



K20 PRO USER MANUAL

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Laser may cause damage to your skin. Please do not expose your skin directly to the laser.
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Please wear laser goggles to protect your eyes when you use this laser module.
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Please ensure that the air pump is turned on before you start cutting. If not, the smoke will contaminate the lens.
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This laser module doesn't support hot plug. Hot plug may cause damage to the laser module.

CONTENT

1

PRODUCT INTRODUCTION

1

Parameters

1

Outline dimension

2

Packing list

3

2

PRODUCT DESCRIPTION

4

Overview

4

Driver adapter

7

Sliding plate

8

3

CONNECTION DESCRIPTION

9

4

FOCUS REFERENCE SETTINGS

11

For cutting

11

For engraving

12

5

MAINTENANCE

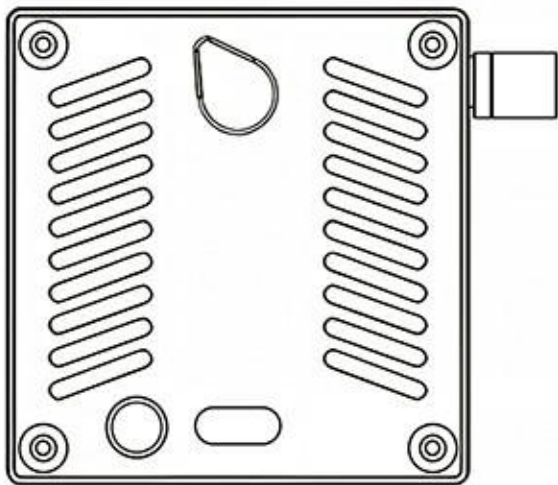
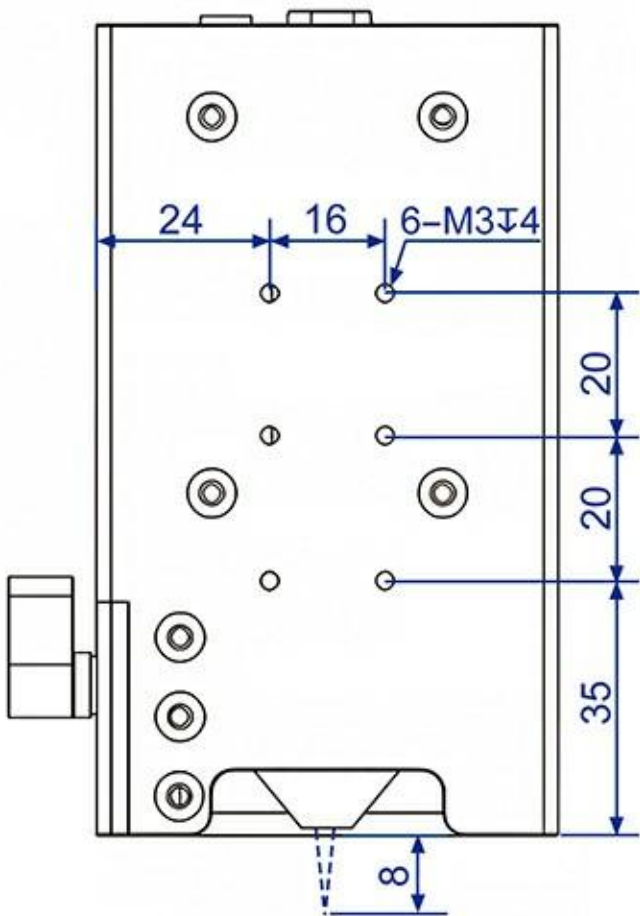
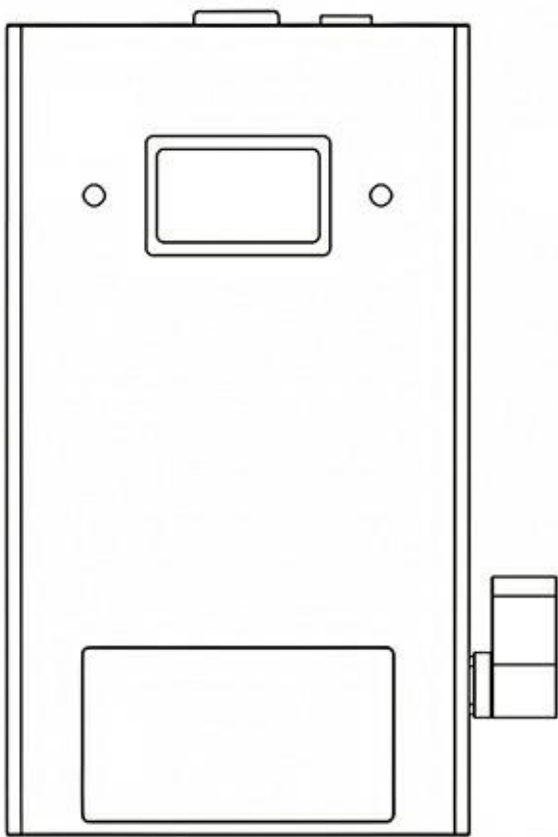
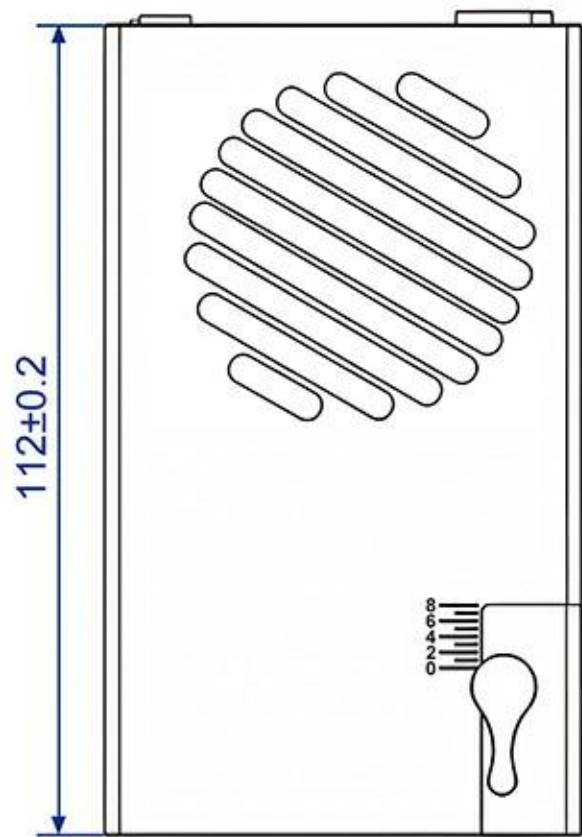
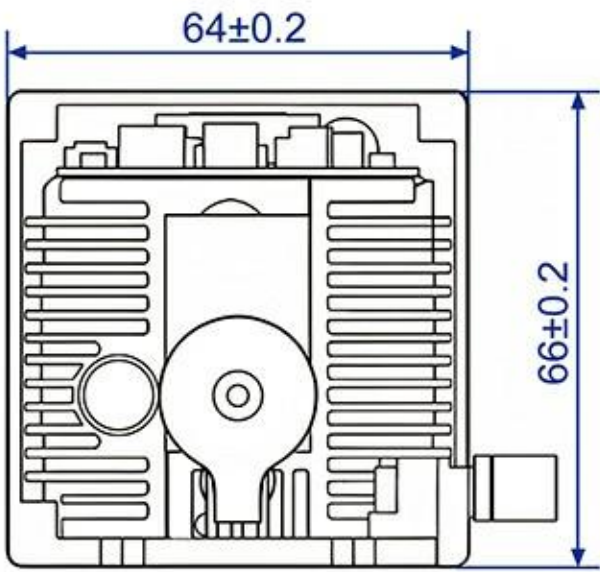
13

1. PRODUCT INTRODUCTION

Parameters

Optical power:	18W-22W
Input:	DC24V 4A
Wavelength:	450nm (±10nm)
Focus length:	40mm
Air assistance:	Built-in airway
Power adjustable:	TTL/PWM
PWM modulation:	0/3-12V, 0-5kHz
Fan speed:	Dual fans, 6000RPM
Operating temperature:	0-60°C
Interface:	MR
Cable:	3PIN, 80cm
Material:	Aluminum & Copper
Module weight:	587g
Application:	Engraving & Cutting

 Outline dimension (Unit: mm)



 Packing list



Input cable *1



Laser module *1



Driver adapter *1



Sliding plate *1



Power supply *1



1.5m Air tube *1



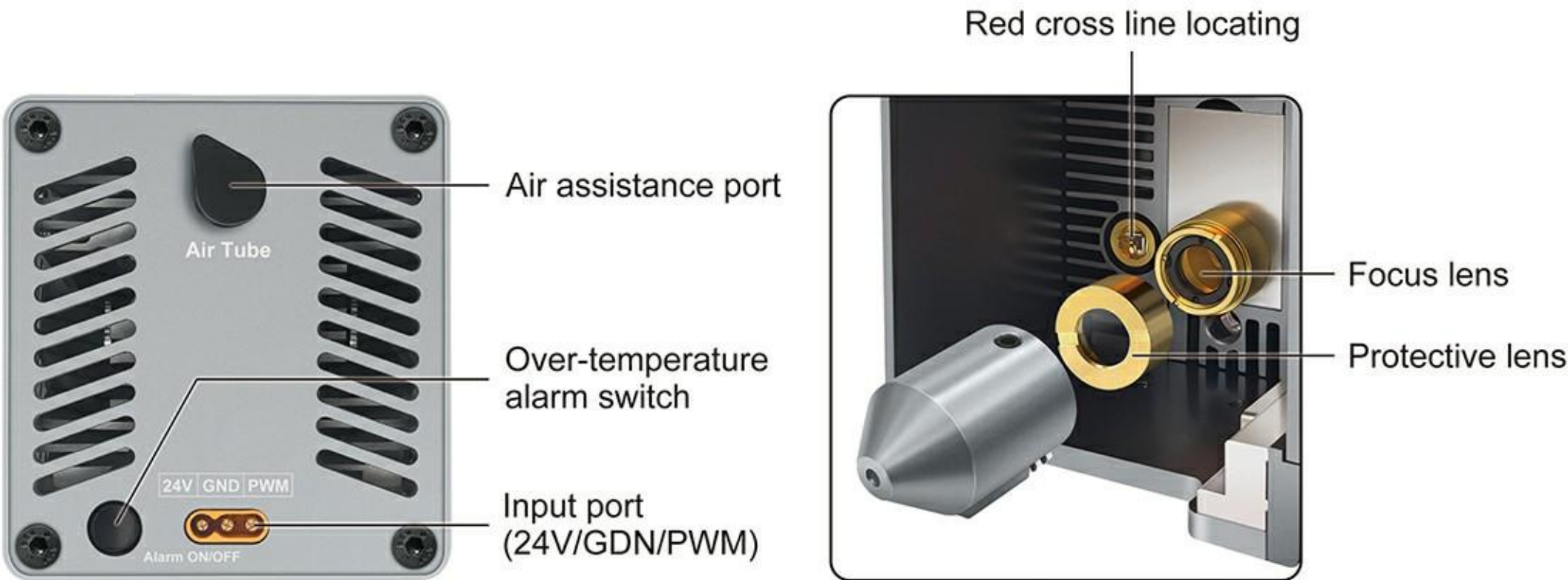
2mm L-wrench *1

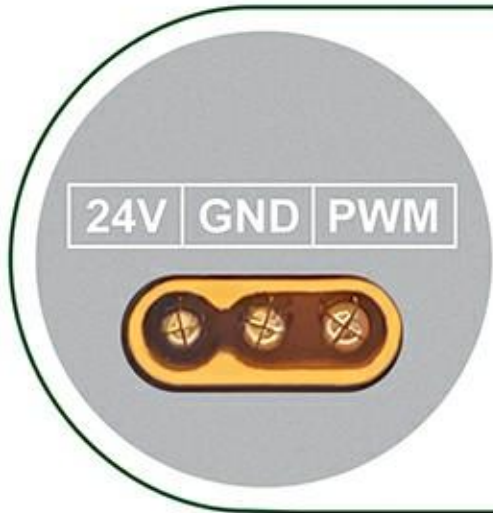


Spare protective lens *1

2. PRODUCT DESCRIPTION

Overview





Input port

Use MR30-M pluggable connector.

- VCC (DC24V)
- 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: $\geq 0.027\text{kPa}$, 27L/min
- Air tube: outer diameter 8mm and inner diameter $\geq 5\text{mm}$



Working temperature display

The output power stability and life time of laser module has strong relationship with working temperature of laser diode. LT-K20 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.

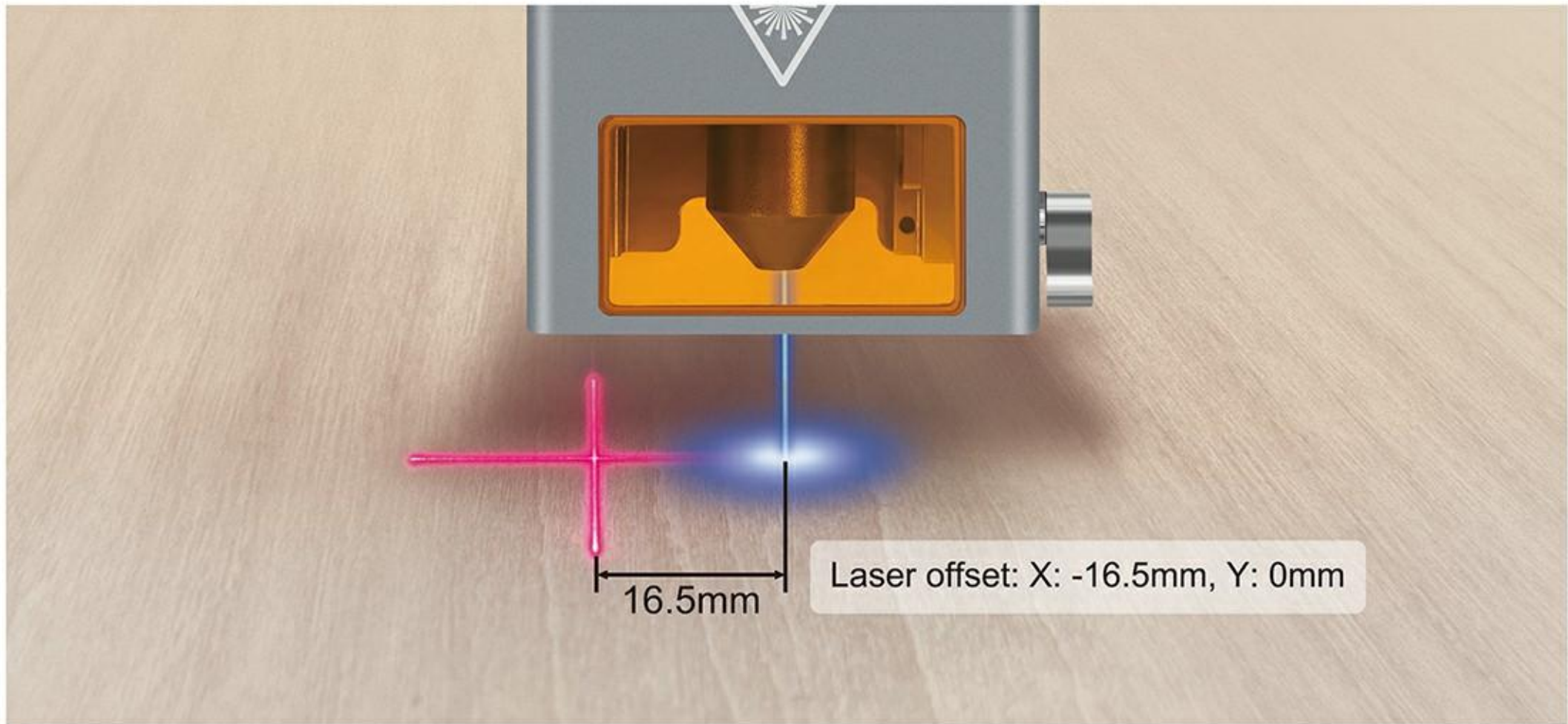


Working status indicator

Power indicator: it is red when power supply is connected.
Signal indicator: it is green when signal is received.

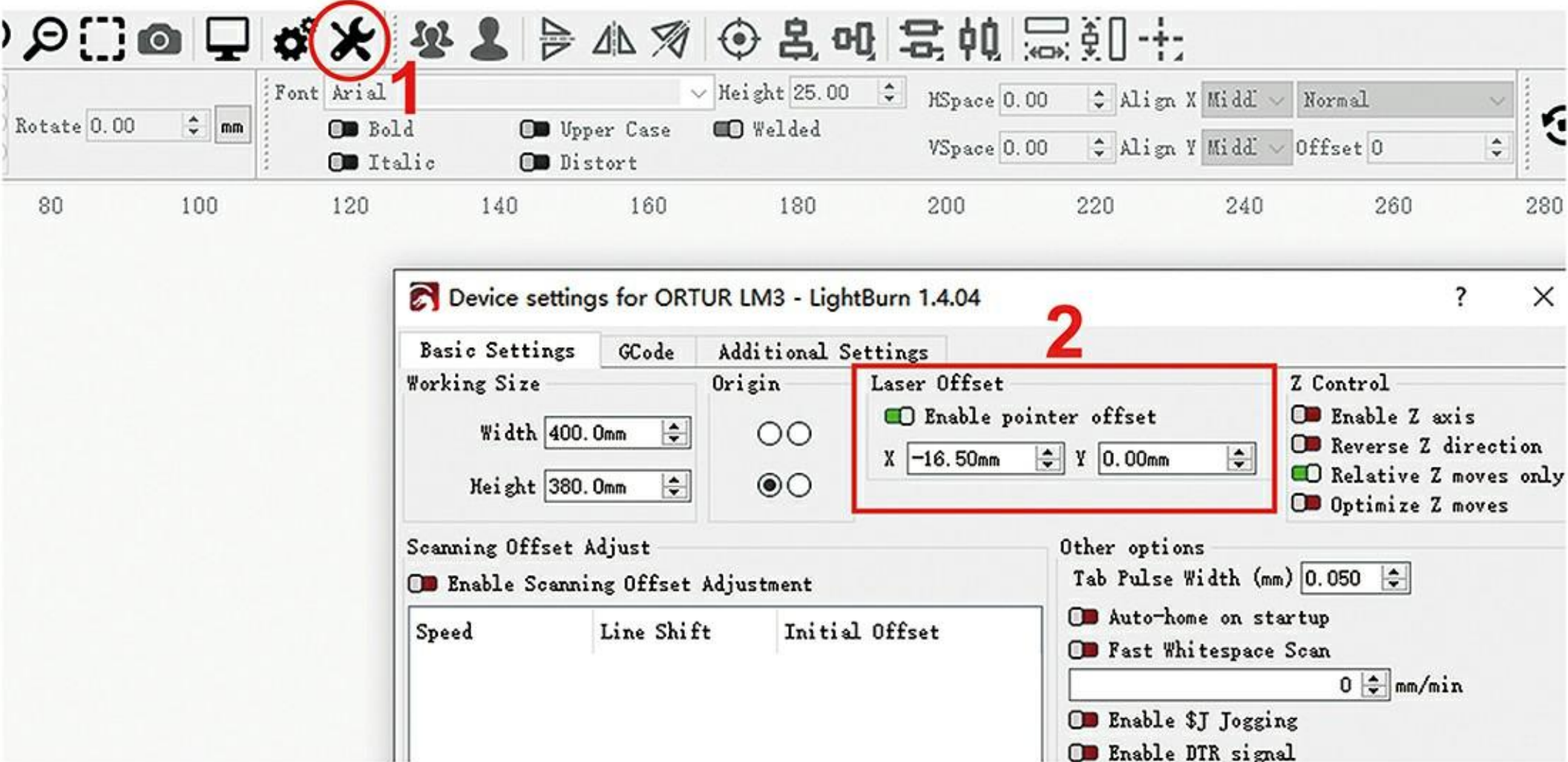
+ Red cross line locating

Help you to place the material to the position correctly.

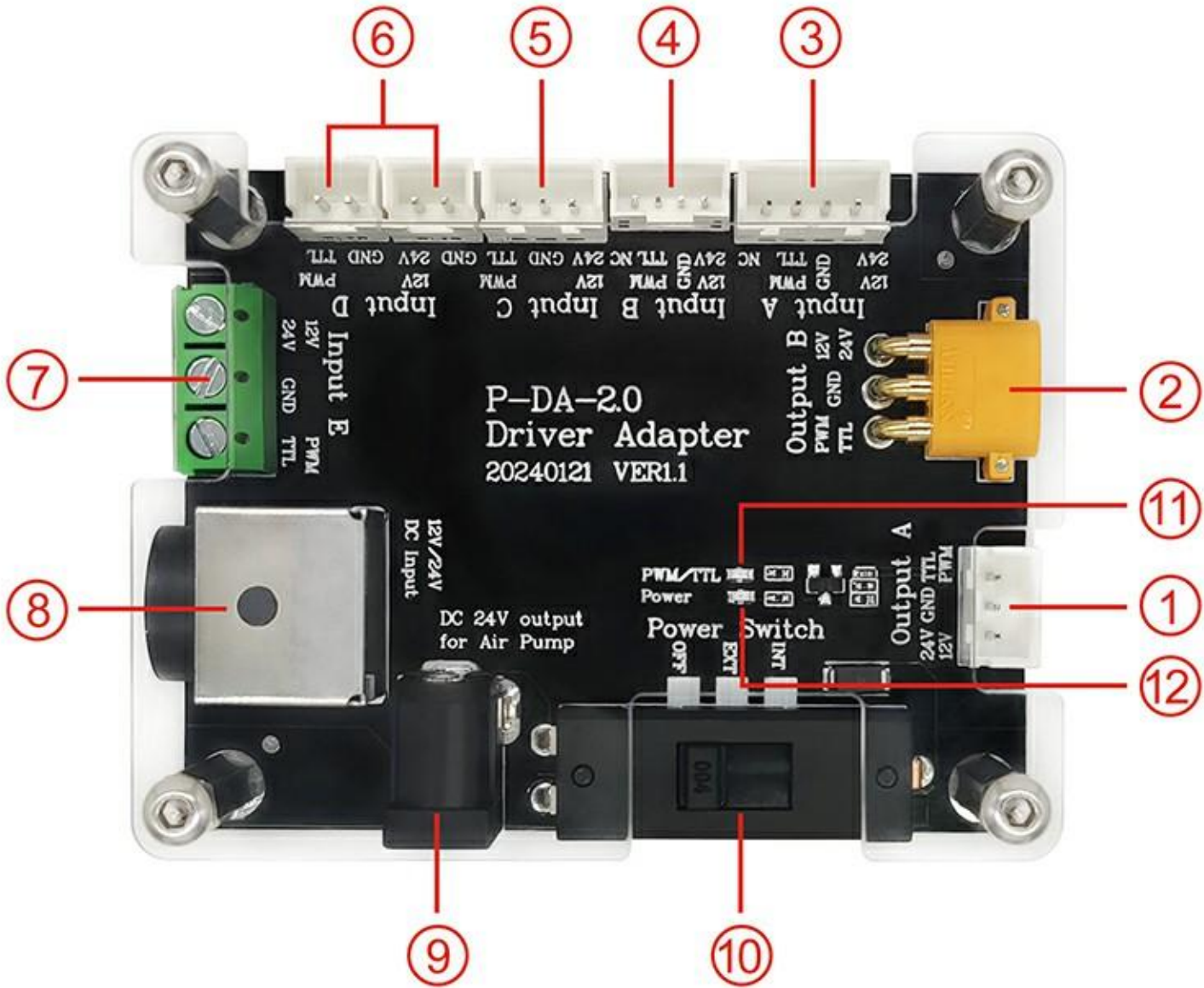


LightBurn Software settings

→ Device setting → Laser offset → X axis: -16.5mm



 Driver adapter (Model: P-DA-02)

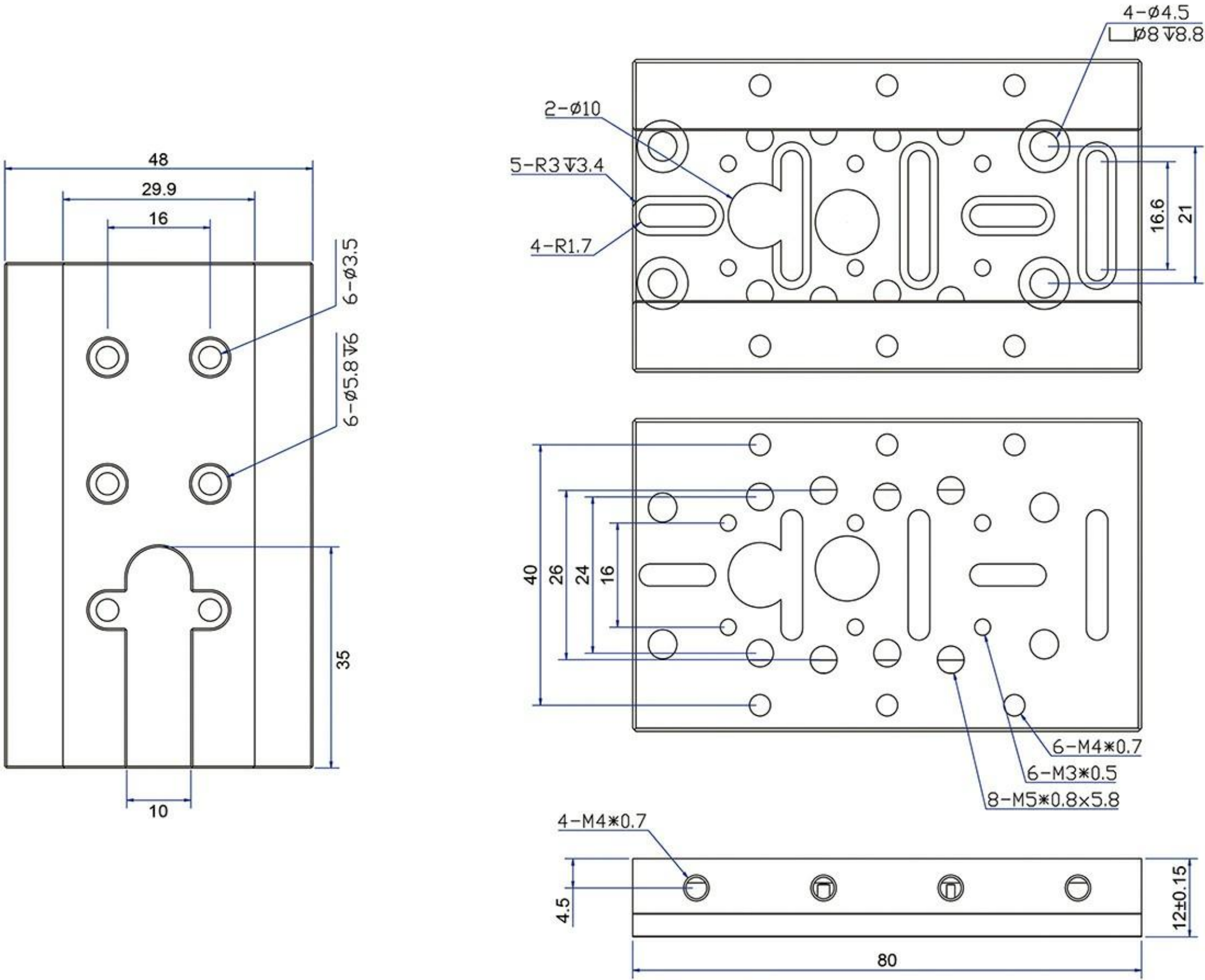


① Output A: XH2.54-3Pin	② Output B: MR30-M
③ Input A: XH2.54-4Pin	④ Input B: PH2.0-4Pin
⑤ Input C: XH2.54-3Pin	⑥ Input D: XH2.54-2Pin
⑦ Input E: KF350-3Pin	⑧ 12V/24V DC Input: 4Pin
⑨ 24V output for air pump: DC5.5*2.1mm	
⑩ Power Switch: • OFF—Power off • EXT—External power supply • INT—Internal power supply	
⑪ TTL/PWM indicator: It is green when the TTL/PWM signal is received.	
⑫ Power indicator: It is red when the power 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

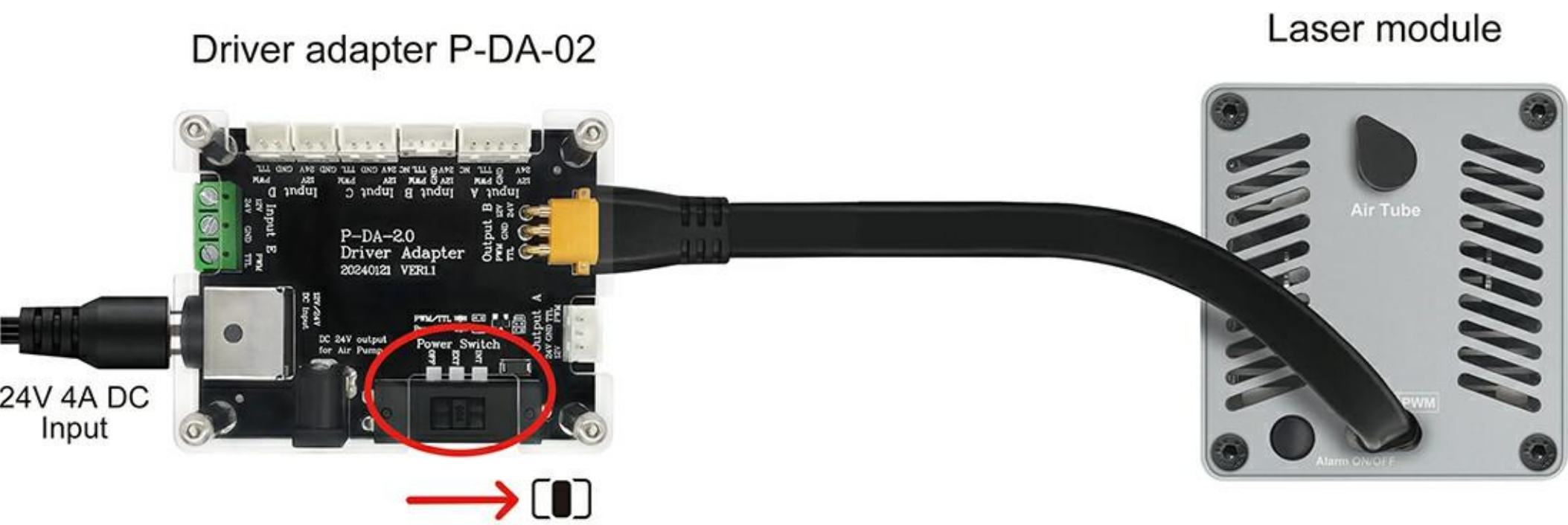
3. CONNECTION DESCRIPTION

Please check whether there is a PWM/TTL and GND output port on the engraver main board before connection.

- Step1
- Connect one end of the input cable to the laser module and the other end to the corresponding output B port on the driver adapter.



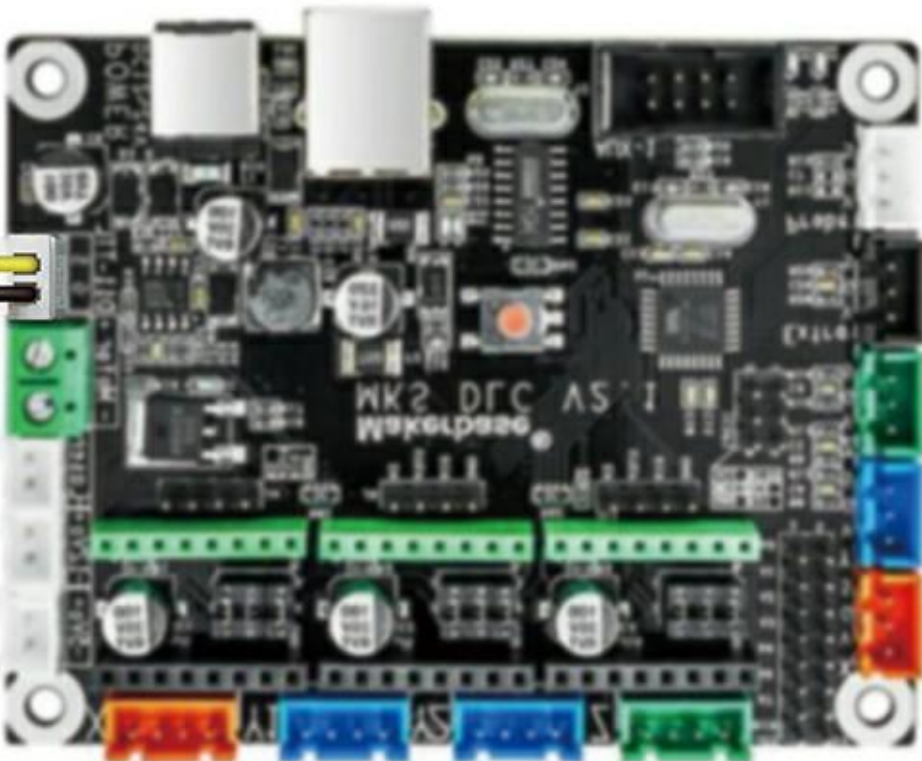
- Step2
- Connect the 24V power adapter to the DC input connector on driver adapter. Push the switch to "EXT" position and the power is provided by external power adapter.



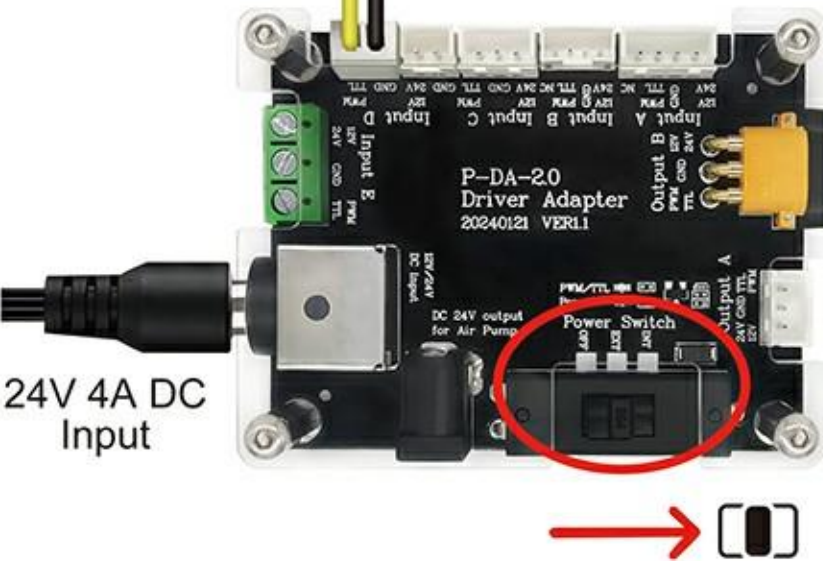
Step3 Connect the engraving machine main board cable to the corresponding input port on drive adapter.

(The picture below is a connection example. For more Input ports, please refer to the driver adapter description on page 7.)

Engraving machine main board



Driver adapter P-DA-02



Laser module



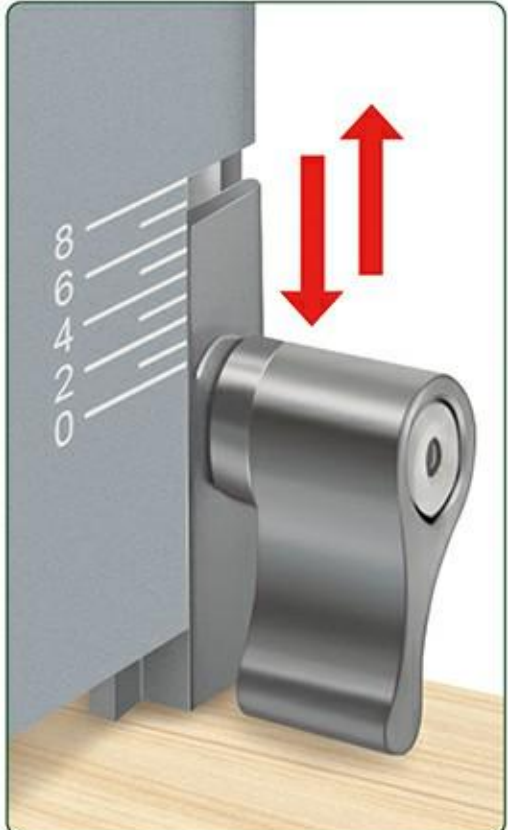
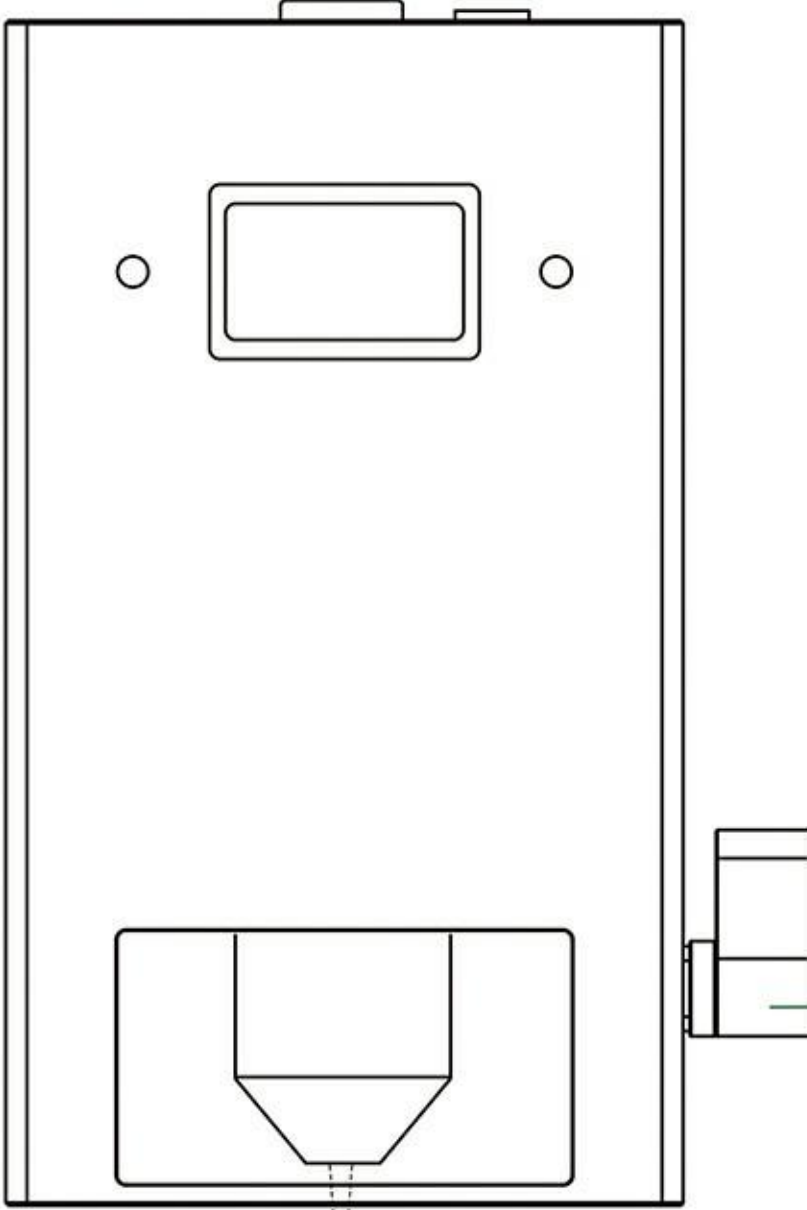
4. FOCUS REFERENCE SETTINGS

The focal length of the K20 Pro 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



For example, if yo want to cut 12mm material, the focus should be 6mm lower than material surface. Please adjust the fixed focus lever to 6mm.

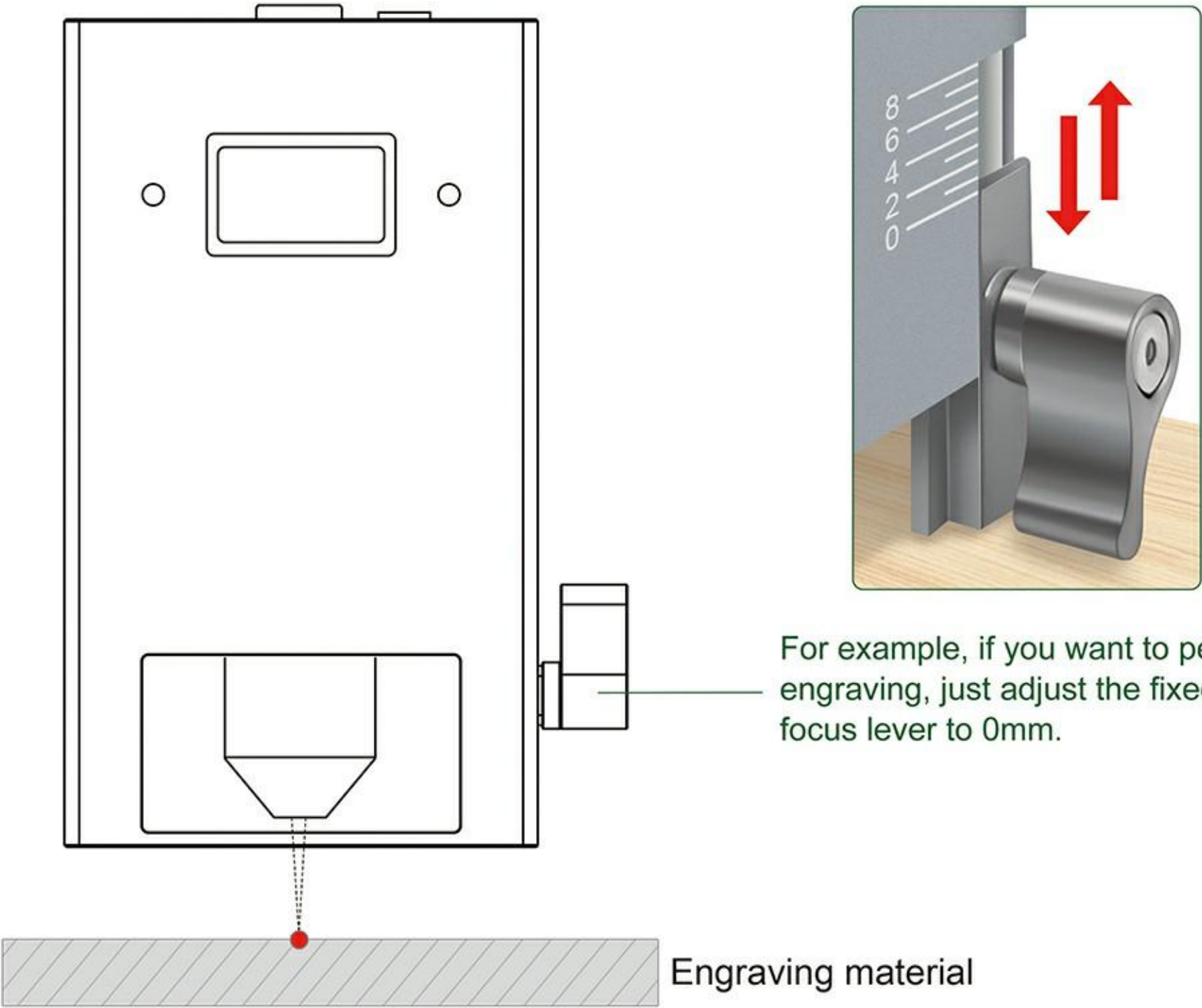
Wood 

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

 For engraving

Please make the focus locate on the engraving material surface.

Reference settings for engraving

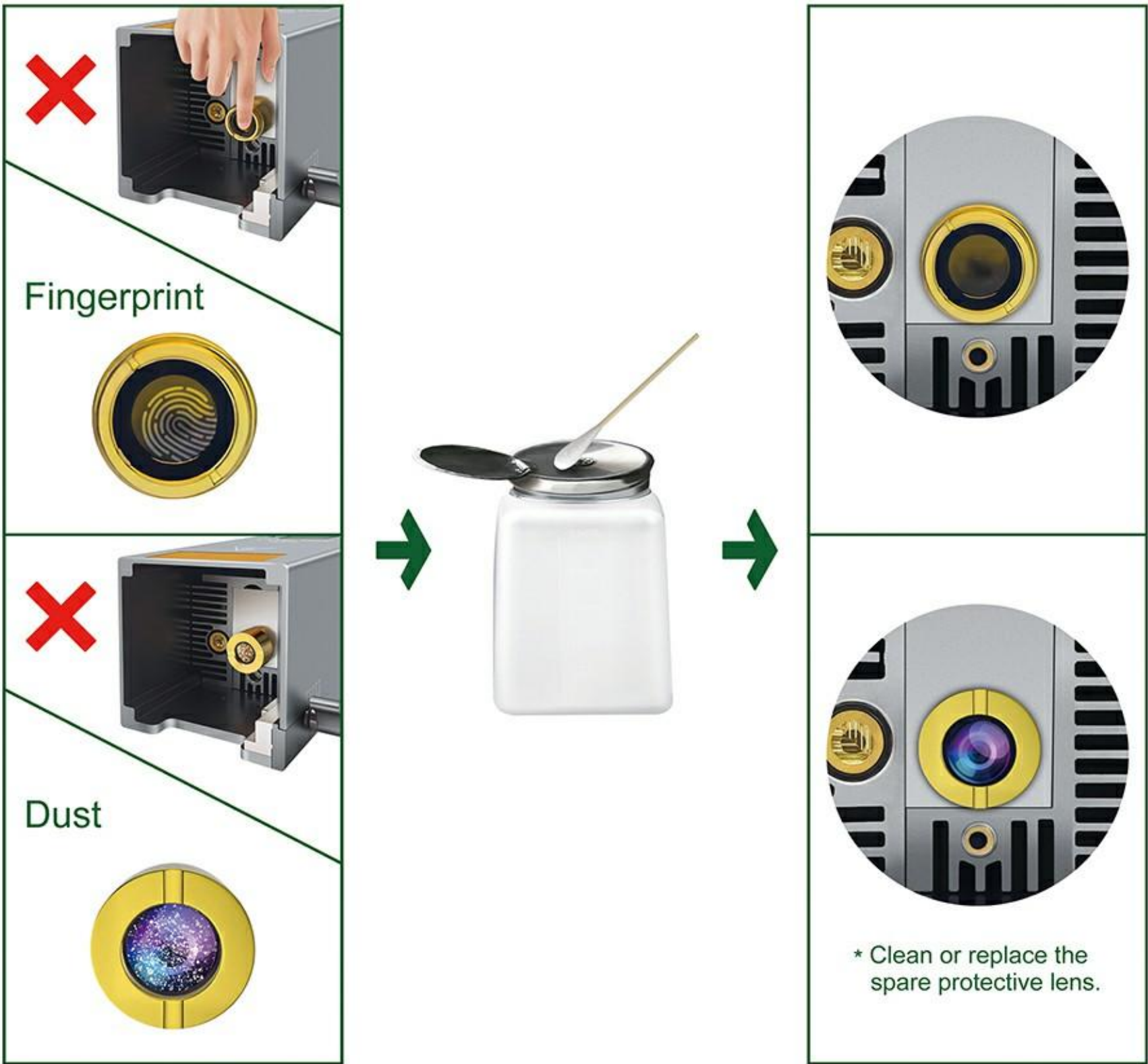


5. MAINTENANCE

- 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 decreases, the lens might be not clean. Please use a clean alcohol swab to clean it according to the following figure.

Caution for lens cleaning:

- Make sure the engraving module is disconnected from the power supply before wiping the lens.
- After wiping, allow the lenses to dry naturally for 3 to 5 minutes before use.



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



LASER TREE

Enjoy pleasure of DIY



RoHS



MADE IN CHINA