

RAYTOOLS

BS03K-CAT SERIES



Disclaimer

Use Regulations

Personnel Responsibilities

Safety Instructions

Prevent Electric Shock



Guard against Danger



Laser Caution

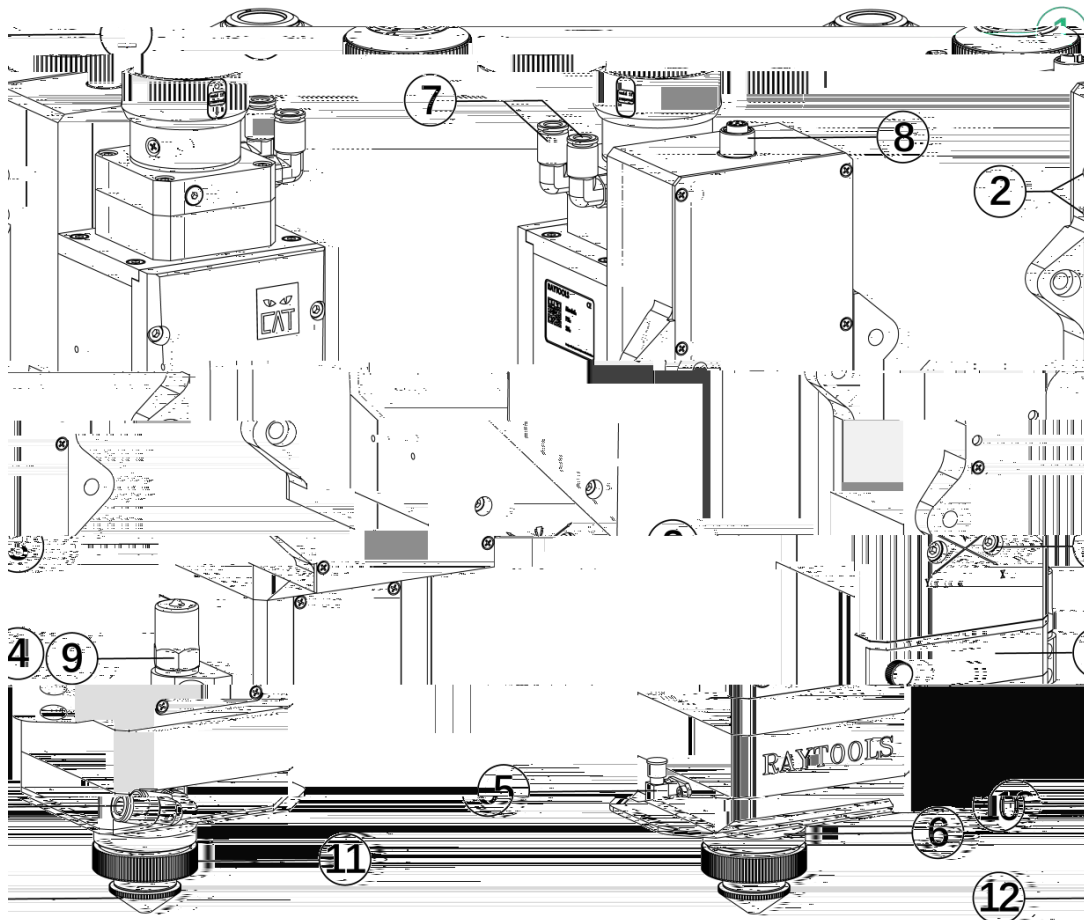
Prevent Waterway Corrosion

Noise Prevention

Storage and Transportation

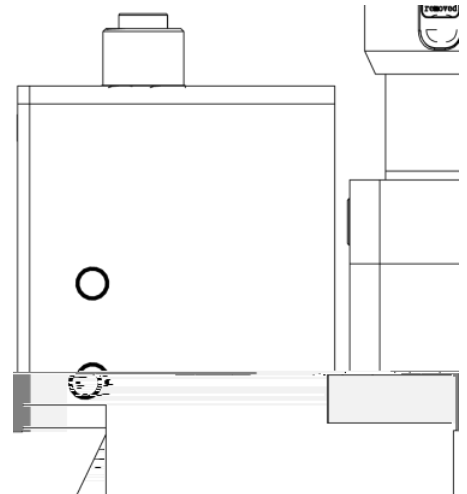
1 Product Summary

1.1 View (with QBH Interface)



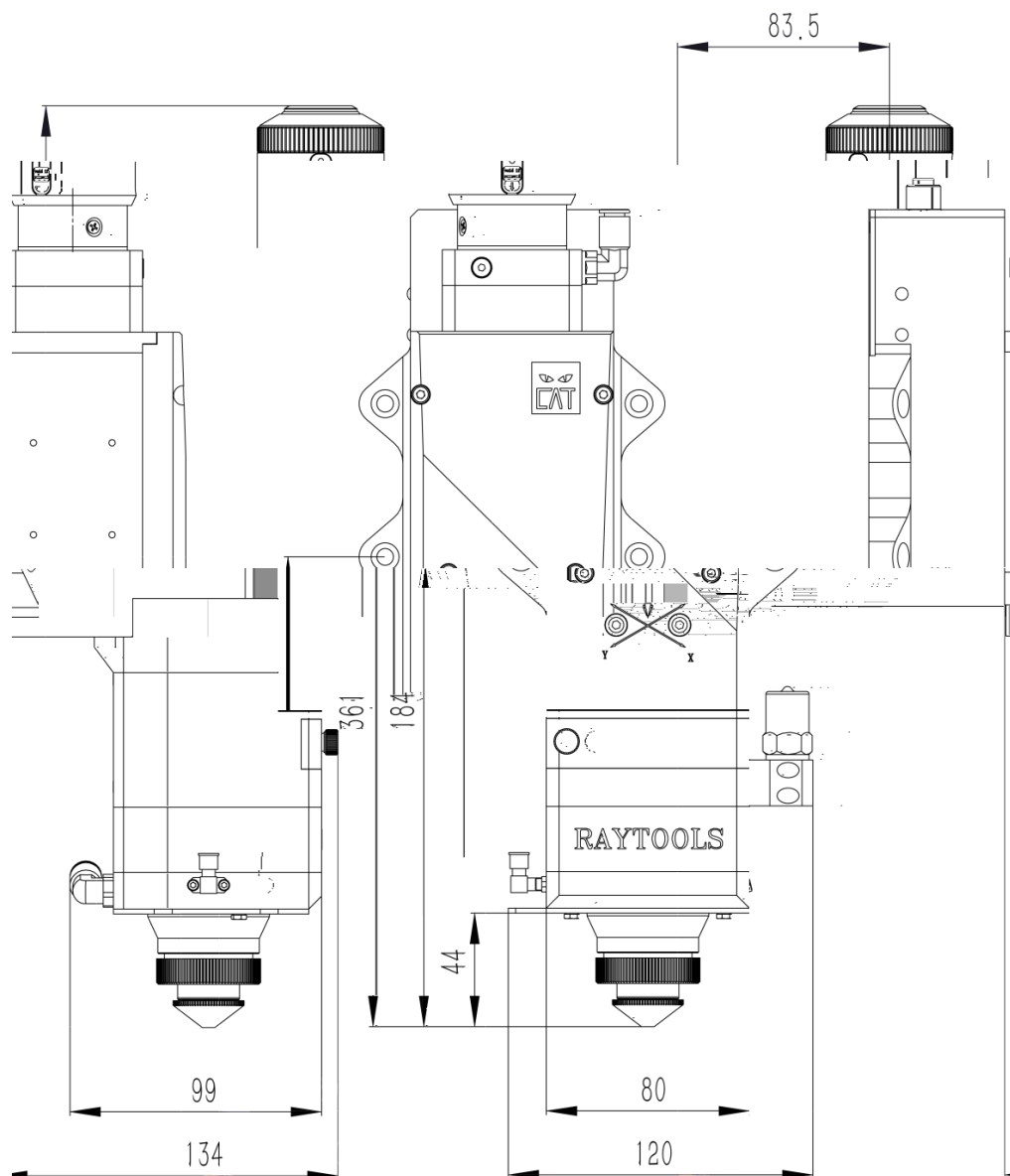
1.2 Monitoring

1.3 LED



1.5 Mechanical Size

Optical Configuration:100:150



1.6 Physical Interface



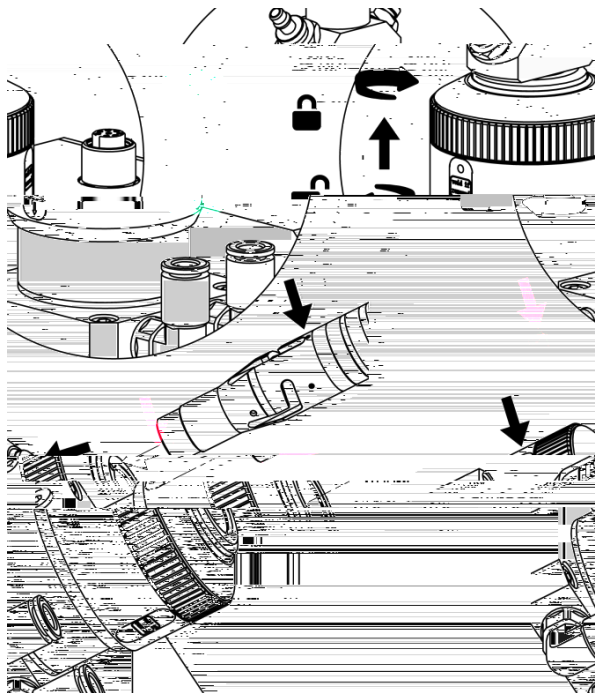
2 Mechanical Installation

2.1 Fiber Insertion



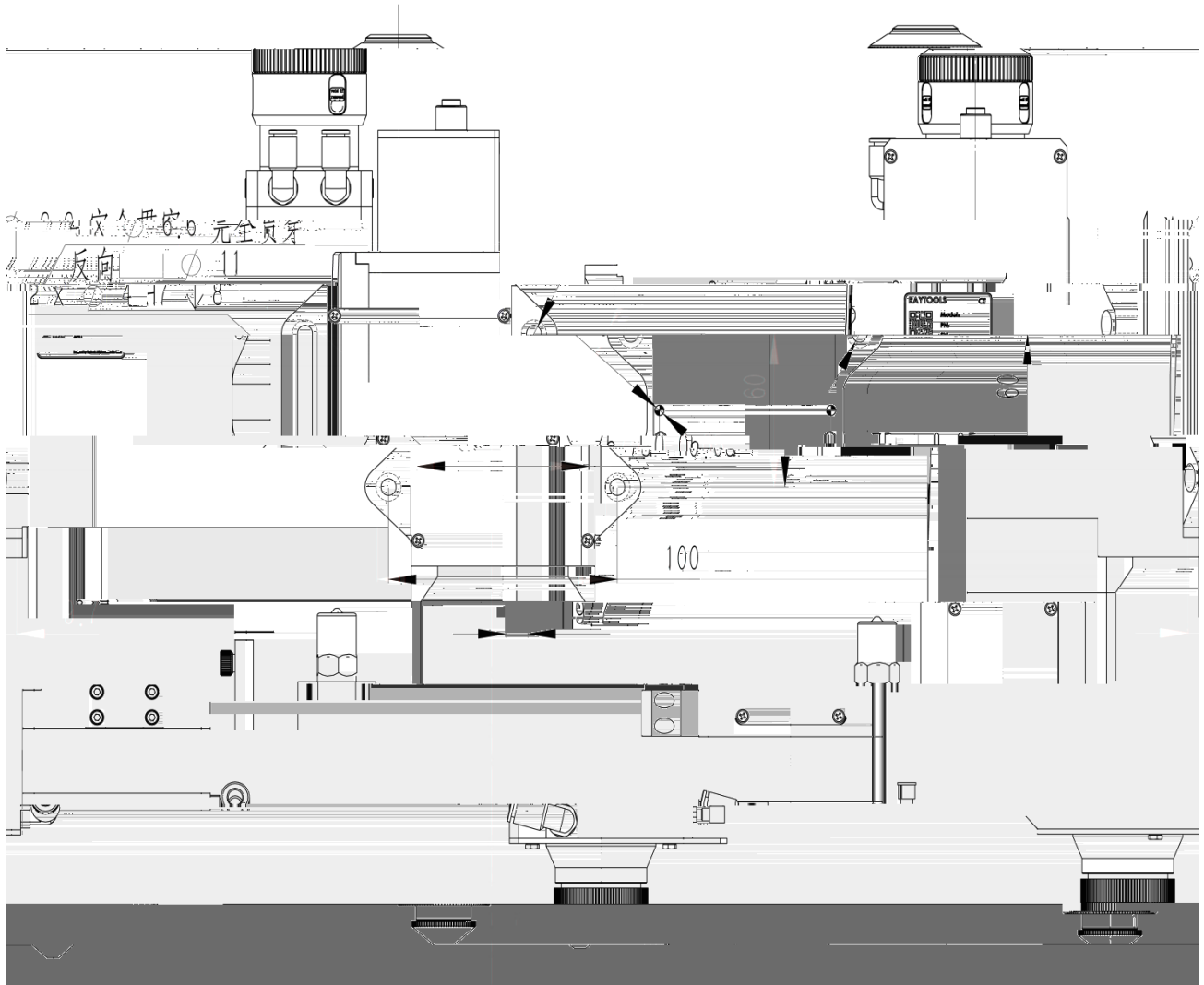
WARNING:

2.1.1 QBH Fiber Insertion

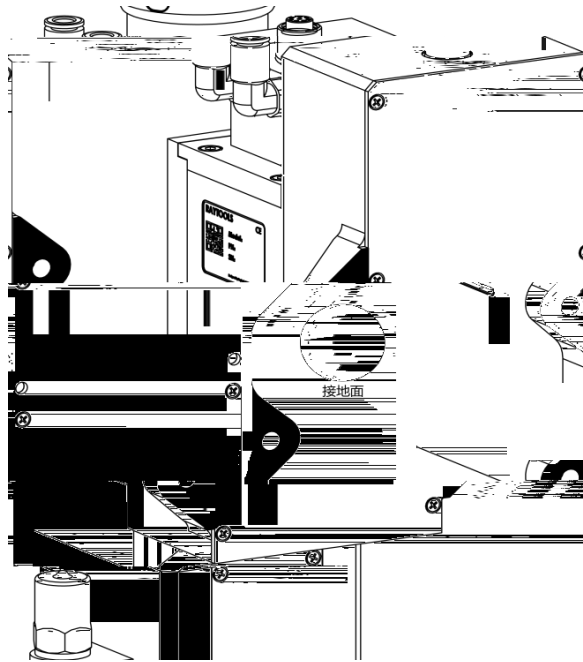


It is recommended to use textured tape to seal the connection of female and male fiber interface after the installation is finished in order to prevent from dust as much as possible in critical dusty environment.

2.2 Mounting of Laser Cutting Head

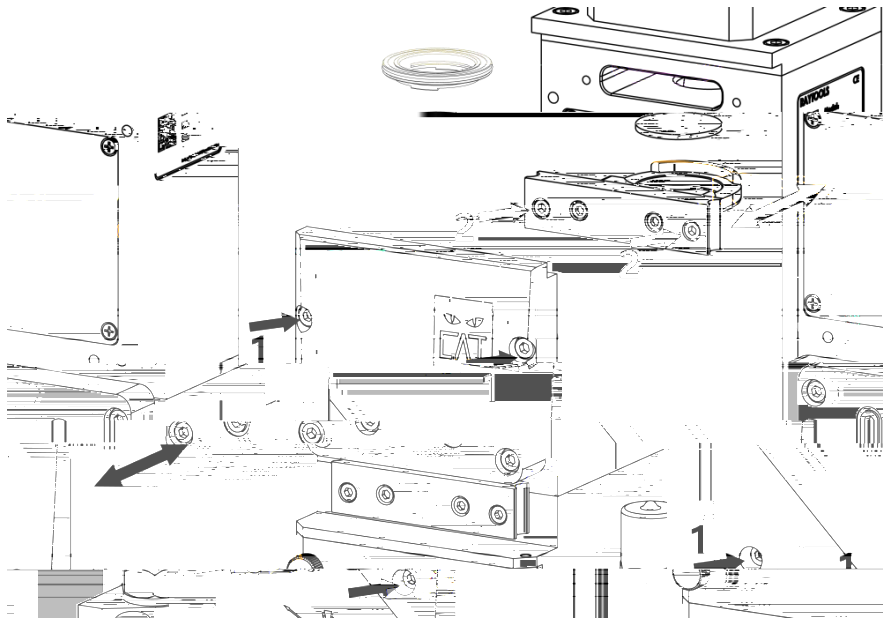


2.3 Earthing of Laser Cutting Head



2.4 Inspection of Top Cover Glass (1st Installation/Replacement of Fiber)

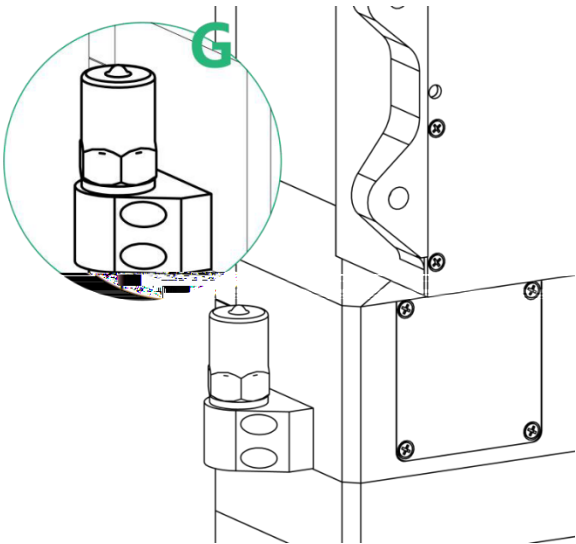
Maintenance or Repair shall be implemented at dust free workstation.



The cover glass shall be replaced if it cannot be cleaned or a damage happens.

2.5 Connection of Cooling Water and Assist Gas

2.5.1 Connection of Cutting Gas

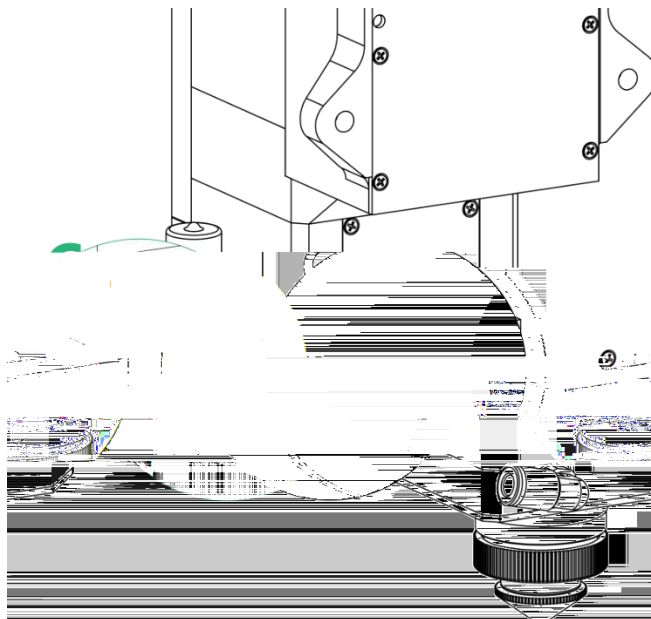


Gas	Purity	Maximum content of water vapor	Maximum content of hydrocarbon



CAUTION: Gas interface cannot be replaced arbitrarily especially do not use PTFE TAPE. Otherwise the gas path will be blocked and cannot do normal cutting which will damage cutting head at the same time.

2.5.2 Connection of Nozzle Cooling Gas

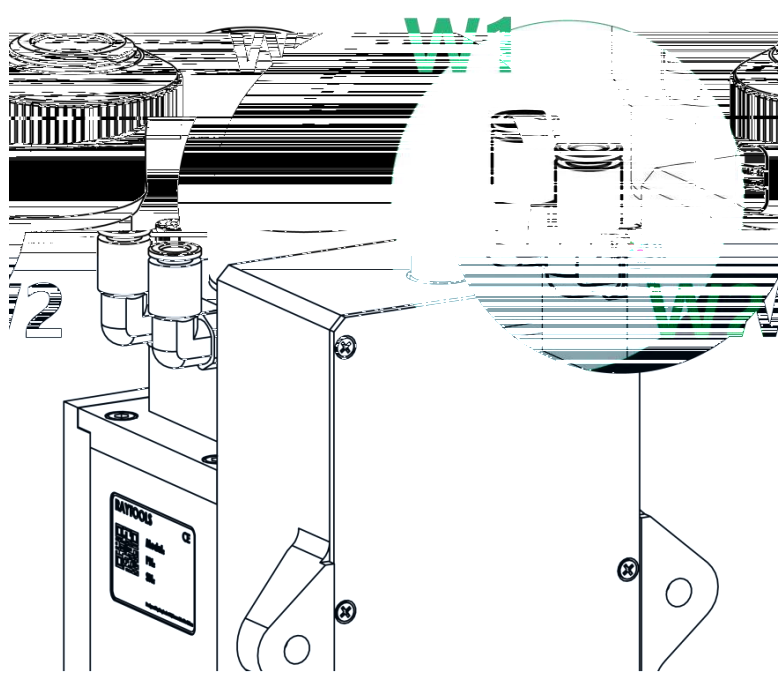


Dried N2 or fine filtered air is recommended for nozzle cooling. The O2 is prohibited for nozzle cooling.



CAUTION: Gas interface cannot be replaced arbitrarily especially do not use PTFE TAPE. Otherwise the gas path will be blocked and cannot do normal cutting which will damage cutting head at the same time.

2.5.3 Connection of Cooling Water

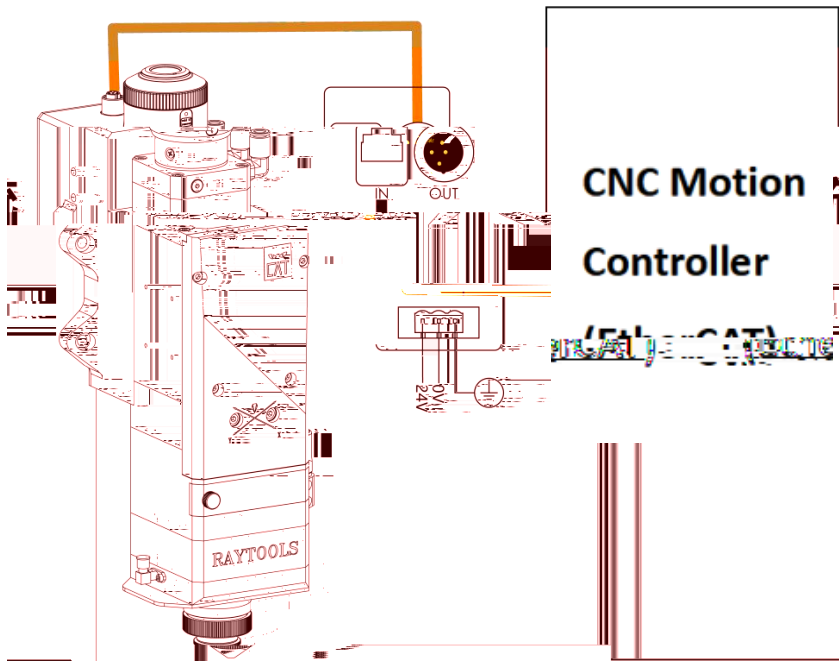


W1 & W2: cooling pipe of fiber interface

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3 System Installation and Commissioning

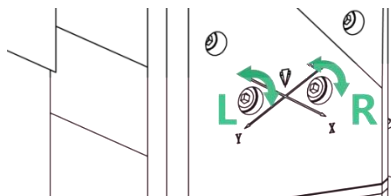




Laser head

Brand Raytools Model BS03K-CAT Height sensor signal port Node 4:Height Sensor Capacitance Focus control port/servo Not linked ☐ Use Other Driver  Restore default data  Restore default model list	Focus adjmt Servo Parameter Motor direction Positive * One Turn pulse number 8000 * Pitch 4.4mm * Max follow-up offset 10mm Manual Speed Manual slow 0.3m/min Manual fast 0.6m/min Auto Speed Speed 6m/min Acceleration 1500mm/s² Acc time 100ms Protective mirror alarm and dew point deviat ☒ ProtectTempAlarm Temp Warning 40 °C Temp Alarm 50 °C Temp Increase War... 7 °C Temp Increase Alarm 15 °C ☐ DewpointTempDiffAL... DewpointDiff 4 °C	Return to Origin Parameter Homing mode Incremental Mode Return origin direction a... Negative Limit Return origin speed 0.15m/min Back Distance 24mm Coordinate aft backward... 0 Axis point and limit configuration Positive hard limit... Not linked Negative hard lim... Not linked Soft limit range -22 ~ 22 mm Gas Pressure Parameter Setting ☐ Activate gas ... Deviation allowable... 70 % Deviation allowa... 20 % Open gas timeout 3000 ms and continue 200 ms Cavity Alarm Temperature Setting ☐ CavTempAlarm Temp Warning 40 °C Temp Alarm 50 °C
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4 Beam Alignment



5 Maintenance

5.1 Cleaning Lens

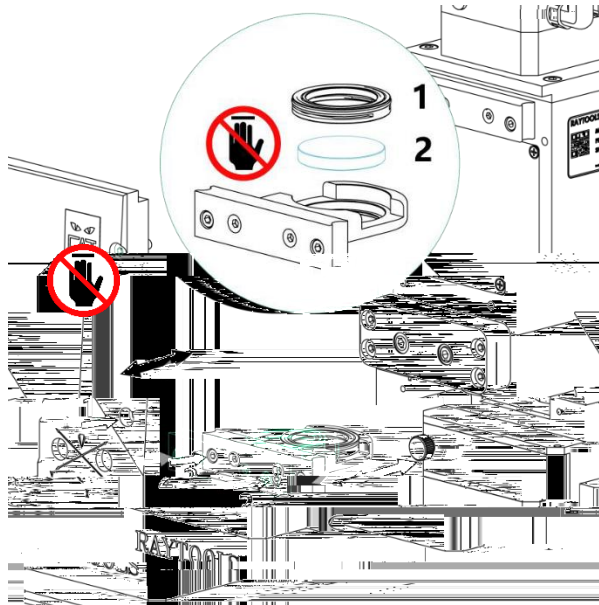
Tools: Dust-proof gloves or fingertip, polyester swab, absolute ethanol, rubber gas blow (purely compressed air).

Cleaning instruction:

5.2 Removal and Installation of Lenses

5.2.1 Removal and Installation of Bottom Cover Glass/Protection Glass

5.2.2 Removal and Installation of Middle Cover Glass/Protection Glass



It is not allowed to pull out the edge of seal ring directly as it is very easy to damage the seal ring. Please wear the clean gloves or fingertips.

5.3 Replace Ceramic Body and Nozzle

