LWT08A0-H01 Temperature Monitoring Manual

Product Description

Shenzhen Ospri Intelligent Technology Co., LTD

Foreword

Dear Users:

Welcome to use Shenzhen Ospri Intelligent Technology Co., Ltd. to produce LWT08A0 fiber laser welding head 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

1.1 Product Parameters

Name	High power welding head
Model	LWT08A0
Interface type	QBH/QD/LOE/Q+
Wavelength	1080±10nm
Rated power	8000W
Focal length	150mm/200mm/250mm/300mm
collimation focus length	100mm/ 150mm
Air blowing method	Coaxial/paraxial blowing
Nozzle model	Φ8/φ6
Collimation protective lens	D50T2
Focus protective lens	D50T2
Auxiliary air pressure	≤1Mpa
Weight	4.6KG

1.2 Cautions

① Ensure standard and reliable grounding before power on;

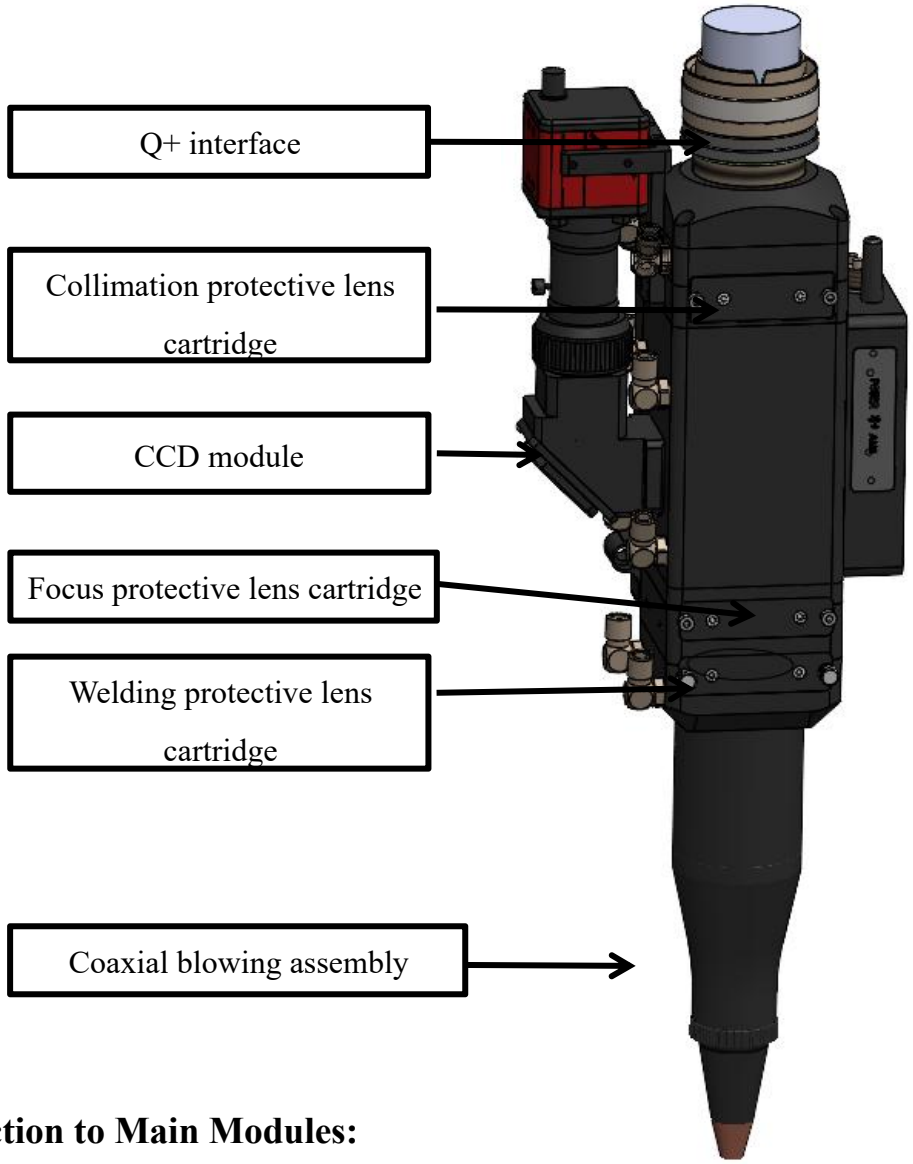
② Clean the QBH fiber tip carefully before connecting it to the welding head as any dirt and dust would cause optics burned inside; when cleaning the laser output head, please use special cleaning equipment;

③ Pay attention to the onsite environment (e.g., turn off fans) and ensure everything is prepared before proceeding with the replacement, when replacing the protective lens.

④ Please contact us in time if you have any questions.

Chapter 2 Structural Features

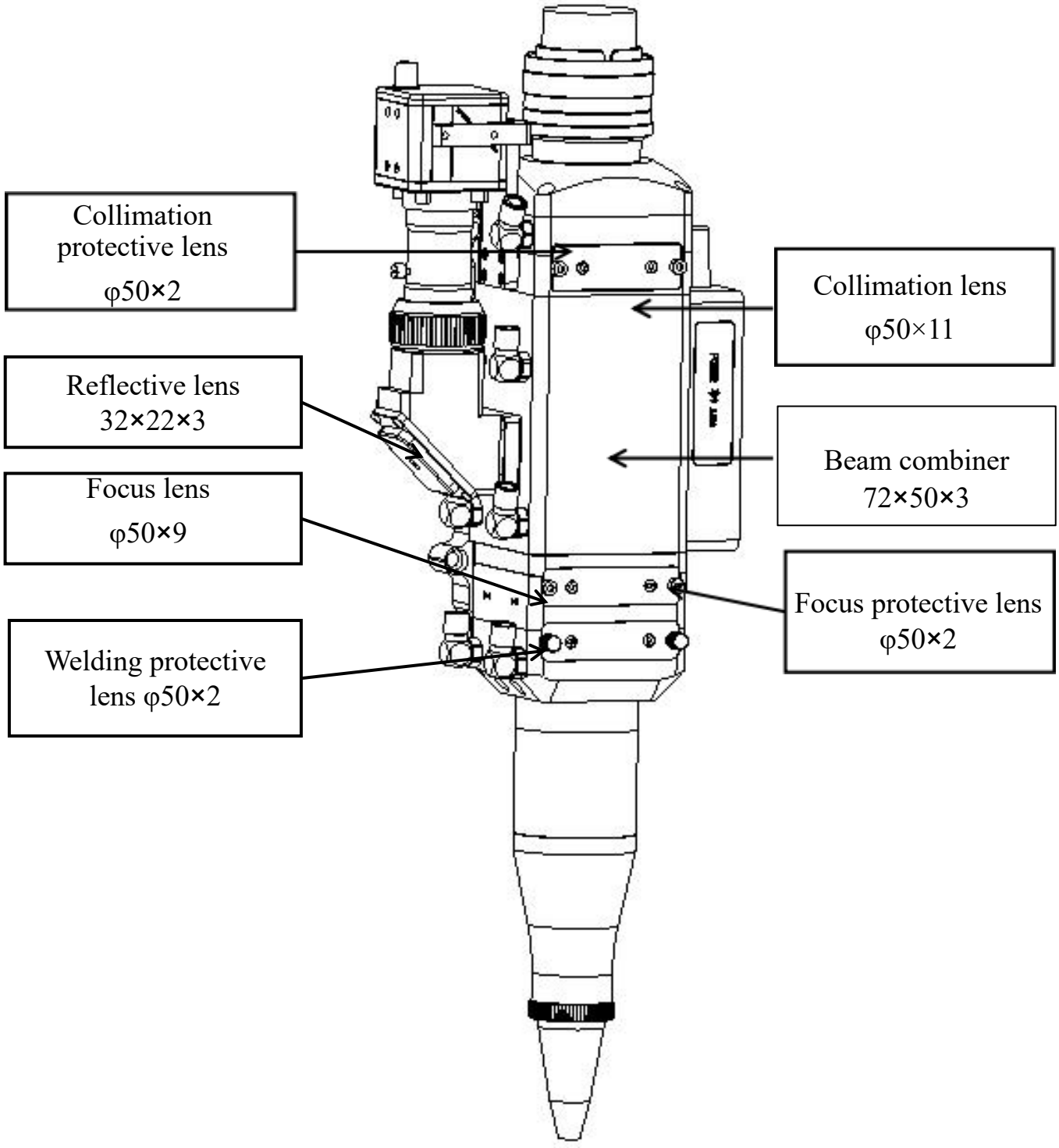
2.1 Brief Description of Product Structure



2.2 Introduction to Main Modules:

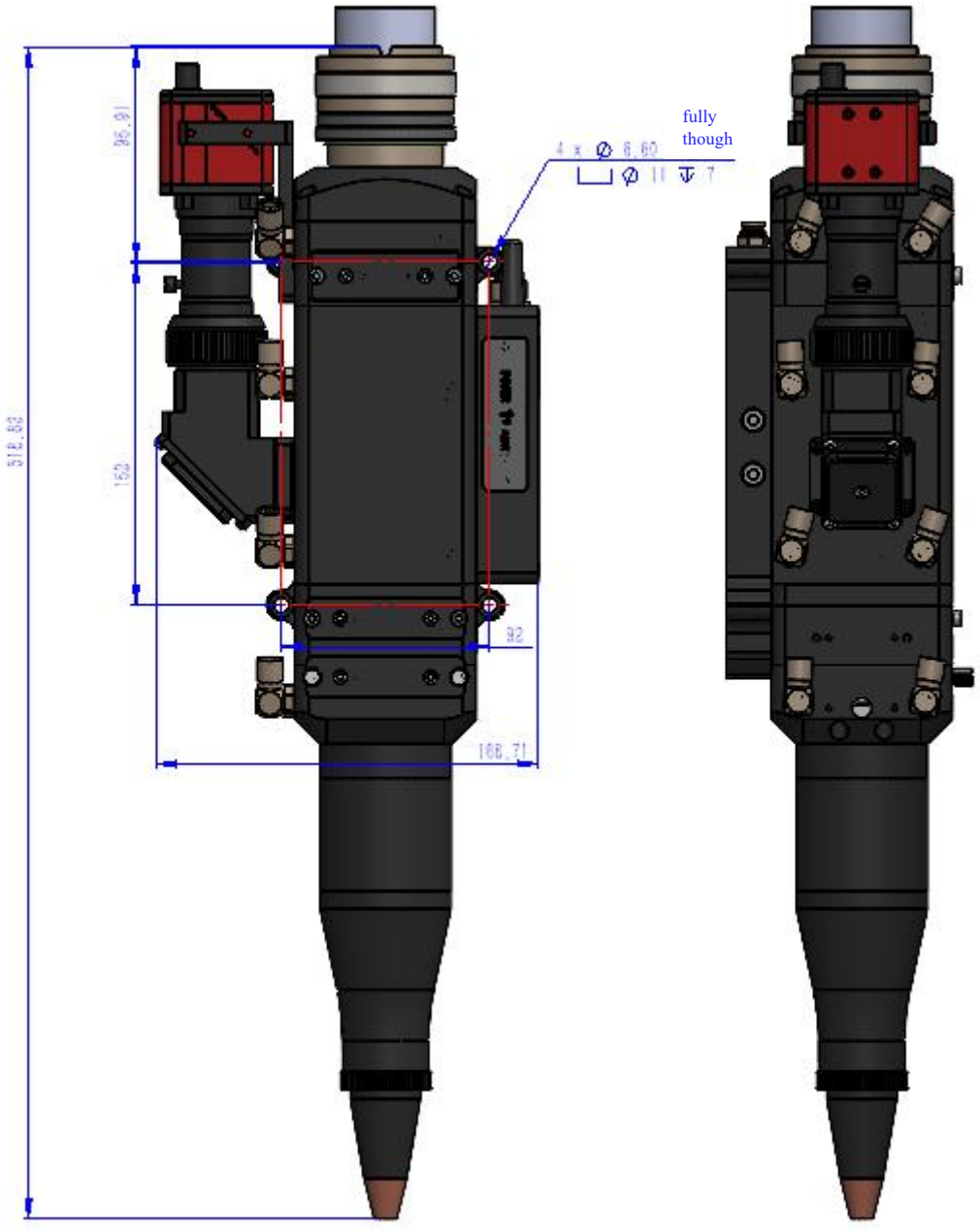
① Q+ interface: Connect and secure the fiber Q+ with the welding head.
② Collimation protective lens cartridge: Extend the service lifespan of the collimation lens;
③ CCD module: Assist with welding teaching functions or provide an interface for a detection system.
④ Focus protective lens cartridge: Further prevent dust and other contaminants from entering the focus lens.
⑤ Welding protective lens cartridge: Further prevent dust and other contaminants from entering the focus lens.
⑥ Coaxial blowing assembly: During laser welding, disrupts the ionization layer formed on the workpiece surface, isolating the workpiece from air to prevent oxidation and stabilize the welding process.

2.3 Brief Description of Product Parts (Lens Size)



Chapter 3 Product Installation

3.1 Schematic Diagram of LWT08A0 with Temperature Monitoring Dimensions

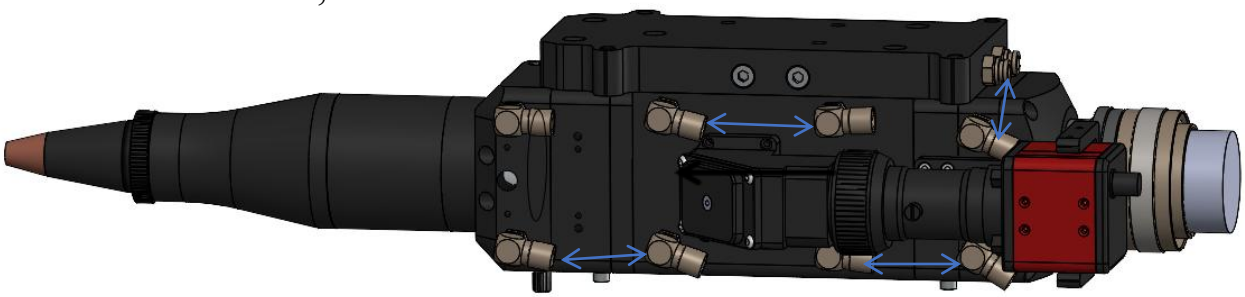


Schematic diagram of main dimensions of the welding head (collimation F100/focus F300)

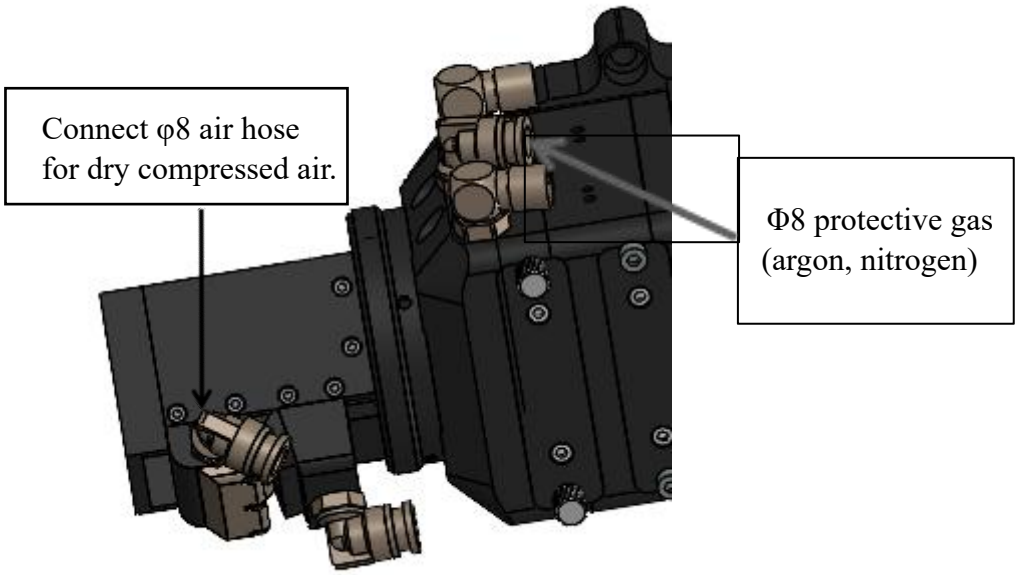
3.2 Water and Air Circuit

3.2.1 Cooling Pipeline

1. Connect with a φ8 water hose, no specific direction, one inlet and one outlet, as shown below.



2. Connect φ8 compressed air or other protective gases, as illustrated below.



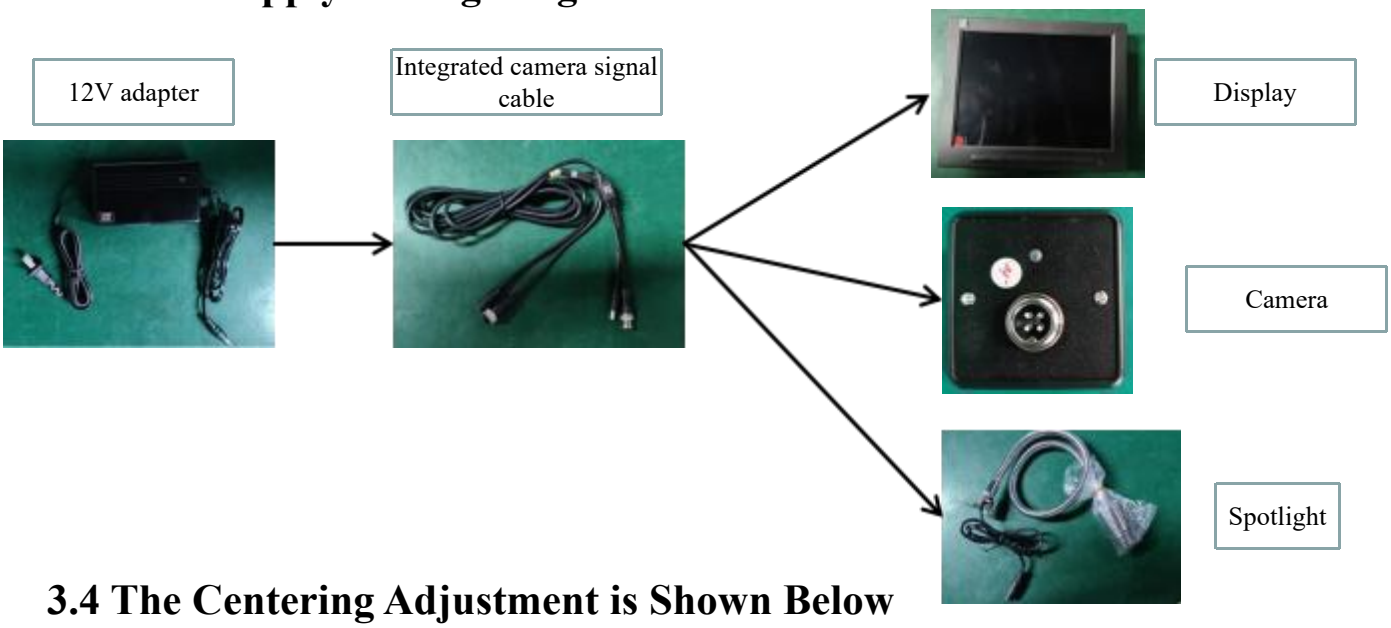
Design of the welding head water circuit system: 1 inlet and 1 outlet cooling pipeline

Recommendation: Connect an 8mm air hose to the inlet for protective gas output.

Protect the welding base material and extend the lifespan of the protective lens, with input flow < 30L/MIN.

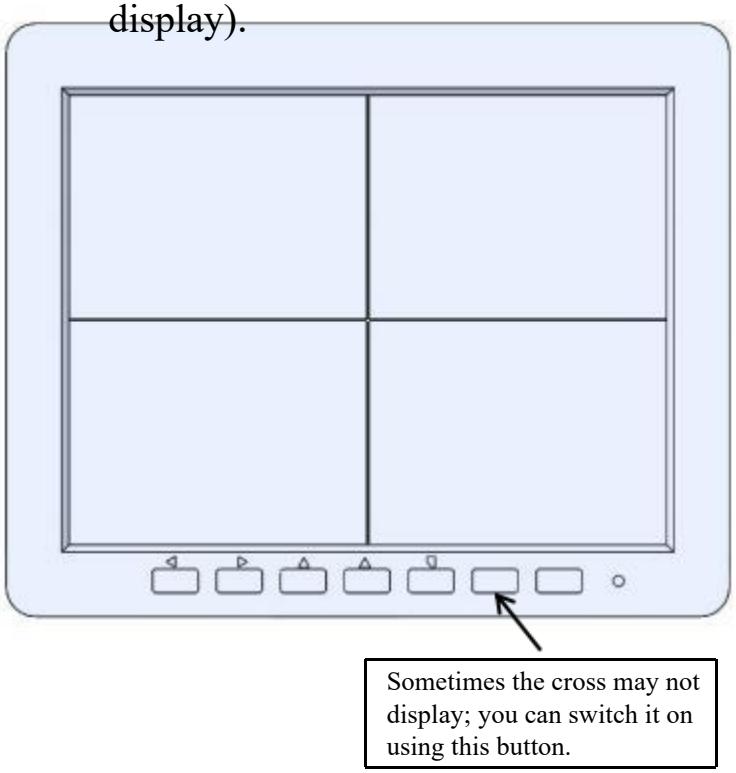
Commonly used gases: argon, nitrogen, and other inert gases.

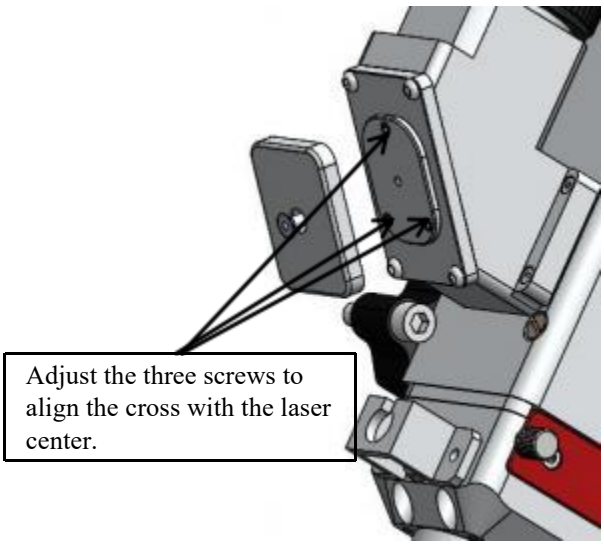
3.3 Power Supply Wiring Diagram



3.4 The Centering Adjustment is Shown Below

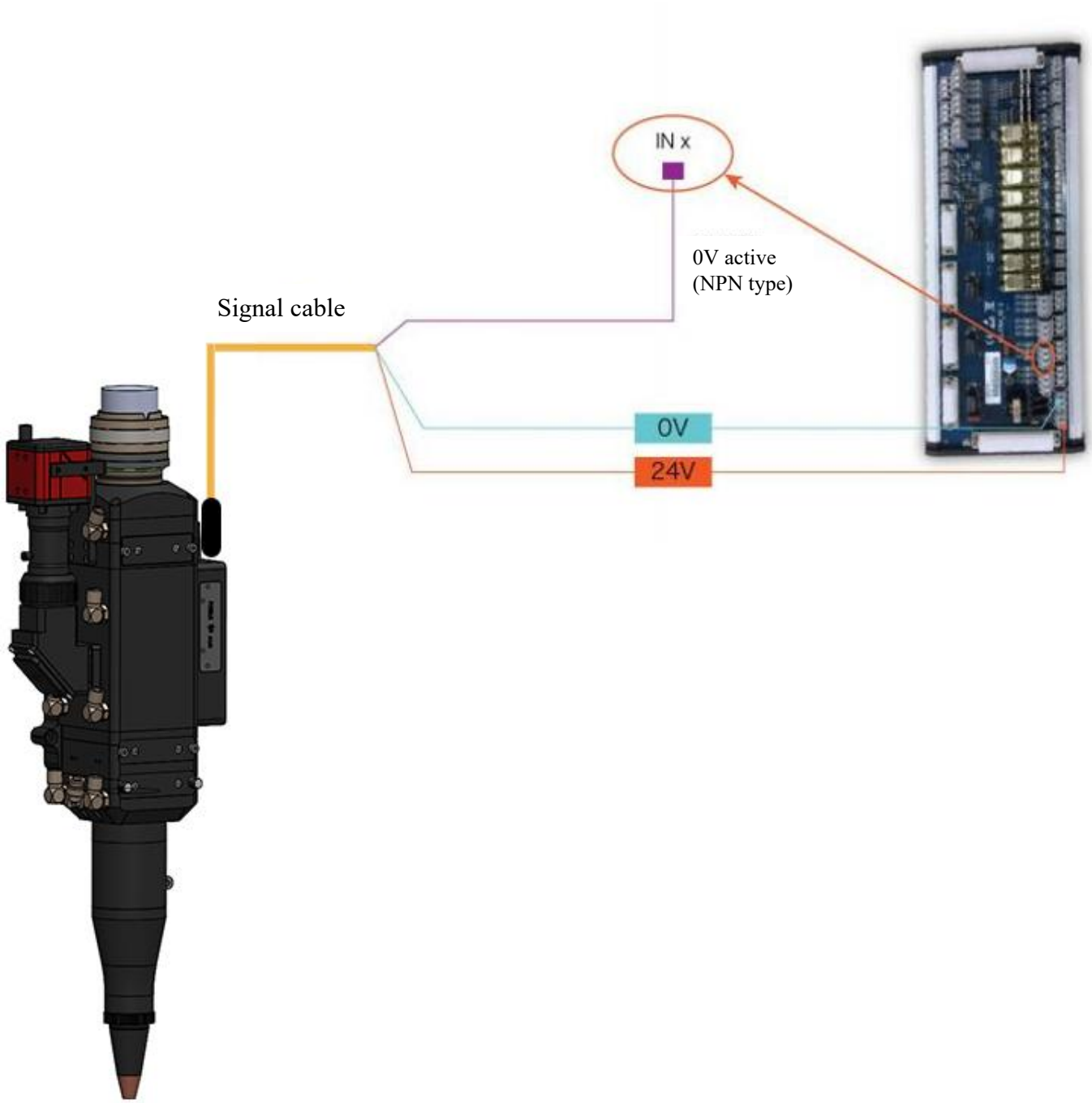
To achieve optimal welding and teaching effects, the laser beam must coincide with the screen cross; when it deviates from the center, first adjust it using the CCD assembly. If the laser center is not aligned, adjust it to coincide with the screen cross (adjust using left, right, up, and down on the display).





3.5 Signal Wiring Diagram

Signal Wiring Diagram



3.4 Mobile App Operation Instructions

3.4.1 Installation of Mobile APP Software

(1) Download from WeChat as shown in the figure 1,

(2) The figure 2 shows the icon after installation, this APP currently only supports installation on Android phones.

Figure 2

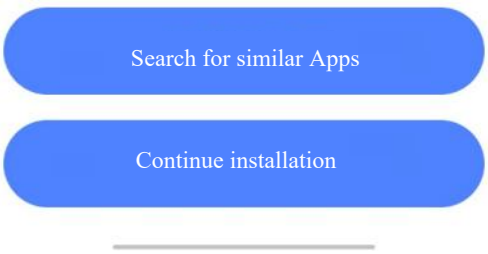


Figure 1

3.4.2 APP Software Connection.

Figure 2.8

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

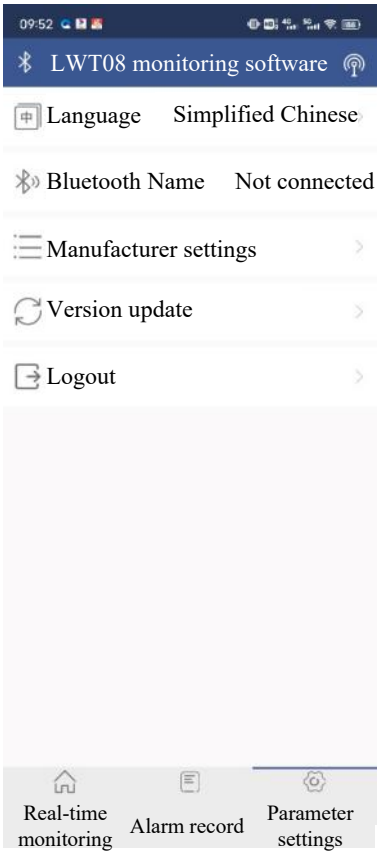


Figure 2.9

②Click "Start Scan" button. If nothing is displayed, click it for several times, as shown in Figure 2.9.

Figure 3.0

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

3.4.3 Software Introduction.

① After running the LWT08 APP, the color of the progress bar on the main interface will change according to the actual temperature value detected, as shown in Figure 3.1.
Green: The lens temperature is normal and can be used normally.
Yellow: The lens temperature is too high. Attention shall be paid to check if the lens is contaminated.
Red: The lens is overtemperature and cannot continue to be used. The machine must be stopped to check the lens.

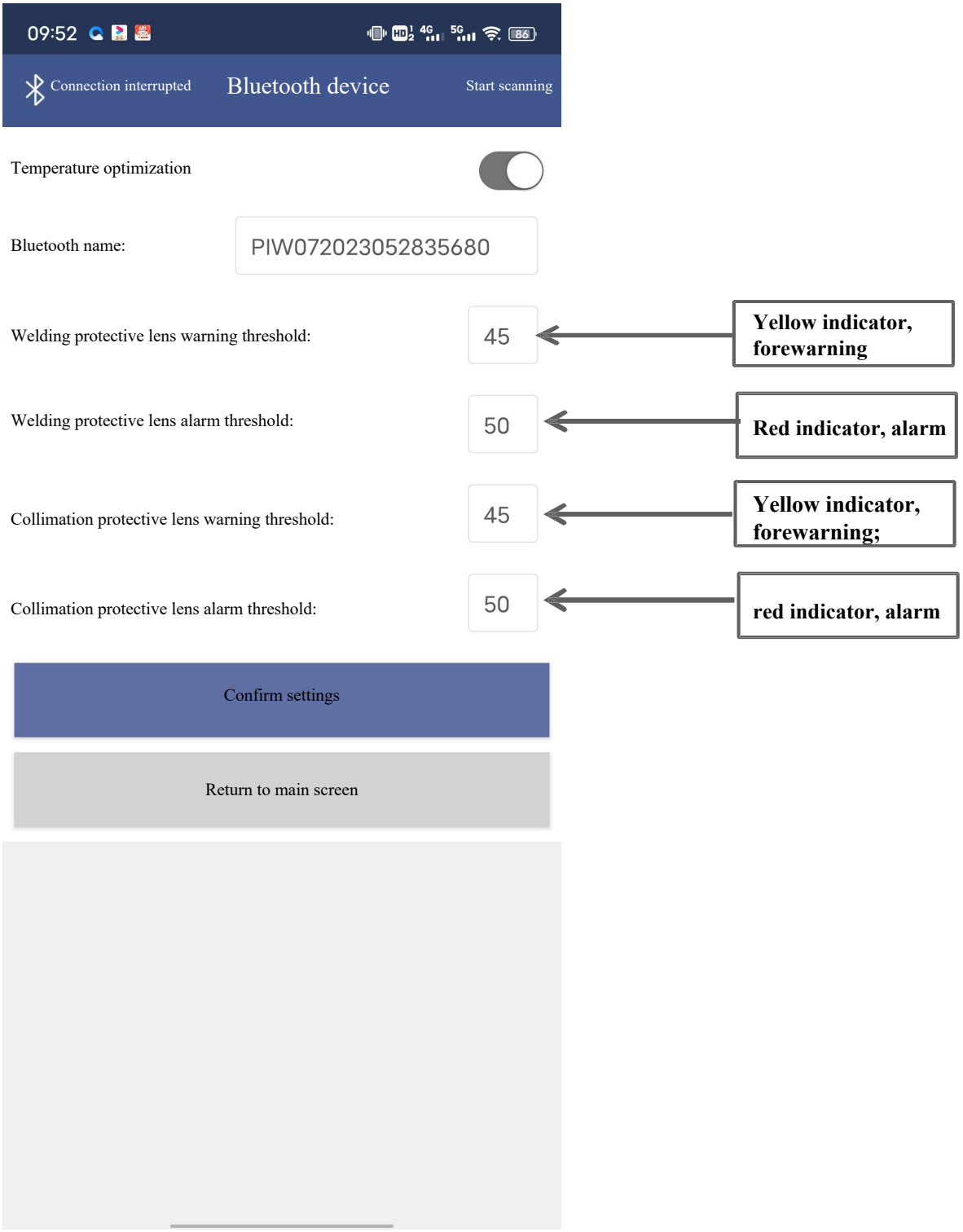
3.1

3.4.4 Temperature Parameter Settings.

① You can set the temperature on the APP and set different temperature thresholds according to the actual applications. Click "Parameter Setting" and input the password "85225225" to enter the temperature settings interface, as shown in Figure 3.3.

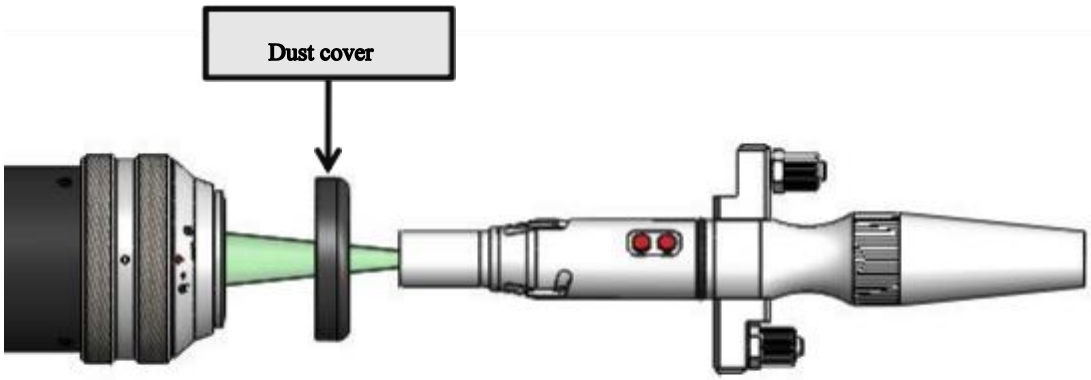
Click "Parameter Setting" and input the password of "85225225"

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

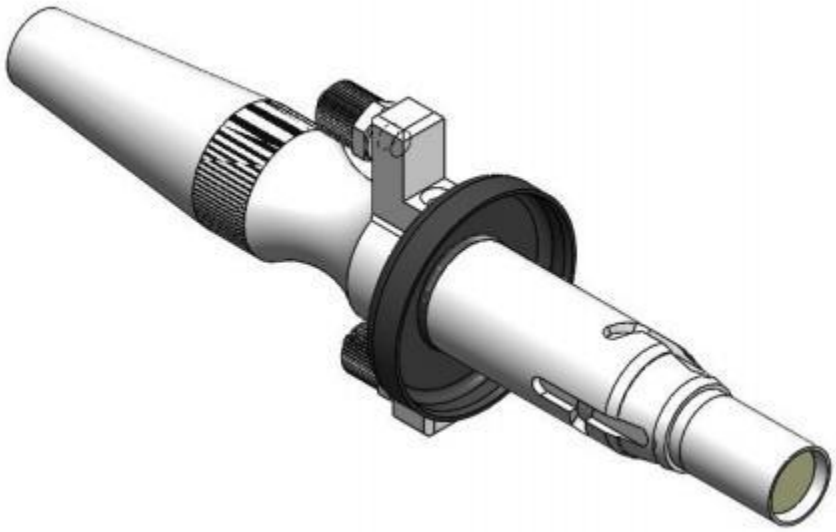


3.6 Installation of the QBH Fiber Laser Head

① Put the welding head horizontally, then take out static sticker, as shown in the following figure:



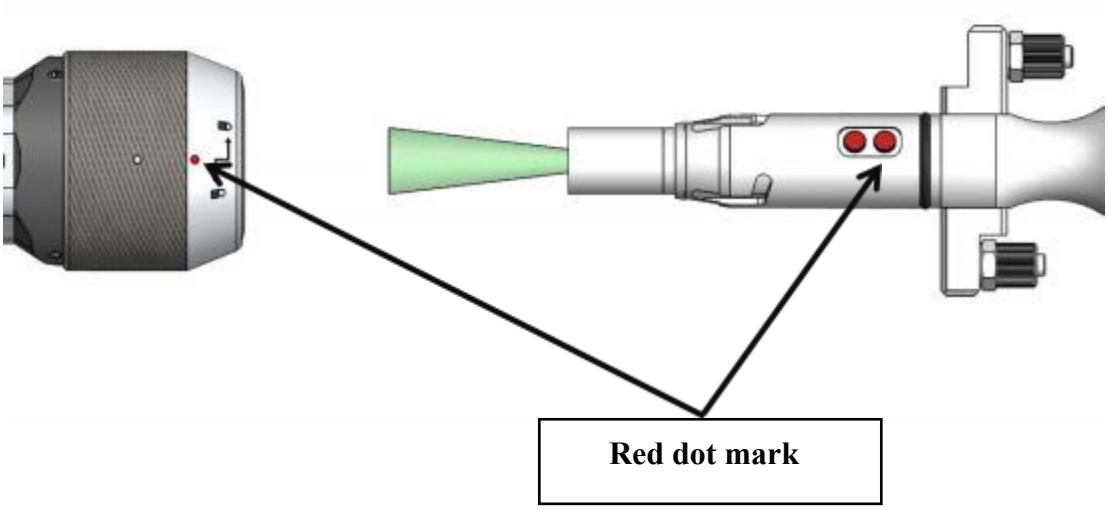
② Insert the dust cover from the white box in the accessories onto the fiber head. as shown in the figure below:



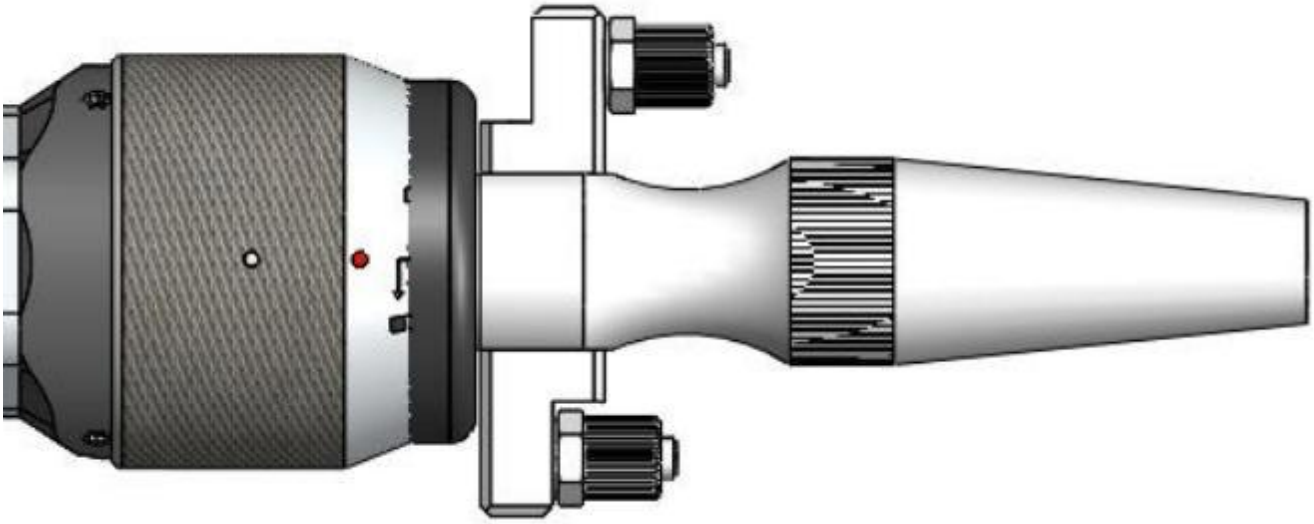
Note: If the laser head is originally equipped with a dust-proof gasket, choose whether to install the dust cover based on actual conditions.

③ Turn the QBH connector into the open state, that is, screw it to the limit position counterclockwise (a "thud" sound can be heard). Do not twist with great force, otherwise the internal structure of the internal structure of QBH

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



⑤ Turn the QBH connector into the lock state, that is, screw it to the limit position clockwise (a "thud" sound can be heard), lift and rotate the nut upwards, then turn the nut clockwise again until it securely compresses the fiber head. (Note: Just turn it to the position without over-tightening, as this may damage the internal structure of the QBH.)



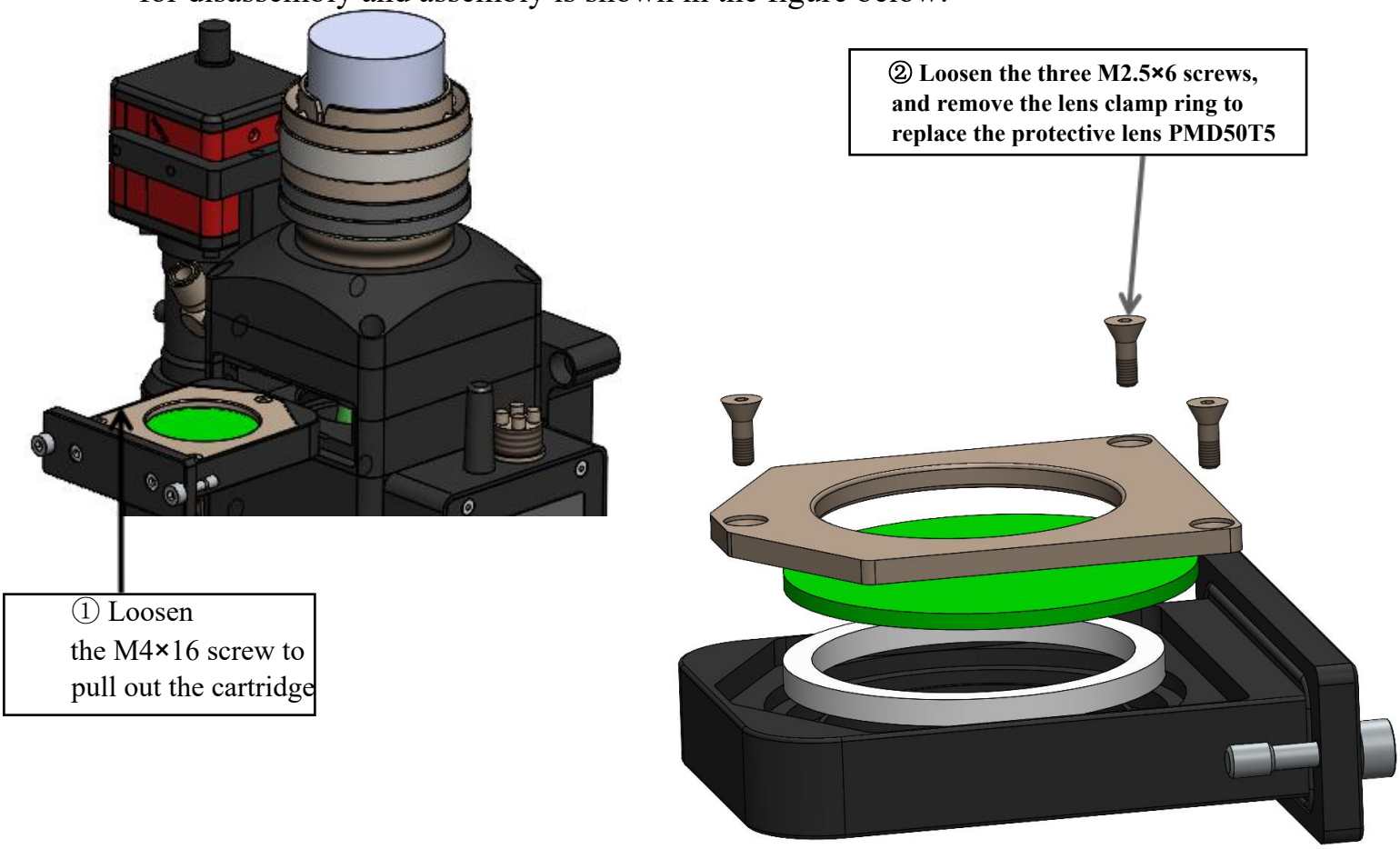
Note: After inserting the fiber, you can wrap a few rounds of painter's tape around it.

Chapter 4 Product Maintenance

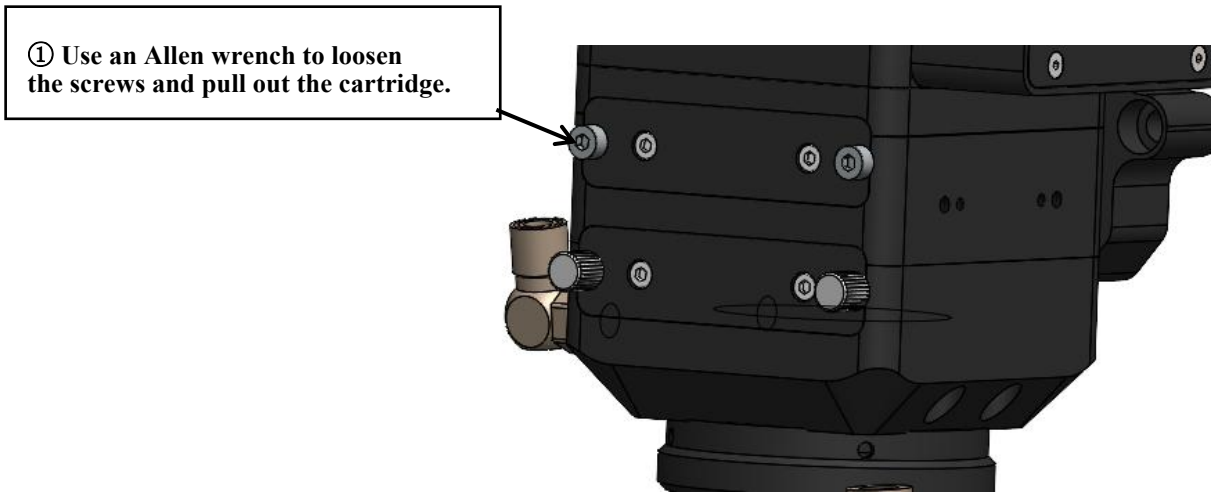
4.1 Maintenance and Replacement of the Protective Lens

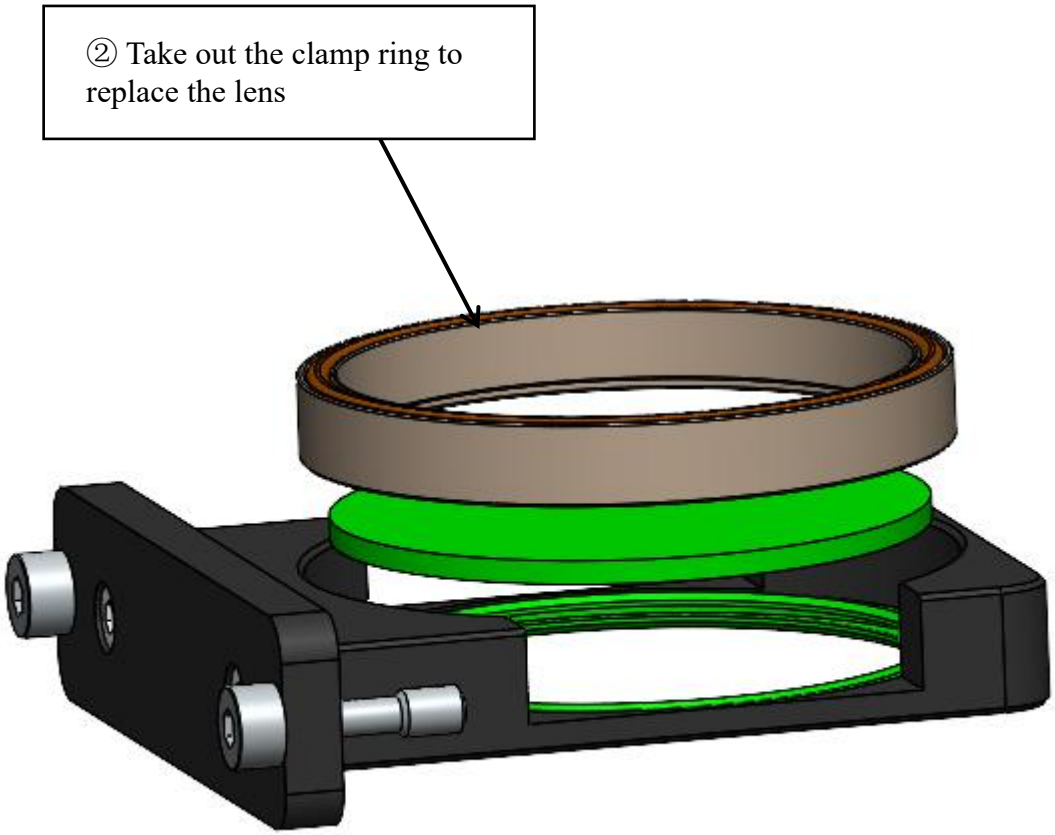
In case poor welding performance occurs while welding protective lens is normal, but burning points on the ceramic piece, the collimation protective lens or focus protective lens possibly is polluted or damaged. In this condition, please pull out the protective lens cartridge to check the lens. Before checking, use a clean cloth dampened with alcohol to wipe the exterior clean.

4.1.1 Disassembly and Assembly of the Collimating Protective Lens, the method for disassembly and assembly is shown in the figure below:

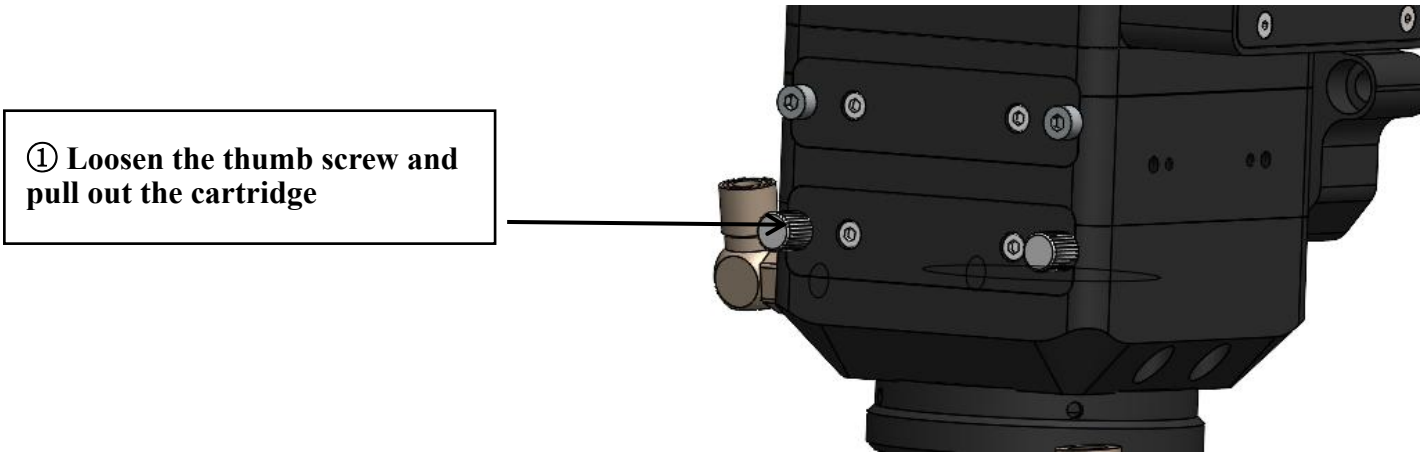


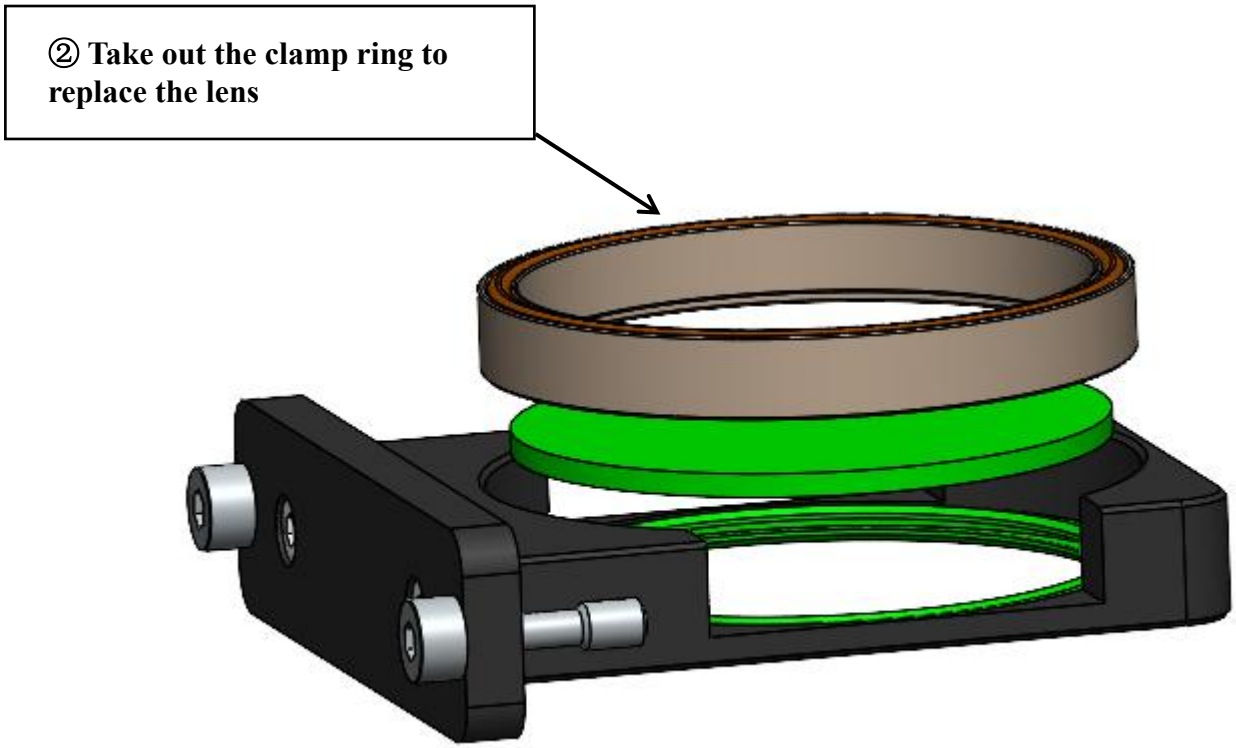
4.1.2 Disassembly and Assembly of Focus Protective Lens, the method for disassembly and assembly is shown in the figure below:



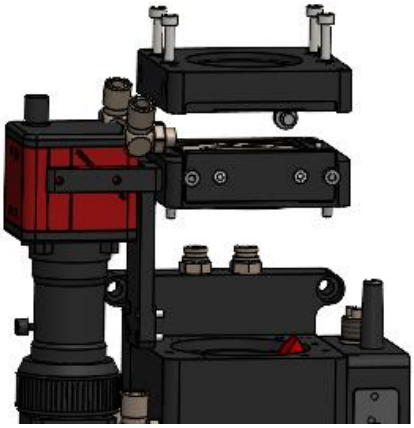


4.1.3 Disassembly and Assembly of the Welding Protective Lens, the method for disassembly and assembly is shown in the figure below:





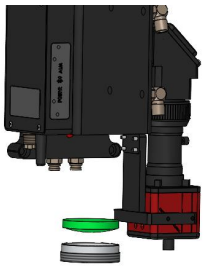
4.2 Maintenance and Replacement of the Collimation Lens



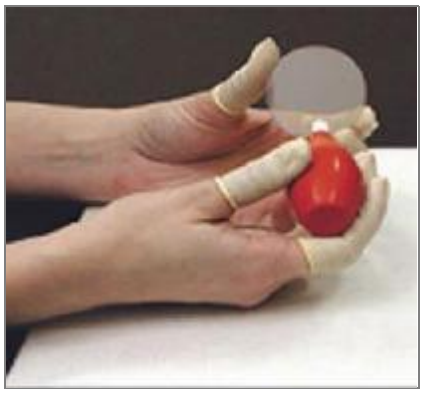
4.2.1 Disassembly and Assembly of the Collimation Lens, as shown in the diagram: ① Remove the M4 screws and remove the QBH assembly; ② Remove the M4 screws and remove the collimation cartridge.

③ After removing the collimation module, turn the welding head upside down and use the lens removal tool to take out the collimation lens.

When installing, pay attention to the direction of the collimation lens; it must not be installed incorrectly, with the convex side facing the nozzle.



4.2.2 Cleaning of the Collimation Lens



① Tools: Dust-free wiping swabs, isopropyl alcohol, dry and pure compressed air.
② Spray isopropyl alcohol onto the dust-free wiping swabs.
③ Gently pinch the both sides of the lens with the left thumb and index finger.
④ Hold the wiping swabs with right hand to gently wipe both sides of the lens in a single direction from bottom to top or from left to right, and blow the lens surface with the rubber air blower to confirm that there is no foreign matters on the cleansed lens surface.
⑤ The cleaned collimation lens should be installed back into the collimation lens holder and inserted into the welding head as soon as possible.

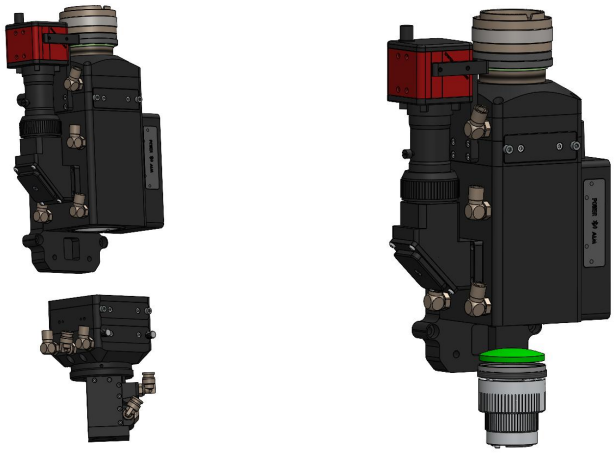
4.3 Maintenance and Replacement of the Focus Lens

4.3.1 Disassembly and Assembly of the Focus Lens, as shown in the diagram.

① Loosen the M4 screw and remove the air-knife assembly;

② Loosen the M4 screw and remove the focus protective lens module;

③ Remove the clamp ring with the lens disassembly wrench to replace the focus lens. When installing, pay attention to the direction of the focusing lens; it must not be installed incorrectly, with the convex side facing upwards.



4.3.2 Cleaning of Focus Lens

① Tools: Dust-free wiping swabs, isopropyl alcohol, dry and pure compressed air.

② Spray isopropyl alcohol onto the dust-free wiping swabs.

③ Gently pinch the both sides of the lens with the left thumb and index finger.

④ Hold the wiping swabs with right hand to gently wipe both sides of the lens in a single direction from bottom to top or from left to right, and blow the lens surface with the rubber air blower to confirm that there is no foreign matters on the cleansed lens surface.

⑤ The cleaned focusing lens should be installed back into the focusing lens holder and inserted into the welding head as soon as possible.

Cautions

1. Hot-swapping of aviation interfaces is prohibited.
2. The LWT08A0 welding head must not operate under conditions where water is not flowing.
3. Timely stop the machine for troubleshooting in case of any exception.

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