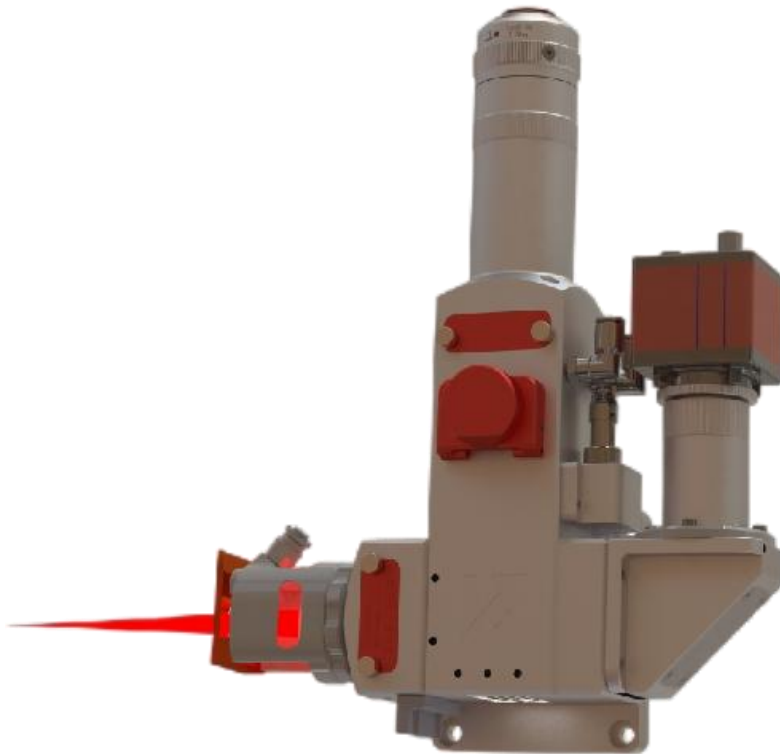


# HK20L/R Adjustable fibre optic welding system

## An instruction manual



Wuhan Xinghong Photoelectric Technology Co., Ltd

2022. 05. 16 (Second Edition)

# Catalogue

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## Revision History



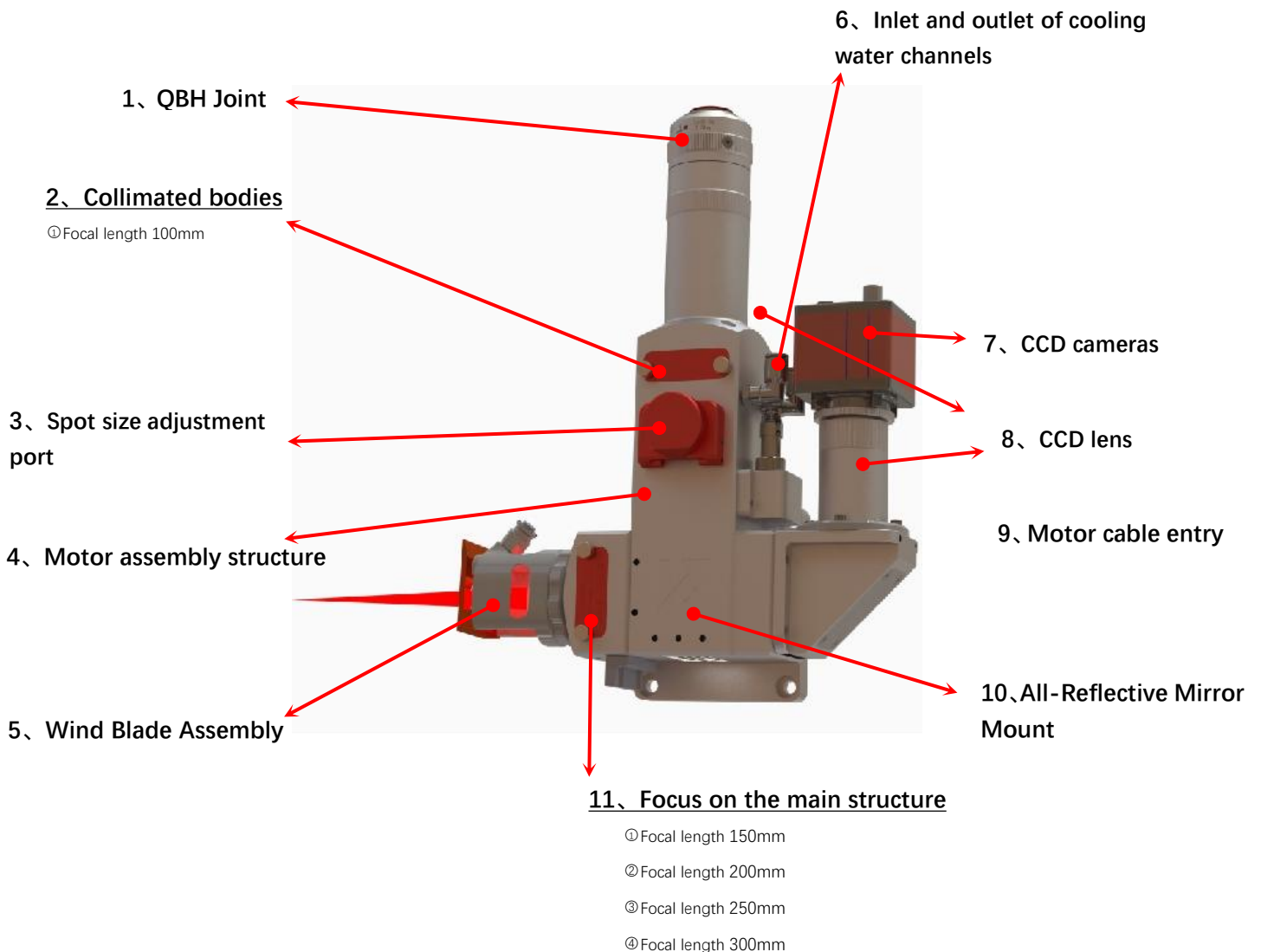
**Please read this product manual carefully after  
Then carry out the installation, debugging and use of the product**

**You must wear safety glasses** when operating the laser equipment. Safety glasses should be selected appropriately for the wavelength of the laser emitted by the laser. If the device is a laser tunable or Raman product, it emits laser light outside the normal output wavelength range of the device's laser and requires appropriate safety protection for this phenomenon. Laser safety glasses should be selected to shield the laser from the entire wavelength range emitted by the laser device.

# Chapter I product introduction and display

## 1. Product introduction

The "HK series adjustable fibre optic welding system" consists of a "brushless motor driver" and a "fibre optic swing adjustable welding head". Remember that the motor must be stopped when the spot size is adjusted. When you receive the product, open the box and it contains: 1 fibre optic swing adjustable welding head, 1 driver, 1 set of 8" display, 1 3-core connection cable and several accessories.

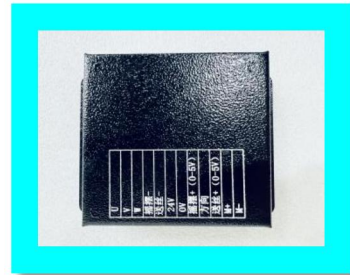


**Note:** Adjustment of the spot size is manual and must wait for the motor to come to a complete stop before adjusting. Otherwise the gears will be damaged, resulting in disorderly operation of the internal motor.

## 2. Accessories display



Fibre optic oscillating adjustable welding head (sample drawing)



Driver (sample)



8-inch display screen (sample)



3-core connecting wire (sample drawing)



Protective lens (sample)

### 3. Special attention: 5 steps for inserting and unplugging optical fiber

**Note: when inserting optical fiber, the laser head shall be placed horizontally; Ensure that the optical fiber is inserted horizontally**

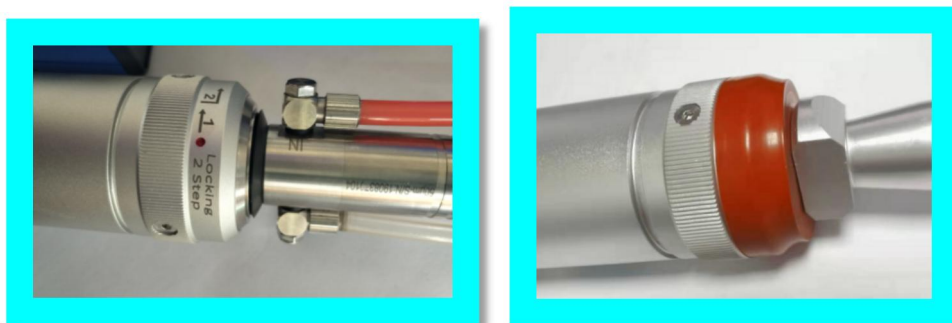
3. 1 Check whether QBH connector and optical fiber plug are dirty, and wipe them with alcohol and cotton swab (cotton paper) in time



3.2 QBH homing "two points and one line" 3.3 alignment insertion of optical fiber plug



3.4 secondary locking clockwise 3.5 optical fiber protective jacket for complete protection



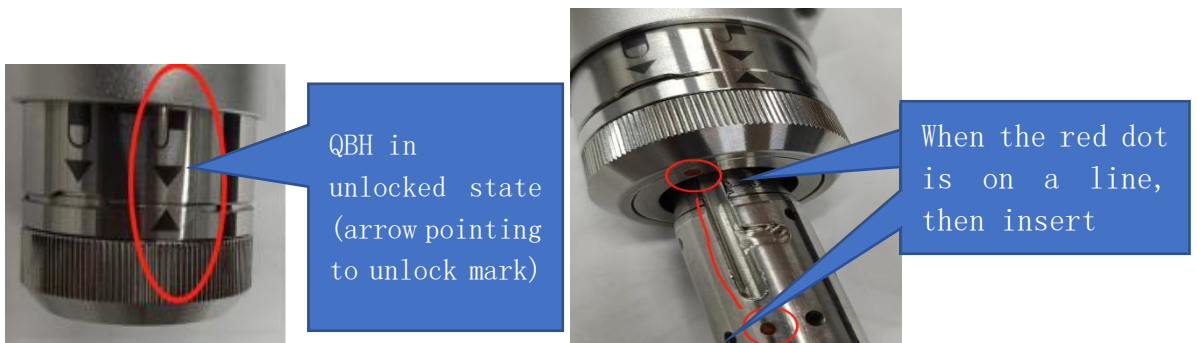
**Note: when inserting optical fiber, the laser head shall be placed horizontally; Ensure that the optical fiber is inserted horizontally**

## 4. Special note: Steps for plugging and unplugging optical fibres (new QBH connectors)

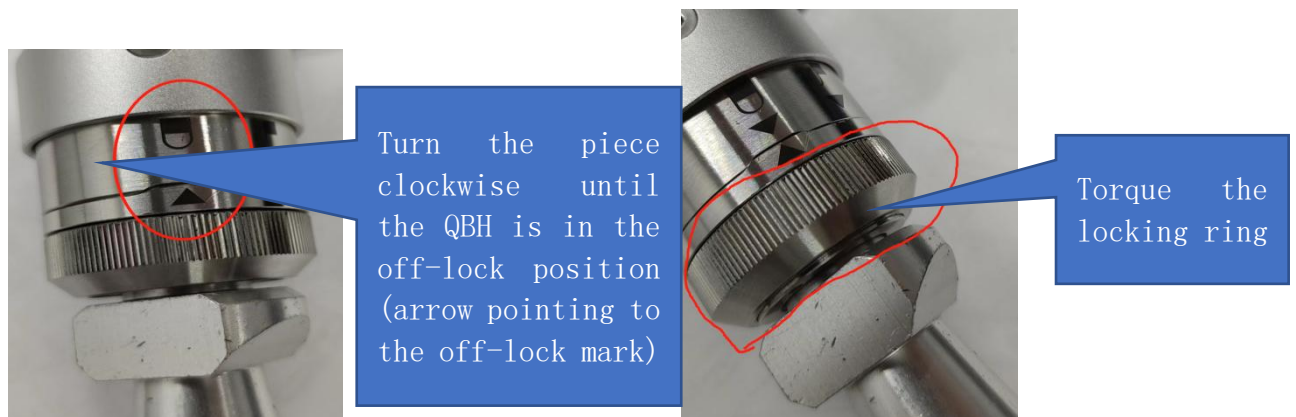
4.1 Inspect QBH connectors and fibre plugs for dirt and wipe them clean promptly with alcohol and cotton swabs (cotton paper).



4.2 The QBH is in the unlocked position (arrow pointing to the unlocked logo) and the red dot of the fibre optic plug is inserted into place against the red dot on the end of the QBH.

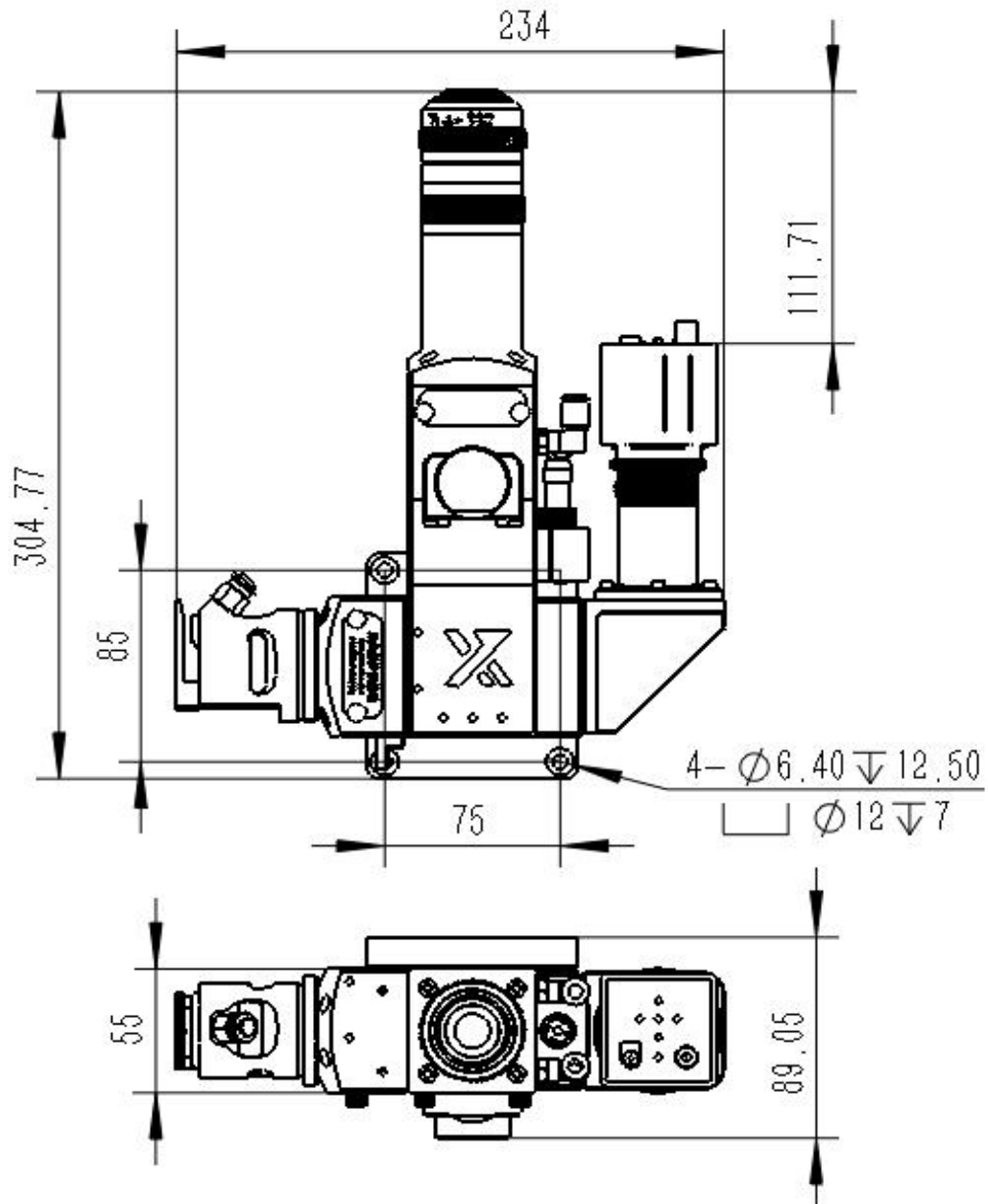


4.3 Turn the ring with the lock mark on the QBH connector clockwise until the QBH is in the off-lock position (arrow pointing to the off-lock mark) and finally twist the locking ring to tighten it.



## Chapter 2 product installation

### 1. Welding joint installation

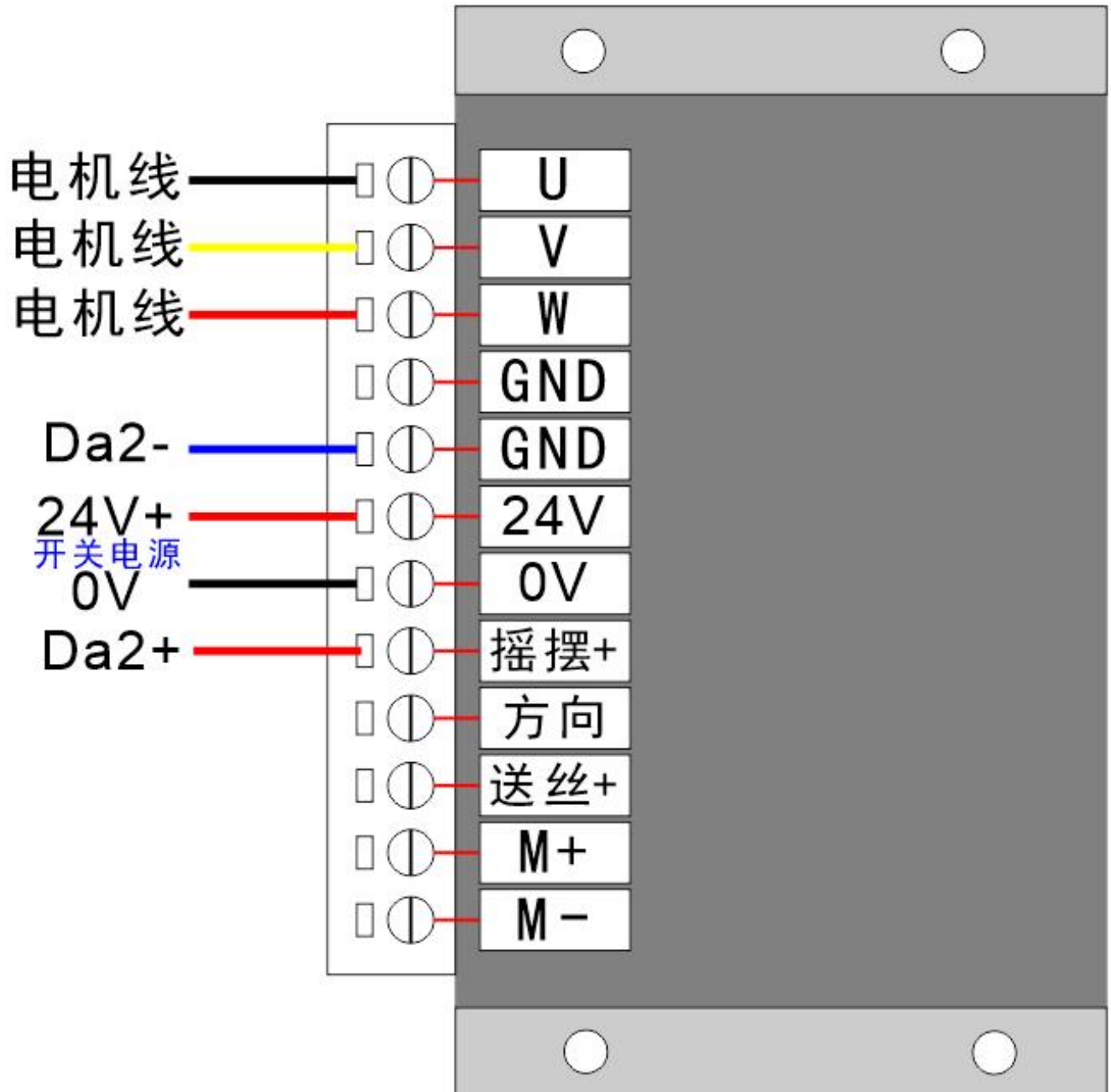


Mounting adapter plate hole 85x75-M6.



## 2. Drive wiring diagram

Controller model: XMDDC V3.1



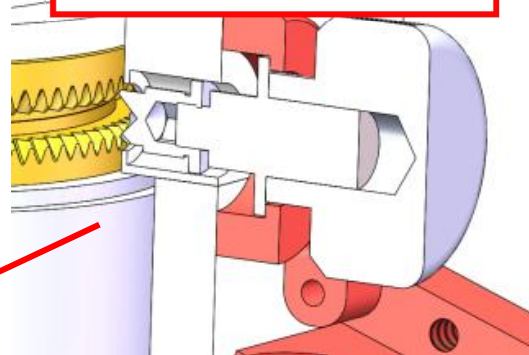
Drive (XMDDC V3.1) wiring diagram

# Chapter 3: Adjustment methods for the ring adjustment function

## 1. The laser ring adjustment function is introduced

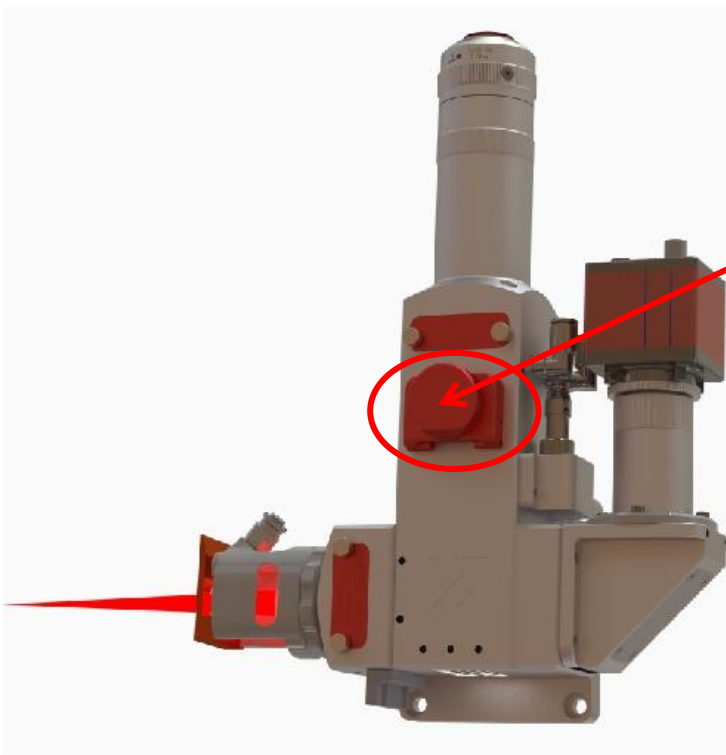
Changing the single welding method of spot laser welding, changing the traditional spot light method to a swinging O-shape light, better achieving the "fish scale welding" effect and expanding the welding width; and adding the welding spot can change the single welding method of fixed spot size laser welding to achieve multi-directional, different welding seam conditions, a variety of welding conditions can be achieved.

**Patent NO:**  
**CN111682728B/**  
**CN111682728A**



### Patented technology.

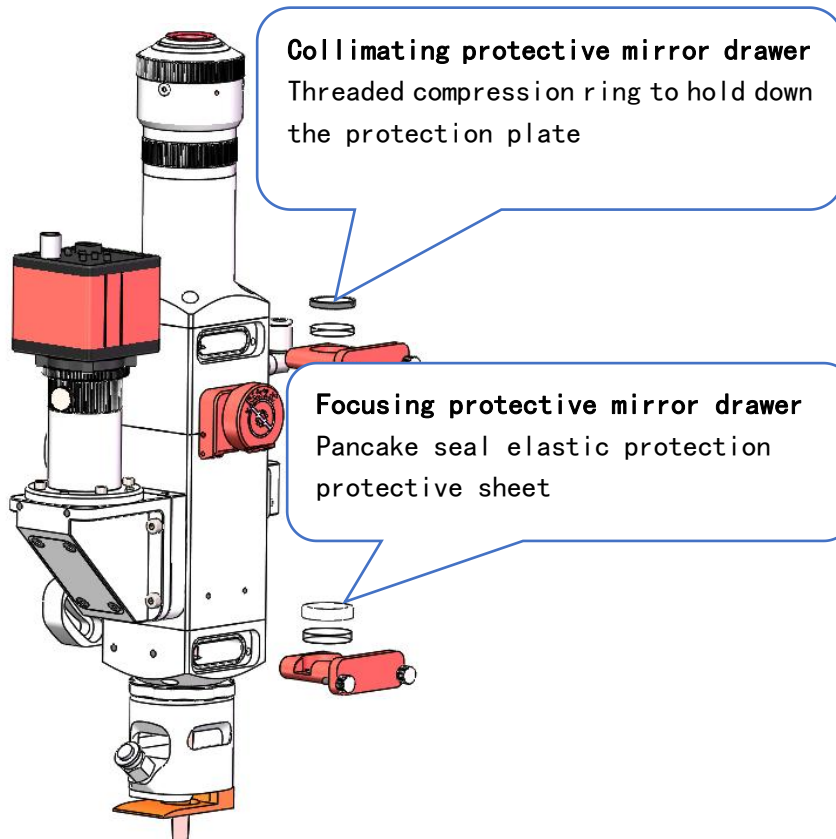
Press the adjusting tooth shaft to engage the tapered adjusting teeth of the upper and lower adjusting rings and twist the adjusting tooth shaft to turn the upper and lower adjusting rings relative to each other.



**Note:** Adjustment of the spot size is manual and must wait for the motor to come to a complete stop before adjusting. Otherwise, the gears will be damaged and the internal motor will run chaotically.

## Chapter 4: routine operation

### 1. Replace the protective sheet



#### **Cautions.**

1. Do not repeatedly use a lint-free cotton cloth or cotton swab to wipe the protective lens piece.

2. Do not touch the protective lenses with your fingers.

Do not blow directly on the surface of the protective lenses with your mouth as this may introduce new soiling.

Do not forget to clean the protective lens drawer when putting it back on.

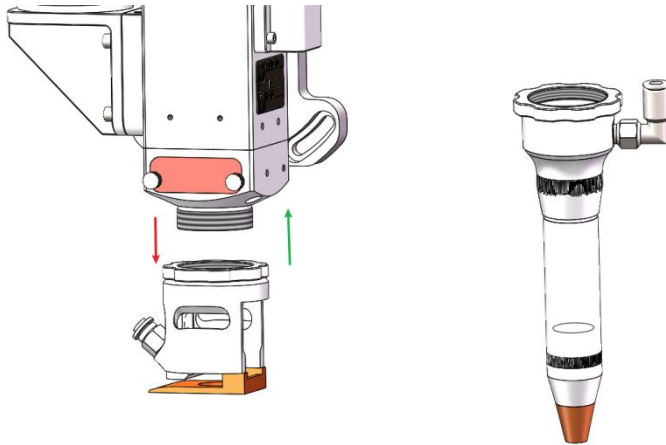
3. When using compressed air, please do not blow directly on the dirt from the front, but use a side blowing method to avoid dirt diving into the surface.

**In particular,** it is important to wear powder-free gloves or finger gloves when cleaning

the product. It is now made clear that if damage is caused by, for example, improper handling or the use of incorrect cleaning procedures or chemical usage, damage due to such causes is not covered by the warranty.

## 2. Coaxial switching of air knife

Thread switching, double thread self-locking, universal positioning, ensuring that the air outlet is in line with customer requirements, thread size M36X0.75mm.



## Revision History

Date	Revised content	Software Versions
20220225	First Edition (First Release)	V1.0
20220516	Version 2 (replacement of drive wiring definition, drive X-Q02 replaced with drive XMDDC V3.1)	V1.1
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