



LT-4LDS-V1 USER MANUAL

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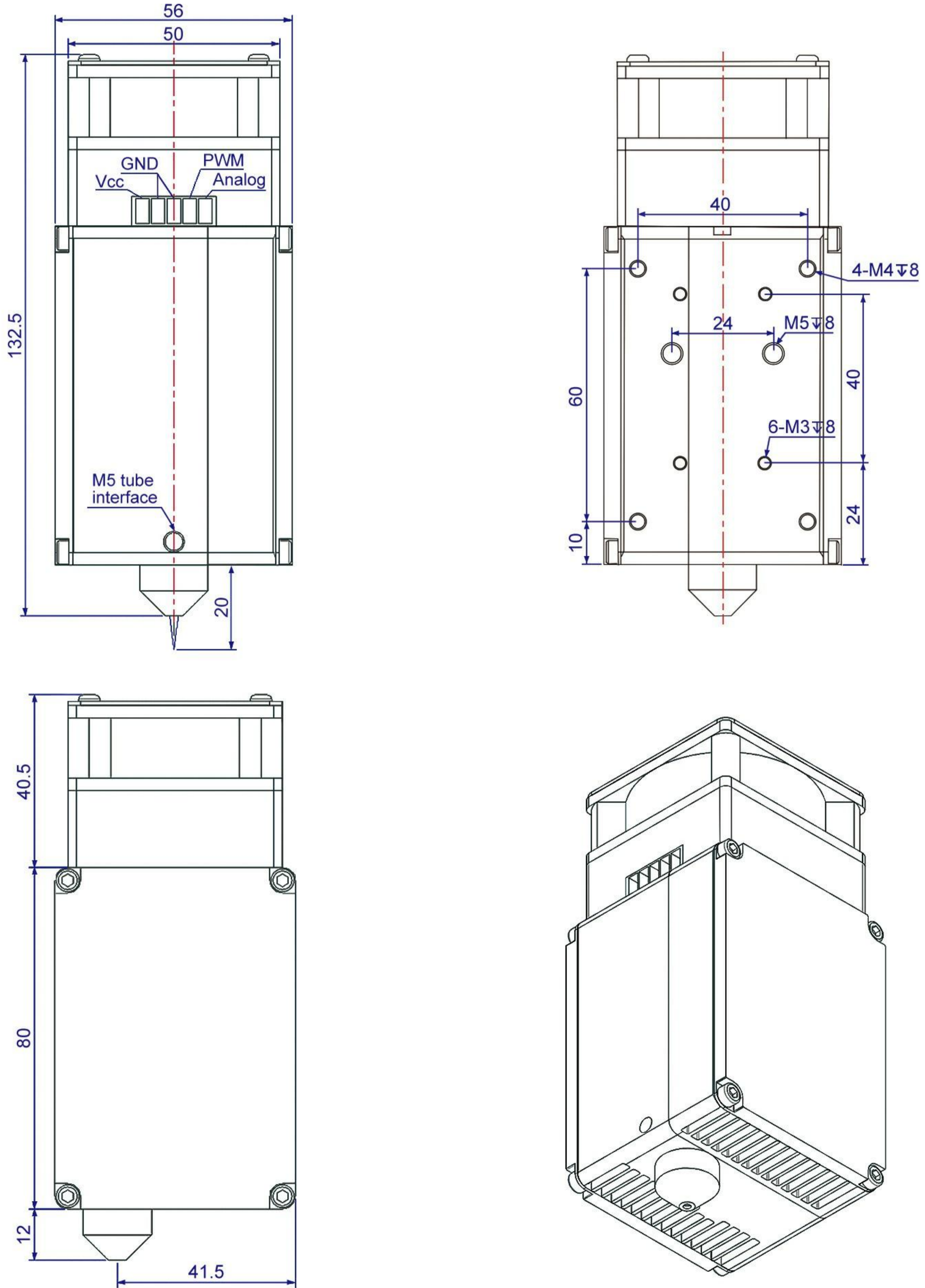
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1. LASER MODULE INTRODUCTION

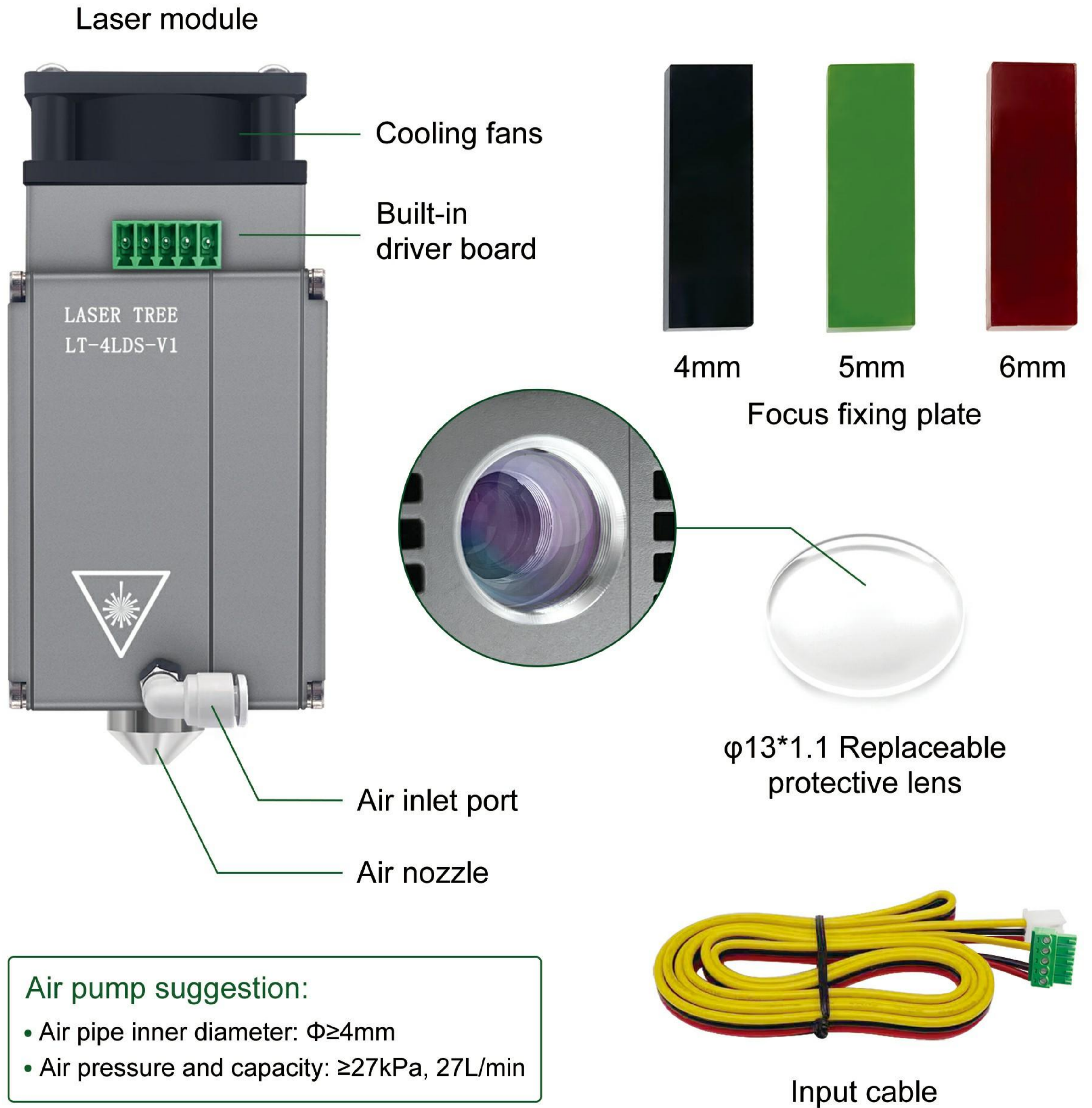
1.1 Parameters

Optical power:	18W - 21W
Input:	24V 2.3-3.2A
Wavelength:	450nm (± 10 nm)
Focus length:	20mm
Air assistance:	Built-in
Power adjustable:	TTL/PWM/Analog modulation
PWM modulation:	0/5-12V, 0-5kHz
Fan speed:	10000rpm
Operating temperature:	0-60°C
Interface:	2EDG-3.81
Cable:	3PIN, 80cm
Material:	Aluminum alloy
Module weight:	460g
Function:	Engraving or cutting

1.2 Outline dimension (Unit: mm)



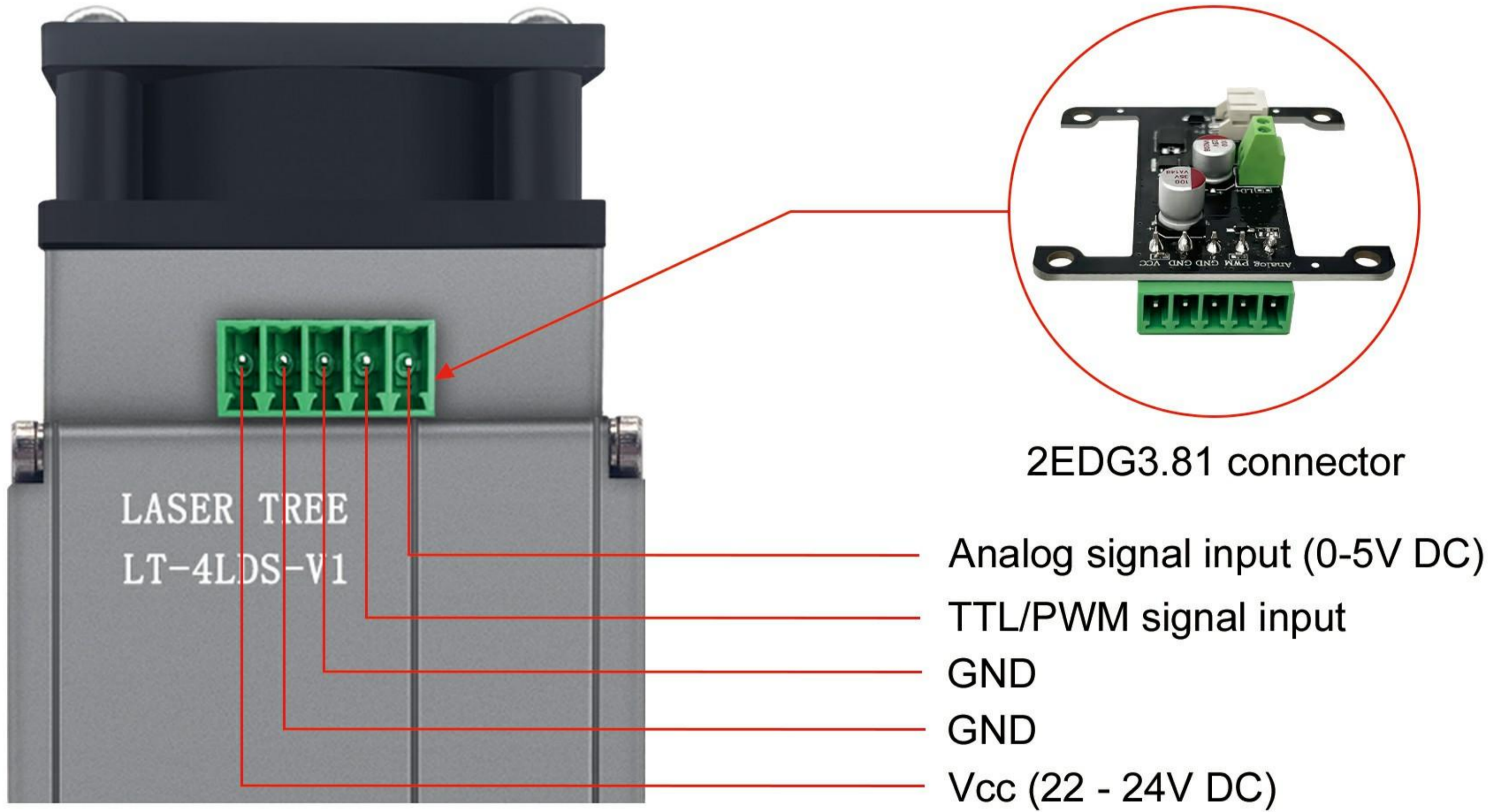
1.3 Standard configuration



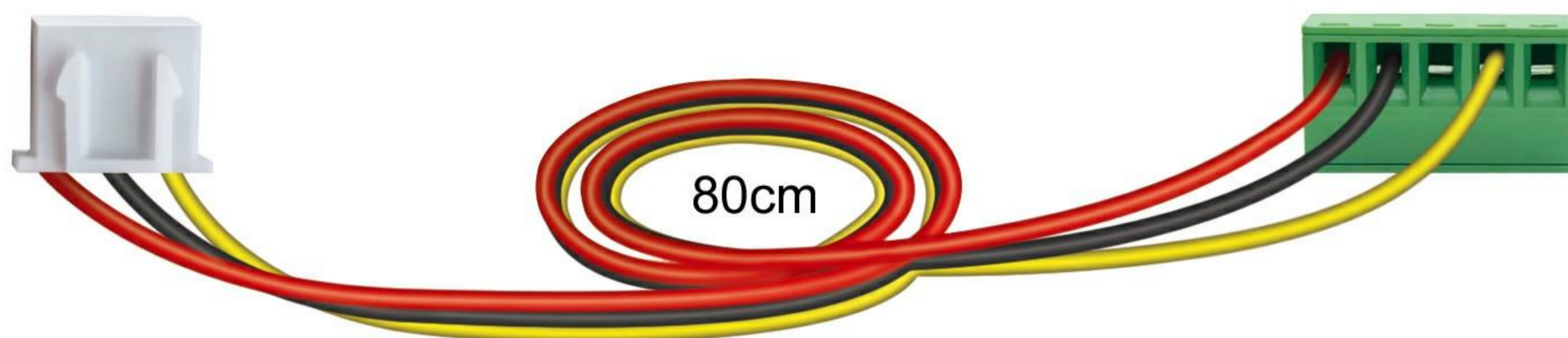
2. LASER MODULE CONNECTION DESCRIPTION

2.1 PIN Definition

I Built-in driver board



≡ Cable

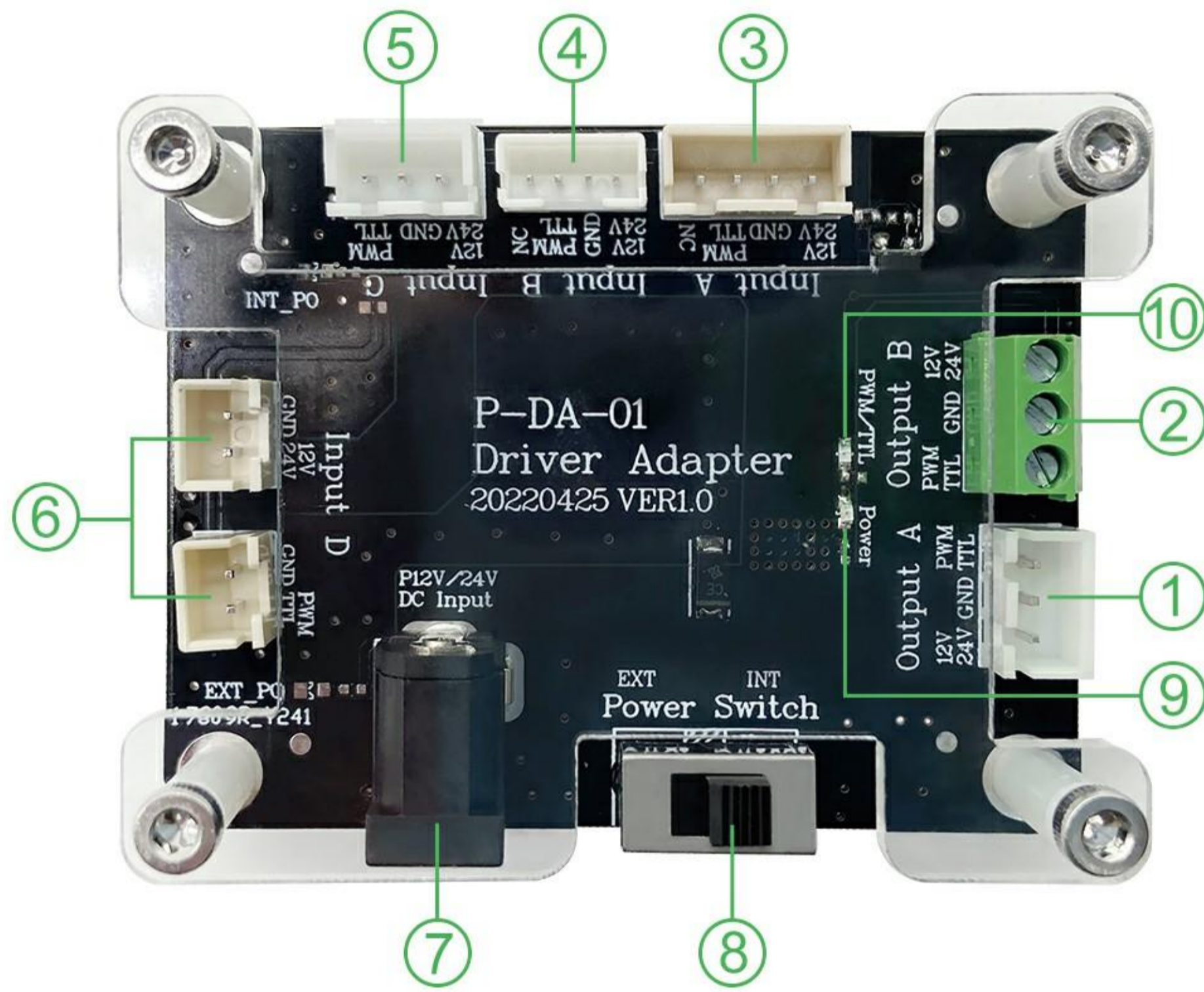


■ Yellow: PWM **■** Black: GND **■** Red: Power (+12V/24V)

2.2 Driver adapter

Note: This driver adapter DOES NOT come with the laser module.
For more details, please refer to **section 2.3 connection**.

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.

2.3 Connection

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 4A power supply.

B. Check the pin definition of the main board on your engraving machine.

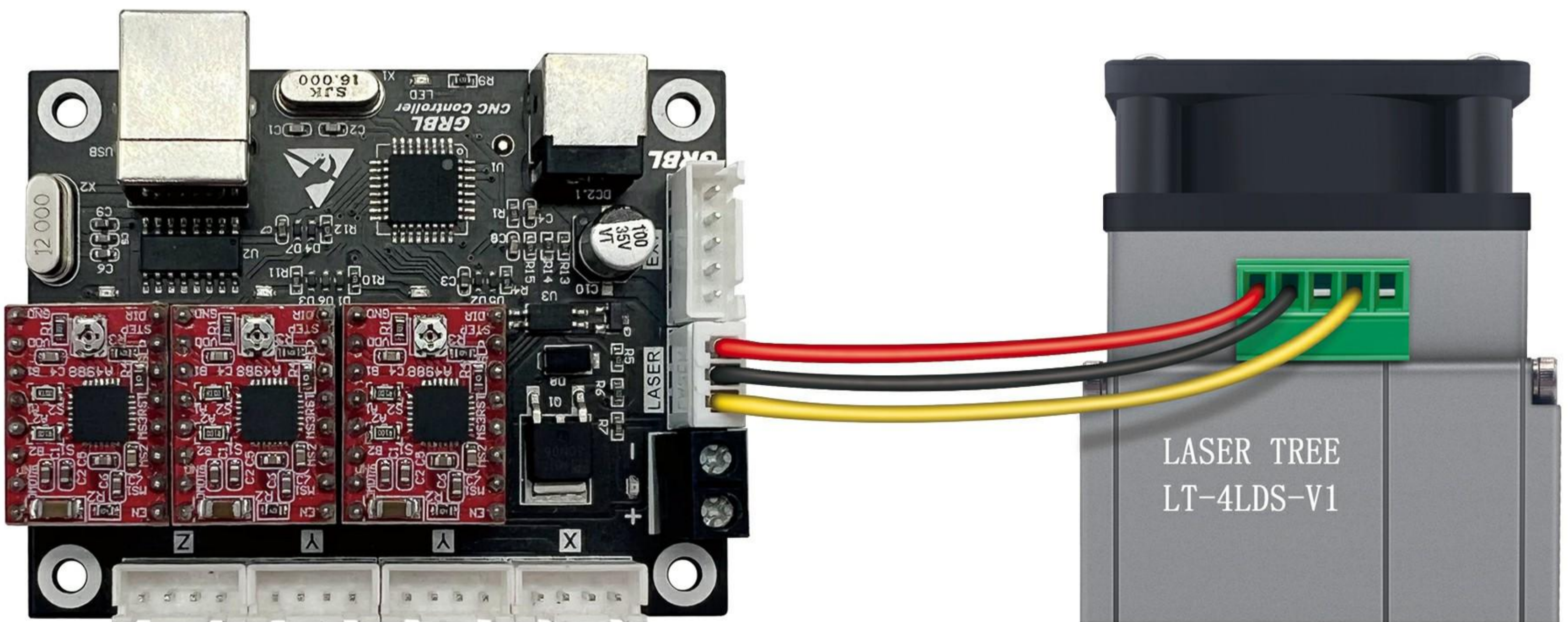
Please ensure your engraving machine main board has "PWM", "GND" and "DC" ports.

■ "A"&"B"are both compatible.

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

Engraving machine main board

Laser module



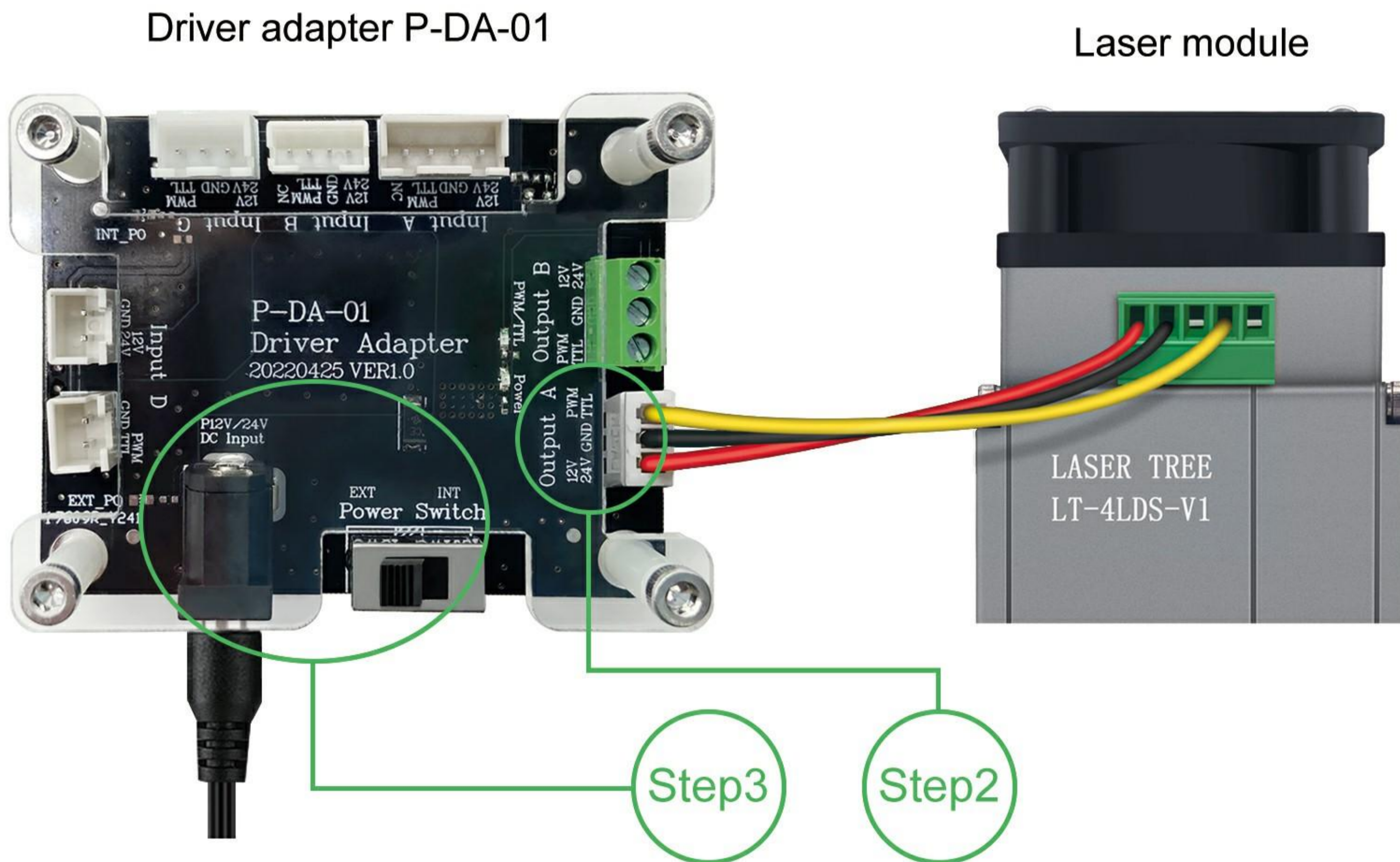
Reference picture

■ Only voltage is not matched.

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

Machine	Laser Module	Solutions
12V	24V	Driver Adapter + 24V Power Supply
24V	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.



Adapter suggestion: DC24V 5A

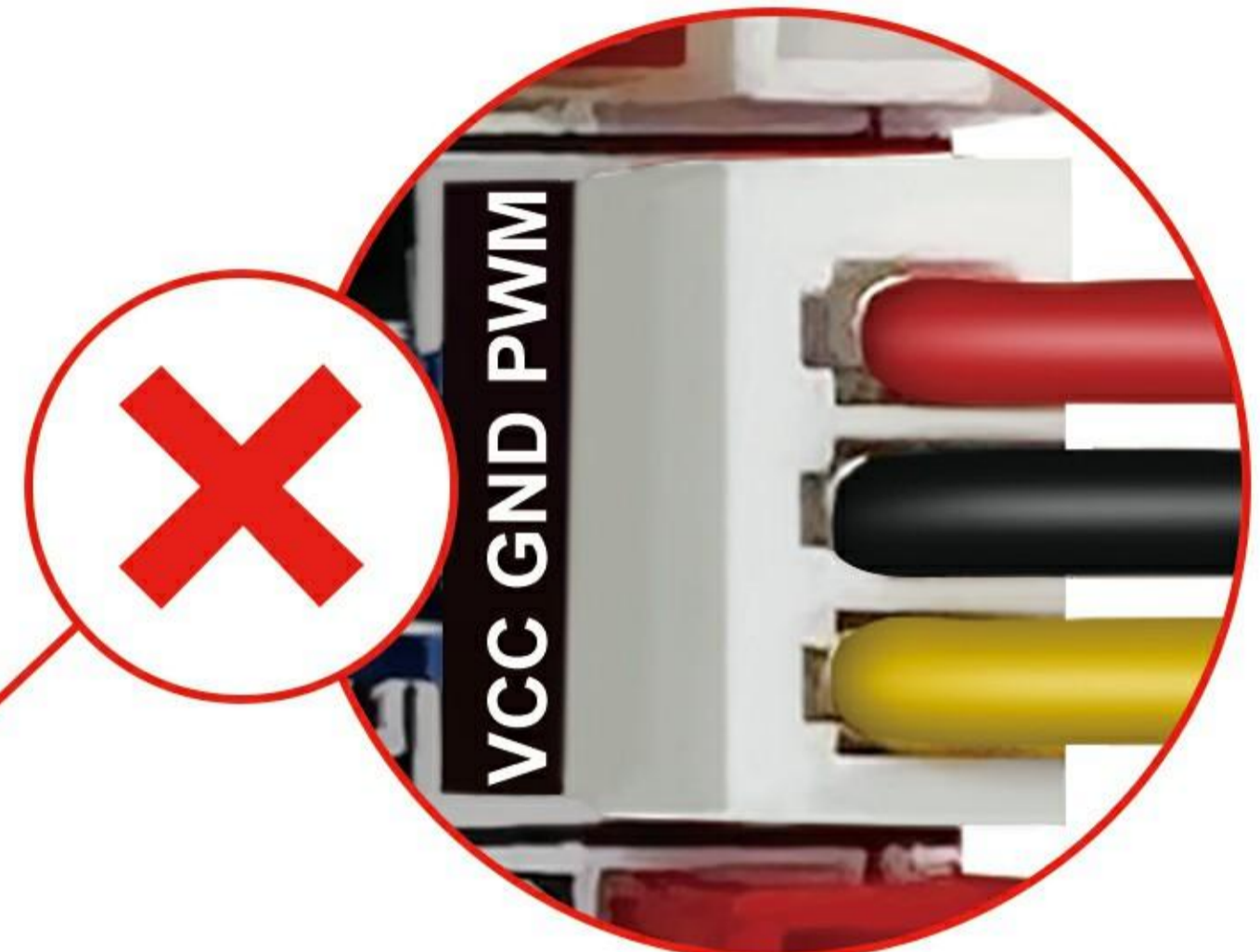
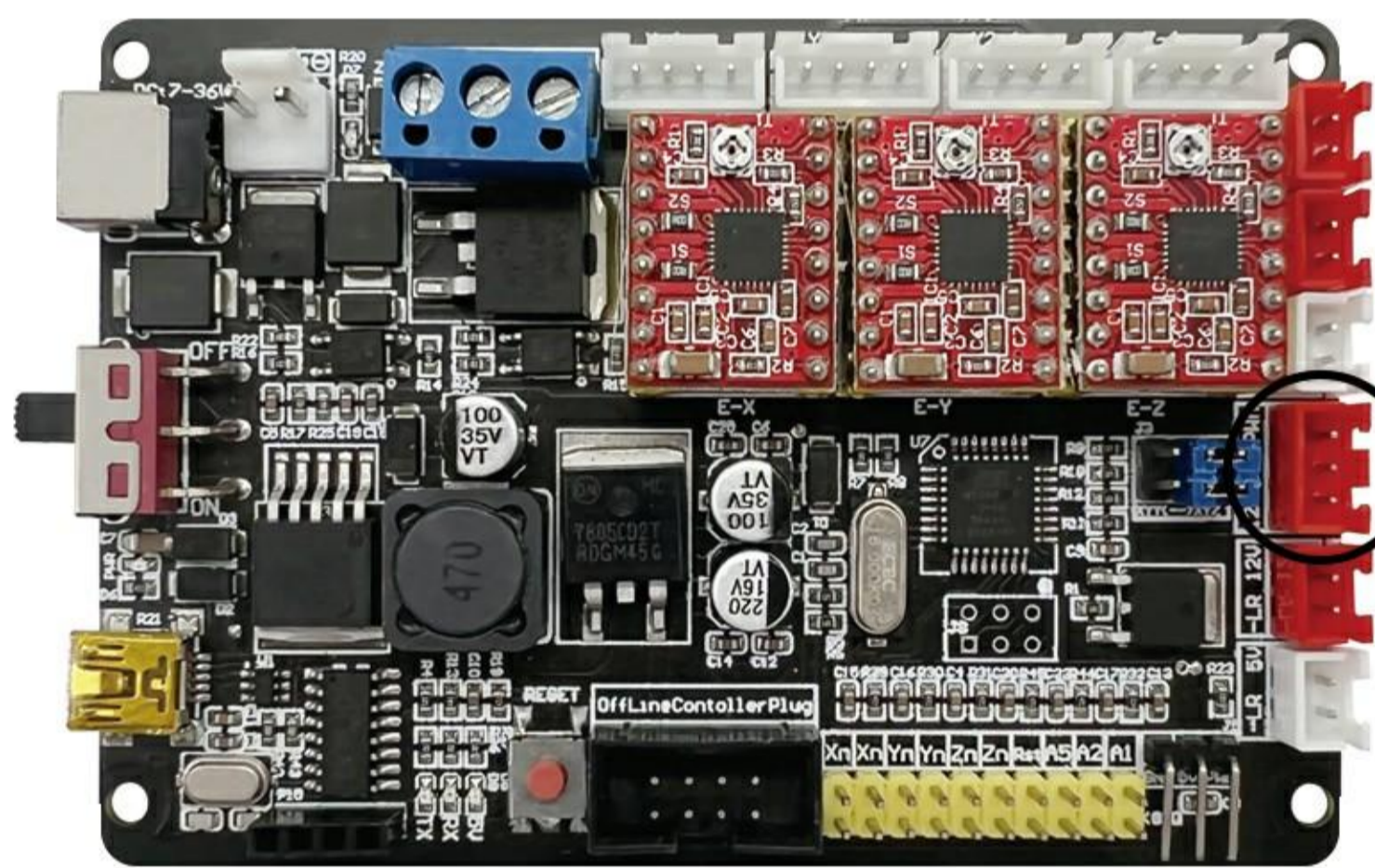
Reference picture

■ 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 main board.

Engraving machine main board



"Red: Power" and "Yellow: PWM " connection error



"Red: Power" and "Yellow: PWM" connection correctly

Reference picture

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

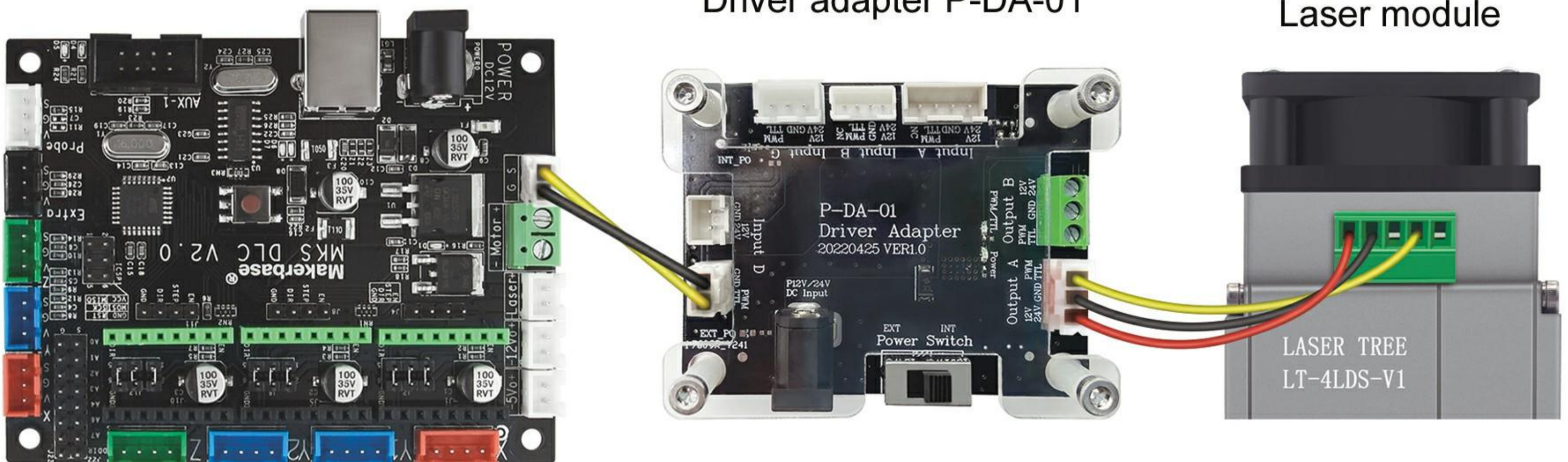
Step1 Connect the cable of the your engraving machine to the corresponding input connector on P-DA-01.

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



Reference picture

3. LASER MODULE REFERENCE SETTINGS

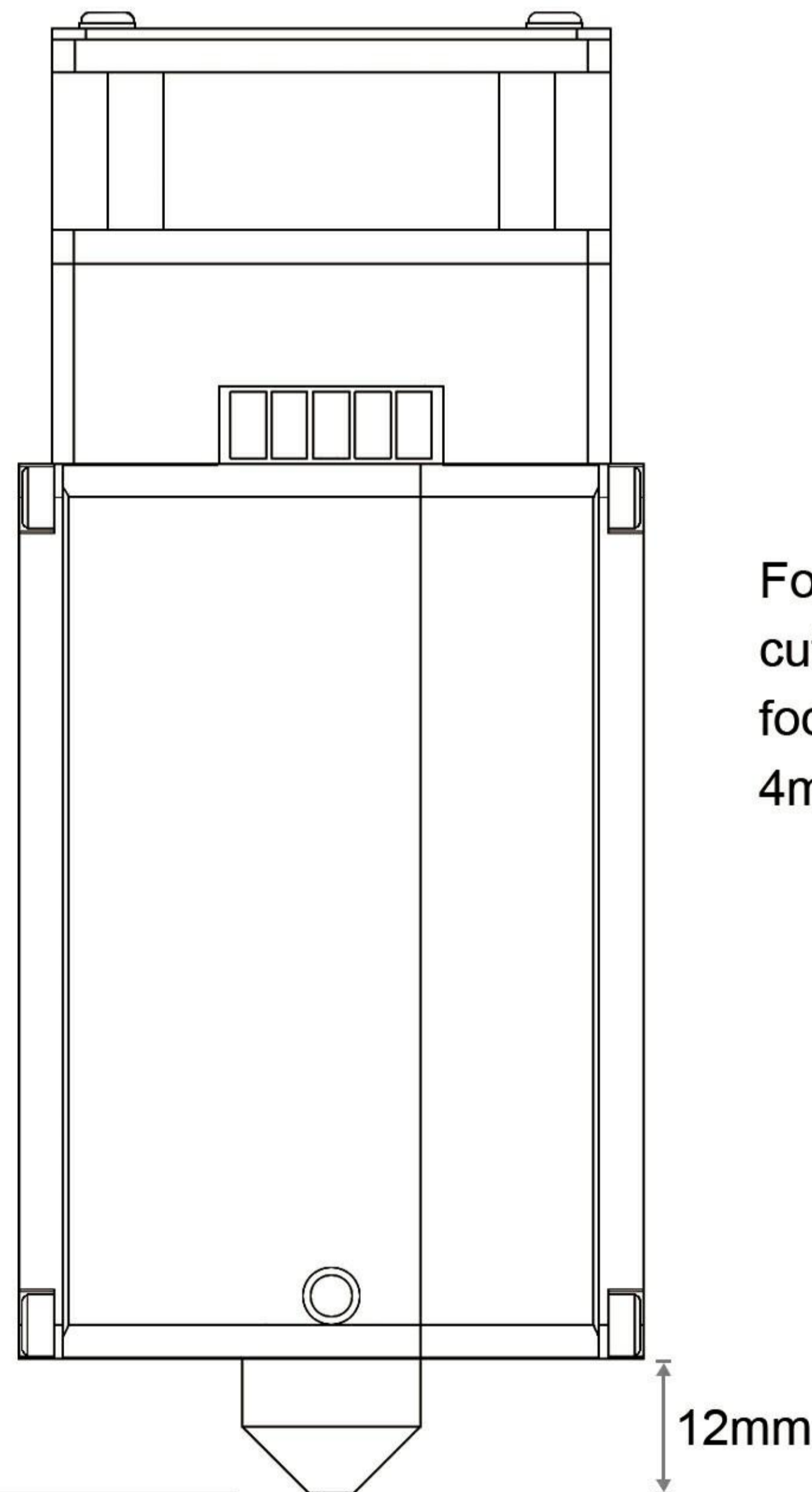
3.1 For cutting

The focal length of the LT-4LDS-V1 laser module is 20mm.

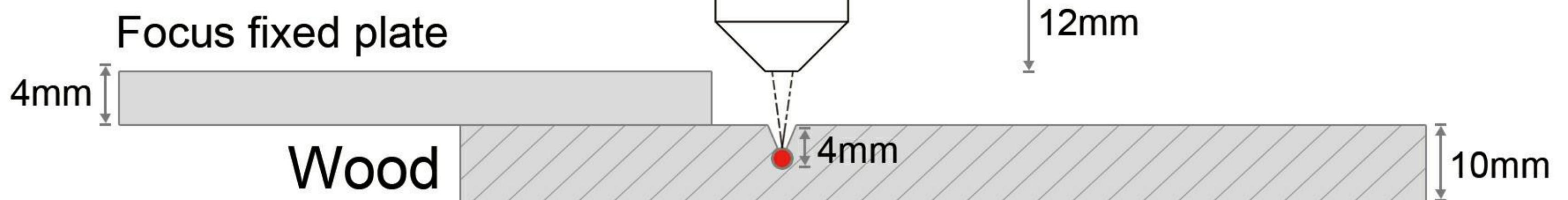
When cutting, you only need to make the focus located a bit lower than the surface of materials.

Reference settings for cutting

Focus fixing plate using reference	
Material Thickness	Plate thickness
2mm	8mm
3mm	8mm
4mm	8mm
5mm	6mm
8mm	5mm
10mm	4mm



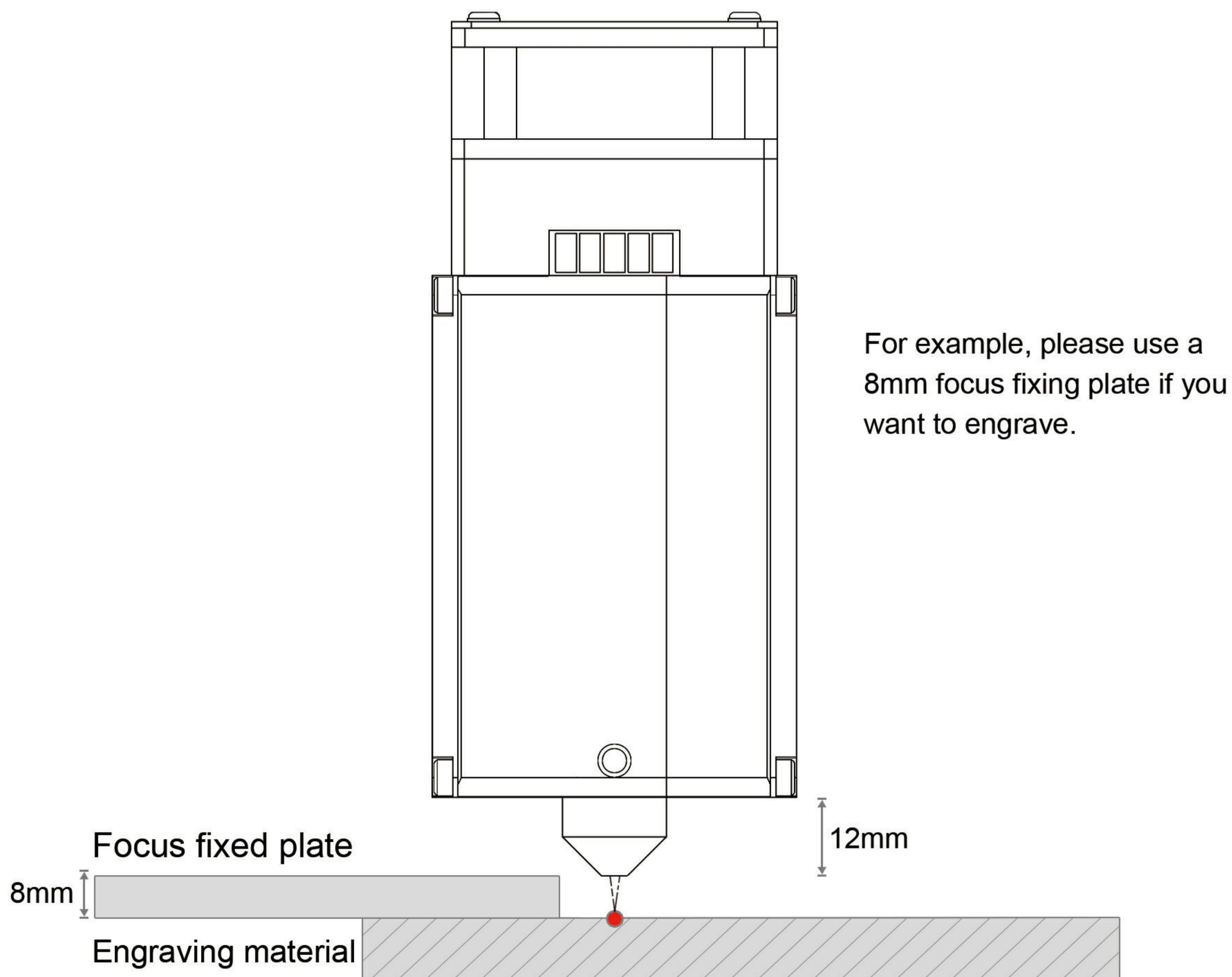
For example, if you want to cut 10mm bass plywood, the focus fixing plate should be 4mm.



3.2 For engraving

When engraving, please ensure that the focus is located on the engraving material surface.

Reference settings for engraving



4. PRECAUTIONS AND MAINTENANCE

4.1 Precautions



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.

4.2 Maintenance



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

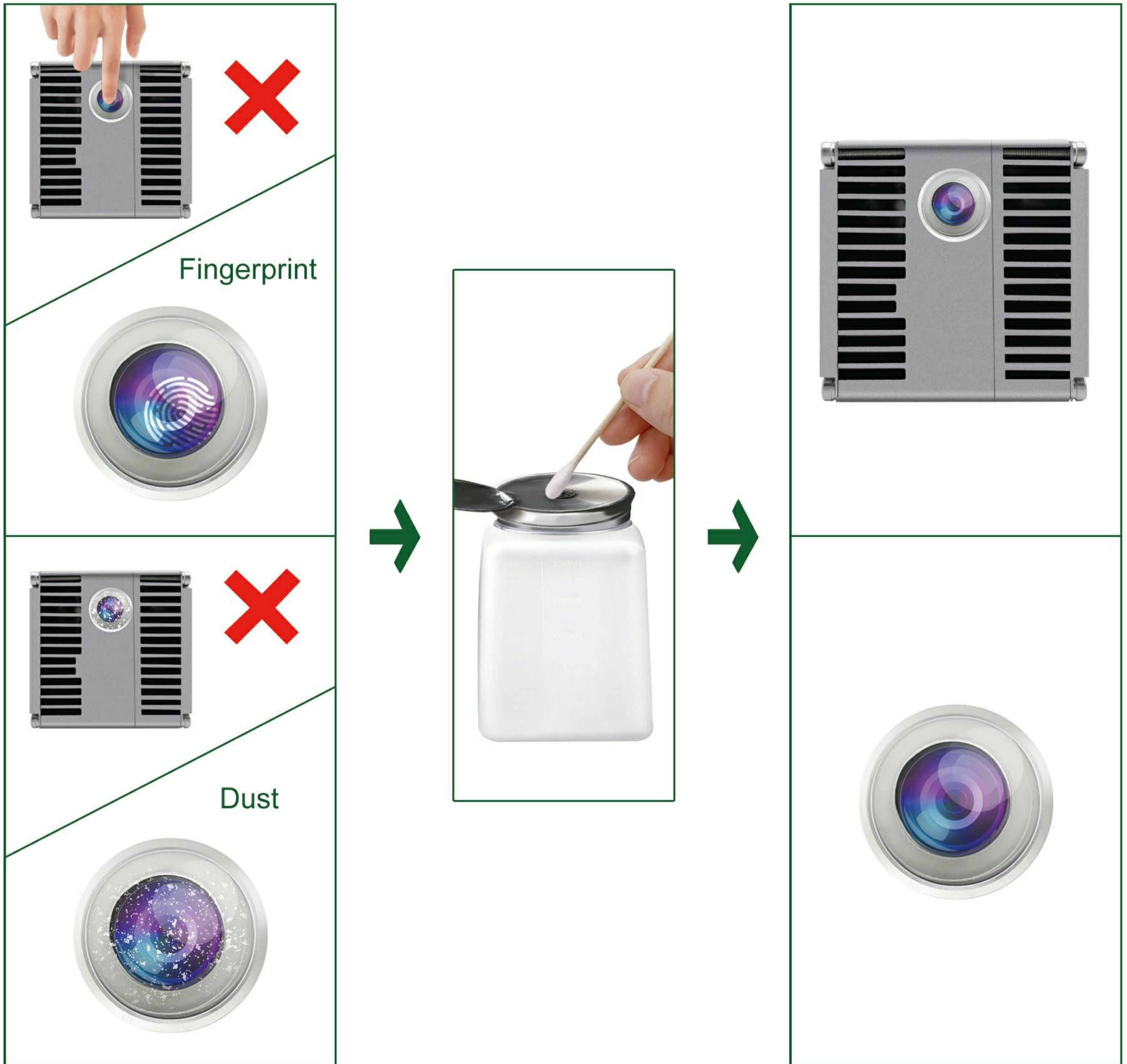


When you replace the air nozzle, please ensure that your operation will not pollute the lens. Finger prints or dust on the lens will weaken the output power of the laser module, or even damage the lens.



When you find the cutting ability decreases, 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.





Enjoy pleasure of DIY