

Firestar™ f201 laser & Flyer 3D System Quick Start Guide

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Important Note:



See the Flyer 3D Marking Head and Firestar f201 Laser Operators Manual for complete installation details and instructions. A PDF version is available Online at: http://www.synrad.com/Manuals/manuals_laser.htm.

Read all ⚠ Danger, ⚠ Warning, ⚠ Caution terms, symbols, and instructions located in the (Laser Safety Hazard information) sections in the Flyer 3D Marking Head and Firestar f201 Laser Operation Manuals.

Marking Head Unpacking:

Attention:



For complete details, refer to the Getting Started (System Inventory and Mounting) Sections in the Firestar f201 and Flyer 3D Marking Head Operator's Manual.

1. Lift the Flyer 3D Marking Head out of the box only by the middle; **do not use housing, coolant fittings, or anything else on the sides to lift the laser.**



Correct



- 1.1 Lifting the Marking Head correctly by holding in the middle.



Caution



- 1.2 Avoid mis-alignment risk! **Do not use** housing fitting or fan (as shown) or any thing on the side to lift.

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2. Locate the shipping **components for the Marking Head** at the bottom of the box **under** the Marking Head.

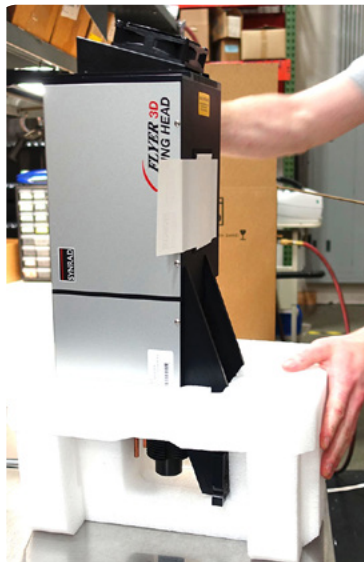
2.1 Remove the marking head from the box.



2.2 Retrieve the components from the bottom of the box.



3. Don't forget to **save all shipping container(s) and inserts** for use when shipping or relocating either the laser or the marking head to another location. Packaging is specially designed to protect your laser.



3.1 Remove and retain the marking head foam.

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Laser Unpacking:

4. **Locate the mounting hardware kit** at the end cap (fitting side of the box or the cardboard pocket.)
5. Two people will be required to lift the laser out of the box **using the lifting handles on each side** of the box.



4.1 Locate the wire harness inside the end cap.



4.2. When re-boxing, note the fixture side faces the end cap.

5.1 **Correct hand** placement for **lifting** the laser out of the box.



5.2 **Two places for both people at opposite ends of the box for lifting.**



Important Note:



Caution! Packing the laser incorrectly can damage the laser!

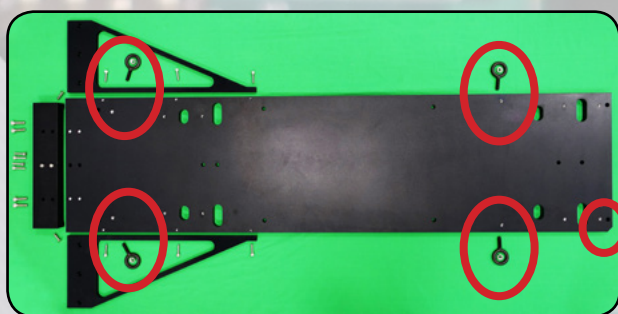
Keep All Foam and Packaging, you will need to re-use it when moving your laser. Refer to this guide and the Getting Started/Technical Reference chapters in the laser's Operation Manual when re-packaging for shipping and/or relocation.

Caution! When packing the laser for relocation or shipment, nothing can be on the sides of the laser at any time as damage will occur. The skin on the sides of the laser is fragile! All box components must be stowed under the laser.

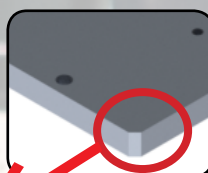
The fittings will be damaged in shipping if not re-packaged as shown above.

Mounting (preparing the rail):

6. Remove the **rail & hardware** from the packaging. Ensure the notch is facing down and to the left. Assemble the **eye bolts first, the bar second, then the triangle bars third.**



- 6.2 Four (4) eye bolt locations on the rail and associated hardware.



Note notch location.



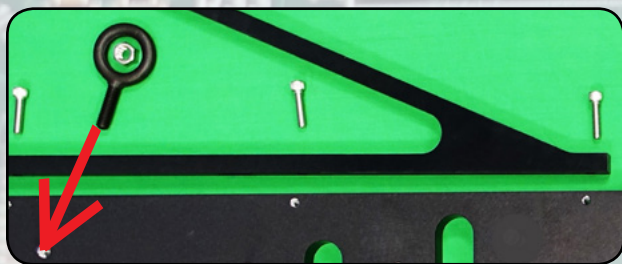
- 6.5 Tighten the eye bolt to the rail.



- 6.3 Affix the bolt onto the eye bolt as shown.



- 6.6 Detach the bolt on the eye-bolt so that it moves down toward the rail.



- 6.4 Assemble the 4 eye-bolts/nuts onto the rail as shown above in 6.2.



- 6.7 Assure the bolt is snugged **flush with the rail** as shown above.

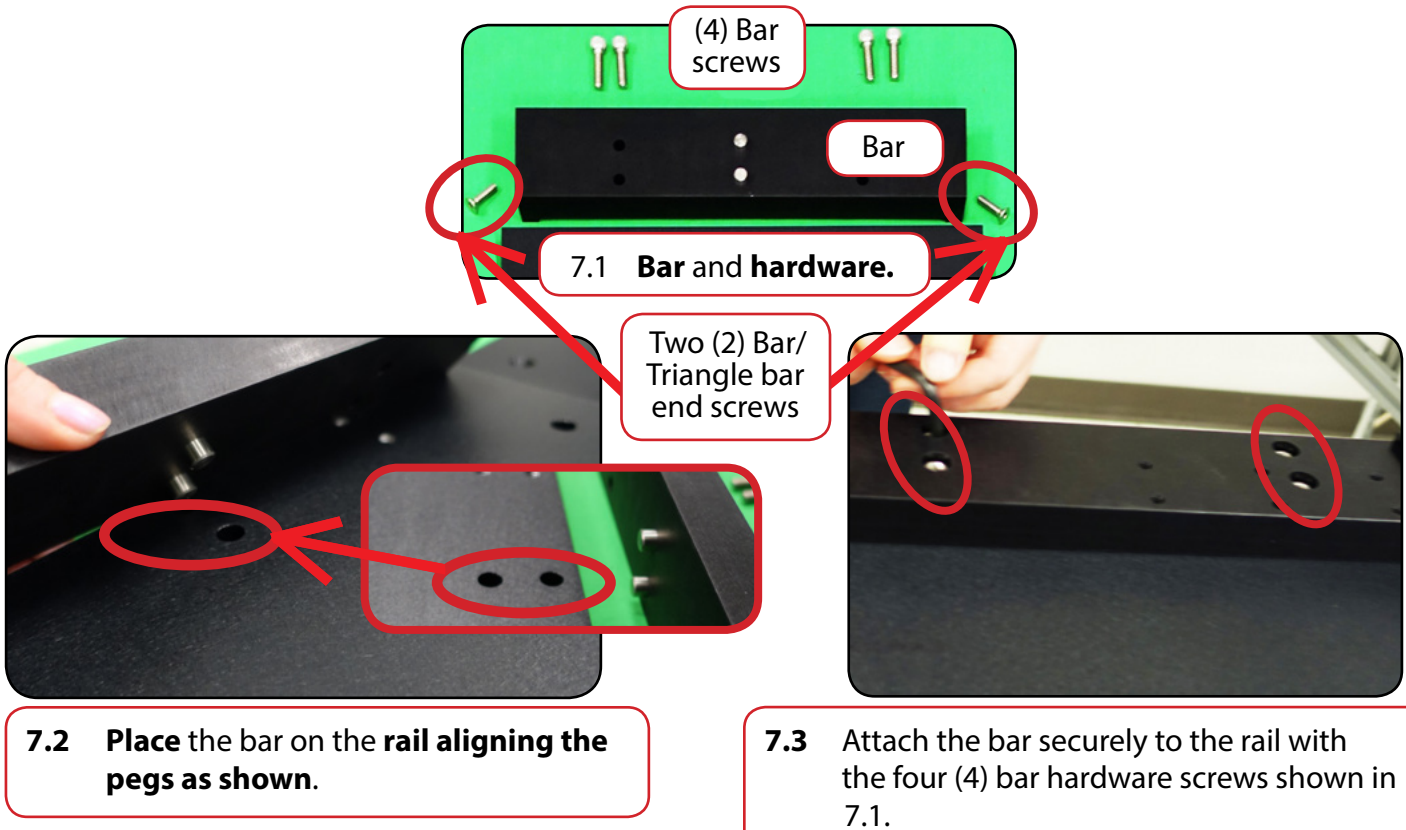
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Mounting (Continued):

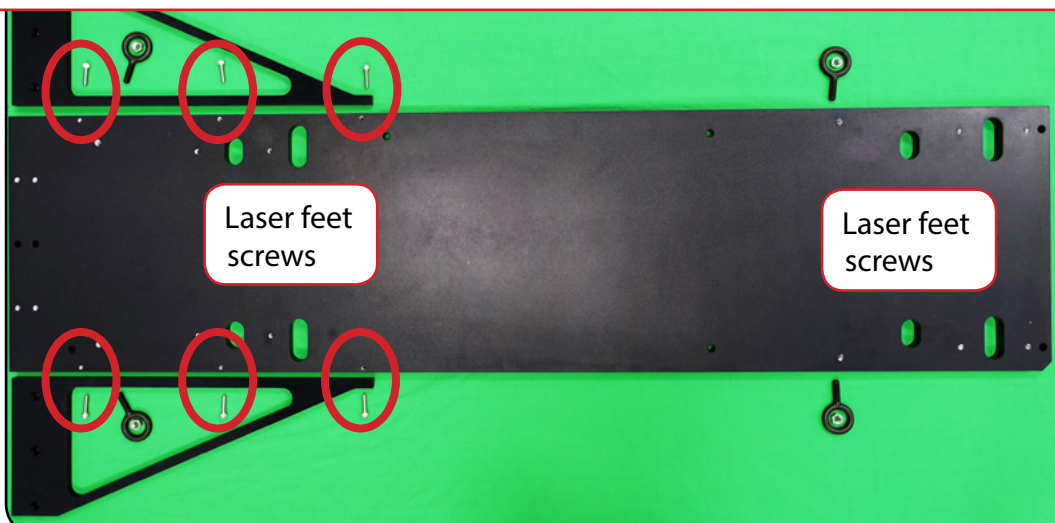
7. Place the **bar** onto the rail as shown below.

Attention: When attaching the Marking Head to the Laser, *make sure the notch is as shown in figure below before going on to the next step.*



8. Install the **triangle bars** as shown below.

8.1 The **Triangle bar** screws and final placement on the rail are shown circled in red below.

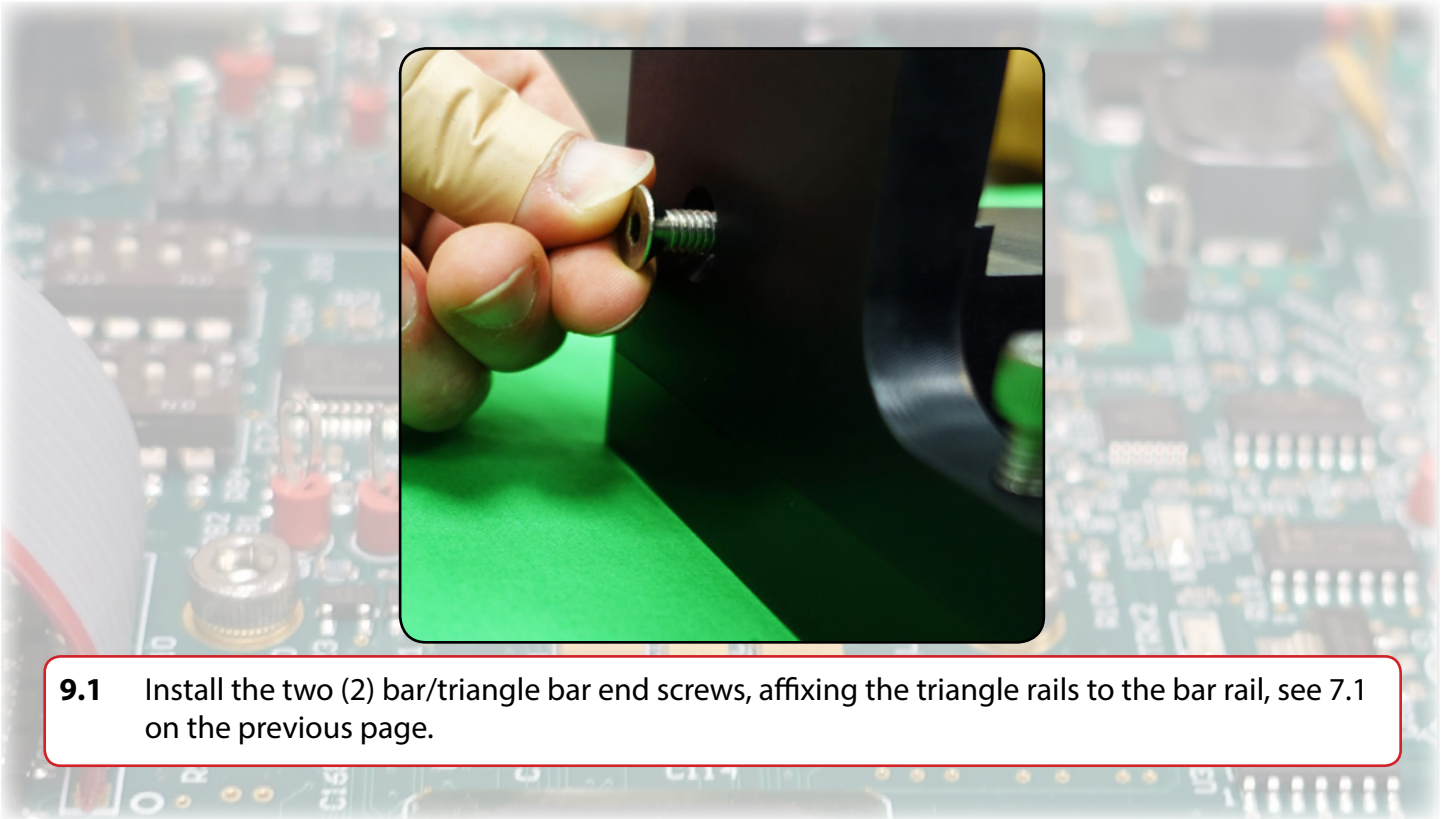


Note: The **Laser feet** screws are shown in their final locations for clarity on the rail above.

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9. After the triangle bars are installed place the side screw(s) as shown below on each side.




9.1 Install the two (2) bar/triangle bar end screws, affixing the triangle rails to the bar rail, see 7.1 on the previous page.

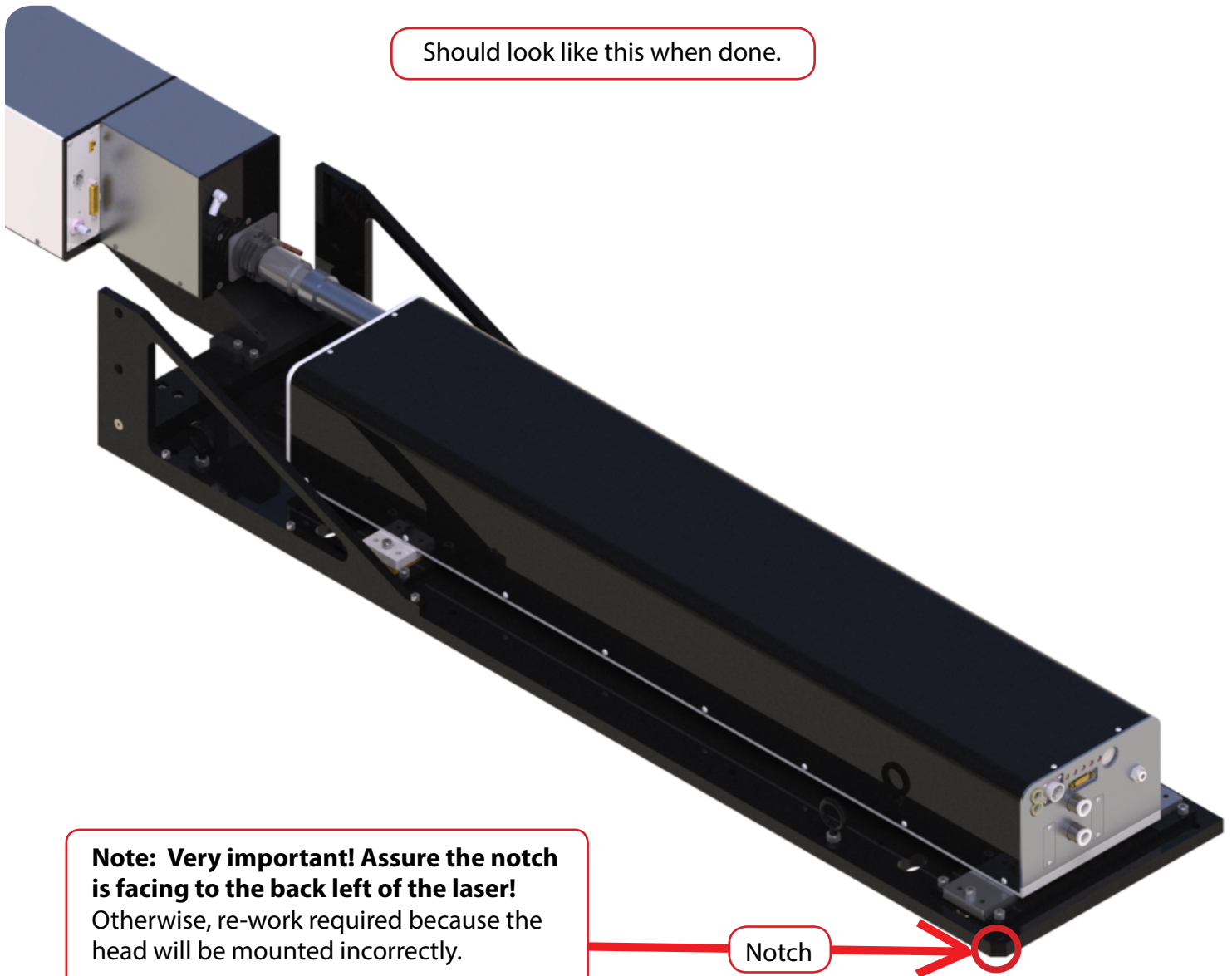
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Mounting (the laser and the marking head to the rail):

10. The laser should arrive with feet and shims installed, please refer to the figure below for further detail.
11. Locate the marking head **Mounting Hardware Kit** (Mounting Hardware Kit ) Marking Head Safety tube, clamp, and Allen screws.

Should look like this when done.



Mounting (the Laser and the Marking Head to the rail):

Attention:

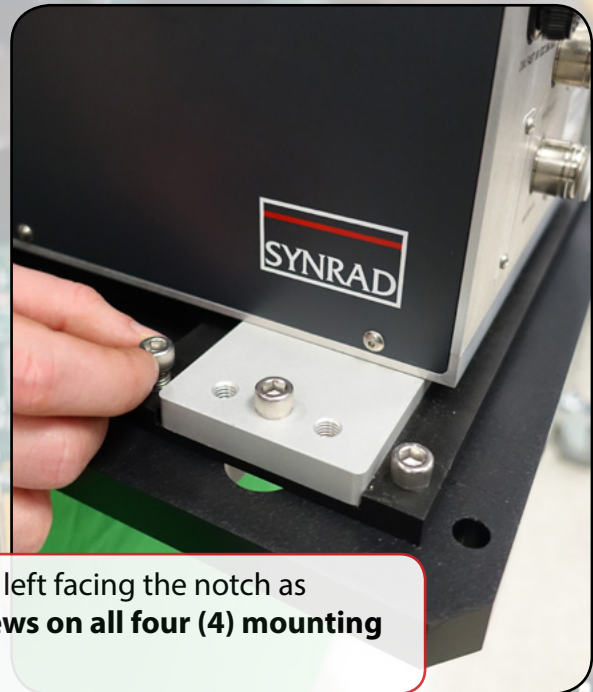


Remove the laser aperture self-adhesive film before mounting to the rail. Don't tighten the Allen screws on the clamp until the laser is mounted to the rail.

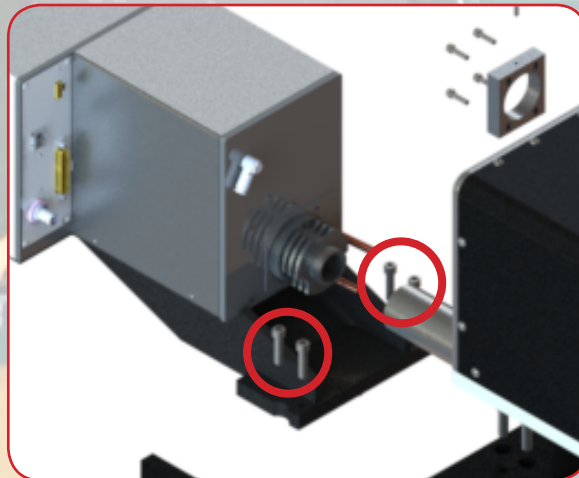
12. Before mounting the laser to the rail, ensure the **aperture seal is removed**.

12.1 Remove the aperture seal.

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ATTENTION
REMOVE THIS LABEL BEFORE USE



12.2 Place the laser onto the rail with the rear left facing the notch as shown. Tighten each of the three (3) screws on all four (4) mounting feet.

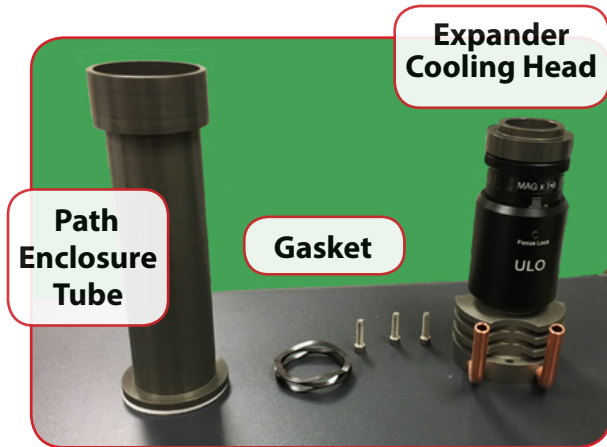


12.3 Mount the marking head to the rail. Tighten all four (4) screws, (two on each side.)

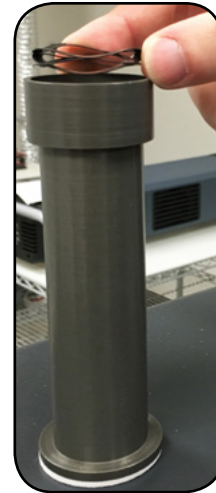
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13. Assure the **Laser and Marking Head are mounted on the rail first**, then assemble the **tube's path enclosure** below. Locate the path enclosure components in the kit.



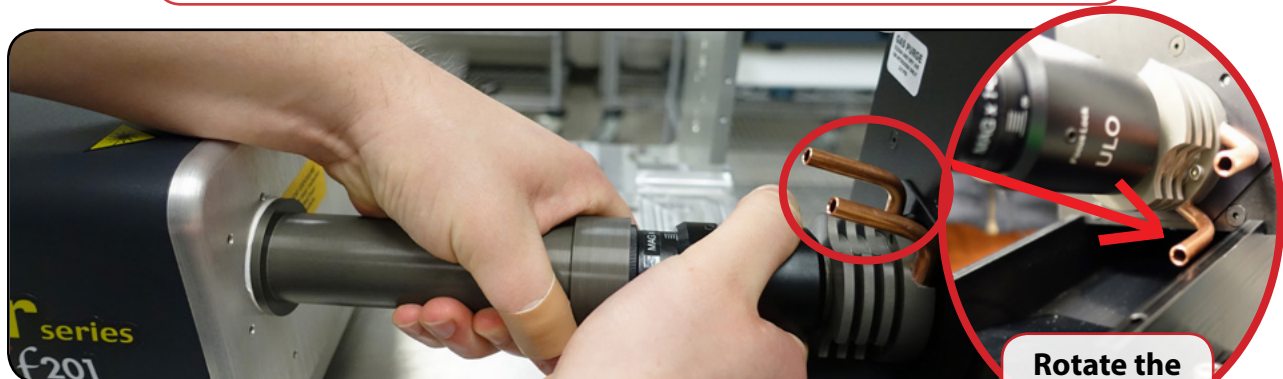
13.1 Locate the components above.



13.2 Place the gasket in the path enclosure tube.



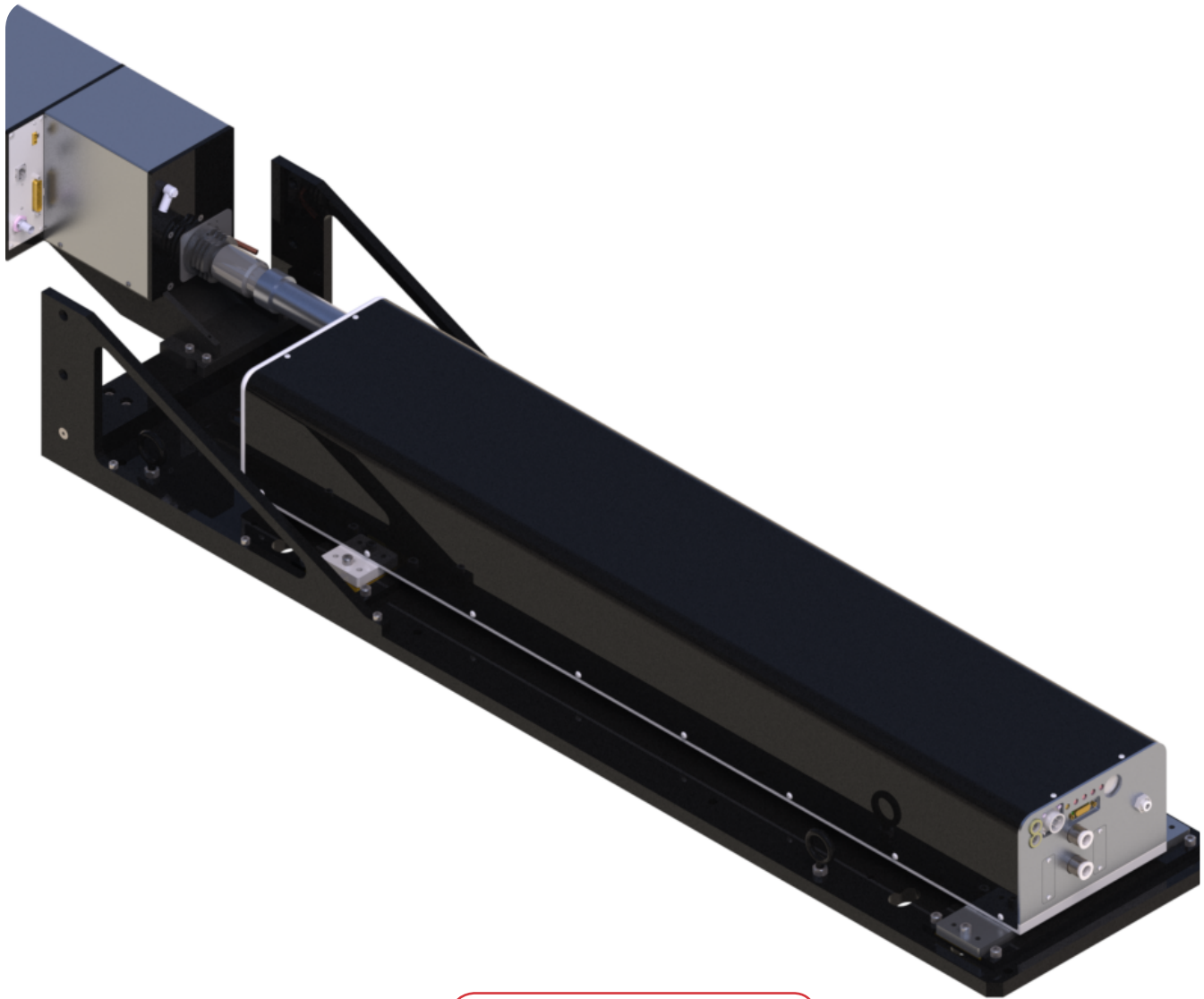
13.3 Place the expander cooling head into the path enclosure tube on the gasket end.



13.4 Apply mild compression to the assembly and slide into place.

Rotate the cooling head down

14. Marking Head & f201 series laser mounted on rail.



14.1 Should look like this.

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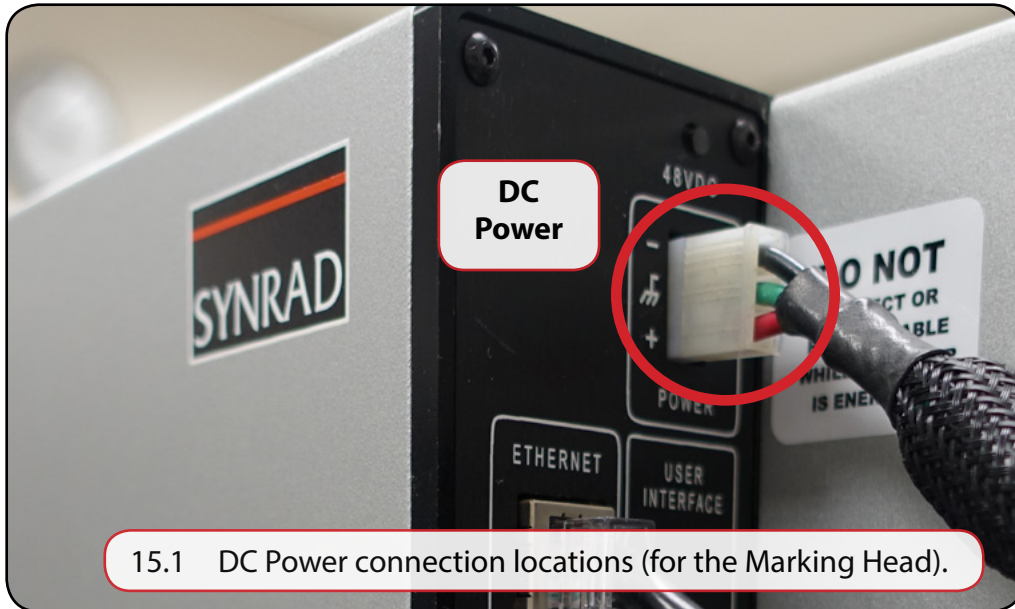
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Electrical Connections:

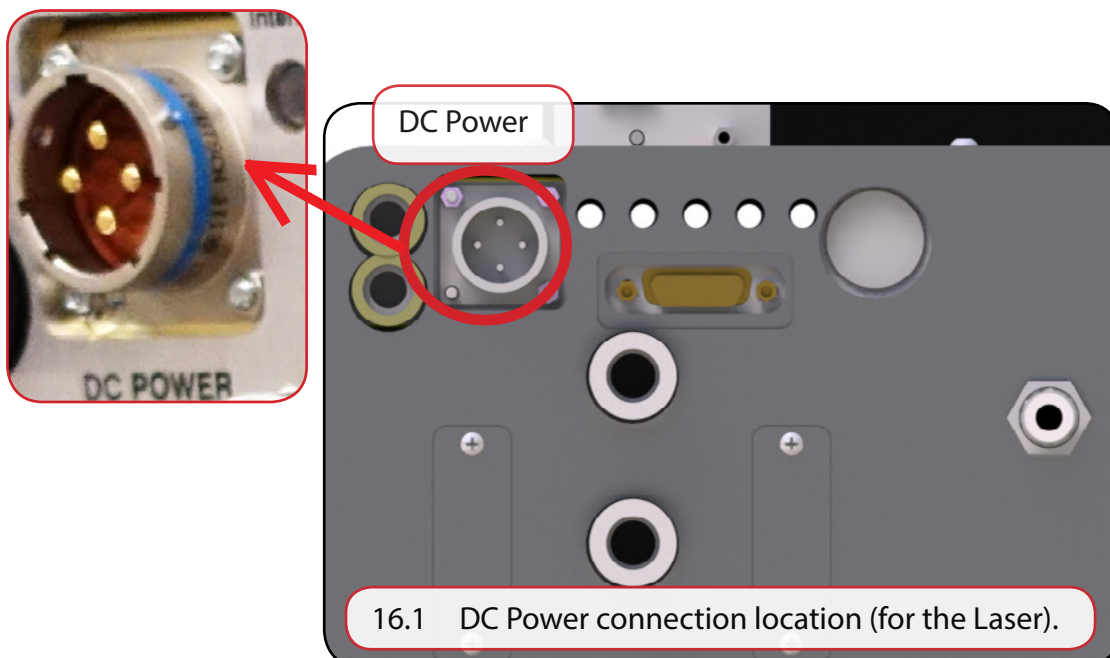
Attention:

- For further details, please see the Getting Started (Connecting-DC power supply connections) section in the Firestar f201 Laser Operator's Manual and Getting Started (Connecting-DC power cable) section in the 3D Marking Head Operator's Manual.

- Connect the Marking Head **DC power VDC** cable into the **Marking Head's power supply**.



- Connect the Laser's **DC Power** (20A FAST 96 VDC 36A) to the **laser's power supply**.



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Control Connections:

Caution:



The **Quick Start Plug** bypasses the laser's safety interlock function, potentially exposing personnel to hazardous **invisible** laser radiation.

17. Connect the laser's control User interface connector to the laser. For initial setup and testing, use the Quick Start Plug. Use the Quick Start Plug only for initial testing or when troubleshooting. Remove DC power before installing or removing the Quick Start Plug. Please refer to the Getting Started (Connecting laser connections & the following Quick Start Plug) sections in the lasers Operator's Manual.



17.1 Quick Start Plug (QSP) goes here, the BNC cable plugs into the QSP.



17.2 Control connection locations (for the Marking Head). Note: the ferrite bead is closest to the Flyer 3D Marking Head. (Refer to step 18.)

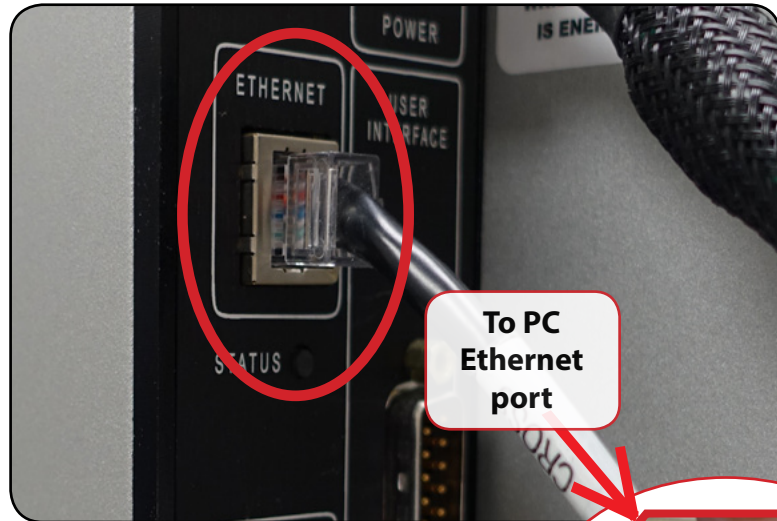
18. Connect the **Marking Head's laser control connector** to the (laser control) interface. The ferrite bead, should be located at the end of the cable, closest to the Flyer 3D.

19. Connect the **Ethernet** plug to the PC.

Attention:



For further details, please see the Getting Started section in the Flyer 3D Operator's Manual.




Cooling Connections:

Attention:



For further details, please see the Getting Started (Cooling Connections, Cooling Tubing Connections, Other Connections) in the Firestar f201 Laser Operator's Manual in the following sections for Facilities/Utilities (Air Drop or Gas Purge), Also see the Getting Started section of the Flyer 3D Operator's Manual.

20. Locate the **Ship Kit** (12 mm Cooling Tubing ) Cooling fittings and 1/2 inch polyethylene tubing.

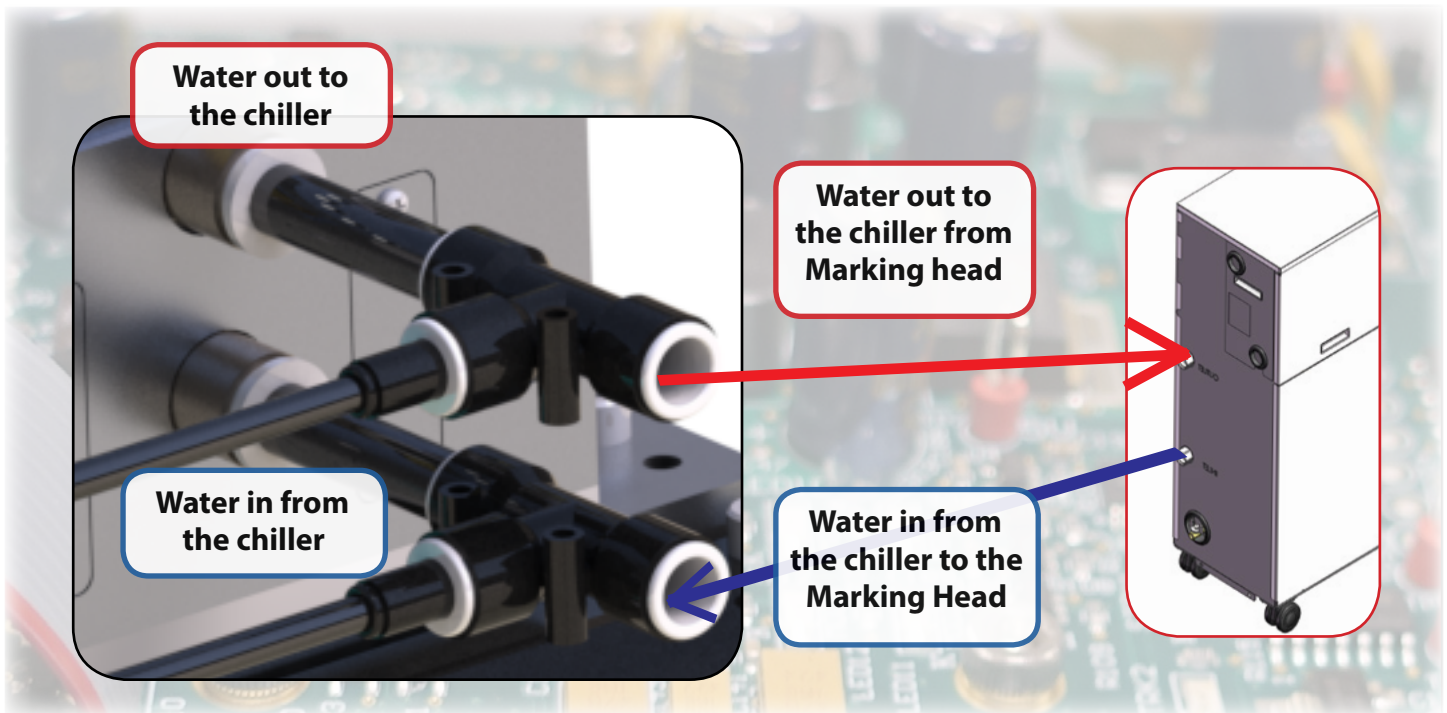
Important

Use distilled water as the coolant. If glycol is necessary, add no more than 10% by volume.

Note:



21. Set coolant temperature between 18–22 °C. If condensation occurs, increase coolant temperature a few degrees at a time, up to a maximum of 28 °C.

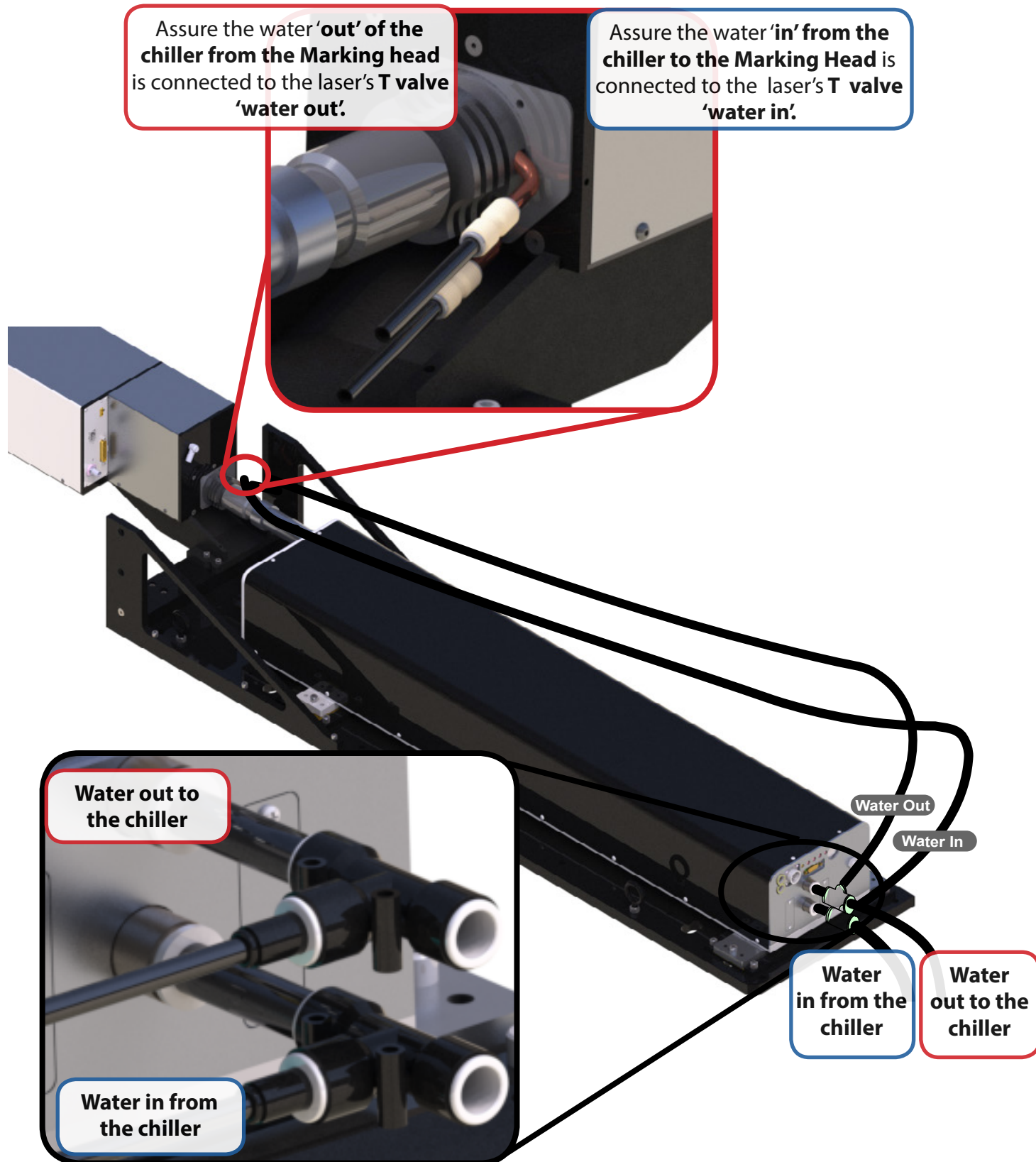


- 21.1 **Bottom** port is for **cooled water in from the chiller**. **Top** port is for **warm water out from Laser to chiller**.

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22. Hook up two coolant connections (one for the cooling water input, one for the output) at the Marking Head.



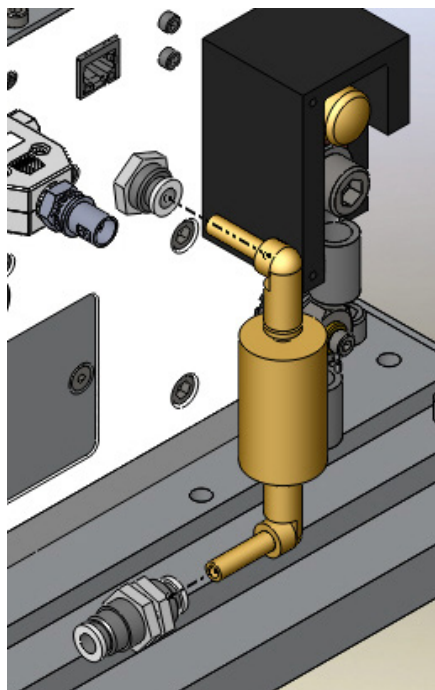
22.1 **Connect the Marking Head** ports for cooling to the tri-connection below from the laser.

Gas Purge Connections:

Note:



(Note: Clean and dry air or N2 Only-please refer to the operators manual for specifications.)



23. See gas purge sections in the Maintenance and Troubleshooting sections of the p400 Operation Manual for specifications. Locate the gas purge kit and spherical washer sets shipped with your laser.

- Use the Gas Purge port to introduce nitrogen or dry, filtered air into the laser housing.
- Air-condition the room or the enclosure containing the laser.
- Install a dehumidifier to reduce the humidity of the enclosure containing the laser.
- Stop coolant flow when the laser is shut down.
- Increase coolant flow by an additional 3.8 LPM (1.0 GPM). Do not exceed a coolant pressure of 414 kPa (60 PSI).
- Refer to Table 1-2 and gradually increase coolant temperature until it is above the dew point temperature and condensation disappears. Do not exceed a coolant temperature of 30 °C (86 °F).

Attention:



The Gas Purge port on the laser must be connected to a source of nitrogen or clean, dry air only; do not use any other gases for purging.

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Final Preparations:

24. After assembly and mounting are complete, see the Mounting Head's QSG for WinMark software setup. If using a diode pointer and/or this is a new laser and you need to verify performance, see the Diode Pointer Quick Start Guide located on our website.

