User Manual of LWT15A0-H01 Temperature Monitor

Product Description

Shenzhen Ospri Intelligent Technology Co., LTD

Foreword

Dear Users:

Welcome to use Shenzhen Ospri Intelligent Technology Co., Ltd. to produce LWT15A0 fiber 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

1.1 Technical Parameters

Name	High power welding head
Model	LWT15A0
Interface type	QBH/QD/LOE/Q+
Applicable wavelength	1,080±10nm
Rated power	15,000W
Focus length	150mm/200mm/250mm/300mm
Collimation focal length	100mm/150mm
Intake mode	Coaxial/paraxial air blowing
Nozzle model	Φ8/φ6
Collimation protective lens	D50T2
Focus protective lens	D50T2
Auxiliary air pressure	≤1Mpa
Weight	4.6kg

1.2. Precautions

① Ensure standard and reliable grounding before power-on;

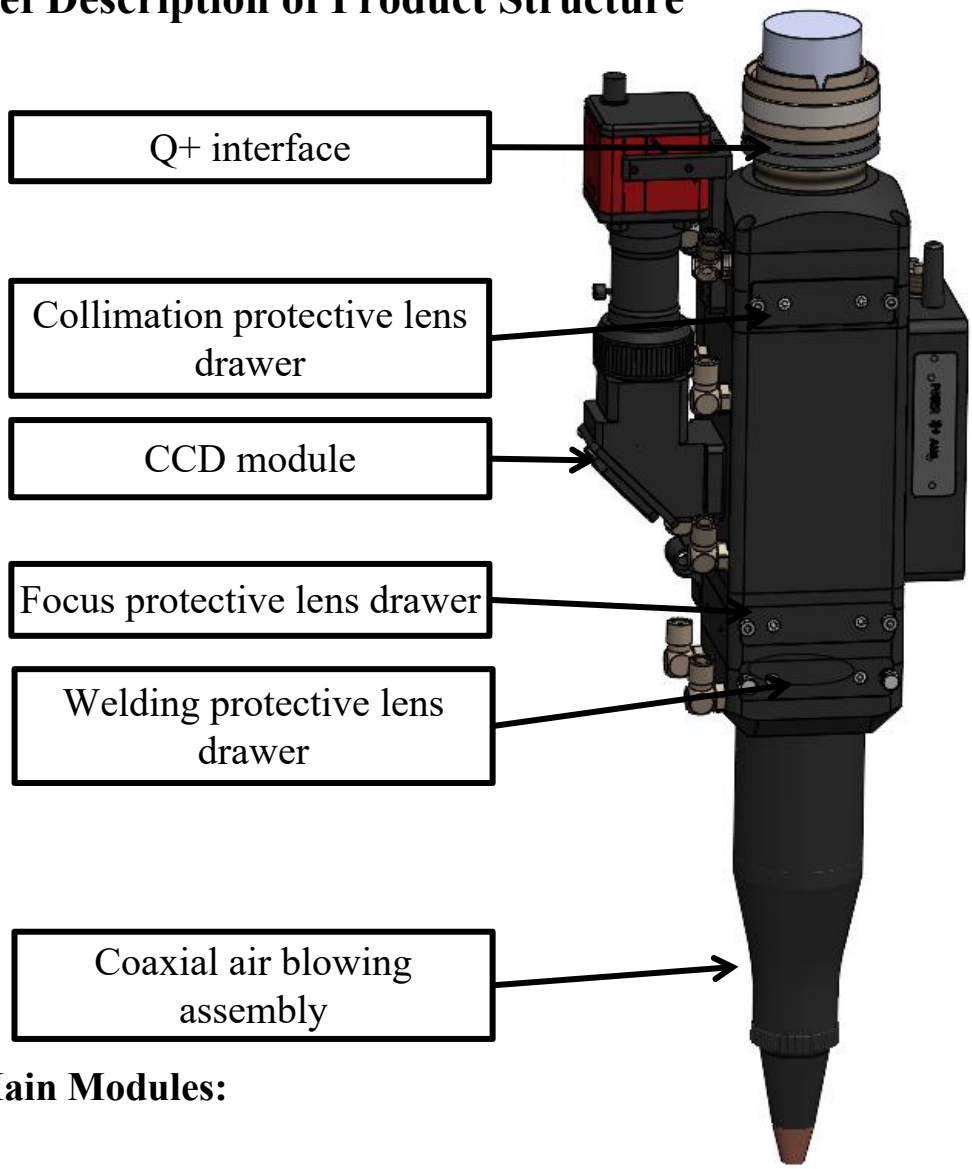
② When connecting the laser output head and welding head, check the output head carefully to confirm no pollutants on it, such as dust, for the pollutants will burn optical fiber and welding head. Please clean the laser output head using dedicated cleaning devices;

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 Q+ connector: Connect and lock fiber Q+ welding head;

② Collimation protective lens drawer: Extend the lifespan of the collimation lens;

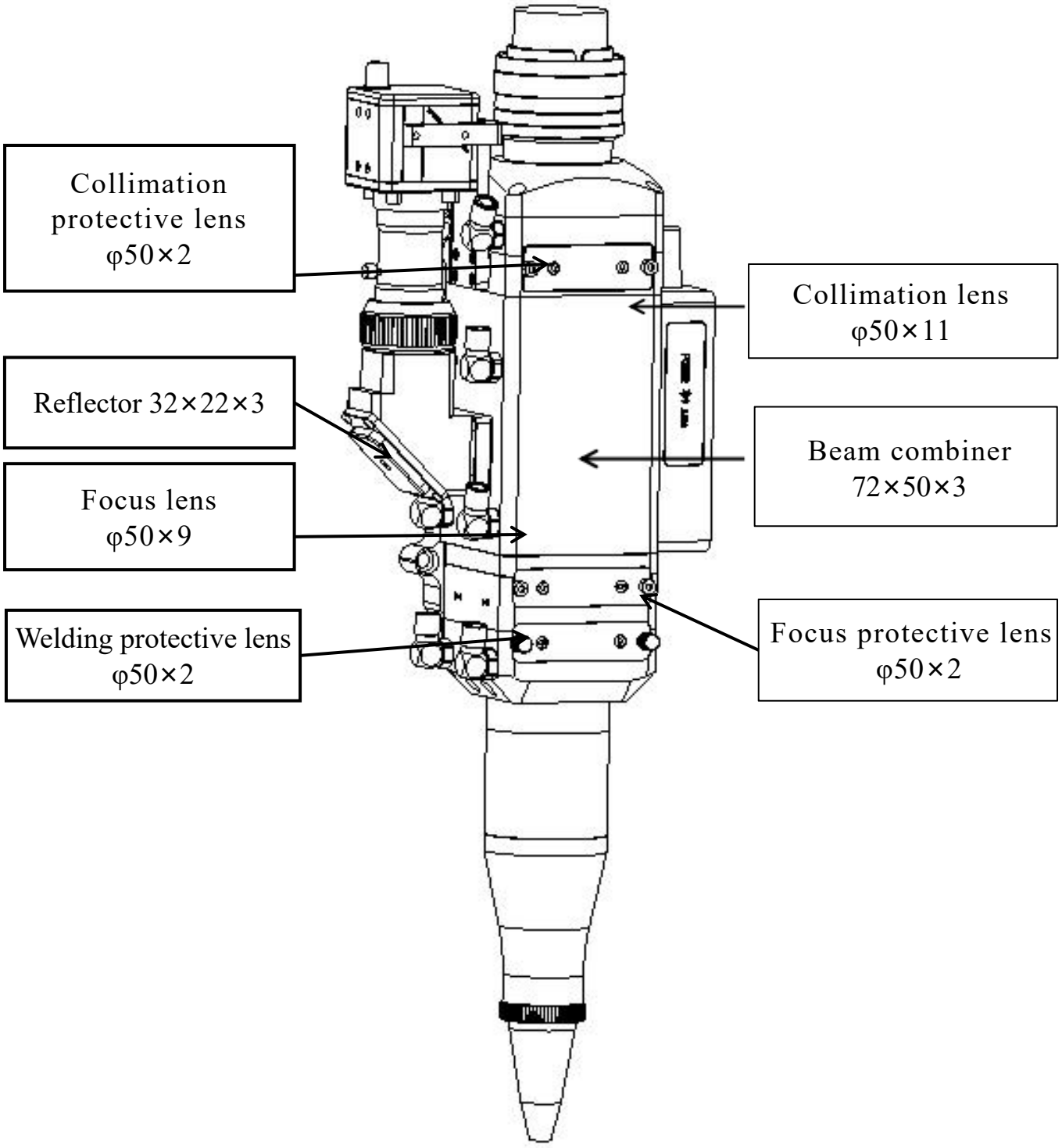
③ CCD module: Assist in welding demonstration or serve as a reserved connector to add detection system;

④ Focus protective drawer: Prevent dust from entering the focus lens;

⑤ Welding protective drawer: Prevent dust from entering the focus lens;

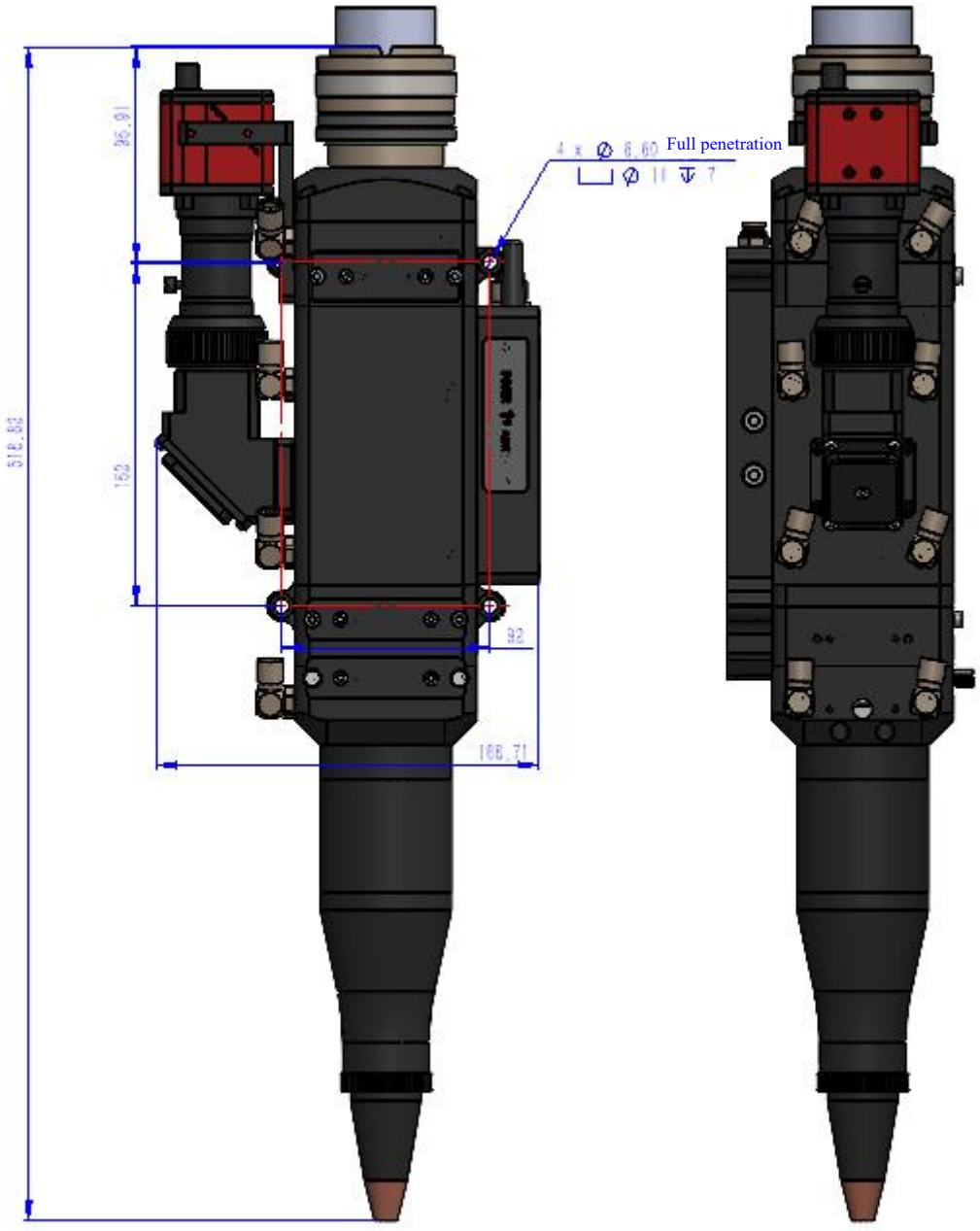
⑥ Co-axial blowing assembly: During laser welding, it can destroy the ionized layer applied by laser on workpiece surface, isolate workpiece from air to avoid workpiece oxidation and destroy the electronic layer to make welding more stable;

2.3 Brief Description of Product Parts (Lens Size)



Chapter 3 Product Installation

3.1 Dimension Drawing of LWT15A0 Temperature Monitor

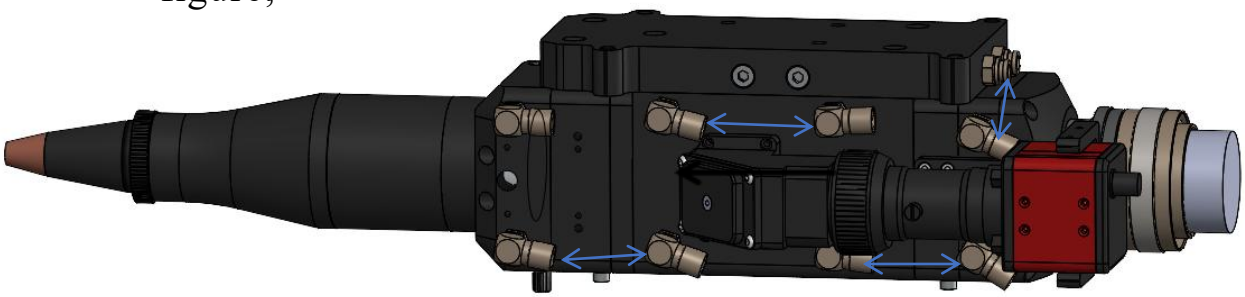


Main dimensional drawing of welding head
(collimation 100/focusing F300)

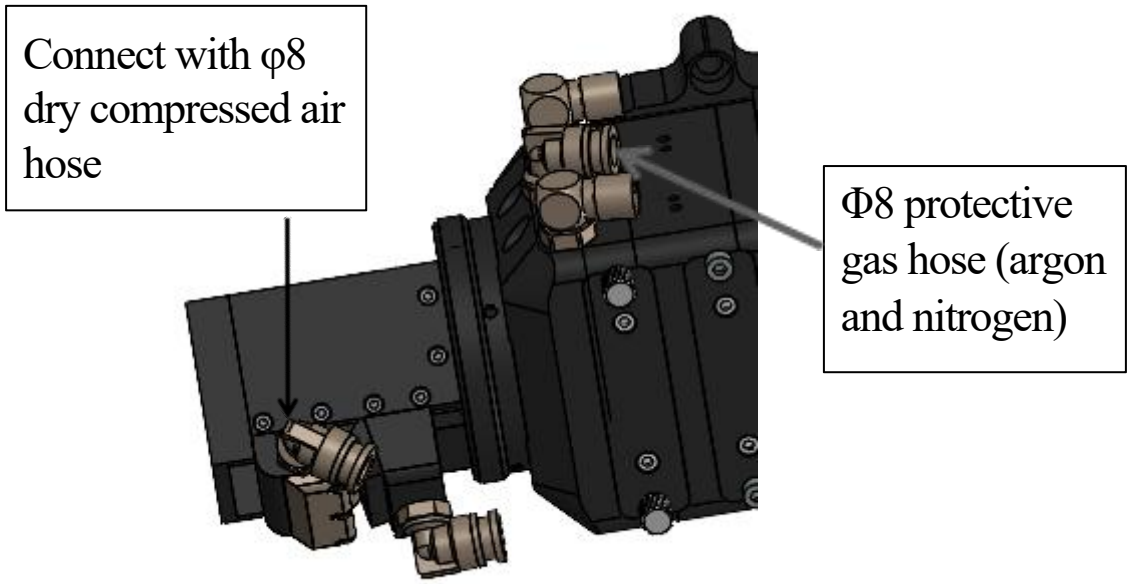
3.2 Water and Gas Connection

3.2.1 Cooling Pipe

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



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

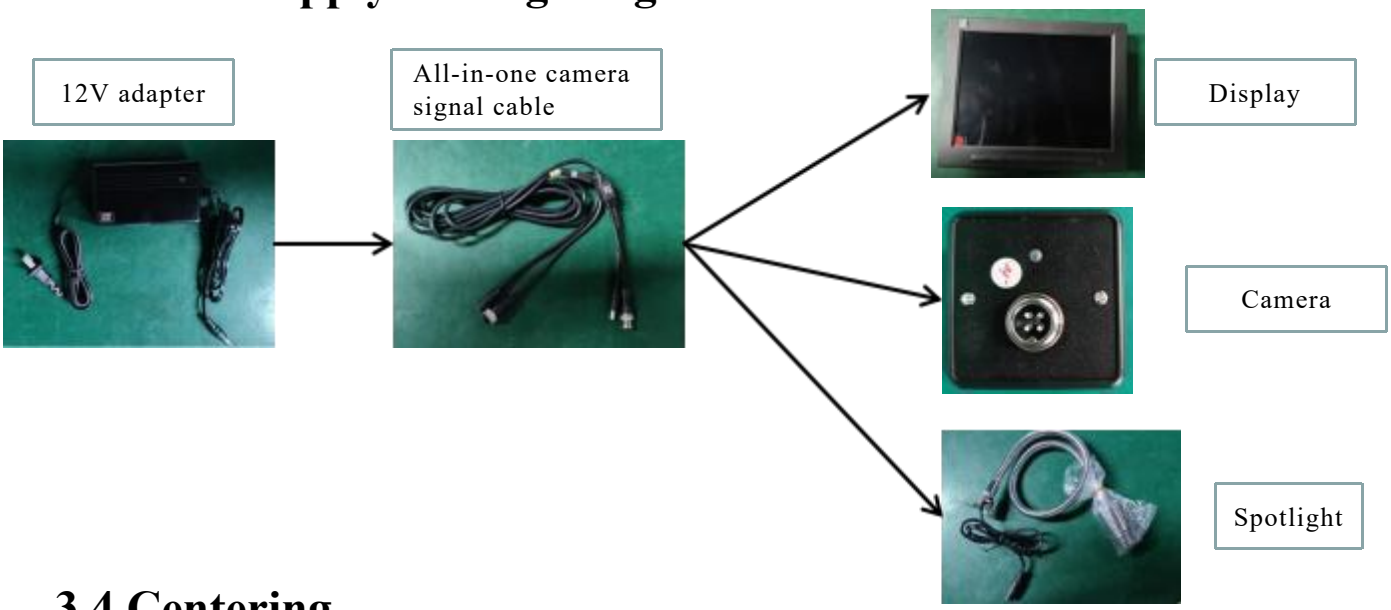


Integrated design for water cooling system: One inlet and one outlet cooling connection

Suggestions: Connect 8mm gas pipe to the input port for protecting gas output, welding base metal and extending the lifespan of lens; input flow <30L/MIN.

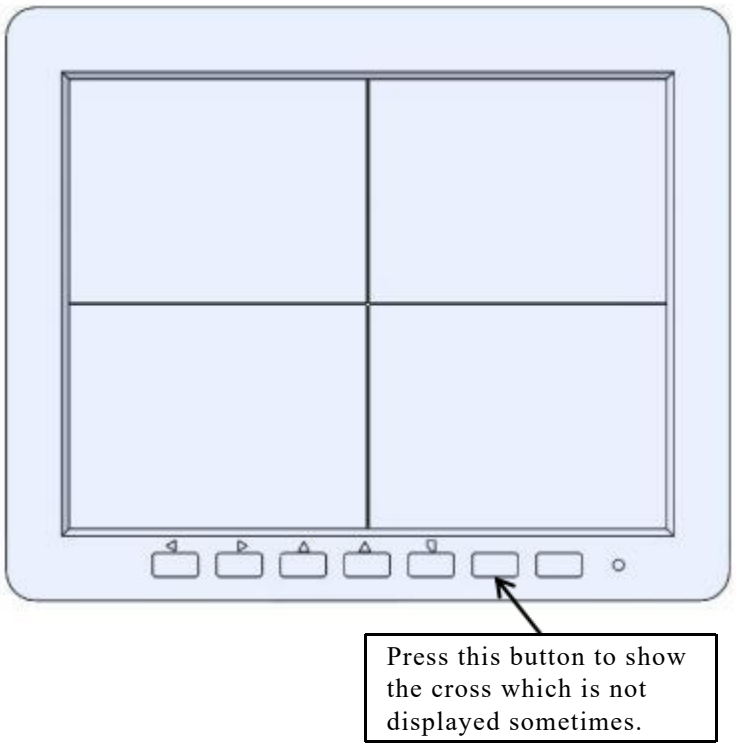
Common gas: Inert gases such as oxygen, nitrogen, etc.

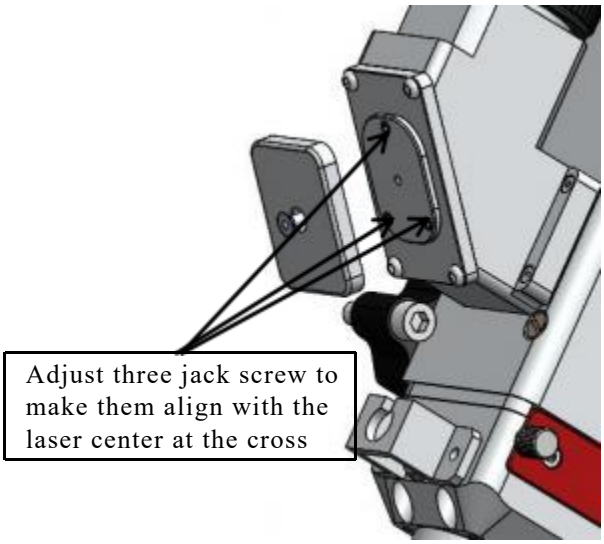
3.3 Power Supply Wiring Diagram



3.4 Centering

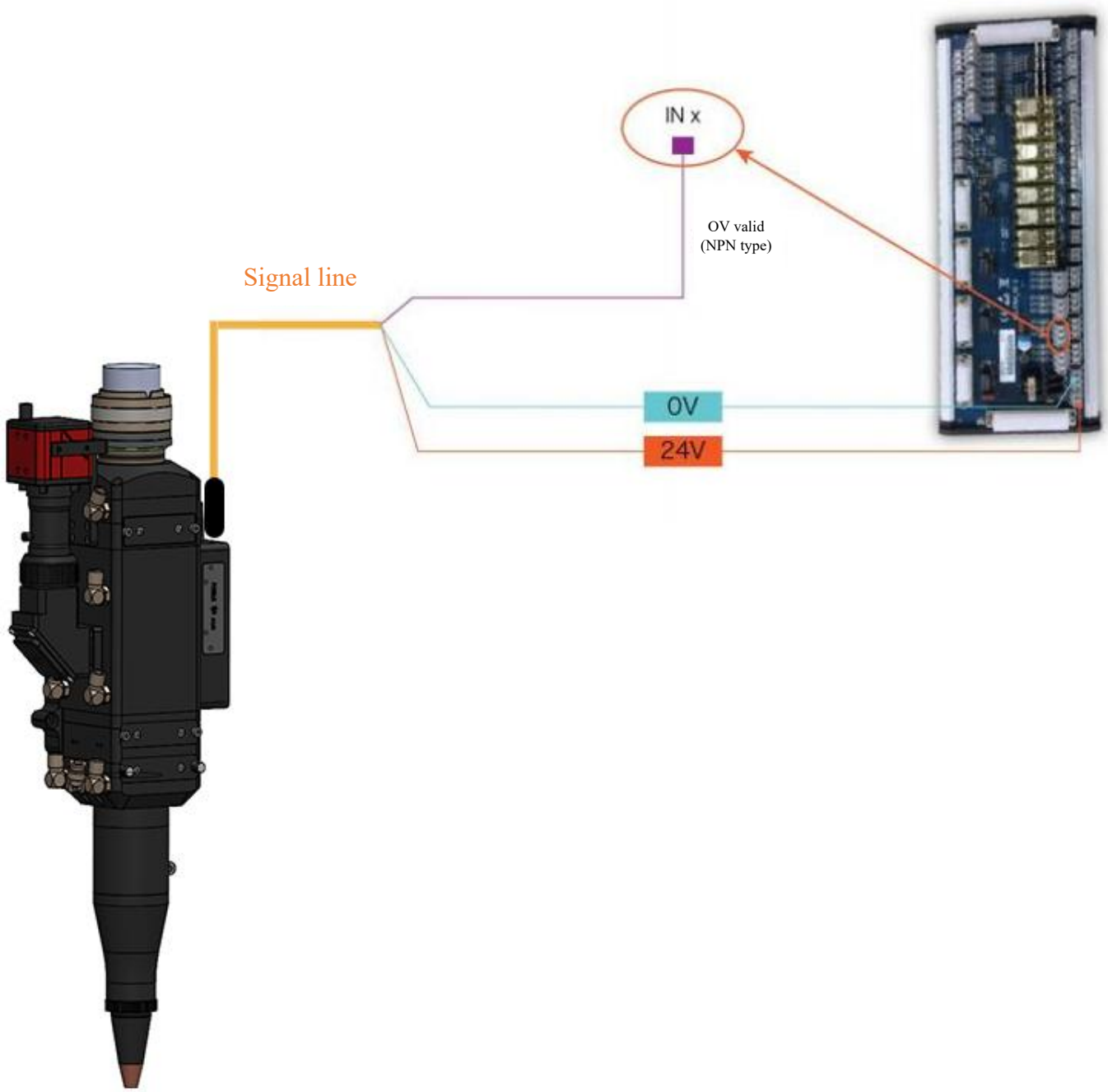
To ensure good welding and demonstration effect, laser beam must be overlapped with screen cross. If it deviates from the center of screen cross, make adjustment via CCD assembly first. If the laser center is not in the center, adjust it by using the screen cross (adjust with up/down/left/right buttons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





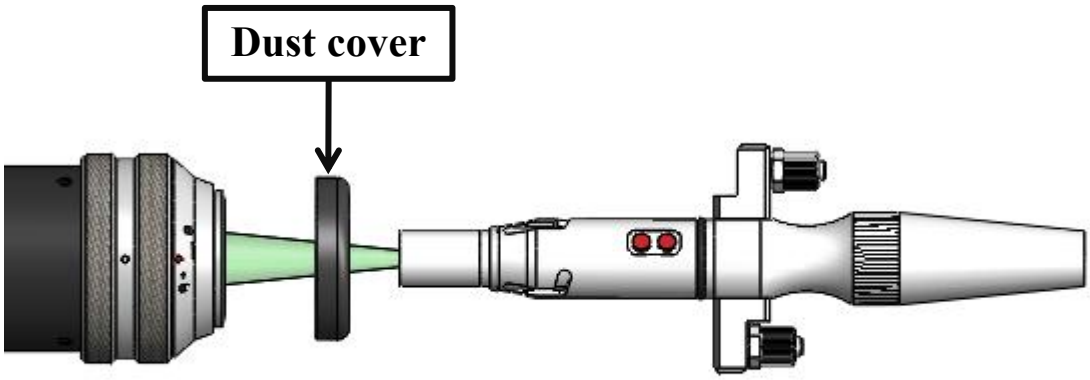
3.5 Wiring of Signal Line

Wiring diagram of signal line

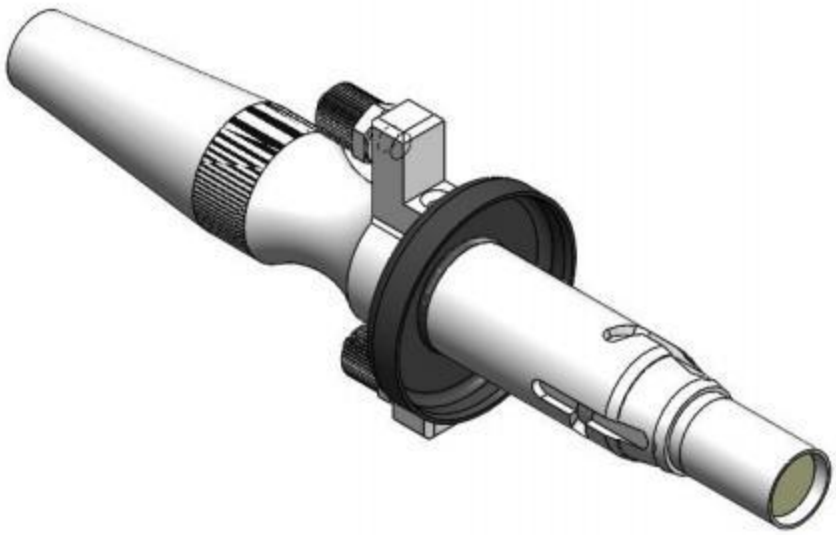


3.6 Installation of QBH Fiber Laser Head

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



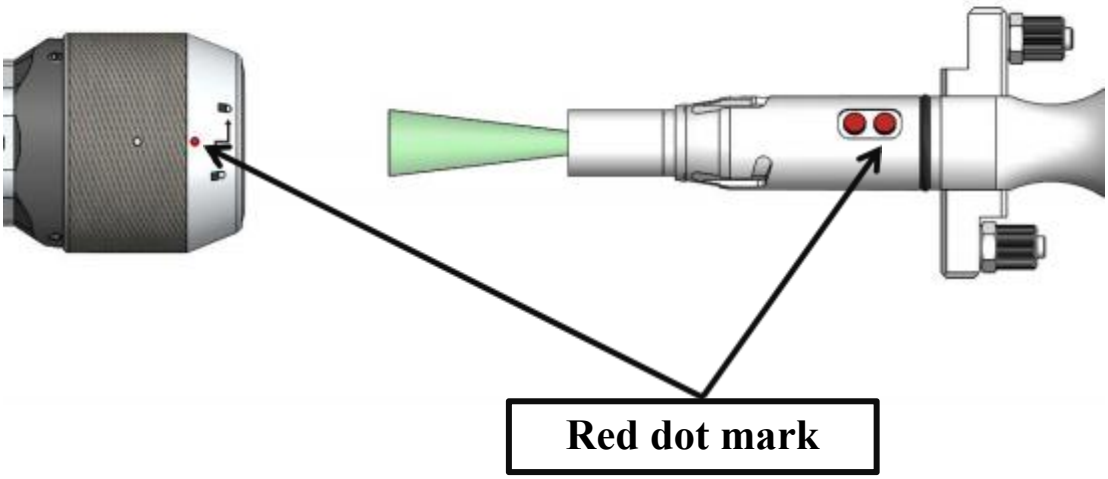
② Cover the dust cover inside the small white box inside accessory into the fiber laser tip, as shown in the figure below:



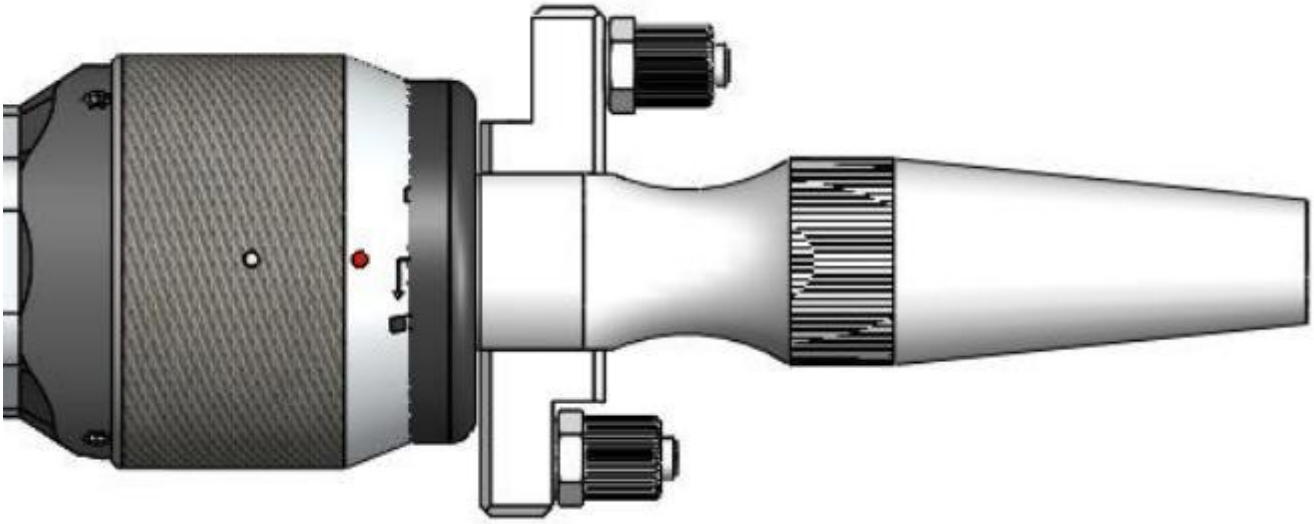
Attention: If the fiber head is with original dust-proof gasket, users can choose whether to install dust-proof cover or not during installation according to the actual condition.

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



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)



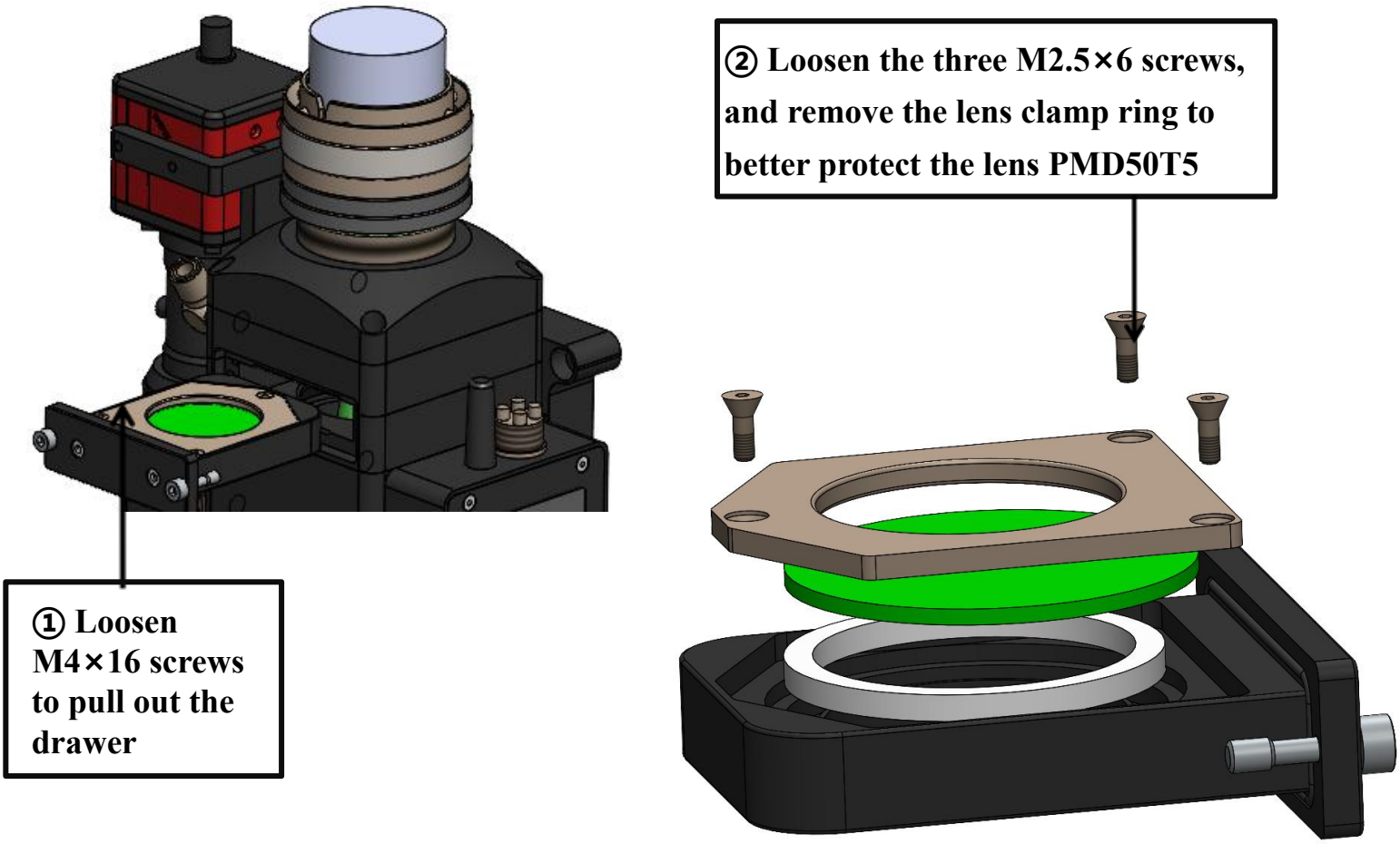
Attention: Wrap with masking tape after plugging fiber tip.

Chapter 4 Maintenance

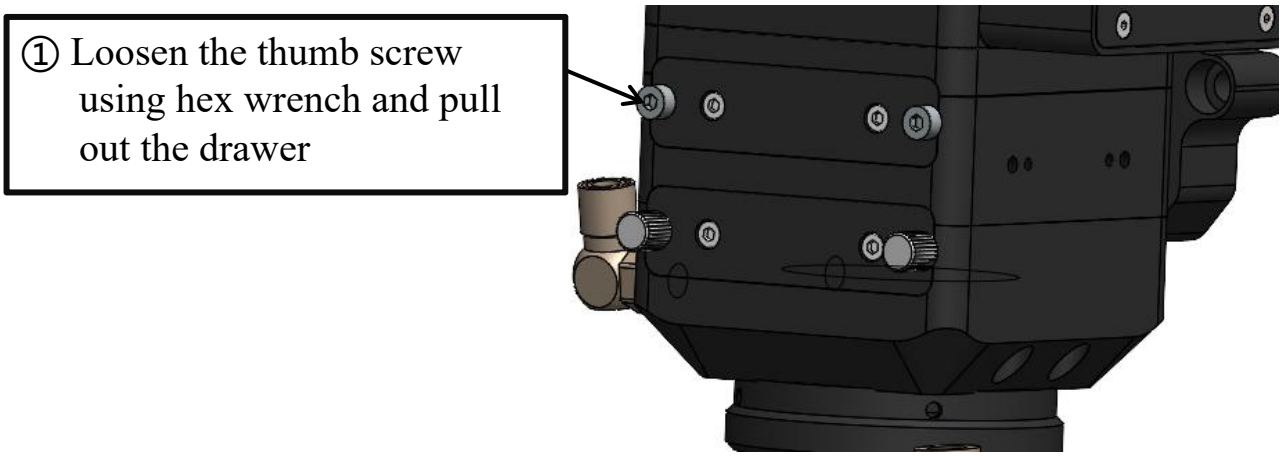
4.1 Maintenance and Replacement of Protective Lens

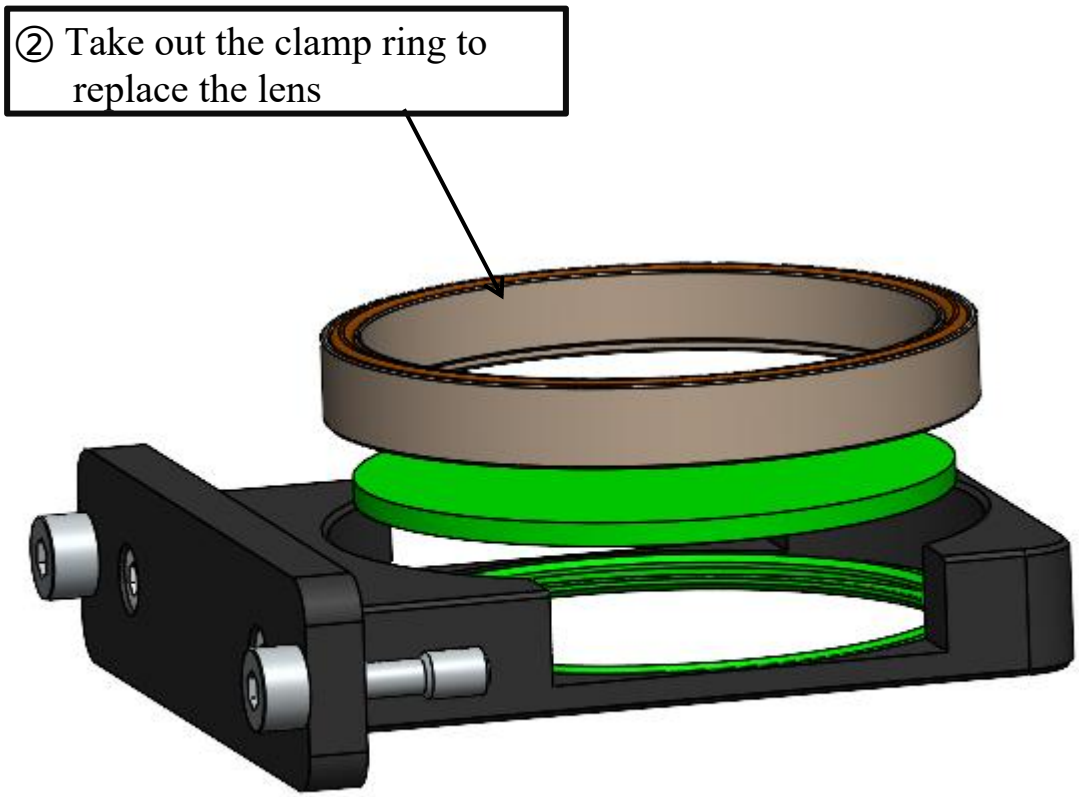
If the welding effect is poor, the welding protective lens is normal but burning points occur to the trial lens, the collimation protective lens or focus protective lens may be polluted or damaged. In this condition, the after-sales personnel shall check if any burning point on the lens. Before checking,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

4.1.1 Disassembly of Collimation Protective Lens The disassembly method is shown in the following figure:

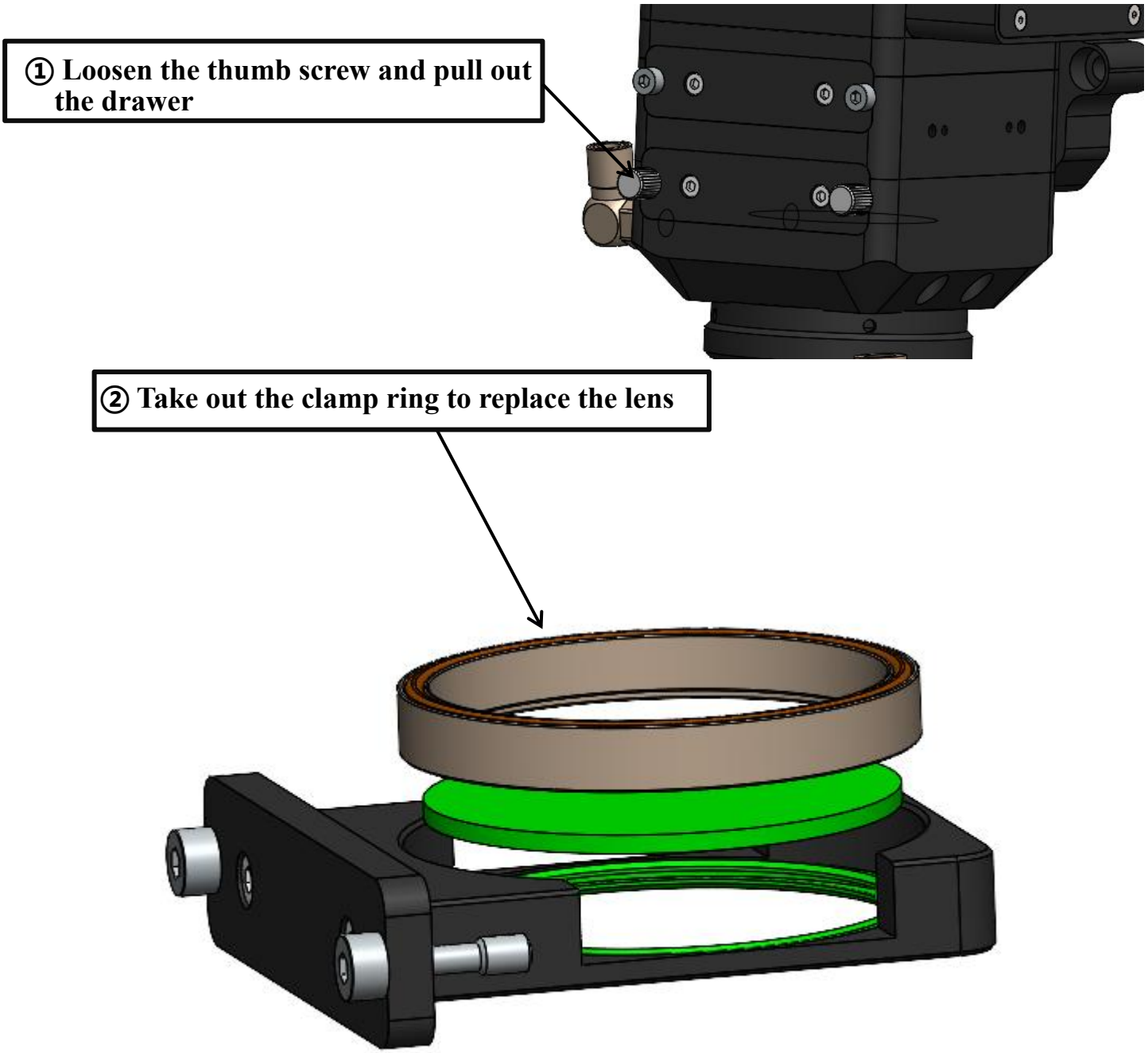


4.1.2 Disassembly of Focus Protective Lens. The disassembly method is as shown in the following figure:

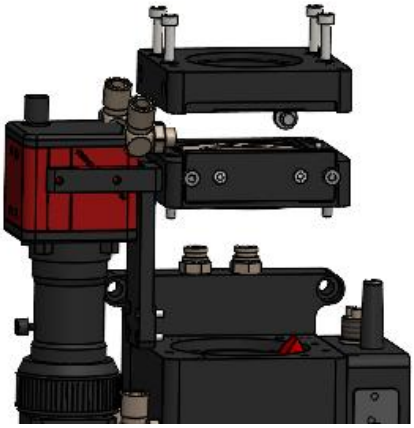




4.1.3 Disassembly of Welding Protective Lens. The disassembly method is as shown in the following figure:



4.2 Maintenance and Replacement of Collimation Lens



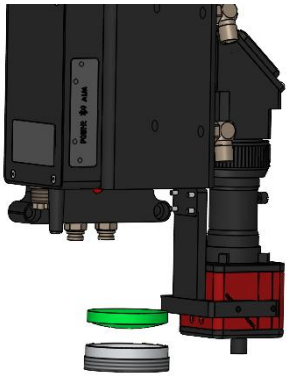
4.2.1 See the figure for the disassembly of collimation lens

① Remove the M4 screws to remove QBH assembly;

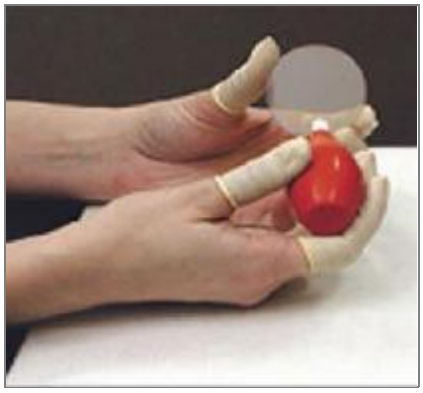
② Remove the M4 screws to remove the collimation drawer;

③ After removing the collimation module, turn the welding head reversely and disassemble the collimation lens using the lens disassembly wrench;

Please mind the proper direction of the collimation lens when assembling it (make sure the bulged face points to nozzle).



4.2.2 Cleaning of 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 must be installed into the welding head's body as soon as possible and inserted into the welding head.

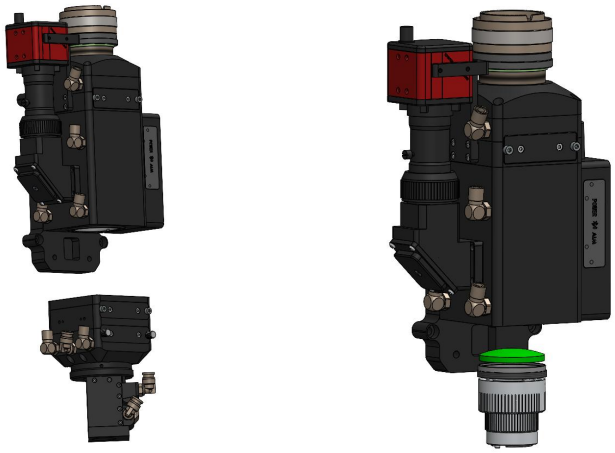
4.3 Maintenance and Replacement of Focus Lens

4.3.1 Disassembly of Focus Lens. See the figure for details

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

② Loosen the M4 screw to remove the parts of focus protective drawer;

③ Remove the pressing ring with disassembly wrench to replace the focus lens. Please mind the proper direction of focus lens when assembling it (ensure the budged surface faces upward).



4.3.2 Cleaning of Focus Lens

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⑤ The cleaned collimation lens must be installed into the welding head's body as soon as possible and inserted into the welding head.

Usage precautions

1. Avoid hot plug of aviation interface It is forbidden to run LWT15A0 welding head
2. without water
3. Timely stop the machine for troubleshooting in case of any exception

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