LWY08A0-H00 User Manual

Product Description

Shenzhen Ospri Intelligent Technology Co., LTD

Foreword

Dear Users:

Welcome to use Shenzhen Ospri Intelligent Technology Co., Ltd. to produce LWY08A0 dual-band composite laser welding joint products. We are honored to have your confidence in our products.

In order to make you have an overall view of the product, convenient for your use, we specifically provide the user manual for you, including product characteristics, structural feature, technical feature, direction for use, maintenance, etc. It's an essential guide when you use this product.

Please read the user manual carefully before use. I'm sure it will be helpful for you to use this product. In addition, if you have any questions during use, please contact us, and we will serve you wholeheartedly.

Declaration:

In order to ensure your safety and the product works normally, please read the guide book carefully before using.

Contents

Chapter 1 Overview

1 Technical Parameters

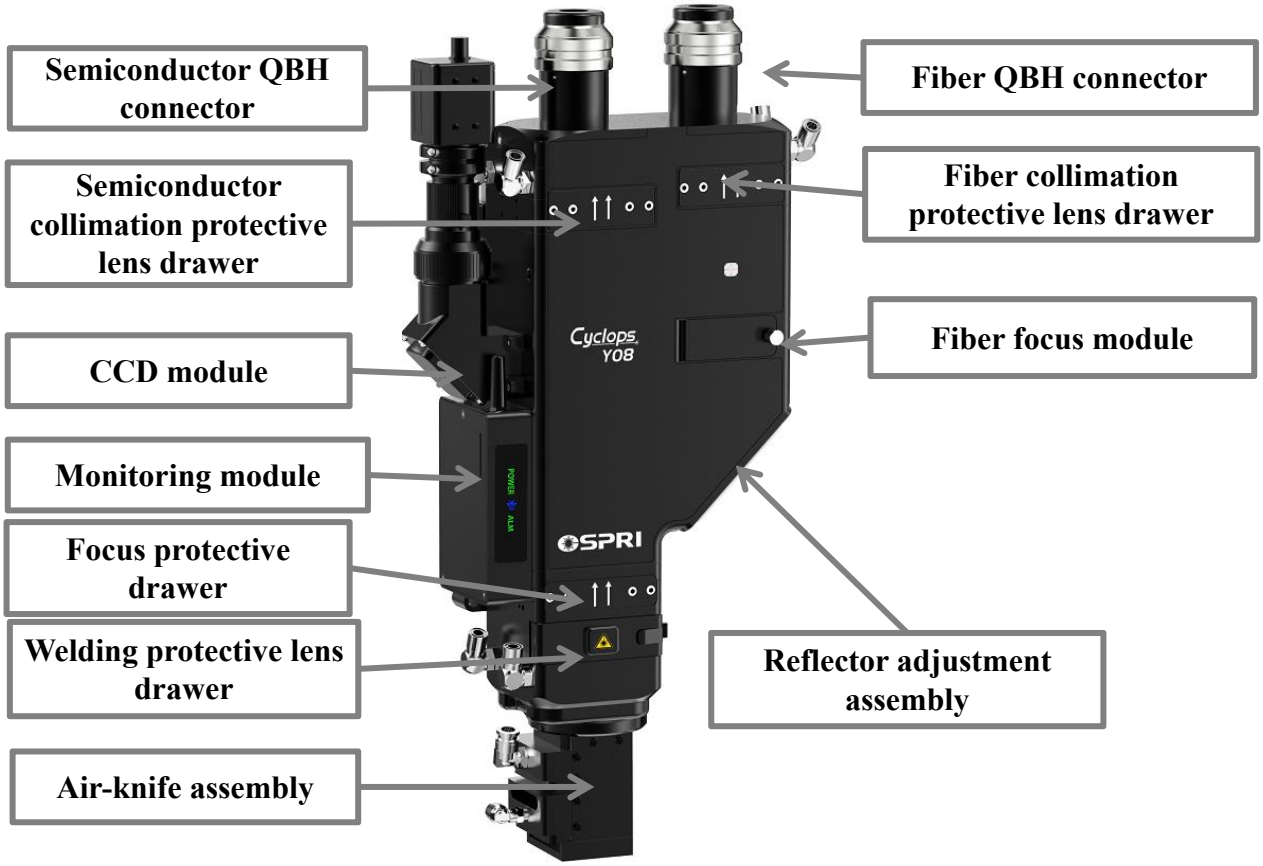
Name	Dual-band medium and high power welding head
Model	LWY08A0
Interface type	QBH
Applicable wavelength	1080±10nm and 910-990nm
Rated power	≤8kW
Semiconductor collimation focal length	100mm
Fiber collimation focal length	100mm/150mm
Focus length	150mm/200mm/250mm/300mm
Vertical adjustment range	±10MM
Intake mode	Coaxial/paraxial air blowing
Nozzle model	Φ8/φ6
Collimation protective lens	D50T2
Focus protective lens	D50T2
Auxiliary air pressure	≤1Mpa
Weight	7.2KG

2 Precautions

① Ensure standard and reliable grounding before power-on;
② When connecting the laser output head and welding head, check the output head carefully to confirm no pollutants on it, such as dust, for the pollutants will burn optical fiber and welding head. Please clean the laser output head using dedicated cleaning devices;
③ Make the site environment (such as closing fan) is ready before replacing the protective lens;
④ For any questions, please feel free to contact us.

Chapter 2 Structural Characteristics

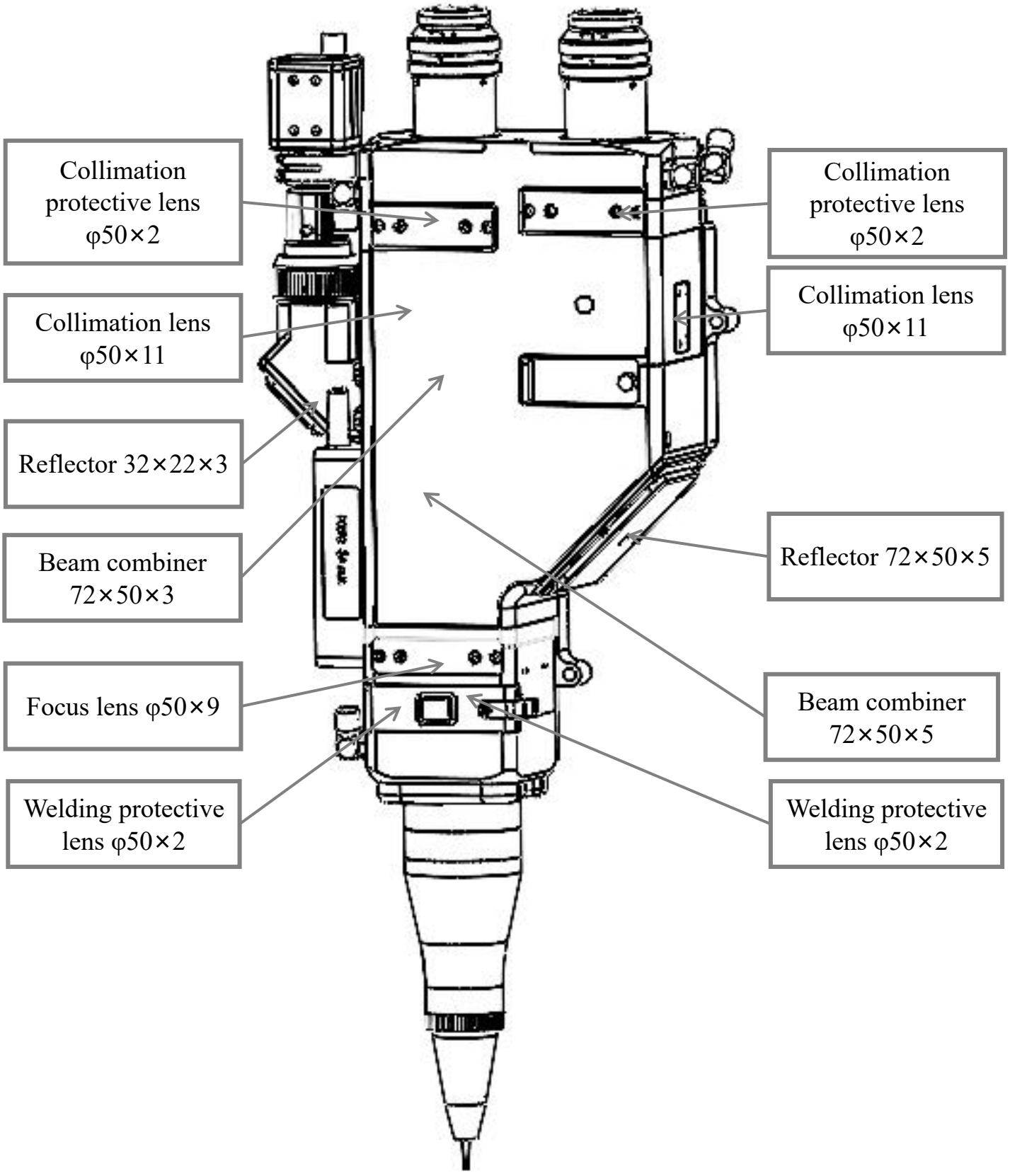
2.1 Brief Description of Product Structure



2.2 Main Modules:

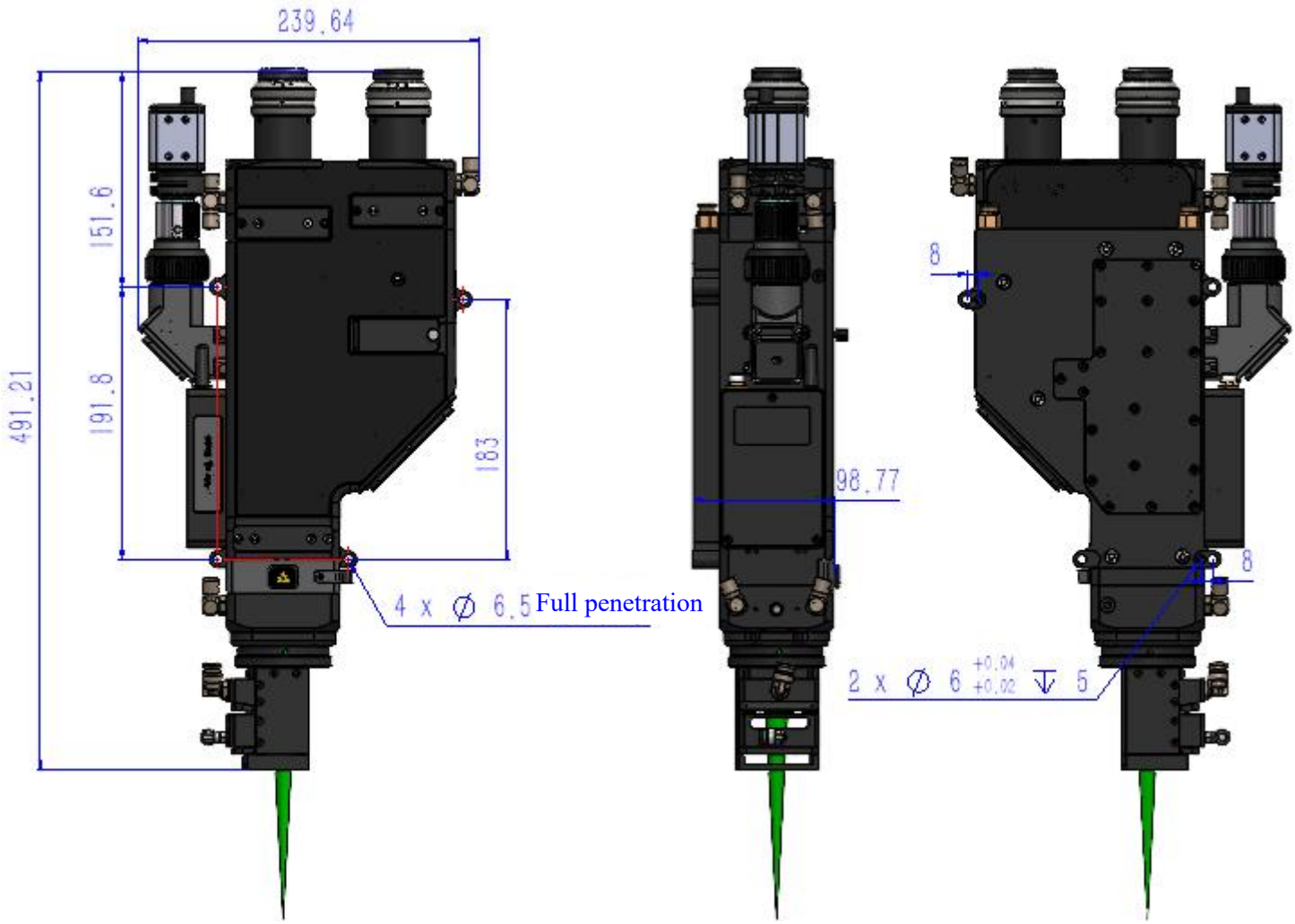
① Semiconductor QBH connector: Connect and lock semiconductor laser and welding head;
② Fiber QBH connector: Connect and lock fiber laser and welding head;
③ Fiber focusing module: Adjust the relative position of fiber focus and semiconductor focus along vertical direction;
④ Semiconductor collimation protective lens drawer: Extend the lifespan of the semiconductor collimation lens;
⑤ Fiber collimation protective lens drawer: Extend the lifespan of the fiber collimation lens;
⑥ CCD module: Assist in welding demonstration or serve as a reserved connector to add detection system;
⑦ Welding protective drawer: Prevent dust from entering the focus lens;
⑧ Focus protective drawer: Prevent dust from entering the focus protective drawer;
⑨ Reflector adjustment assembly: Adjust the relative position of fiber focus and semiconductor focus along the horizontal position;
⑩ Air-knife assembly: Prevent the spatter from damaging the protective lens and extend its lifespan.
⑪ Monitoring module: Monitor the status of welding head protective lens via mobile APP.

2.3 Brief Description of Product Parts (Lens Size)



Chapter 3 Product Installation

3.1 LWY08A0 Dimension Drawing

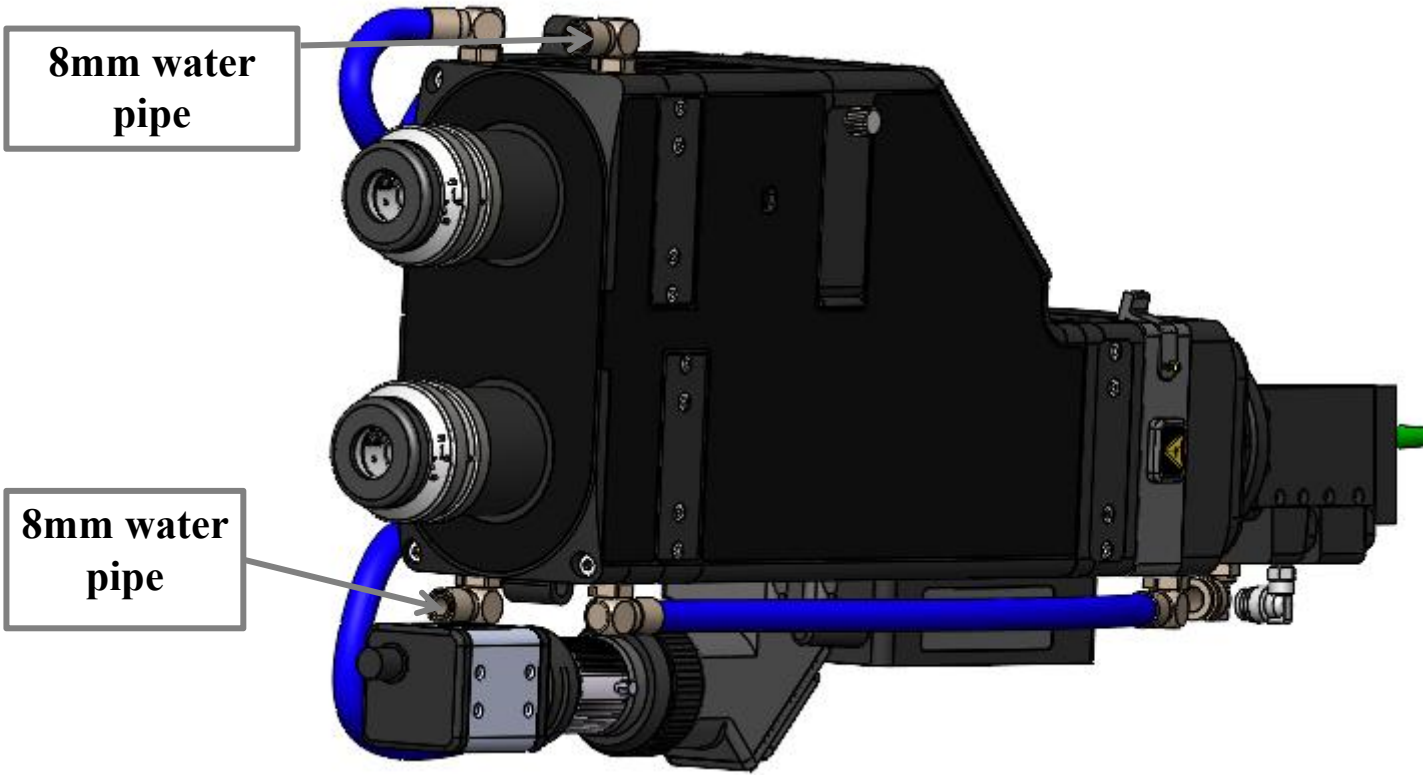


Schematic diagram of main size of welding head
(semiconductor collimation 100, fiber collimation 100 and focus F300)

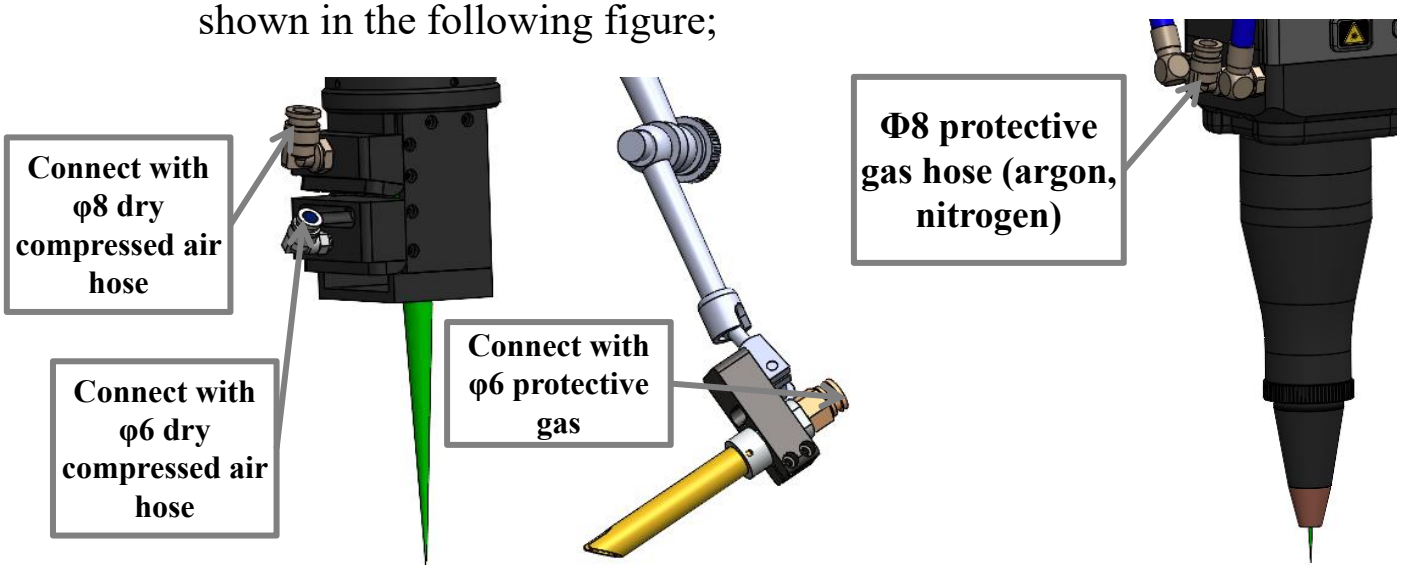
3.2 Water and Gas Connection

3.2.1 Cooling Pipe

1. Connect with φ8 water hose to form an inlet and an outlet cycle, as shown in the following figure;



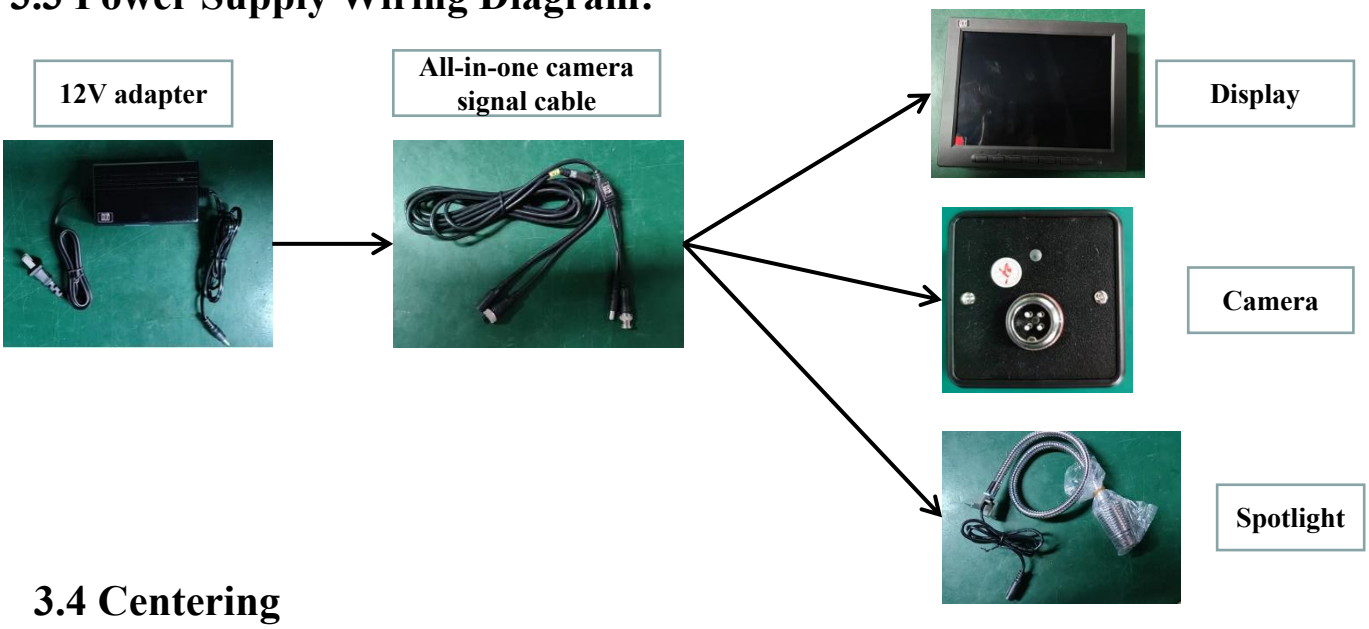
2. Connect with φ8 hose of compressed air or other protective gases, as shown in the following figure;



Suggestions: Connect 8mm gas pipe to the input port for protecting gas output, welding base metal and extending the lifespan of lens; input flow >10L/MIN.

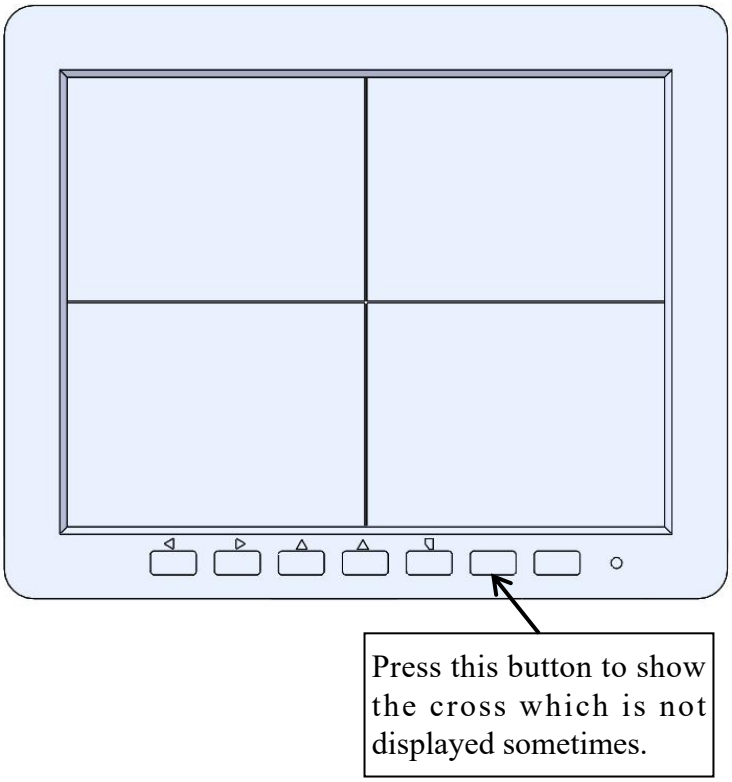
Common gas: Inert gases such as oxygen, nitrogen, etc.

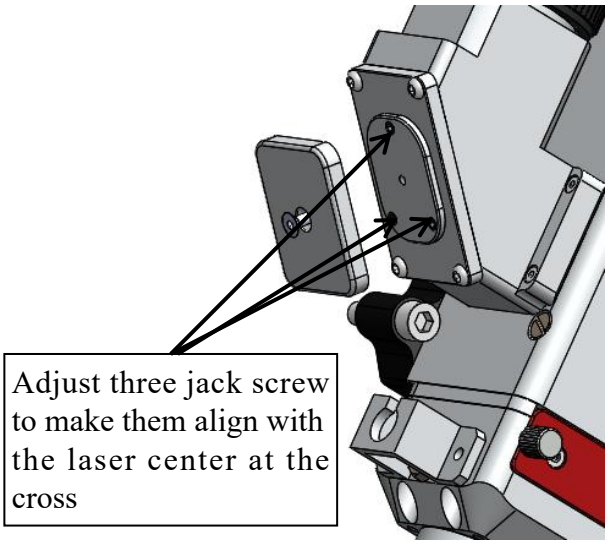
3.3 Power Supply Wiring Diagram:



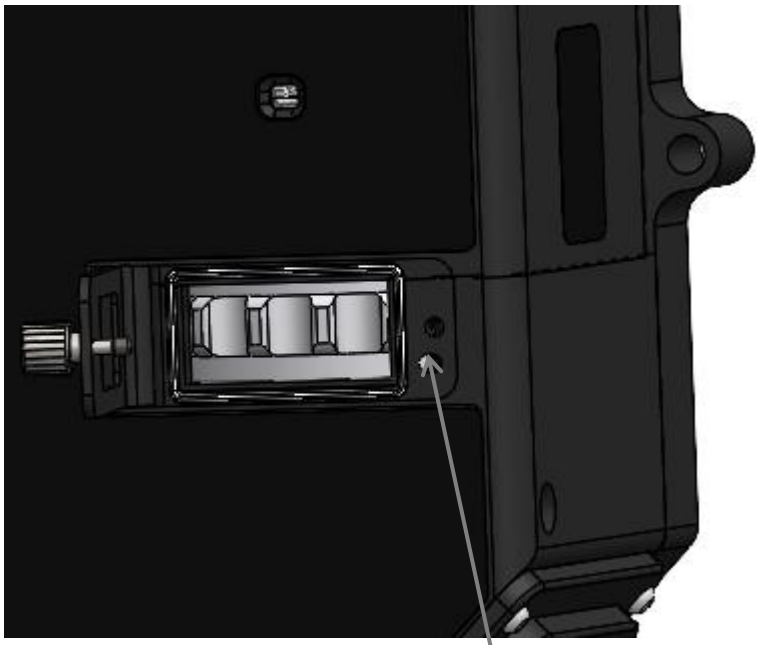
3.4 Centering

To ensure good welding and demonstration effect, laser beam must be overlapped with screen cross. If it deviates from the center of screen cross, make adjustment via CCDassembly first. If the laser center is not in the center, adjust it by using the screen cross (adjust with up/down/left/right buttons on the screen).





3.5 Fiber Focus Adjustment



3.5.1 Vertical Adjustment of Fiber Focus

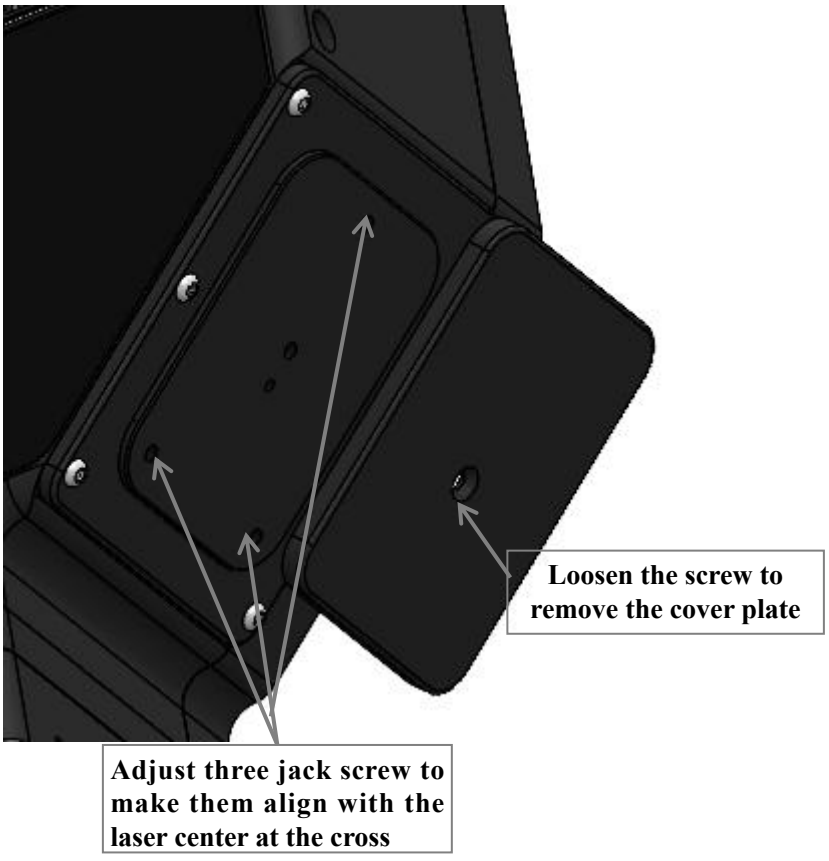
① Loosen thumb screw and pull the cover;

② Rotate the focusing nuts to proper position, Then lock the jack screw.

3.5.2 Horizontal Adjustment of Fiber Focus

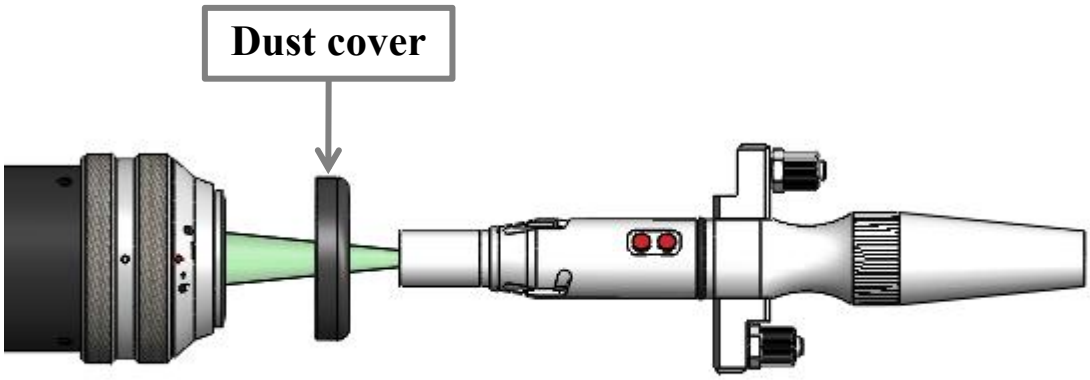
① Loosen the M3 countersunk screw and remove the cover plate;

② Adjust the three 3 jack screws to the desired fiber focus position.

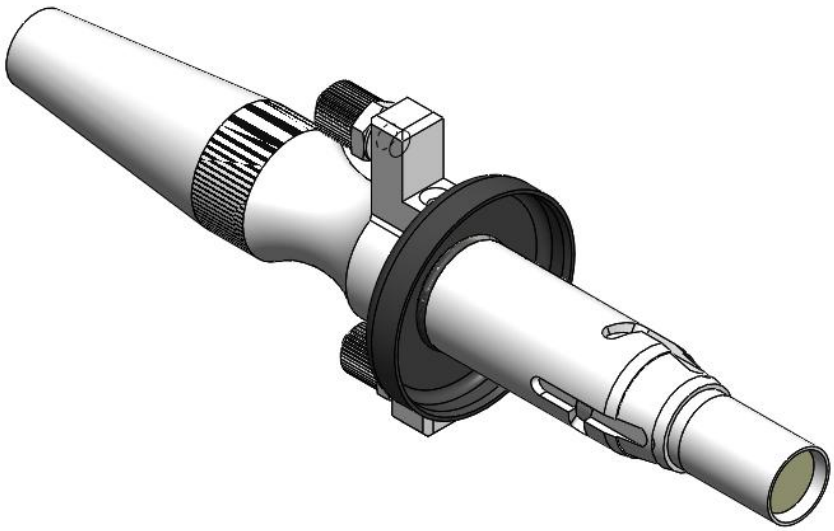


3.6 Installation of QBH Fiber Laser Head

① Put the handheld welding head on the console horizontally, and then take out dust-proof cover, as shown in the following figure:

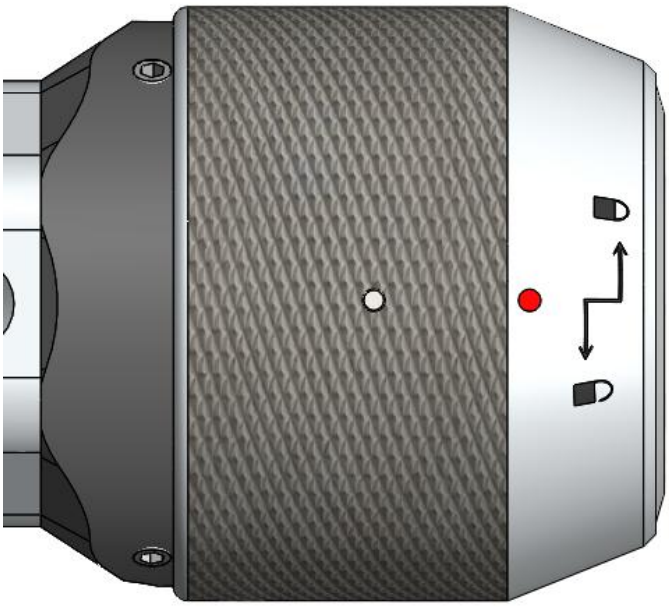


② Cover the dust cover inside the small white box inside accessory into the fiber laser tip, as shown in the figure below:

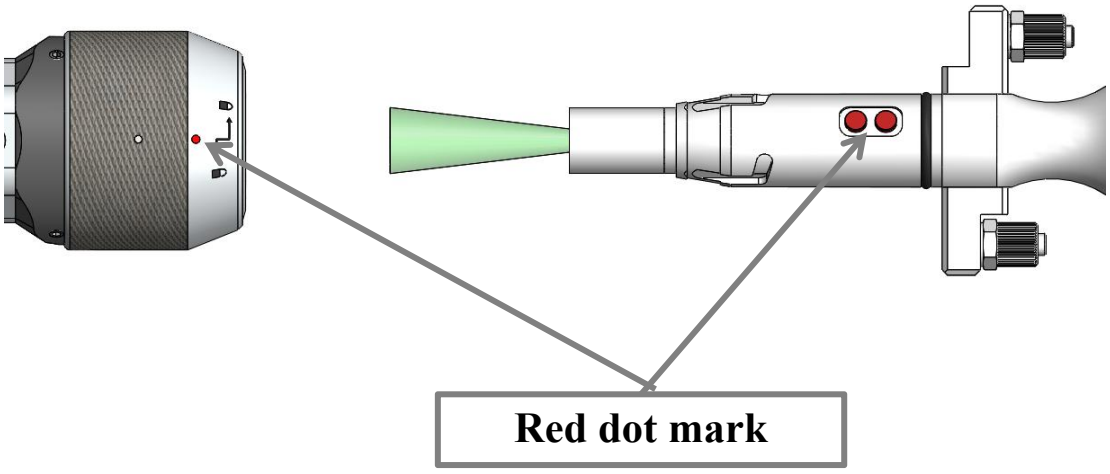


Attention: If the fiber head is with original dust-proof gasket, users can choose whether to install dust-proof cover or not during installation according to the actual condition.

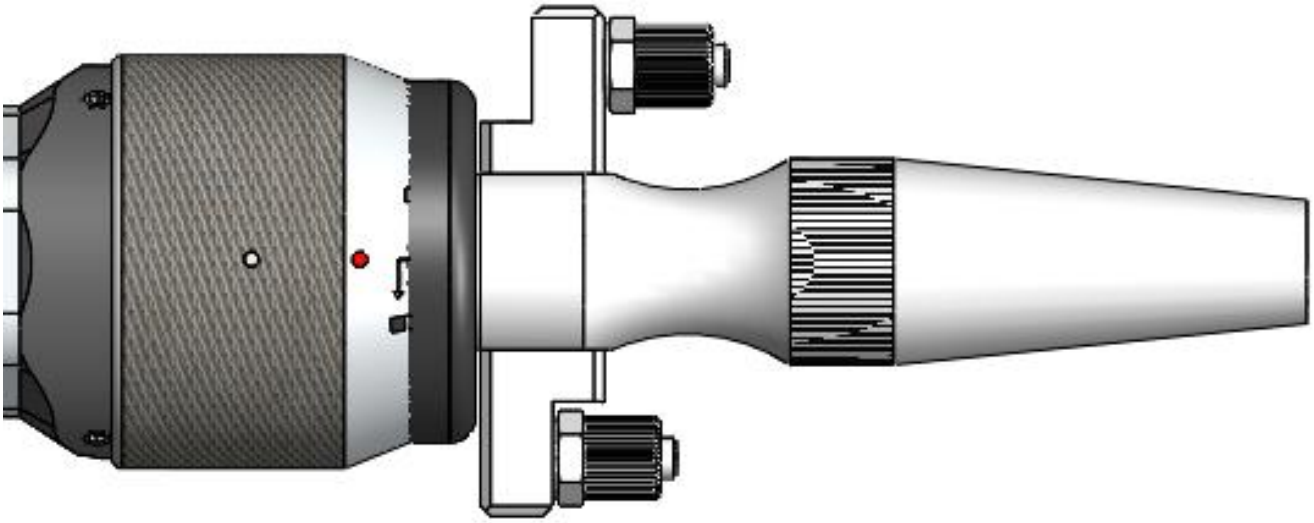
③ Turn the QBH connector into the open state, that is, screw it to the limit position counterclockwise (a "thud" sound can be heard). Ensure proper screwing strength; otherwise, the internal structure of QBH may be damaged.



④ Align the red dot on the fiber head with the red dot on the QBH connector, and slowly insert the fiber tip into the connector, as shown in the following figure:



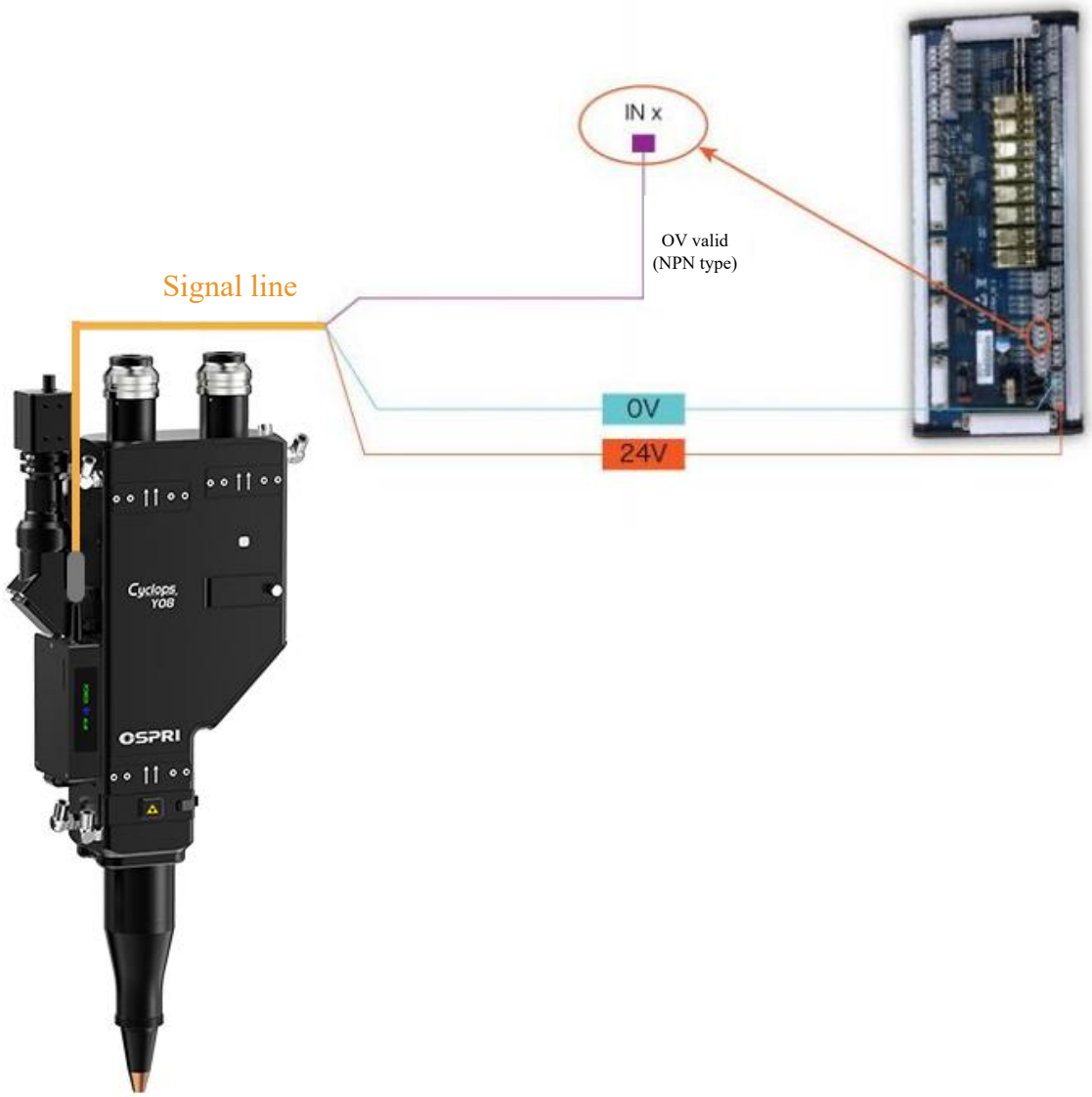
⑤ Turn the QBH connector to the locked state, that is, screw it toward the limit position clockwise (a "thud" sound can be heard). Lift the rotating nut upward and turn the nut clockwise again until the fiber laser tip is locked. (Do not twist with too much force; otherwise the internal structure of the QBH may be damaged).



Attention: Wrap with masking tape after plugging fiber tip.

3.7 Wiring of Signal Line

Wiring diagram of signal line



3.8 Mobile APP Operation

3.8.1 Mobile APP Installation

① Download Figure 1 via WeChat

② Figure 2 shows the icon after installation is finished. The APP supports Android phone installation only at present.

Figure 1

Figure 2

3.8.2 APP Software Connection

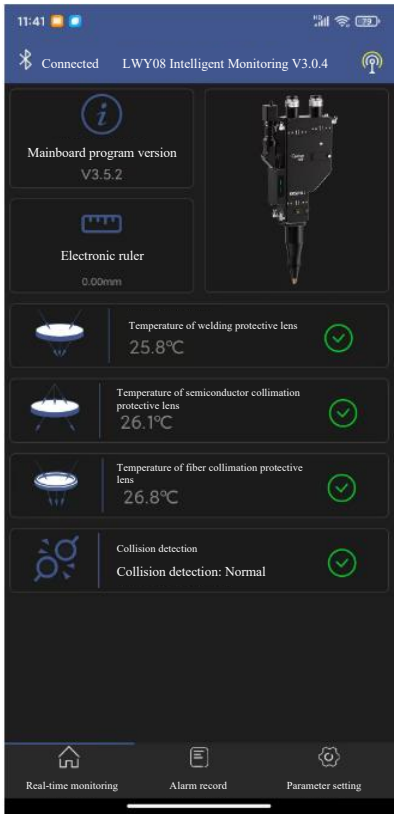


Figure 2.8

① Click the Bluetooth icon to open the Bluetooth connection interface, as shown in Figure 2.8.

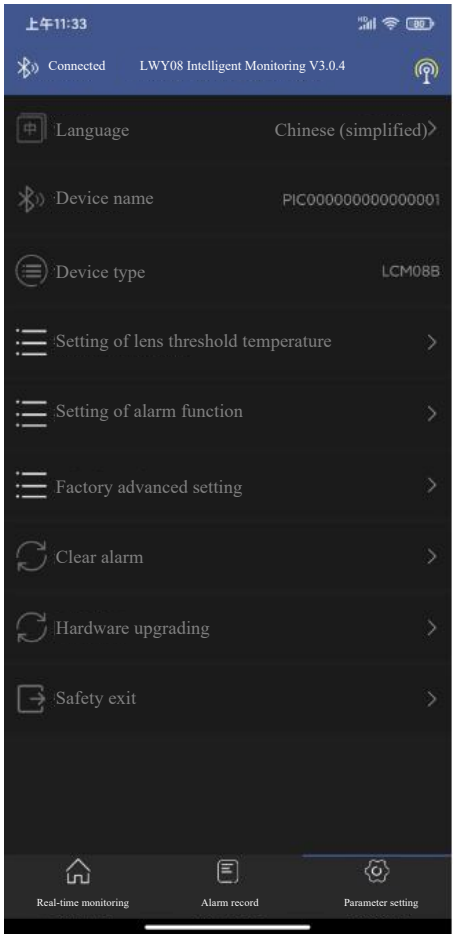


Figure 2.9

② Click the "Start Scanning" button. If nothing is displayed, click it for another more times, as shown in Figure 2.9.

Figure 3.0

③ After the device is scanned, select the device to connect and click the [Connect Device] button, and then the mobile phone can communicate with the device in real time, as shown in Figure 2.9.

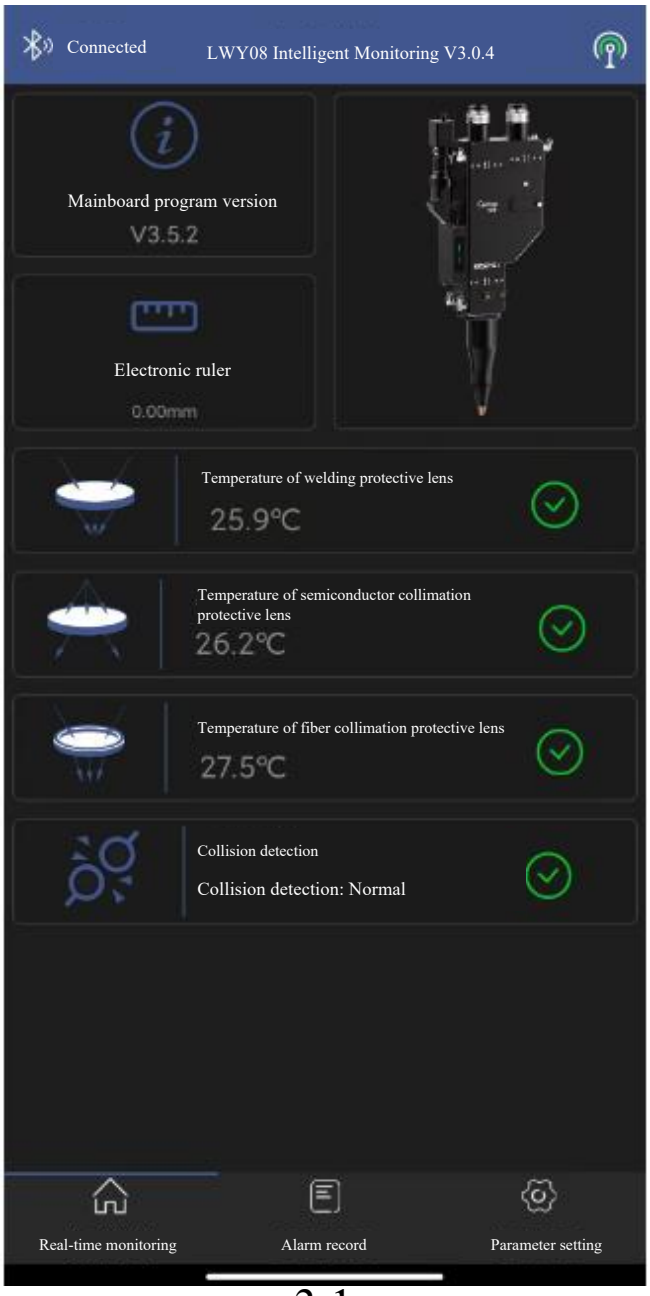
3.8.3 Software Introduction

① After running the LWY08A0 APP, the progress bar color on the main interface will change according to the actual temperature value monitored, as shown in Figure 3.1.

Green: It can be used normally if the lens temperature is normal according to the monitoring results.

Yellow: The lens temperature is too high and check if the lens is contaminated.

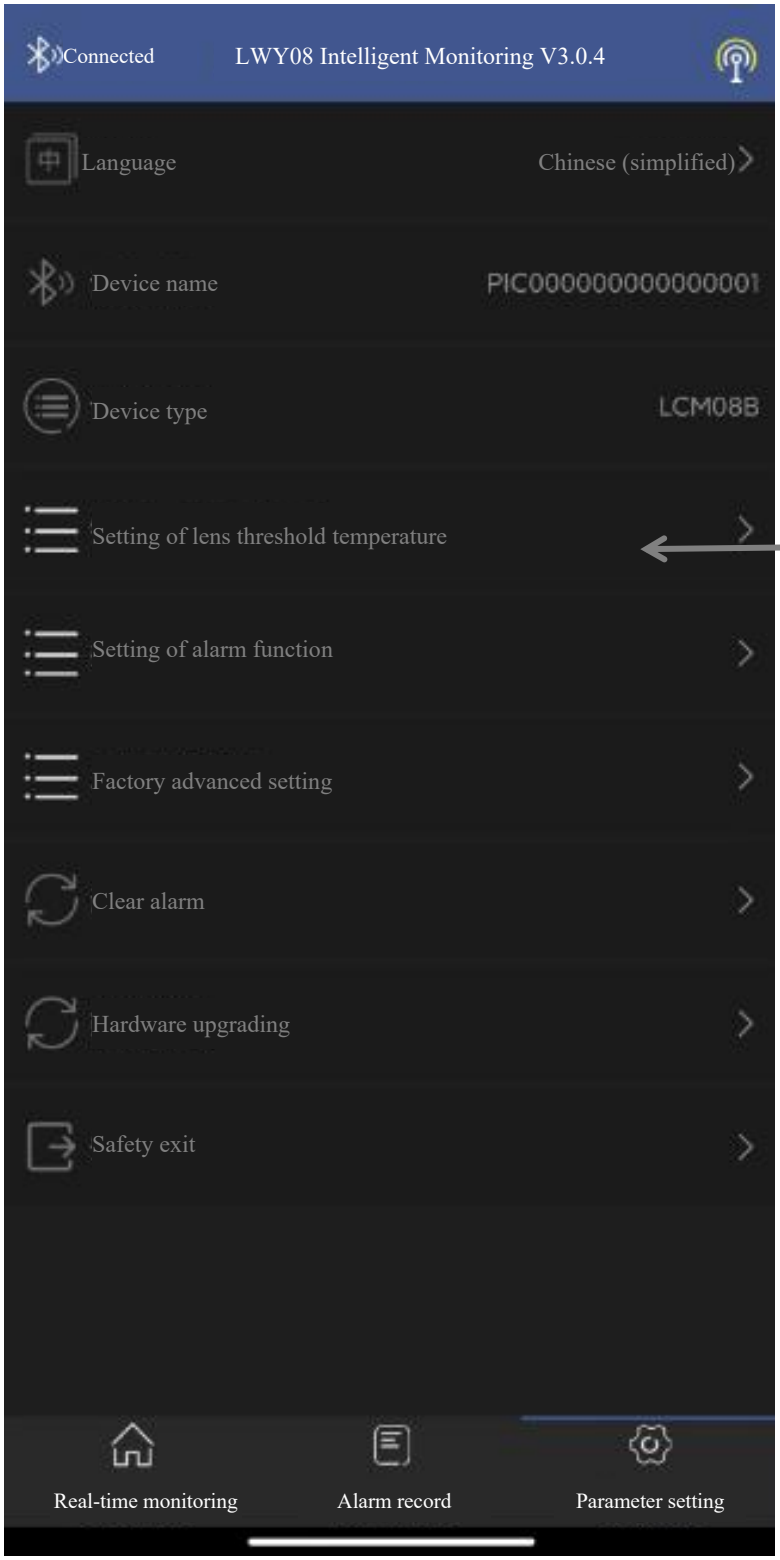
Red: The lens temperature is too high and the software cannot be used continuously. Stop the machine for inspection.



3.1

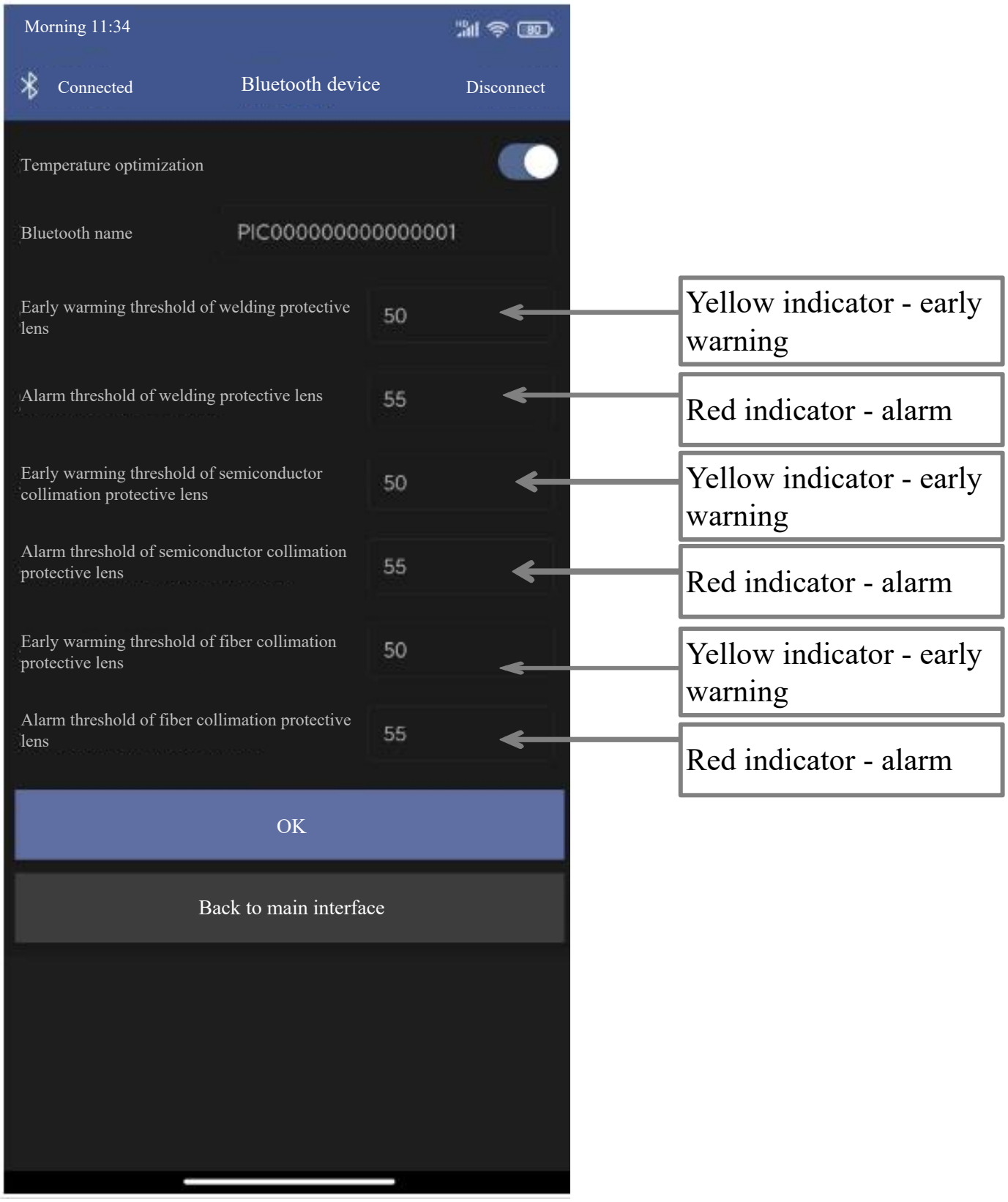
3.8.4 Temperature Parameter Setting

① This APP supports temperature setting. Temperature thresholds can be set according to actual applications. Click "Vendor Setup Options" and enter the password "85225225" to enter the temperature setting interface, as shown in Figure 3.3.



Click the option of "Lens Temperature Setting" and enter the password 85225225

② Enter temperature setting interface to set the temperature according to the actual conditions. The early warning value must be lower than the alarm value. After setting, click "Confirm setting" setting button, as shown in Figure 3.3:

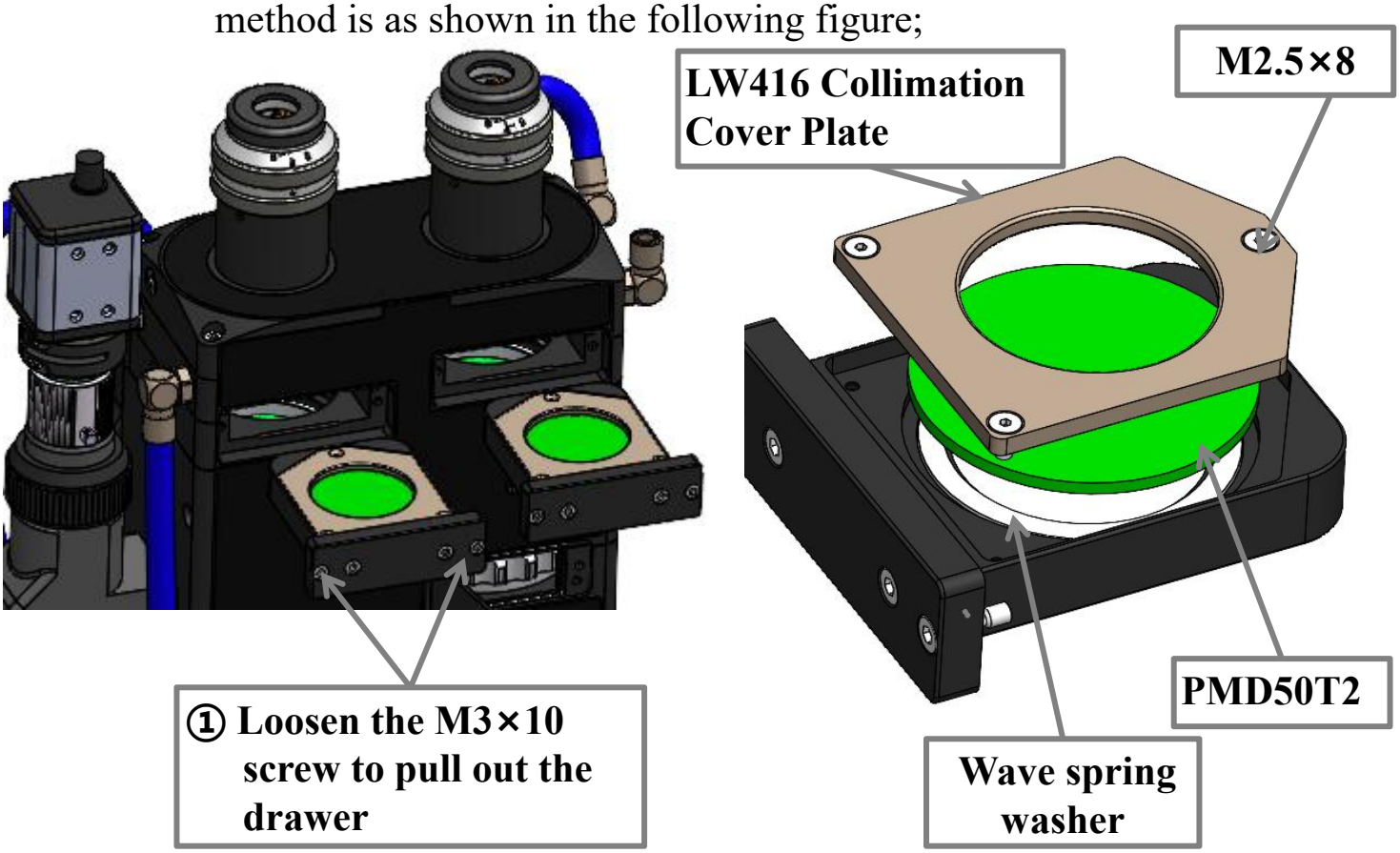


Chapter 4 Maintenance

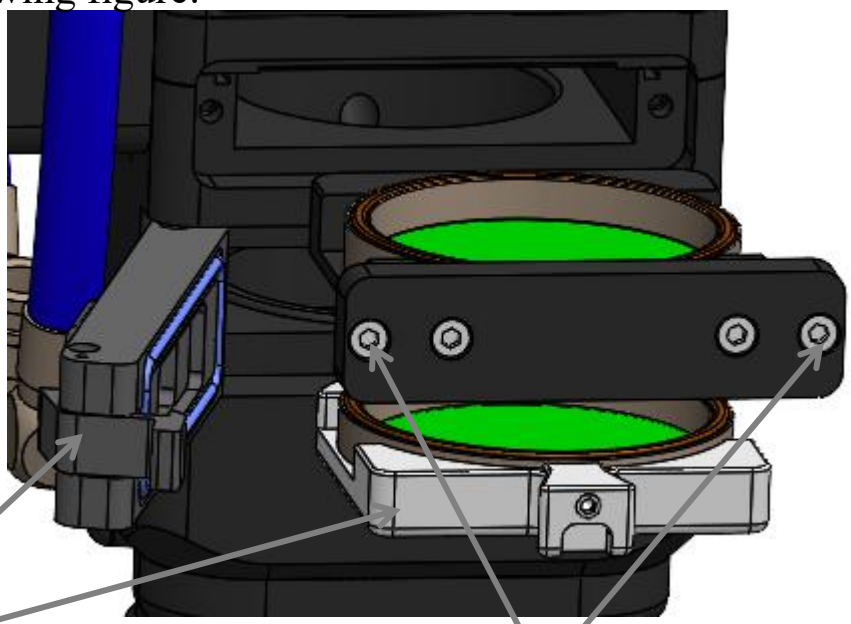
4.1 Maintenance and Replacement of Protective Lens

If the welding effect is poor, the welding protective lens is normal but burning points occur to the trial lens, the collimation protective lens or focus protective lens may be polluted or damaged. In this condition, the after-sales personnel shall check if any burning point on the lens. Before checking, use a clean cloth dampened with alcohol to wipe the outer surface.

4.1.1 Disassembly of Collimation Protective Lens. The disassembly method is as shown in the following figure;



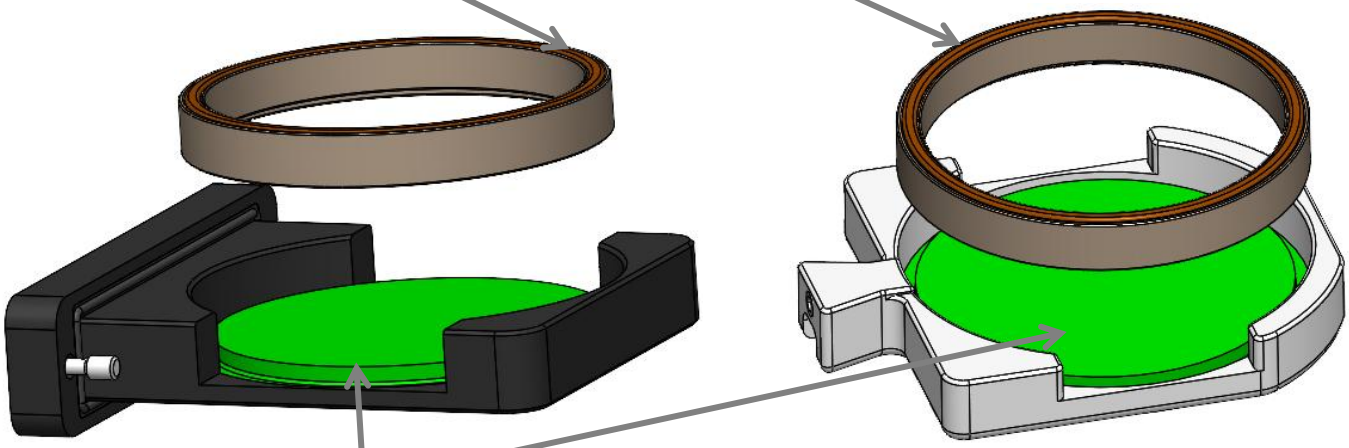
4.1.2 Disassembly of Focus Protective Lens. The disassembly method is as shown in the following figure:



②Press the buckle to pull out of the drawer

① Loosen M3 anti-loosening screw to pull out of the drawer

③ Take out the clamp ring to replace lens



PMD50T2

Usage precautions

1. Avoid hot plug of aviation interface
2. LWY08A0 welding head cannot work without water cooling
3. Timely stop the machine for troubleshooting in case of any exception

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