

HC60 Double Oscillating Mirror Scanning Welding Head

User's Manual



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Catalogue

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Revision History



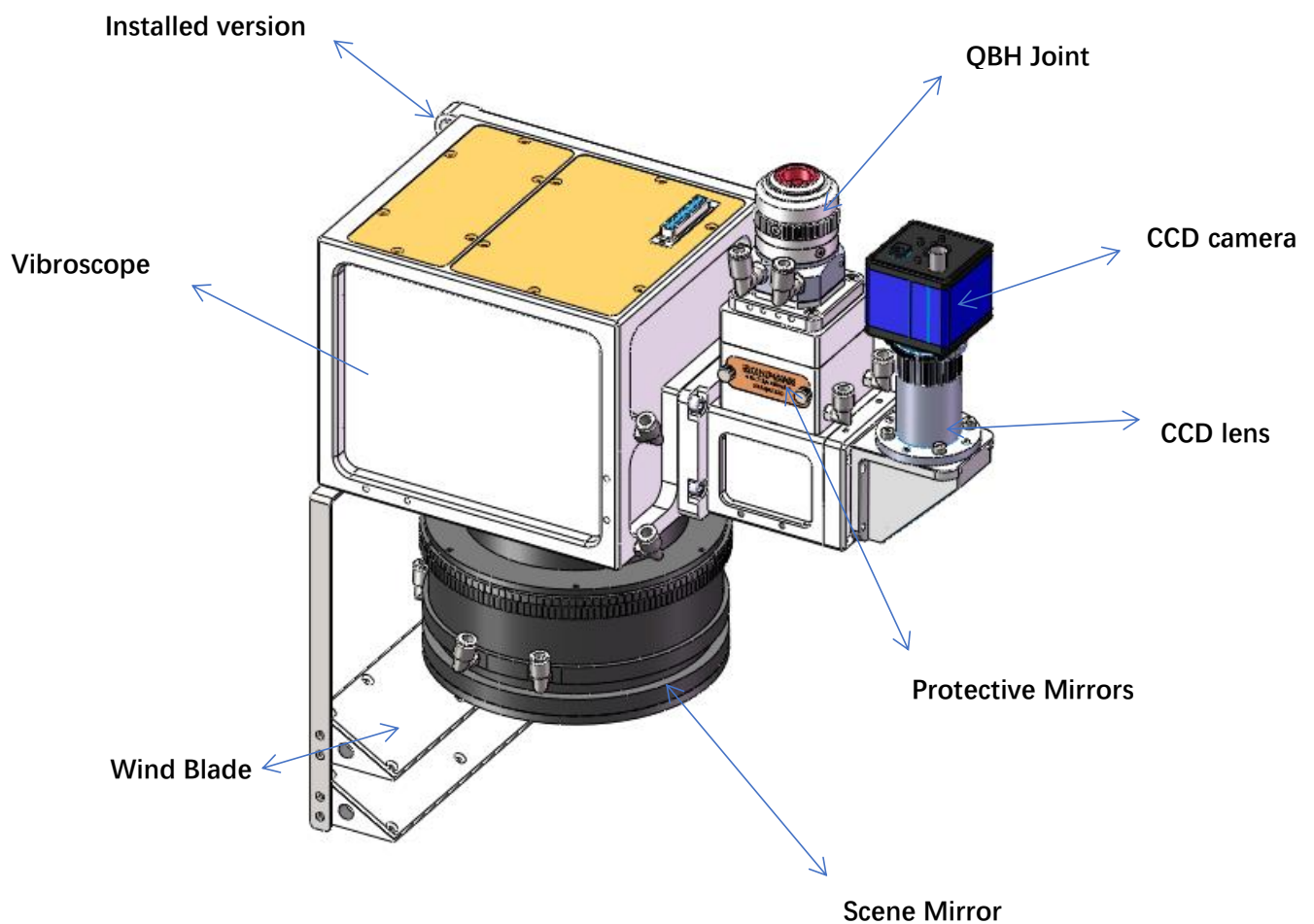
**Please read this product manual carefully after
Then carry out the installation, debugging and use of the product**

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 1 Product Introduction and Display

1. product introduction

The "HC60 Double Oscillating Mirror Scanning Welding Head" is a two-axis oscillating welding head developed in-house, consisting of a "Platform Oscillating Mirror Welding Head", a scanning field mirror and an "X-Z Laser Welding Control System". The welding head consists of a QBH collimation module, an oscillating mirror assembly, a field mirror module and a CCD monitoring module (optional).



2. Product parameters

Maximum power	6000W
Incident spot	30mm
Monitoring range	F500
Scanning range	350X350mm
positioning speed	4m/s
scanning angle	$\pm 12.5^{\circ}$
Working environment temperature	$25 \pm 10^{\circ}$
collimating lens	D28X4
weights	15KG

3. Accessories display

	Welding head
	±15V power supply
	Control line (standard control line for marking machines)

4. Special attention: 5 steps for plugging and unplugging optical fibers

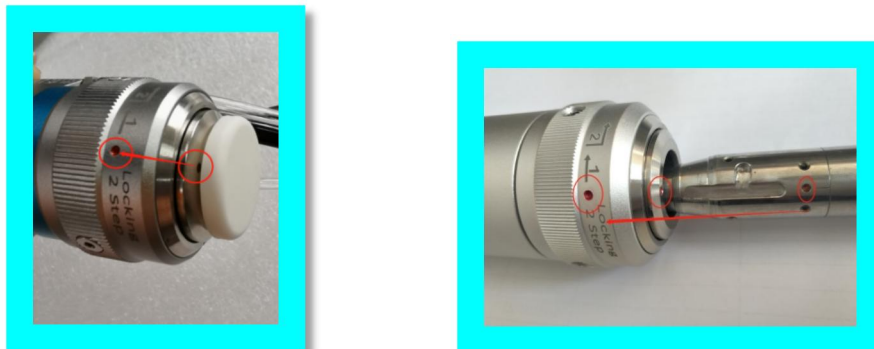
Note: The laser head needs to be placed horizontally when inserting the fiber; ensure that the fiber is inserted horizontally

4.1 Check whether the QBH connector and optical fiber plug are dirty, and wipe it clean with alcohol and cotton swab (tissue paper) in time



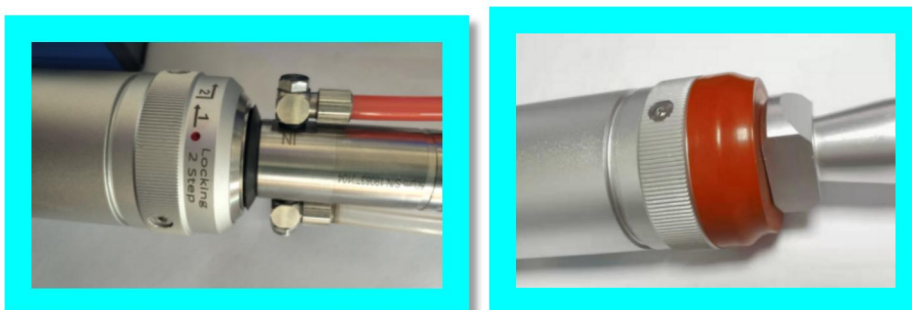
4.2 QBH homing "two points and one line"

4.3 Inserting the optical fiber plug into position



4.4 Double locking clockwise

4.5 Fiber Protection Jacket for full protection



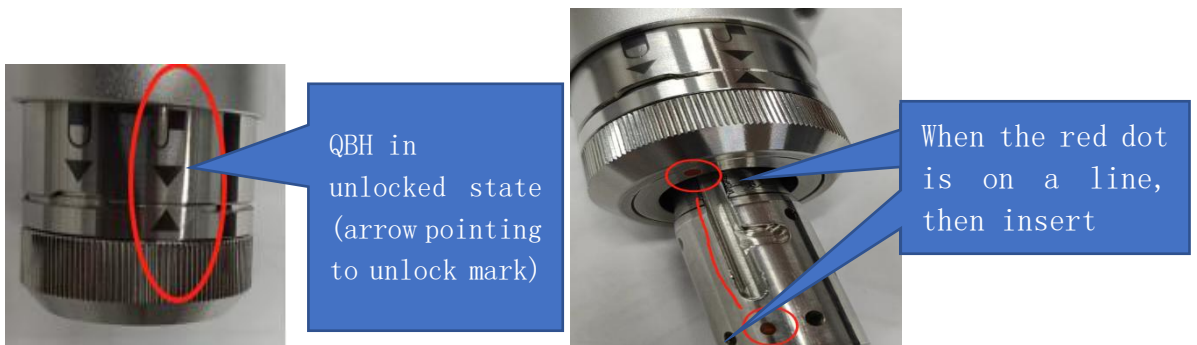
Note: The laser head needs to be placed horizontally when inserting the fiber; ensure that the fiber is inserted horizontally

5、Special note: Steps for plugging and unplugging optical fibres (new QBH connectors)

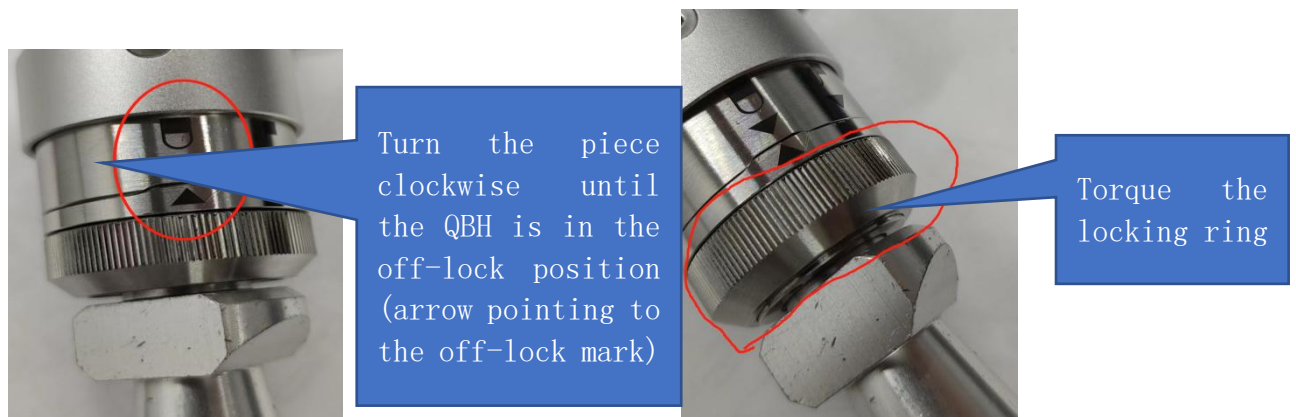
5.1 Inspect QBH connectors and fibre plugs for dirt and wipe them clean promptly with alcohol and cotton swabs (cotton paper).



5.2 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.

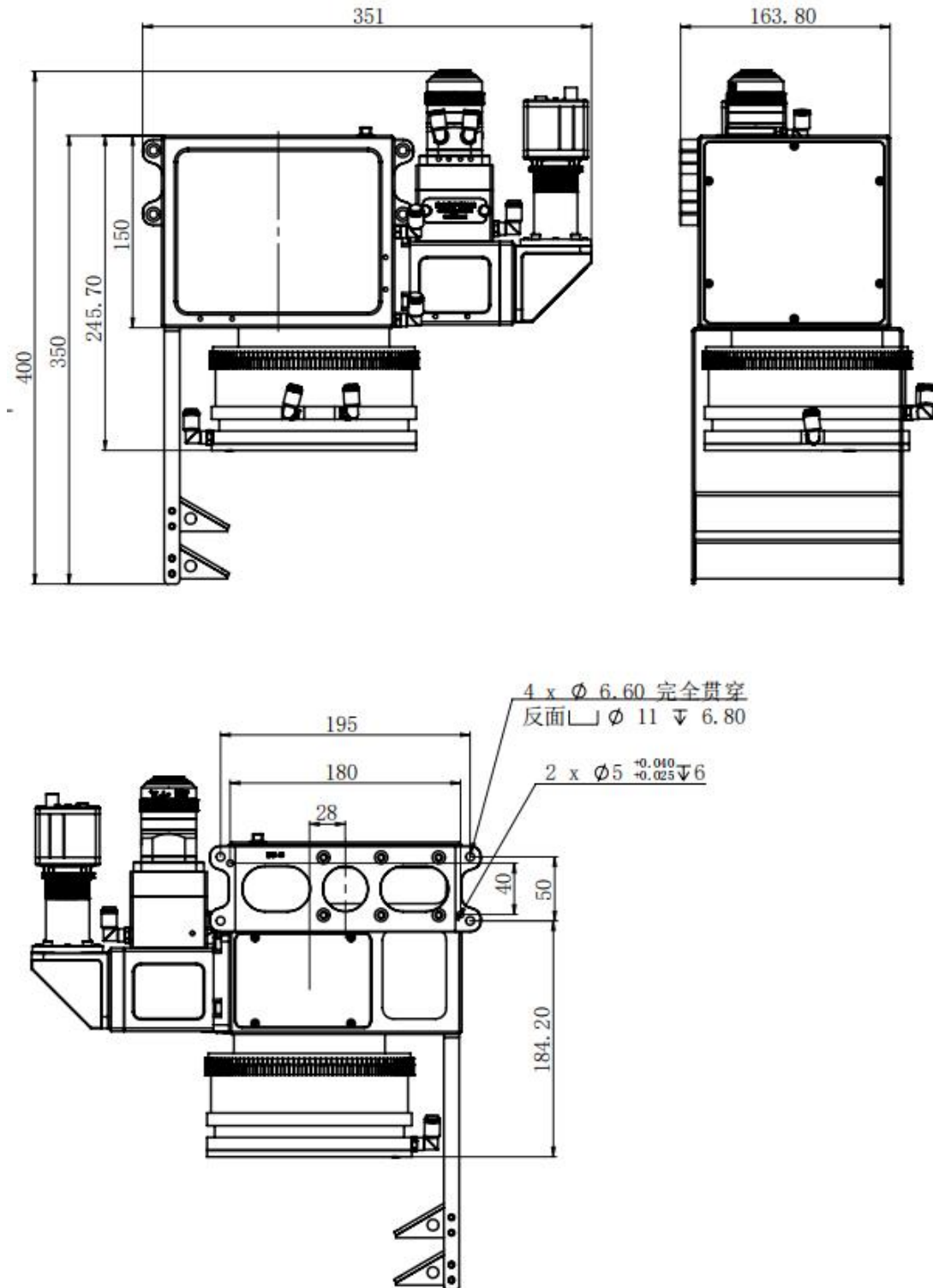


5.3 Turn the ring with the lock mark on the QBH connector clockwise until the QBH is in the off-lock position (arrow pointing to the off-lock mark) and finally twist the locking ring to tighten it.



Chapter 2 Introduction to Product Functions and General Operations

1. Welding head installation dimension drawing



2. Defocus adjustment

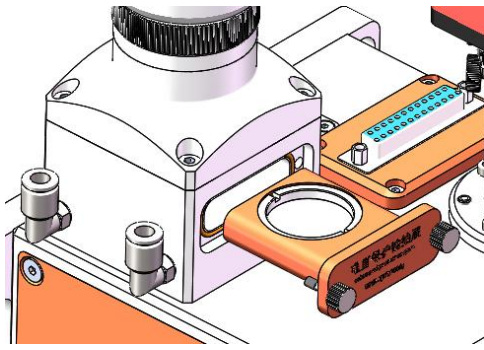
Adjust the laser power to about 150W, the laser beam brightness is the strongest, "snort" sound maximum, hear the snap only when the focal point is located exactly on the surface of the workpiece, which is zero defocusing.

Negative defocusing, you can get a greater depth of melting, the internal power density of the material is higher than the surface, easy to form a stronger melting, vaporization, so that the light energy to the material deeper transfer. Therefore, in practice, when a greater depth of fusion is required, negative defocusing is used; when welding thin materials, positive defocusing is appropriate.

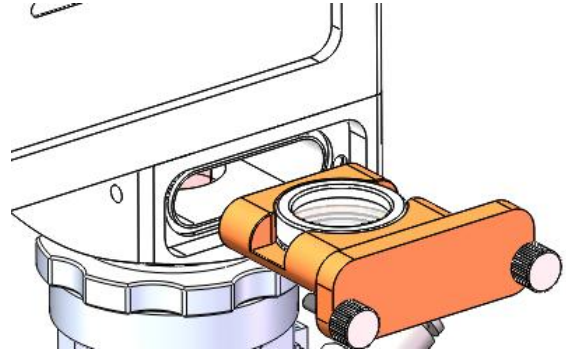
3. Replacing the cleaning protection sheet

Importance: When cleaning and replacing the protective sheet, you will need the following:

1. Powder-free rubber gloves or finger gloves, lint-free cleaning wipes and cotton swabs
2. Isopropyl alcohol (optical grade, anhydrous), acetone (optical grade, anhydrous), ethanol
3. Compressed air (oil-free, water-free)
4. Light source



Collimation Mirror Drawer (Threaded Press Ring)



Focus protection mirror drawer (pan plug seal)

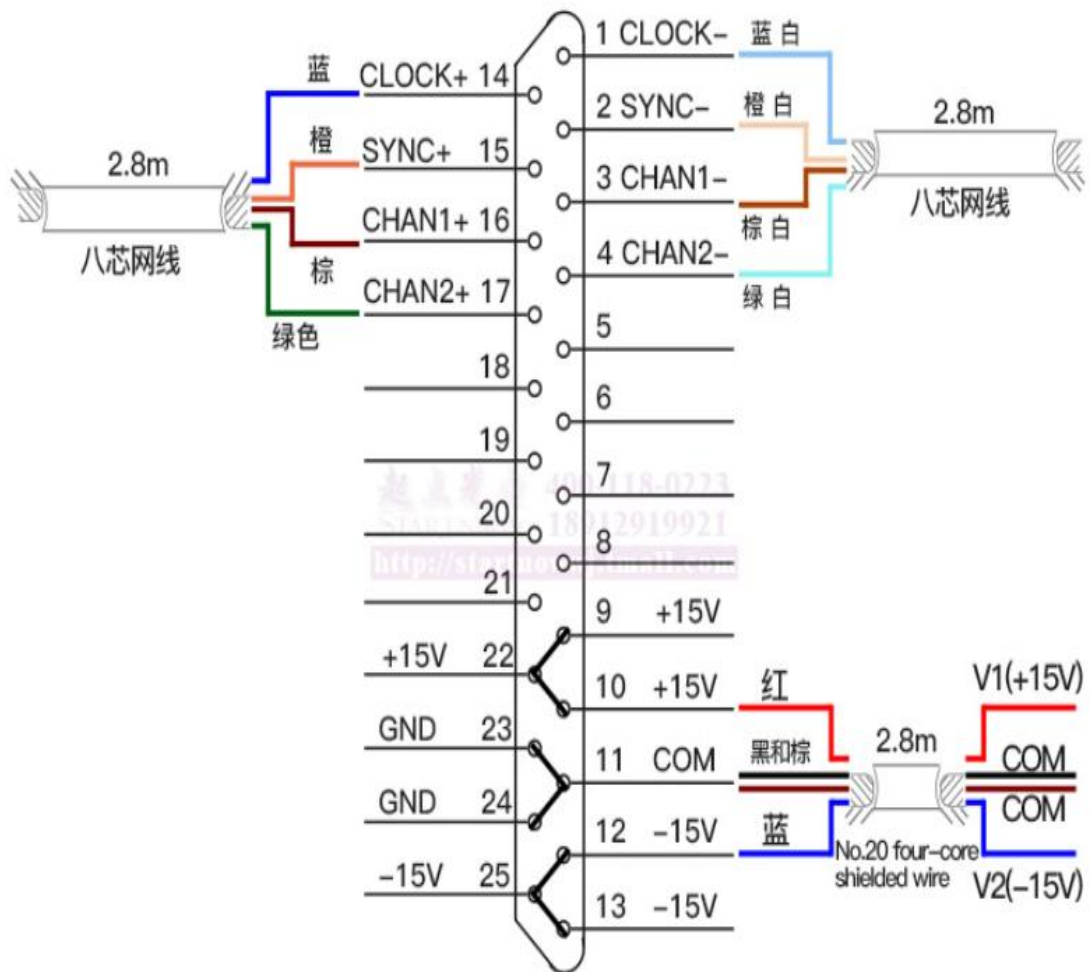
★Notice:

- ★ Do not go back and forth, use a lint-free cotton cloth or cotton swab to wipe the protective lens.
- ★ Do not touch the translucent surface of the protective lens with your fingers.
- ★ Do not blow directly with your mouth to protect the dirt on the surface of the lens, because it may bring new dirt.
- ★ Do not touch the tip of the cleaning swab with your fingers.
- ★ Don't forget to clean when replacing the mirror drawer.
- ★ When using compressed air, please do not blow the dirt directly from the front, and use the method of blowing from the side to prevent the dirt from sneaking into the surface.
- ★ Special instructions, powder-free gloves or finger cots must be worn when cleaning the product. It is now clear that if the damage is caused by, improper handling or the use of incorrect cleaning procedures or chemical use, damage due to such causes is not covered by the warranty.

4. The control interface is based on the customer's oscilloscope control software

Note: The standard control cable for marking machines is used for communication between the welding head and the control card

With wiring definition



Revision History

Date	Revised content	Software Versions
20220805	Version 1	V1.0

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