LASER TREE

K30
USER MANUAL

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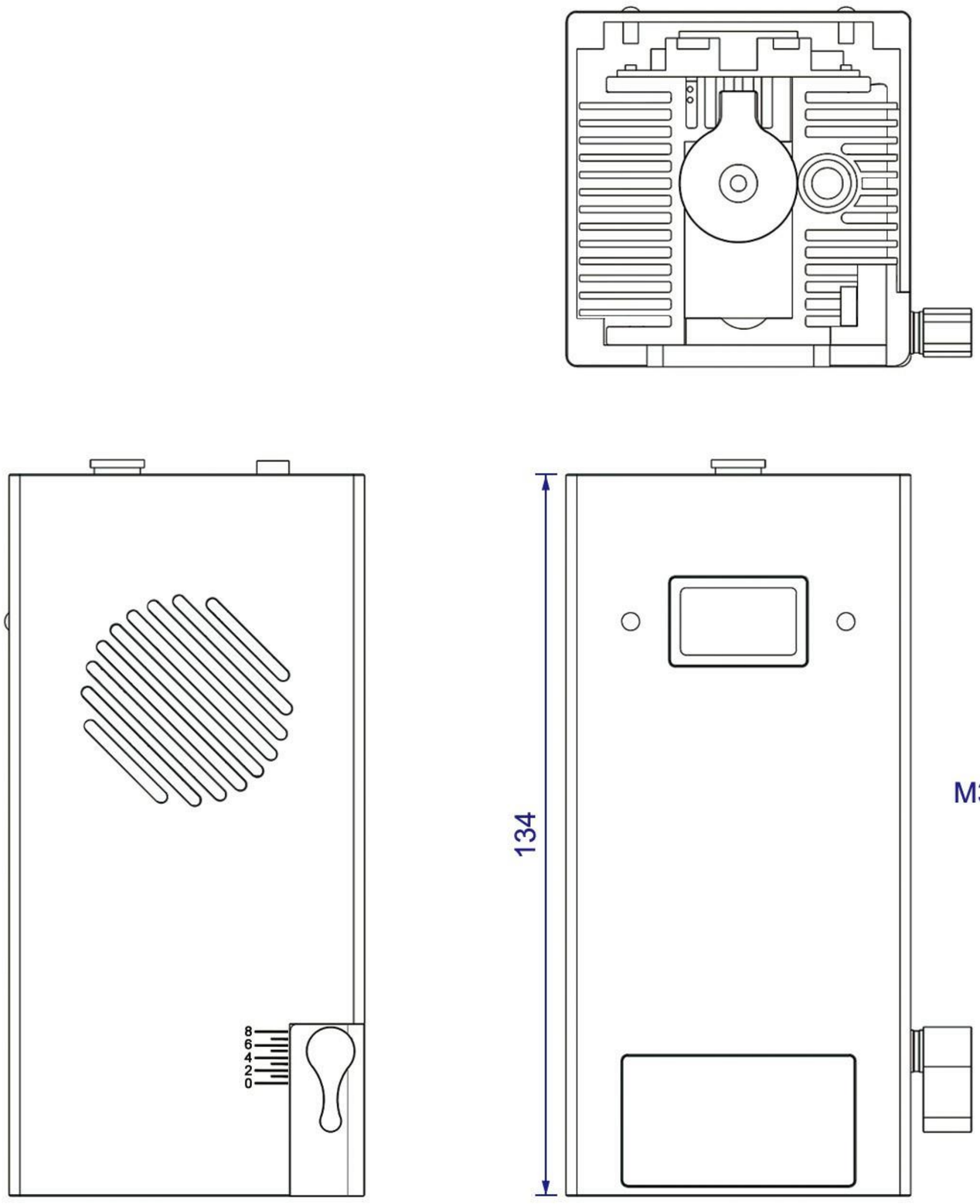
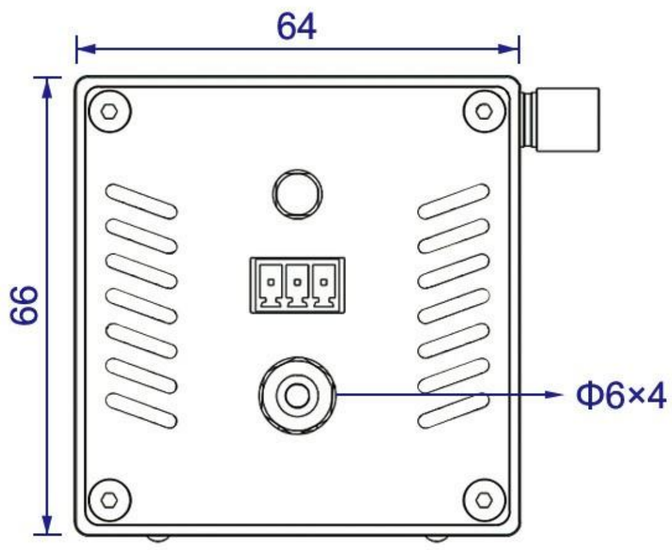
1. PRODUCT INTRODUCTION

Parameters

Model:	K30
Optical power:	28-32W
Input:	24V 5A
Wavelength:	450nm (±10nm)
Focus length:	40mm
Air assistance:	Built-in airway
Power adjustable:	TTL/PWM
PWM modulation:	0/3-12V, 0-5kHz
Fan speed:	9000rpm
Operating temperature:	0-60°C
Interface:	2EDG-3.81
Cable:	3PIN, 80cm
Material:	Aluminum & Copper
Module weight:	710g
Application:	Engraving & Cutting

Outline dimension (Unit: mm)



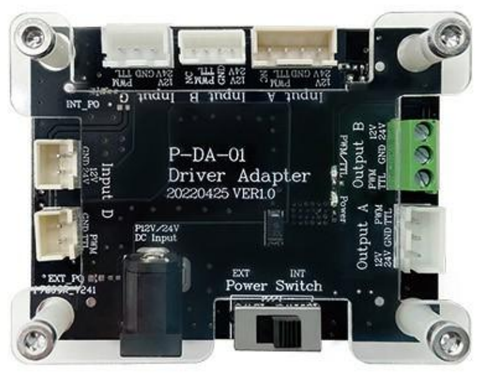


Packing list

Laser module

Sliding plate

2mm L-wrench



Driver adapter

24V5A power supply

Spare protective lens

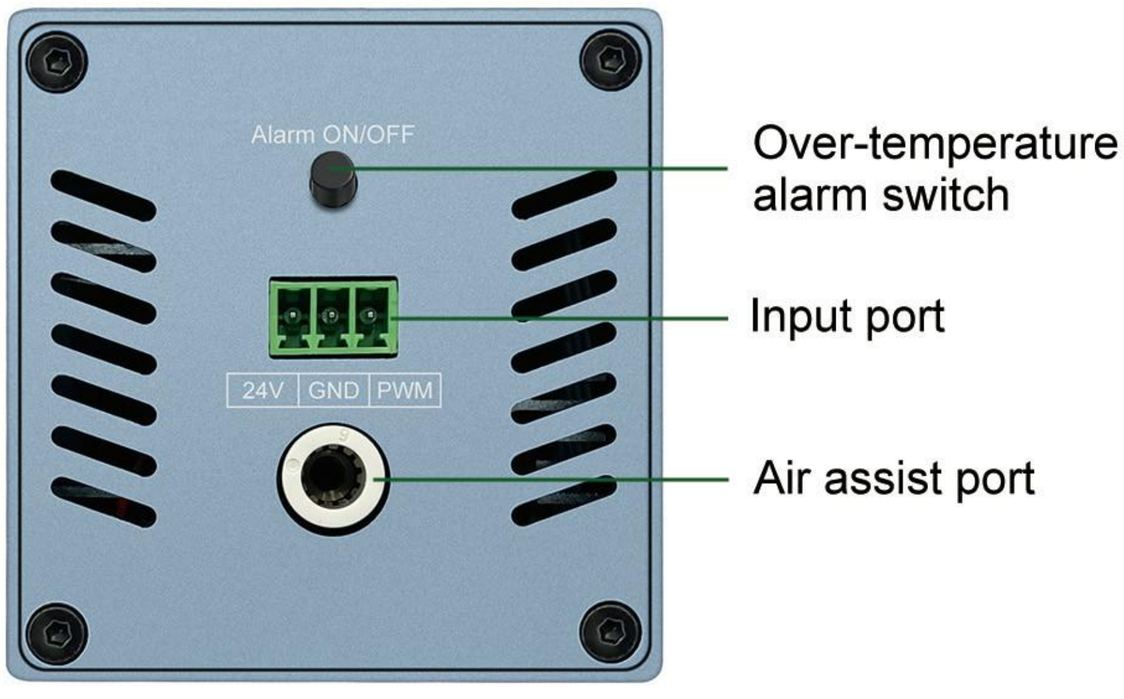
1.5m Air tubex1

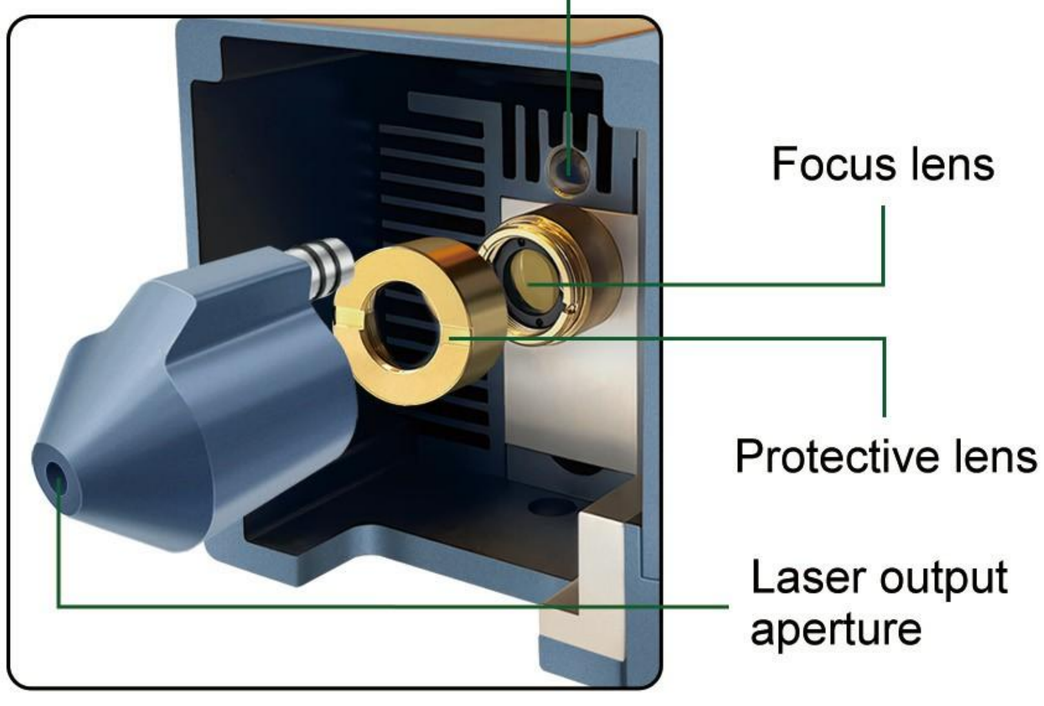
80cm Input cable

60cm Adapter cable

2. PRODUCT DESCRIPTION

Overview





Input port

Use 2EDG3.81 pluggable connector.

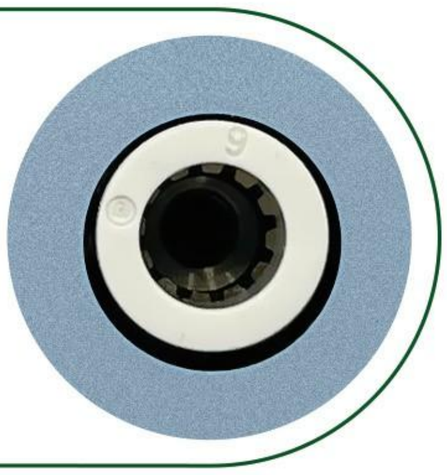
- VCC (24V5A DC)
- GND
- TTL/PWM in (0-5kHz)

Air assistance port

Built-in air assist to get clean-cut edges and improve cutting performance.

Air pump suggestion:

- Air pressure and capacity: ⩾0.027kPa, 27L/min
- Air tube: outer diameter 6mm and inner diameter ⩾4mm



Working temperature display

The output power stability and life time of laser module has strong relationship with working temperature of laser diode.K30 built-in a thermistor at the highest temperature point near the laser diode, the operating temperature of the diode can be displayed on the digital tube in real-time.

We suggest the working temperature of the laser module is controlled below 55°C and the working environmental temperature below 35°C to get good power stability and durability.

Over-temperature alarm switch

When the working temperature of the laser module is higher than 55°C, the buzzer will sound an alarm.

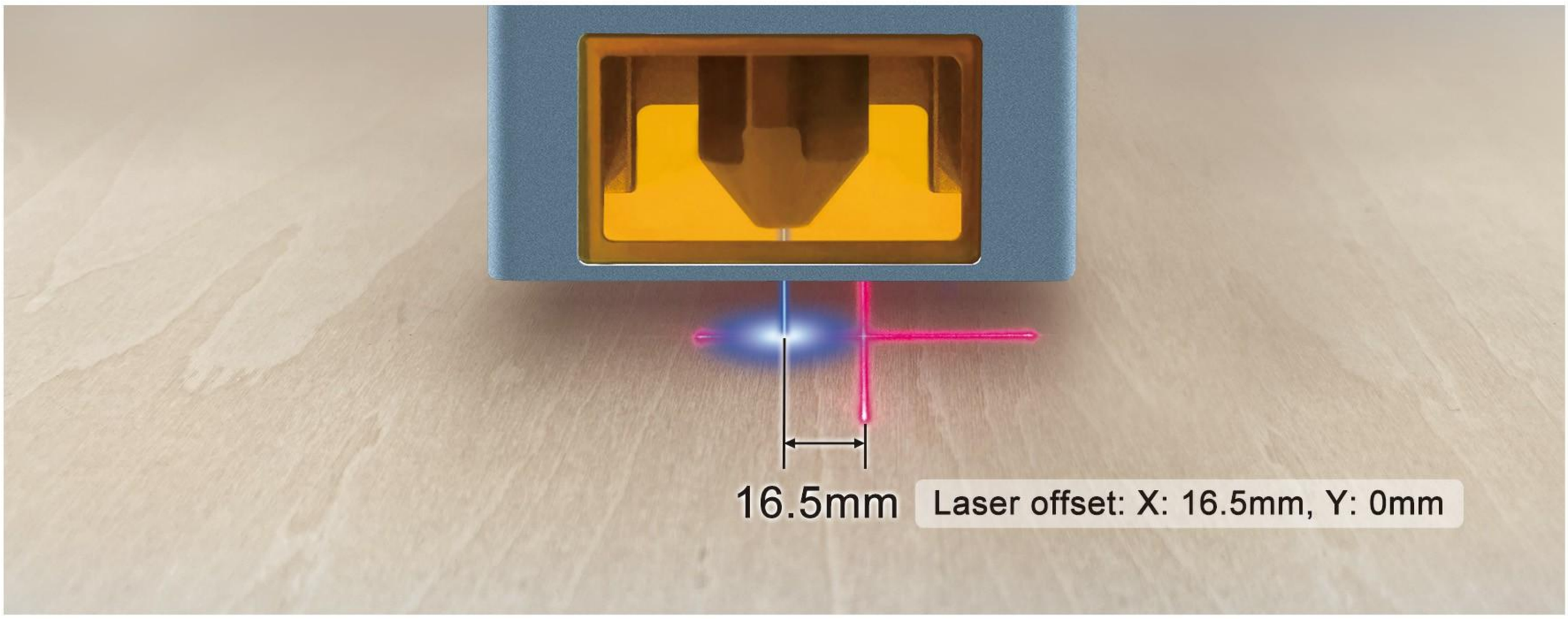
Working status indicator

Power indicator: it is red when power supply is connected.

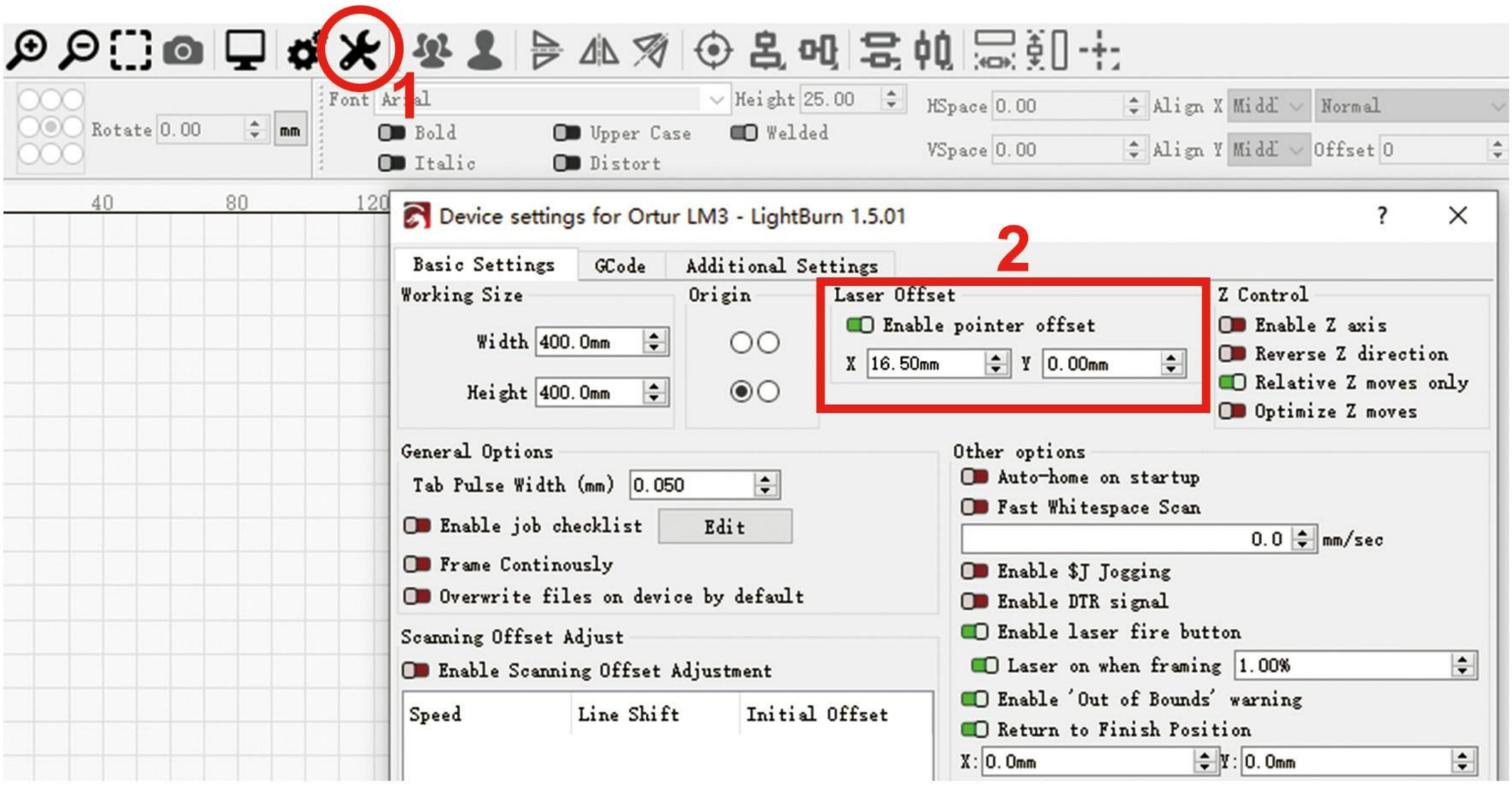
Signal indicator: it is green when signal is received.

Red cross line locating

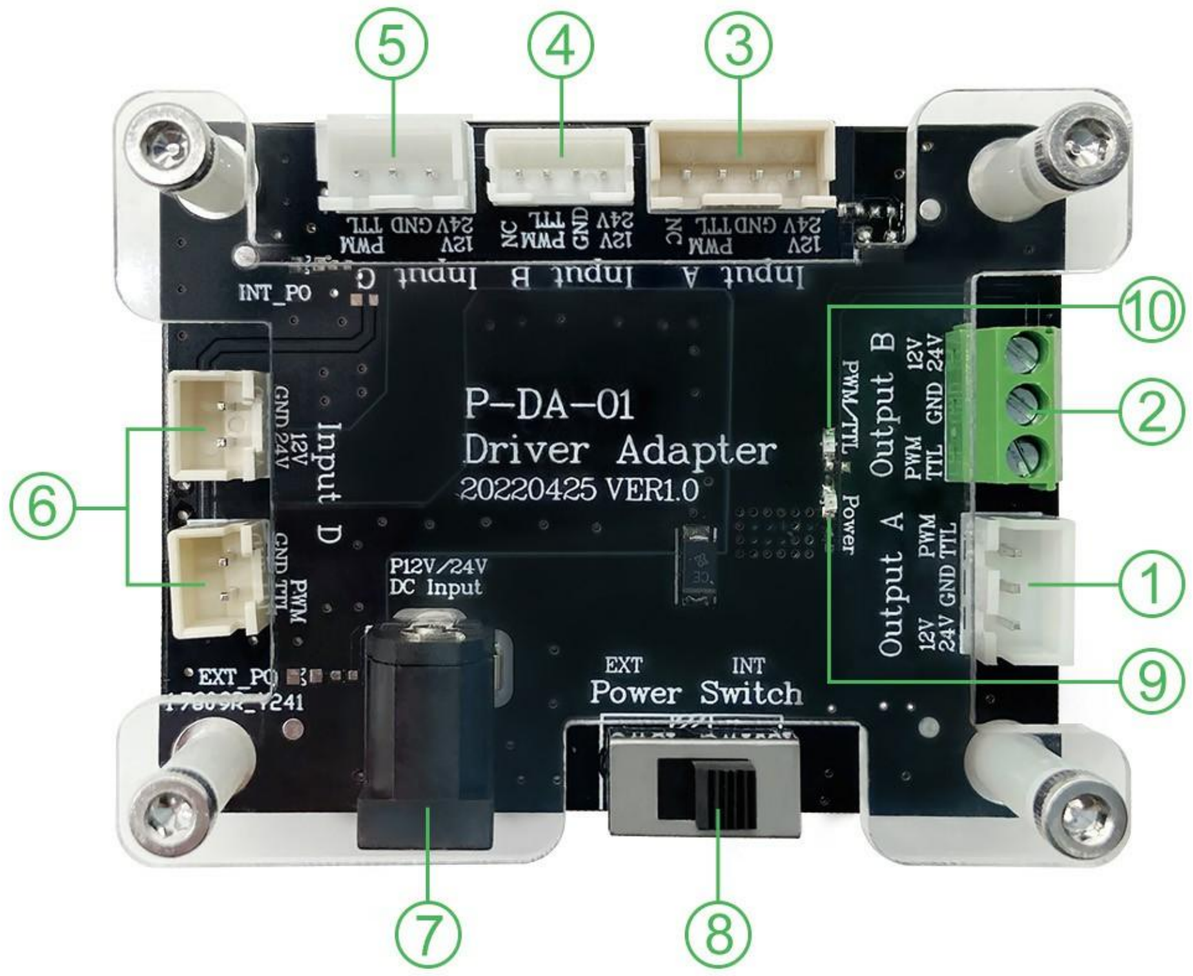
Help you to place the material to the position correctly.



LightBurn settings



Driver adapter (Model: P-DA-01)

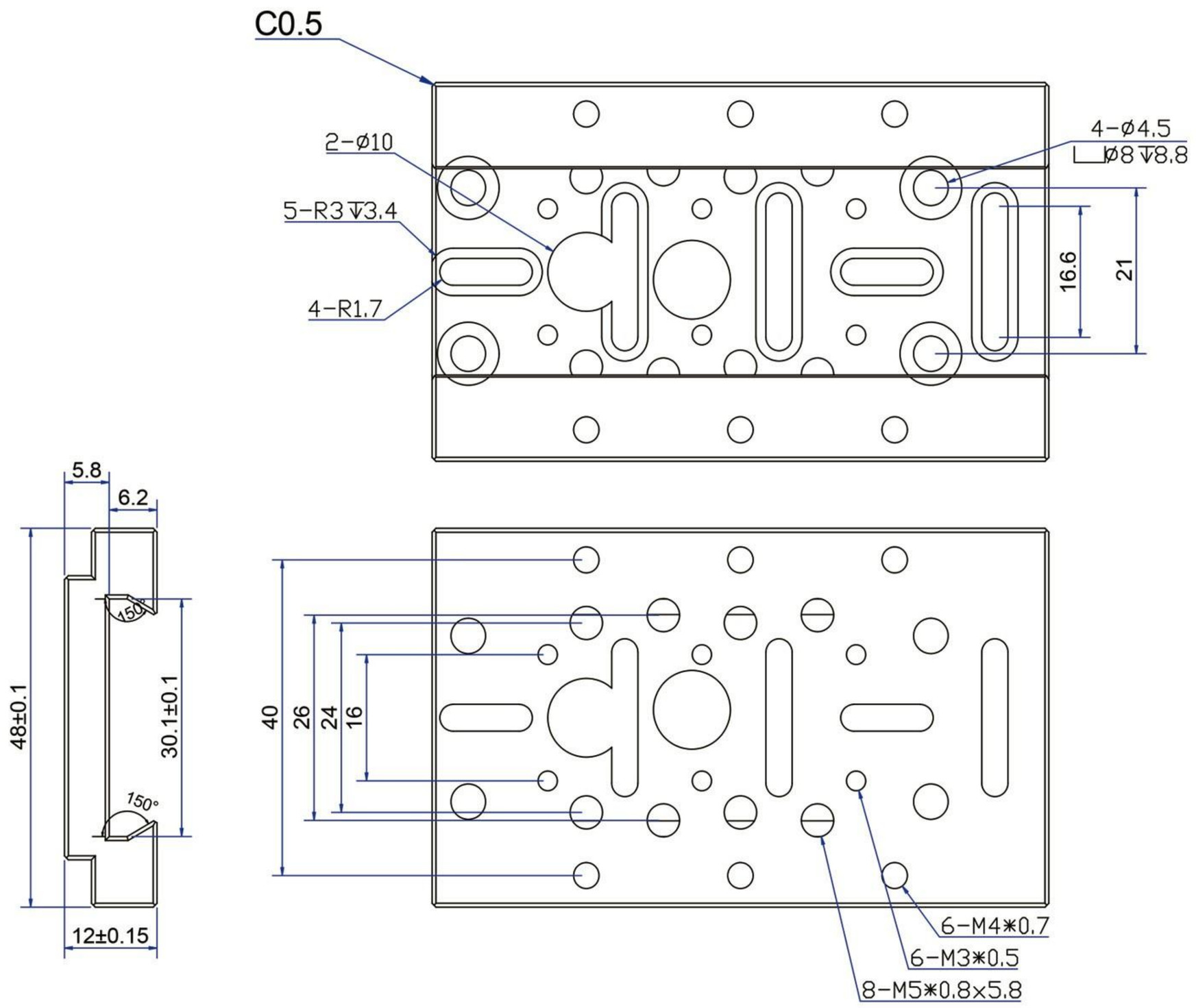


① Output A: 3PIN connector	② Output B: 3PIN connector
③ Input A: 4PIN connector	④ Input B: 4PIN connector
⑤ Input C: 3PIN connector	⑥ Input D: 2PIN connector
⑦ DC Input: 12V or 24V power adapter	
⑧ Power Switch: • EXT→External power supply • INT→Internal power supply	
⑨ Power indicator: It is red when the power cable is connected correctly.	
⑩ TTL/PWM indicator: It is green when the TTL/PWM cable is connected correctly.	

Sliding plate

Multiple holes bring you widely installation compatibility.

Outline dimension (Unit: mm)



Accessories for sliding plate

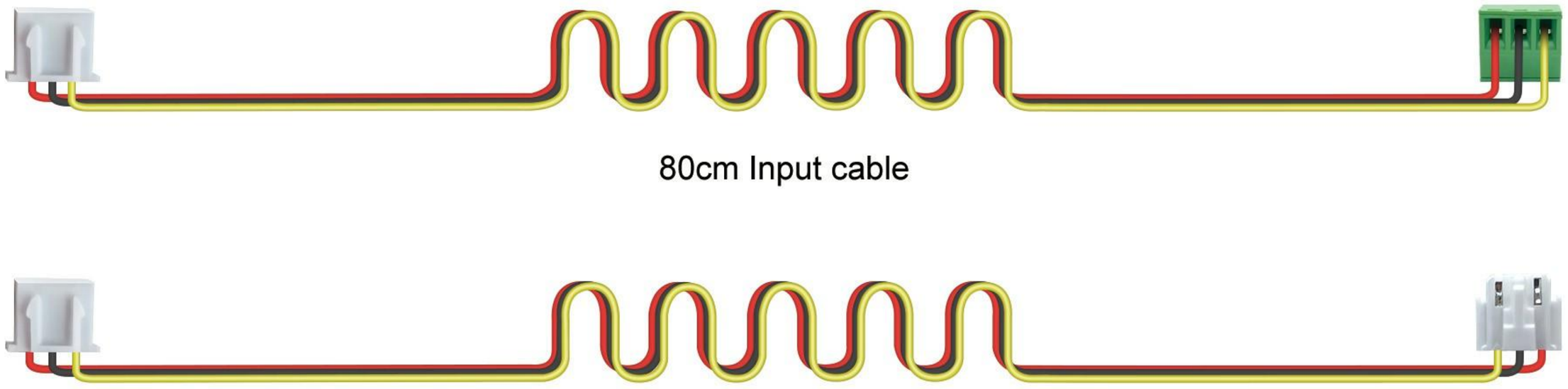
M3x6 Fasten screw*4

M4x20 Fasten screw*2

2.5mm L-wrench

Installation for sliding plate

PIN definition



80cm Input cable

60cm Adapter cable

Yellow wire: PWM

Black wire: GND

Red wire: Power (24V)

3. CONNECTION DESCRIPTION

Please check whether the laser module is compatible with your engraving machine before connection.

A. Check the voltage parameter of you engraving machine.

Please ensure your engraving machine can provide at least 24V 5A power supply.

B. Check the port of the main control board on your engraving machine.

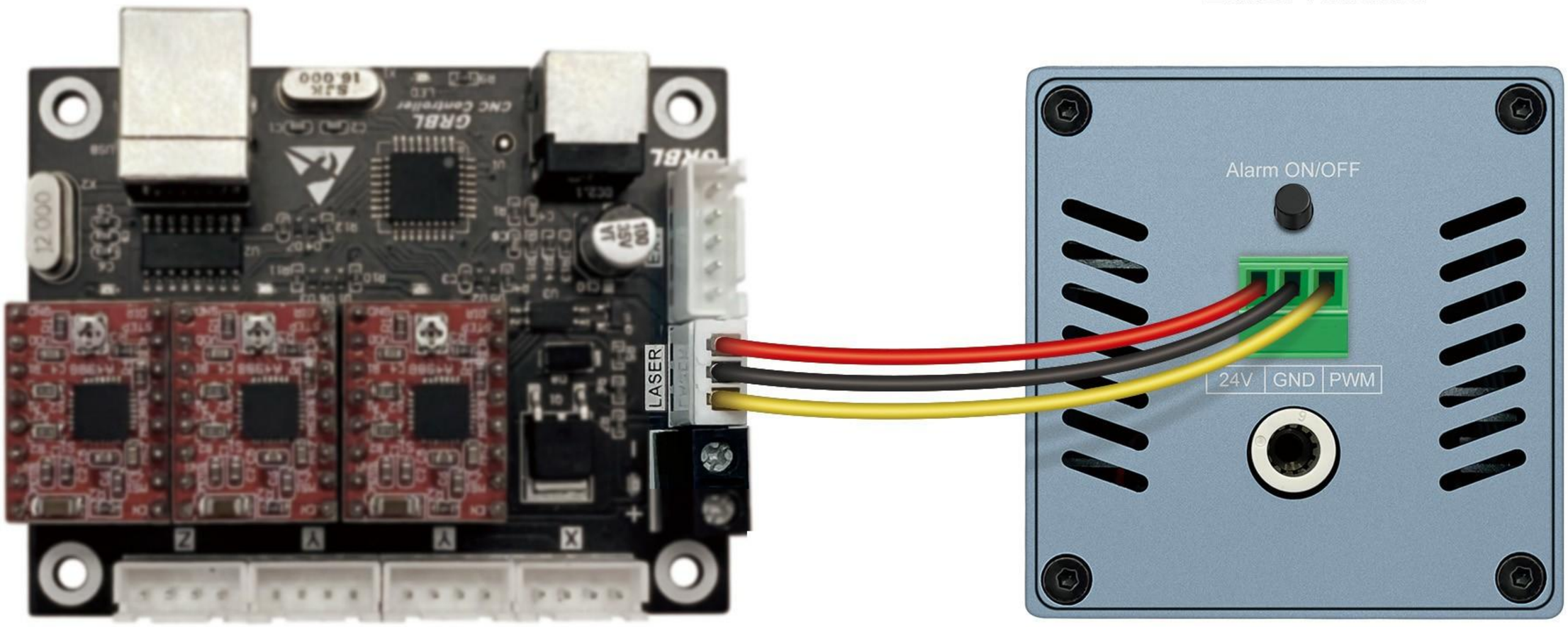
Please find the PWM port, GND port and VCC port on the main board of your engraving machine. Then connect this laser module to the main board accordingly.

- “A”&“B”are both compatible.

Connect the laser module to the main board of your engraving machine directly.

Engraving machine main board

Laser module



Reference picture

● Only voltage is not matched.

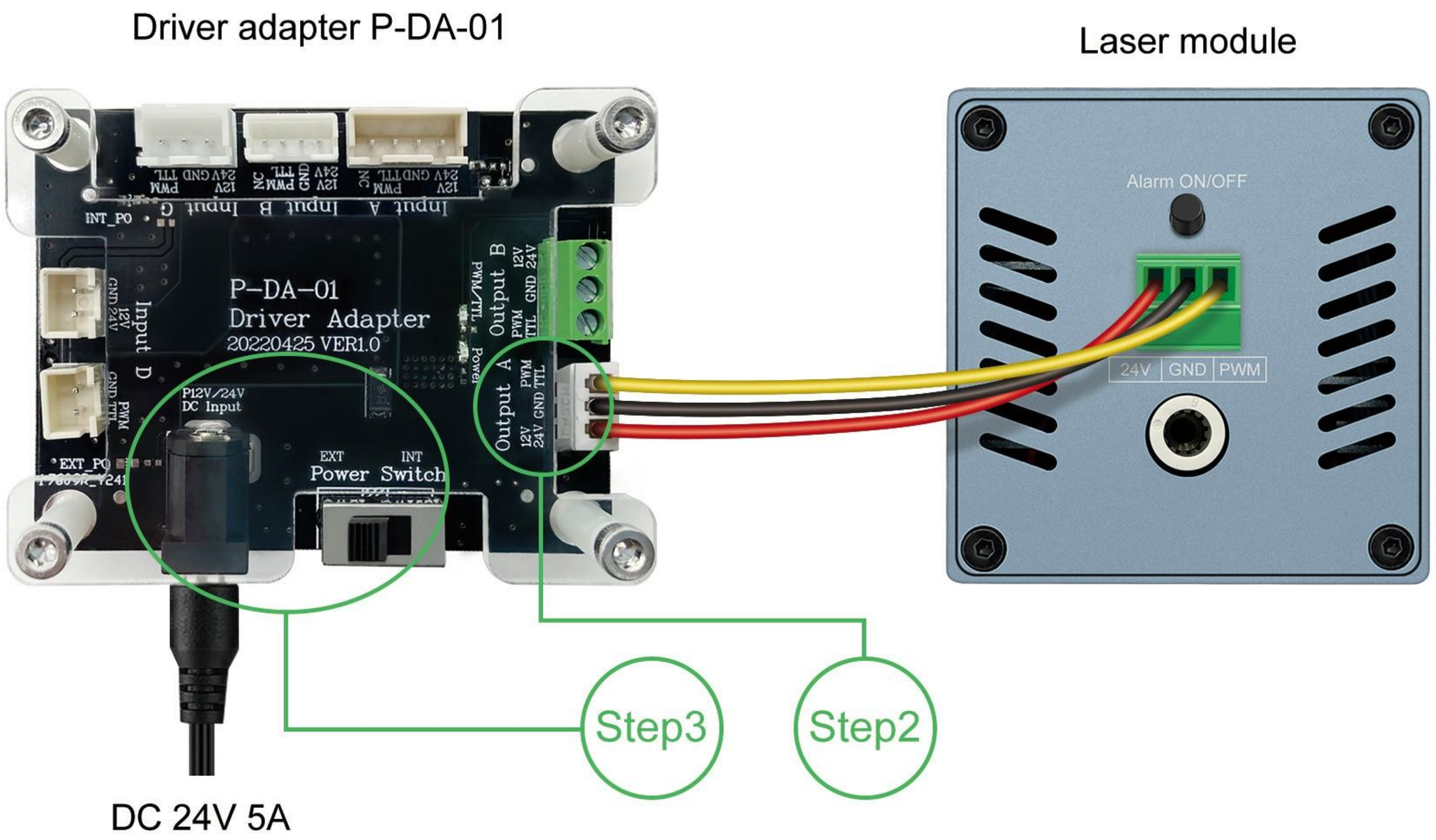
The voltage parameter of your machine are not matched to the module.

Laser Module	Machine	Solutions
24V	12V	Driver Adapter + 24V Power Supply
	24V	Plug and Play

Step1 Connect the cable of your engraving machine to the corresponding input connector on P-DA-01.

Step2 Connect the cable of the laser module to the Output A connector on P-DA-01.

Step3 Connect the 24V power adapter to the DC Input connector on P-DA-01. Push the switch to EXT position and the power is provided by external power adapter.

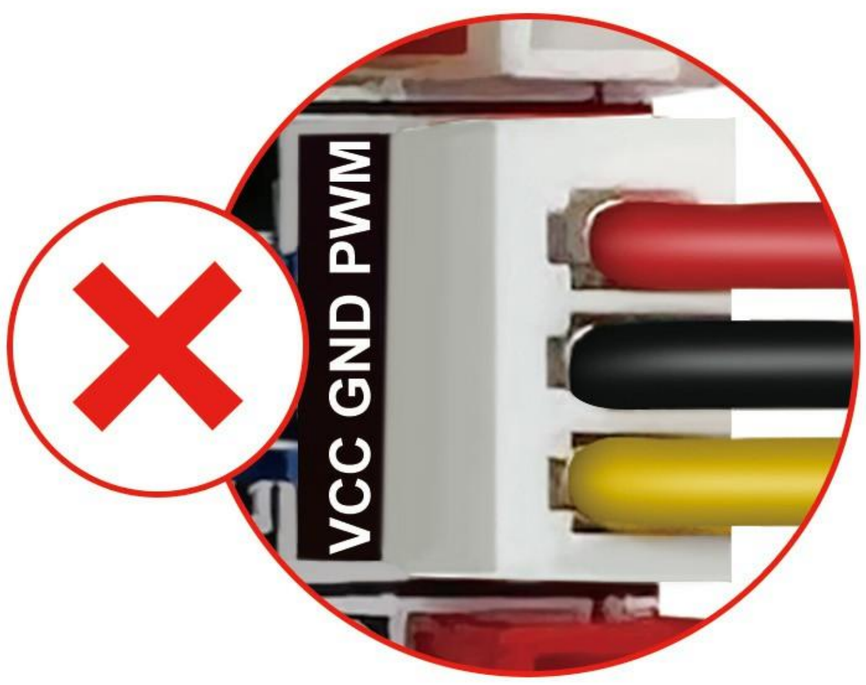


Reference picture

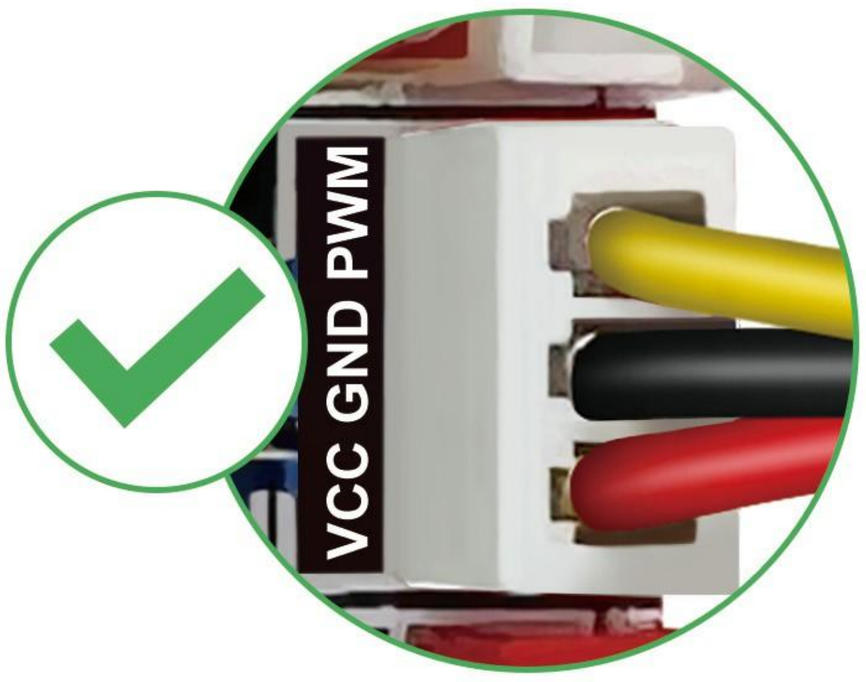
● Only control board pin definition is not matched.

Situation 1: The definition of connector on the engraving machine main board is not pin-to-pin.

Please rearrange the wire sequence of the cable to make each wire is well matched with the pin definition on the engraving machine main board.



Red wire and yellow wire connection error



Red wire and yellow wire connection correctly

Situation 2: Please use P-DA-01 if the main board of your engraving machine is not 3pin, such as 2pin.

Laser Module	Machine	Solutions
3PIN	2PIN	Driver Adapter
	Other pins	Driver Adapter

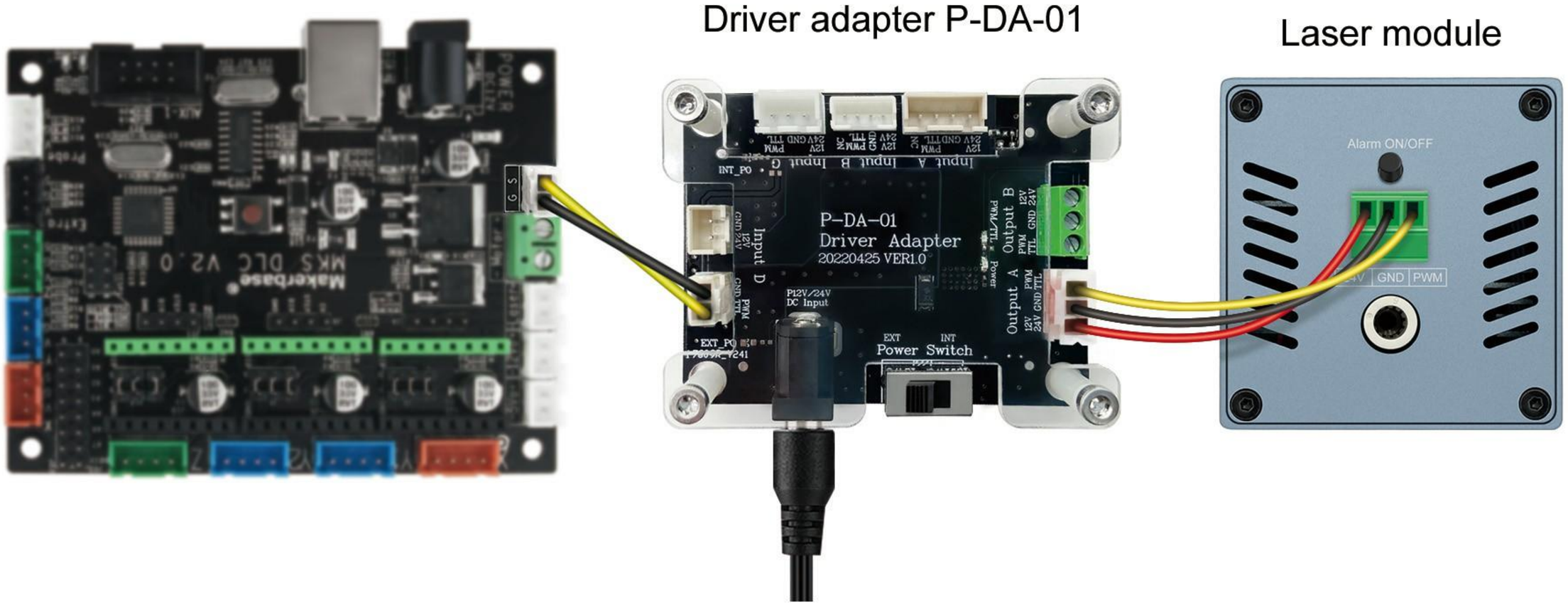
Step1 Connect the cable of the your engraving machine to the corresponding input connector on P-DA-01.

Step2 Connect the cable of the laser module to the Output A connector on P-DA-01.

Engraving machine main board

Driver adapter P-DA-01

Laser module



DC24V 5A

Reference picture

4. FOCUS REFERENCE SETTINGS

The focal length of the K30 laser module is 40mm.

For cutting

Please make the focus locate lower than the cutting material surface according to the following.

Reference settings for cutting

Fixed focus lever usage reference	
Material thickness	Fixed focus lever
< 5mm	0mm
5mm	2mm
6mm	3mm
8mm	3mm
10mm	4mm
12mm	5mm
15mm	6mm
⩾20mm	7mm

For example, if you want to cut 10mm material, the focus should be 4mm lower than material surface. Please adjust the fixed focus lever to 4mm.

For engraving

Please make the focus locate on the engraving material surface.

Reference settings for engraving

For example, if you want to perform engraving, just make the focus on the engraving material surface and adjust the fixed focus lever to 0mm.

5. PRECAUTIONS

⚠ Laser may cause damage to your skin. Please do not expose your skin directly to the laser.

⚠ Please wear laser goggles to protect your eyes when you use this laser module.

⚠ Please ensure that the air pump is turned on before you start cutting. If not, the smoke will contaminate the lens.

⚠ This laser module doesn't support hot plug. Hot plug may cause damage to the laser module.

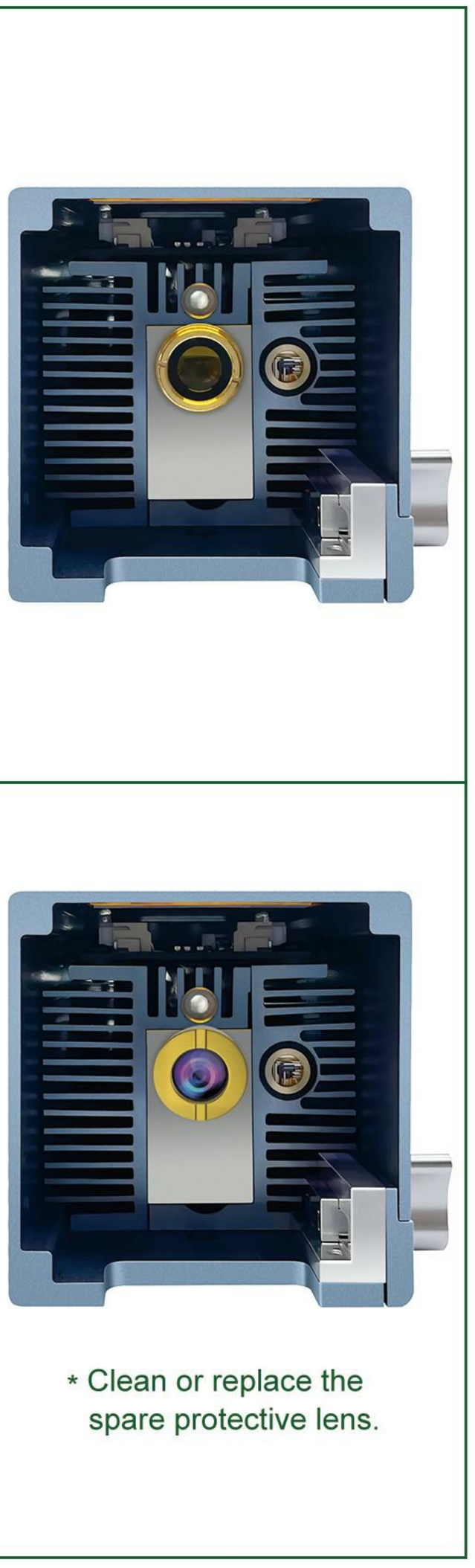
6. MAINTENANCE

When the laser module is not used for a long time, please ensure that the lens is not polluted by dust.

When you replace the air nozzle, please ensure that your operation will not pollute the lens. Finger prints or dust on the lens will weaken the output power of the laser module, or even damage the lens.

When you find the cutting ability of laser module decreased, the lens might be not clean. Please use a clean alcohol swab to clean it according to the following figure.

* For more information about maintenance, please contact us at lasertree@micost-optotech.com.



* Clean or replace the spare protective lens.

LASER TREE

Enjoy pleasure of DIY

RoHS

MADE IN CHINA

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