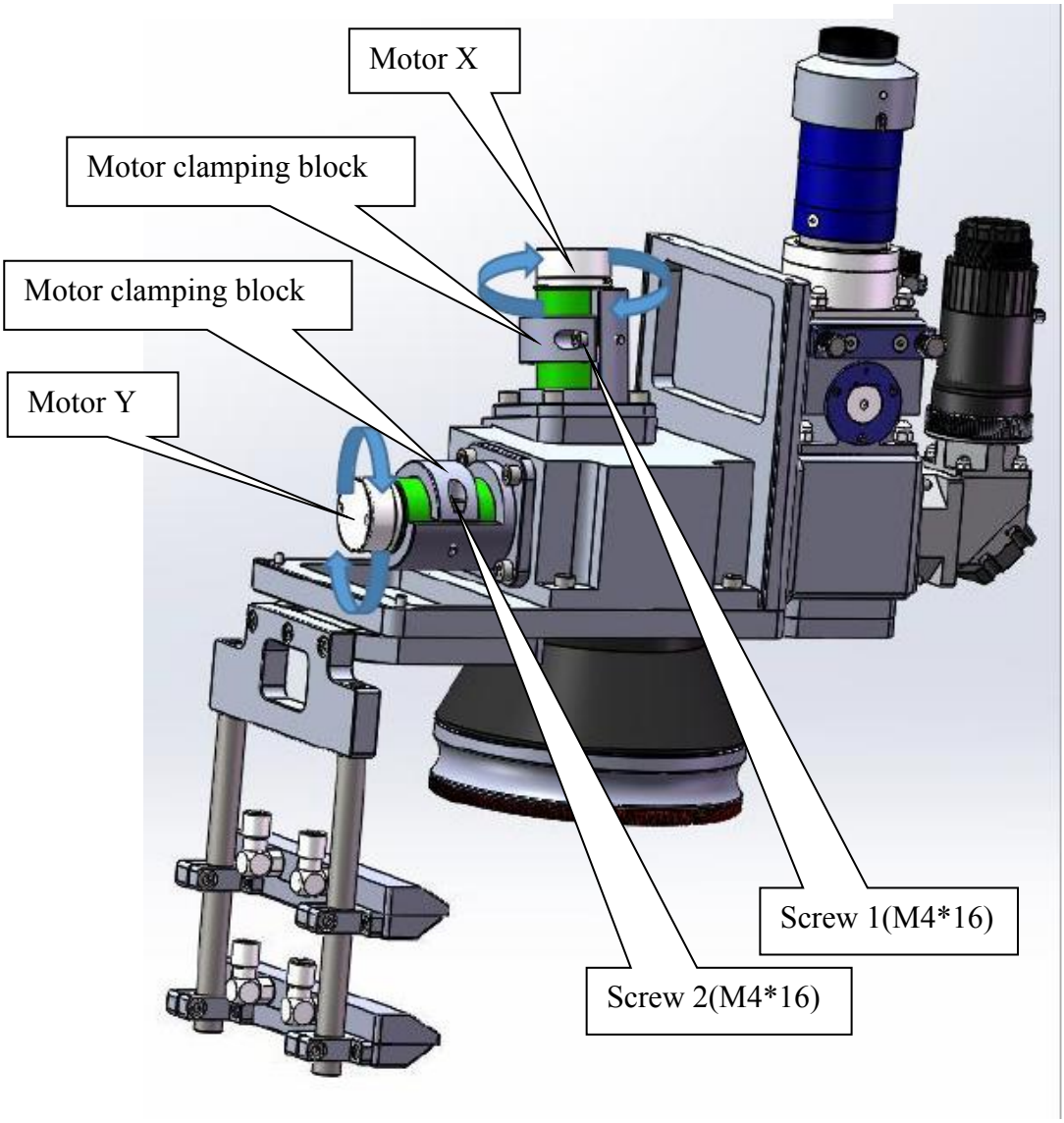
CCD mirror film angle adjustment procedure:

1, Release the mirror plate cover screw with a screwdriver
2, Remove the mirror cover
3, Use a screwdriver to gently turn the four screws on the fixed mirror plate of the tray holder, adjust the reflection angle, so that the spot is in the center of the display screen, a more intuitive view of the welding dynamic effect.




1, screws; 2, cover; 3,screws

6. Galvanometer angle adjustment




Galvanometer angle adjustment step

1、Rotate to remove the motor cover
2、Release screws 1 and 2 with an internal hexagon wrench to loosen the motor clamp block
3、Rotate the motor, fine-tune the reflection angle, so that the spot display in the positive center, intuitive view of the welding dynamic effect is better
4、The X-axis and Y-axis mirrors are angle adjusted in the same way

## 7. Electrical

For your personal safety and use of products, please note:

1.Read this instruction carefully 2.Electrical wiring correctly

3.Install filter and voltage circuit 4.Earthing

5.Set software parameters correctly

### 7.1Electrical objects

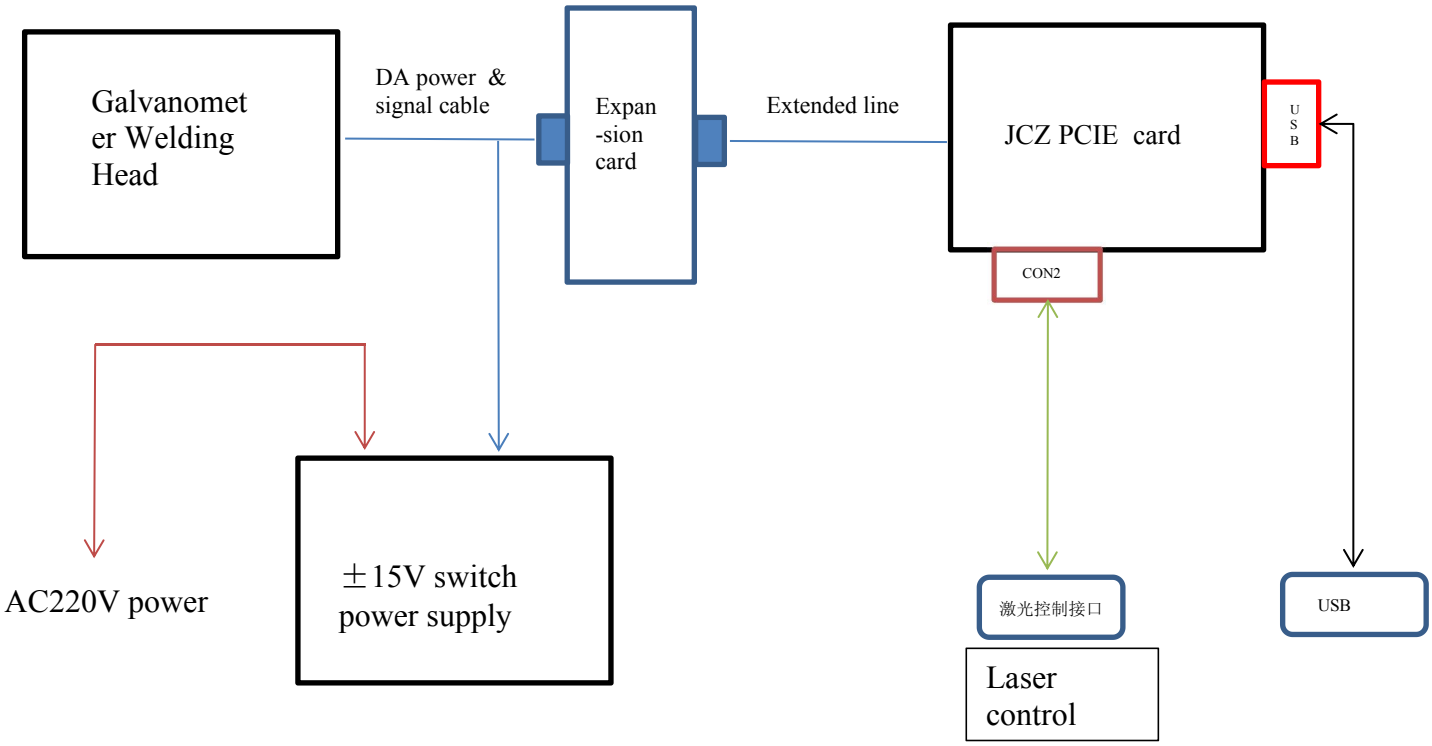
±15V power supply

Driver interface DB25

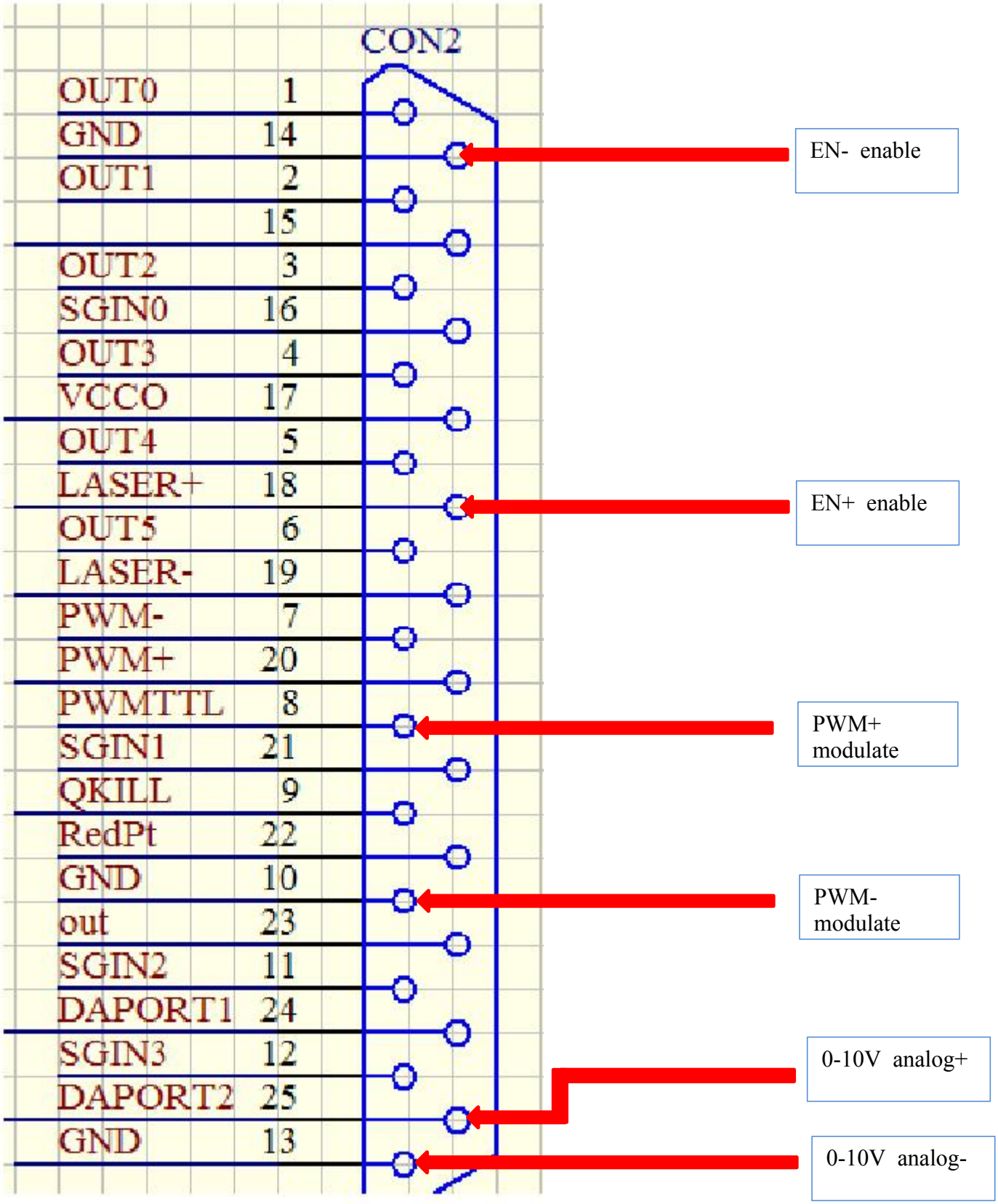
DA & power cable

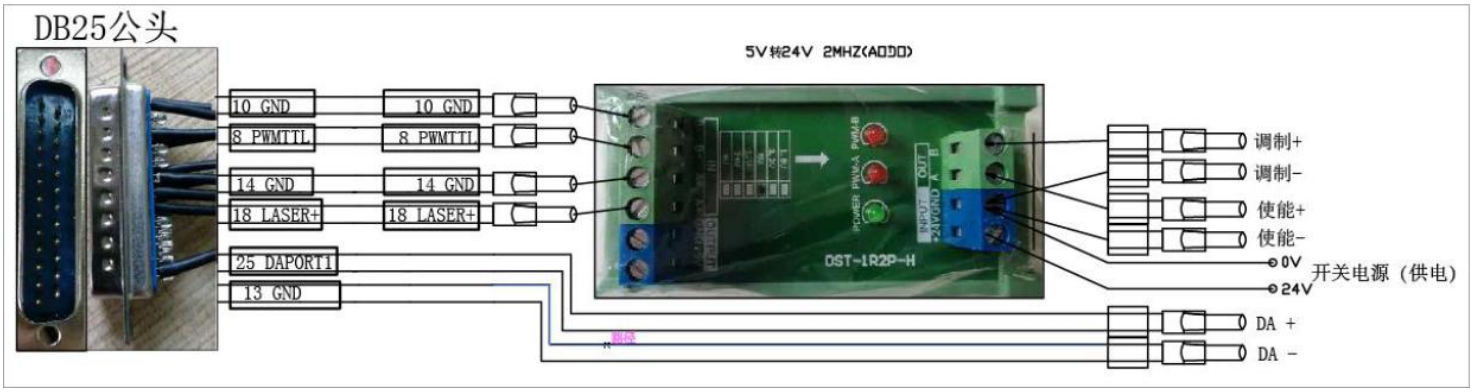
### 7.2.JCZ wiring diagram

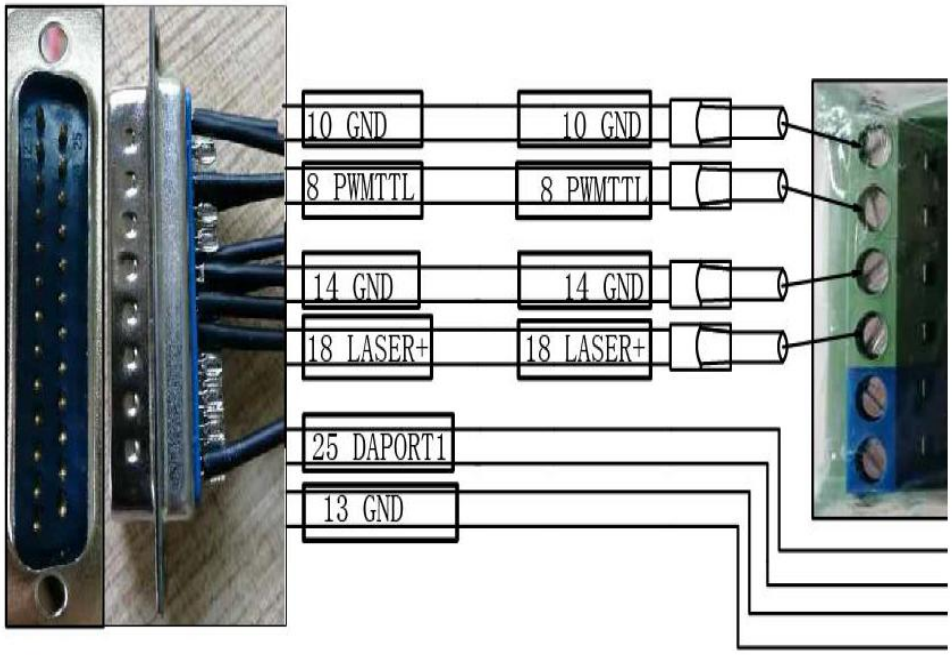
For JCZ PCIE digital card:

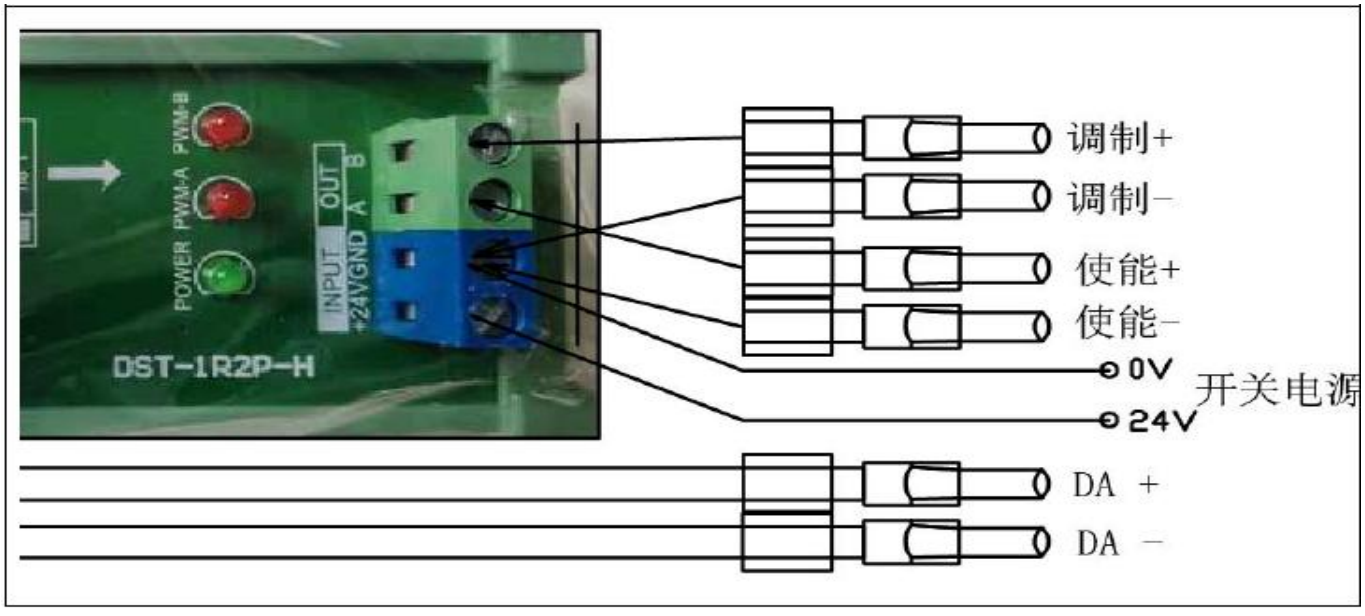


7.3 Laser control interface



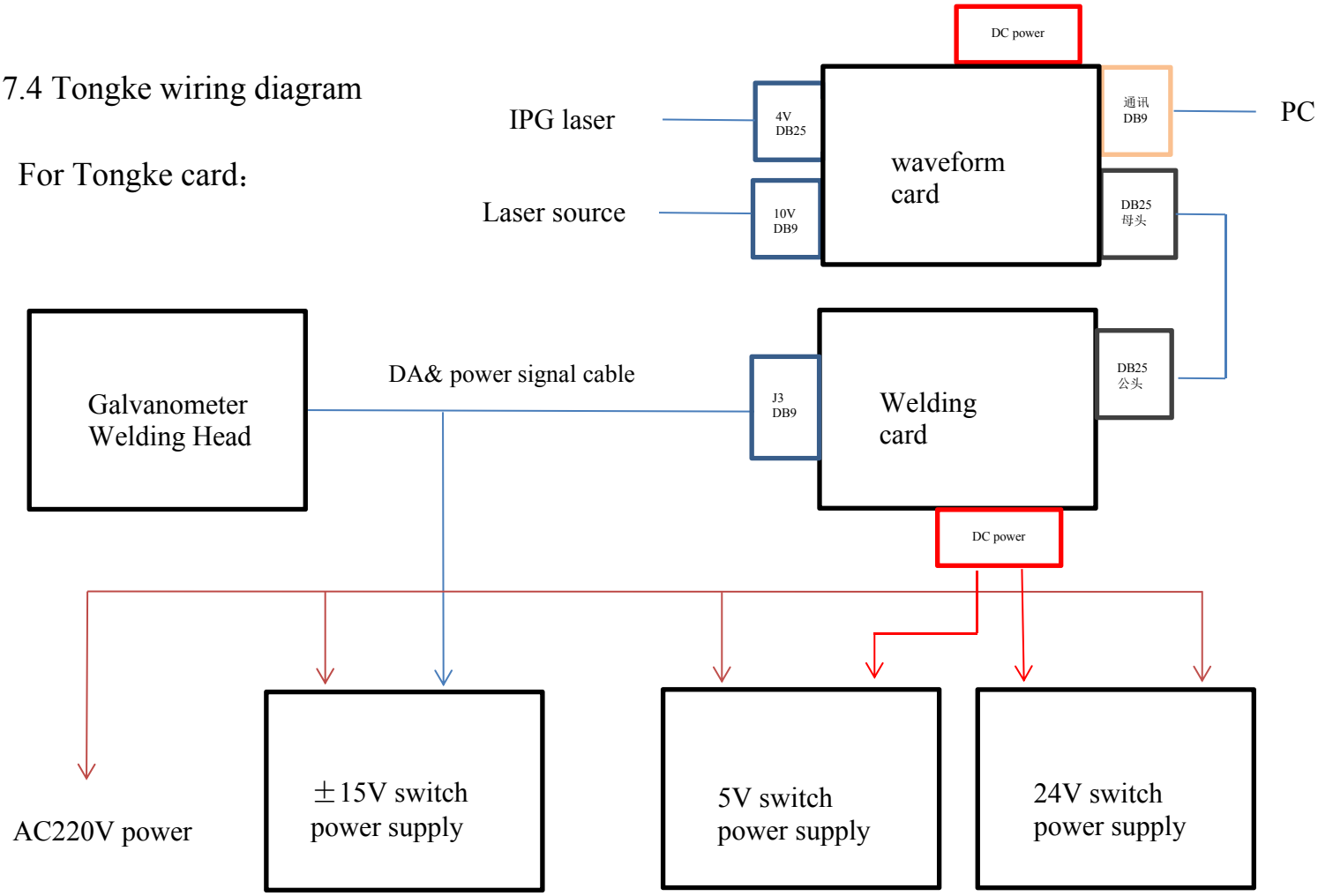

DB25公头
5V转24V 2MHZ(AOOO)
10 GND
8 PWMTTL
14 GND
18 LASER+
25 DAPORT1
13 GND
10 GND
8 PWMTTL
14 GND
18 LASER+
DST-1R2P-H
调制+
调制-
使能+
使能-
0V
24V
开关电源（供电）
DA +
DA -

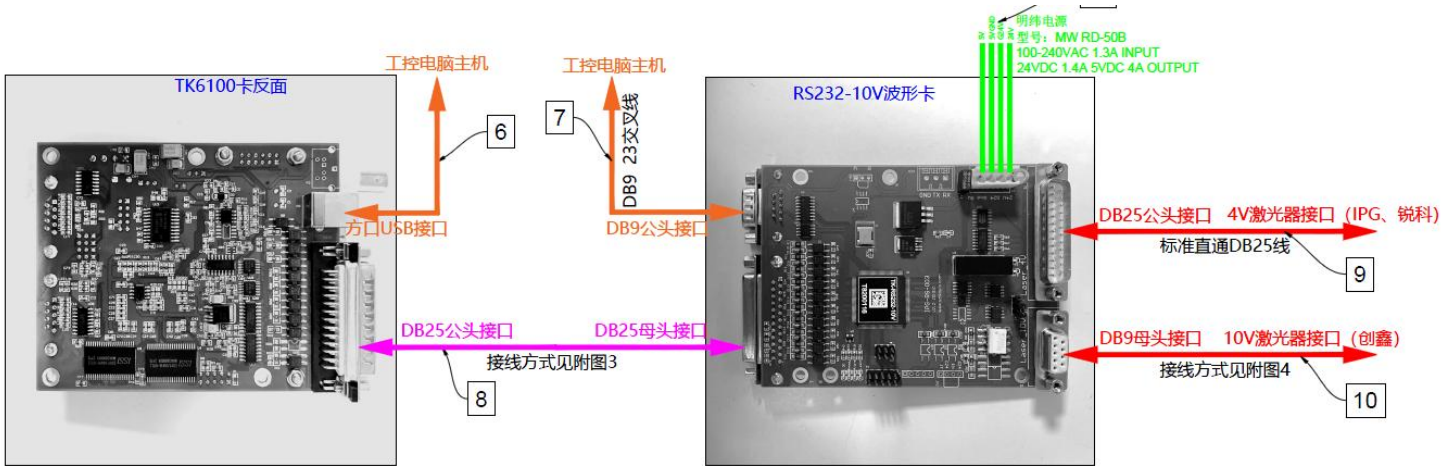

10 GND
8 PWMTTL
14 GND
18 LASER+
25 DAPORT1
13 GND
10 GND
8 PWMTTL
14 GND
18 LASER+


POWER PWM-A PWM-B
INPUT +24VGND
OUT A B
DST-1R2P-H
调制+
调制-
使能+
使能-
0V
24V
开关电源
DA +
DA -

## 7.4 Tongke wiring diagram

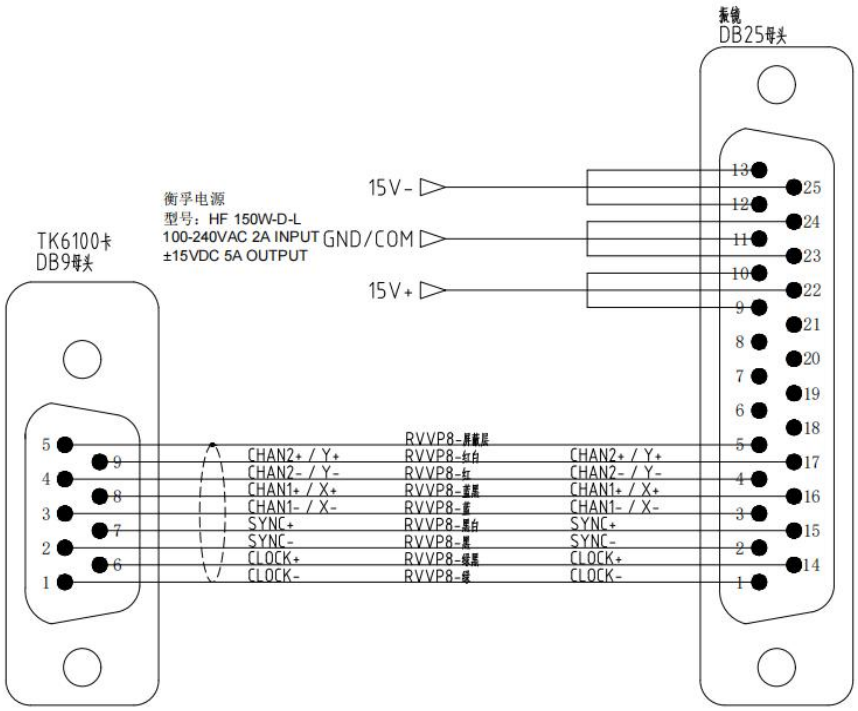
For Tongke card：



## 7.5 Interface definition

### Galvanometer wiring




### Laser source wiring mode (for Maxphotonics)