

70W LASER TUBE



Safety Information

⚠ Warning!

- **ONLY** use in full compliance with all applicable local and national laws and regulations.
- This is a class 4 laser which can lead to serious injuries or property damage if used improperly.
- **DO NOT** use this laser around combustible materials or volatile fumes as they might ignite.
- Ensure that the laser tube's electrodes and emission lens are kept clean and dust-free.
- **DO NOT** place any body part in the path of the laser.
- **ALWAYS** wear appropriate personal protective equipment such as protective eyewear when operating this laser. It is also recommended to secure the worksite or erect protective screens around the laser path to prevent injury to passersby.
- **ALWAYS** use **EXTREME** caution around the tube's high voltage electrical connections.
- The working area **MUST** be equipped with appropriate firefighting equipment.
- Certain materials can emit gases or radiation when exposed to lasers. It is the buyer's responsibility to research your working materials before exposing them to the laser so appropriate precautions and equipment can be used.
- **DO NOT** leave this laser unattended during operation.
- **DO NOT** permit minors or untrained personnel to use this laser. **ONLY** allow trained technicians to make or adjust its electrical connections.
- **DO NOT** use this laser in overly hot or humid environments.
- **DO NOT** disassemble this laser without proper training.

Specifications

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|---|---------------------------|
| Max. Input Voltage | 24kV |
| Rated Power | 70W |
| Peak Power | 90W |
| Peak Current | 20 mA |
| Rec. Water Flow Rate | 0.8–3.4 gpm (3–13 L/min.) |
| Rec. Water Temperature | 70–85°F (20–30°C) |
| Expected Operational Life at <40%/40–70%/>70% Power | 12000/10000/5000 hr. |
| Rec. Operational Temperature | 60–90°F (15–32°C) |
| Rec. Storage Temperature | 14–95°F (–10 to 35°C) |
| Recommended Humidity | 30–60% |
| Length | 43 in. (110 cm) |
| Diameter | 2.3 in. (6 cm) |

Installation

⚠ For a step-by-step video guide to this process, search for “Changing Your CO2 Laser Tube” on the **OMTechLaser** channel at **youtube.com**.

1. Prepare your engraver by disconnecting it from power, draining its cooling water system, and waiting 30 minutes to allow any charge stored in its internal power supplies to drain completely. Open any side panels, remove any extension boxes, open the laser tube brackets, and disconnect the tubing and wiring. Remove the old tube.
2. Gently raise and shake your new tube to check for any damage during shipment. Contact customer service if anything sounds or looks amiss.
3. Place your laser tube so that the correct side is facing up (the laser does **NOT** need to be perfectly centered) and the emission lens is $\frac{1}{2}$ – $\frac{3}{4}$ inches (1.3–1.9 cm) from your engraver's first mirror.
4. Retighten the brackets to hold the tube snugly but without excessive pressure.
5. Reconnect the water pipes and wiring.

⚠ The high-voltage electrical connections are **EXTREMELY** dangerous. Use of a trained electrician is highly recommended.

Solder each pair of wires together, black to black and red to red. Fill the provided ceramic cap with slow-drying liquid silicone and press the red wires' connection completely into the cap. Wrap the cap and black wire connection in electrical tape.

⚠ **DO NOT** leave any wiring exposed and **DO NOT** place the red wire connection near the metal frame of your engraver, where arcing might occur.

6. Wait six (6) hours for the silicone to firmly set before reconnecting your engraver to electricity, restarting the water cooling system, closing the side panels, reattaching any extension box, testing the laser, and realigning the mirror system.

Maintenance

- Remove any dust or debris from the surface of the tube if it becomes noticeable. Use a soft dry cloth for most surfaces. Use a cotton swab soaked in alcohol for the semitransparent mirror at the end of the tube, cleaning in gentle circular motions. Only clean the tube when it is fully cooled, never when it remains warm from use.

Never use cleaning solutions that might leave residue on the glass or mirror.

- **ALWAYS** keep a constant flow of cool but not ice-cold water during use. Use of distilled water to avoid contaminant build-up is highly recommended. Visually confirm the water has filled the cooling pathway and all air bubbles have been removed before activating the laser.
- For best results, never exceed the tube's rated power and allow the tube to rest after every few hours of continuous work.

Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us at help@cs-supportpro.com and we'll resolve your issue ASAP! For a .pdf copy of the latest version of these instructions, use the appropriate app on your smartphone to scan the QR code to the right.

