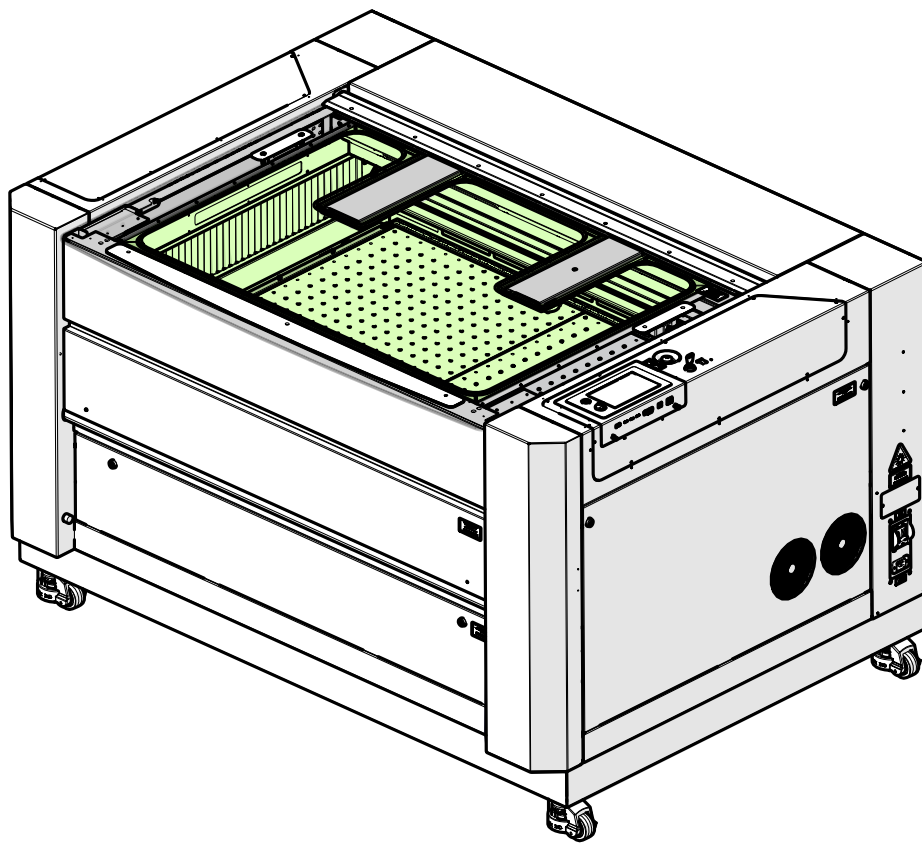


## Linear Guide (IKO) Replacement Fusion Pro 32 & 48



### Parts Required

- CS1205 - Linear Guide, 988mm
  - Fusion Pro 32
- CS0489 - Linear Guide, 1394mm
  - Fusion Pro 48

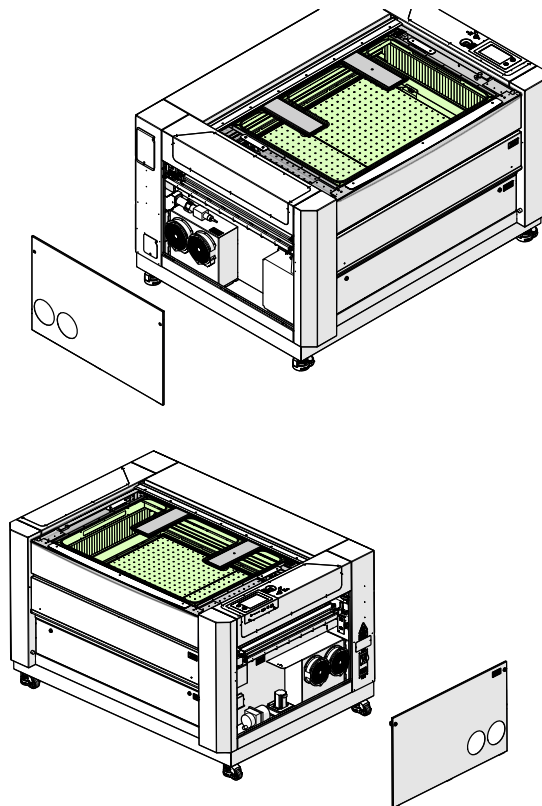
### Tools/Materials Required

- 5/32", 7/64", 3/32" Allen Wrench
- 5/16" Nut Driver
- Phillips Head Screwdriver

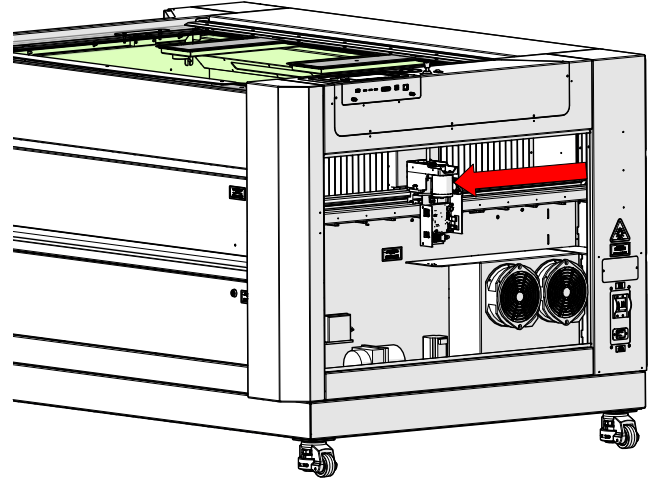
# IKO Replacement

## IKO Removal

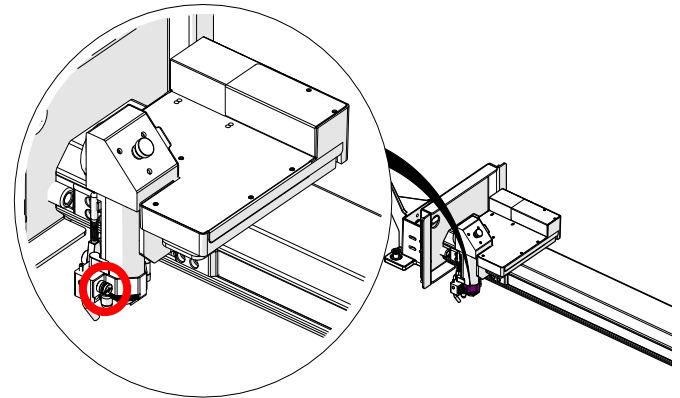
1. Turn off the engraver.
2. Disconnect engraver from power source.
3. Remove the left and right panels of the engraver by loosening the 5/32" cam locks:



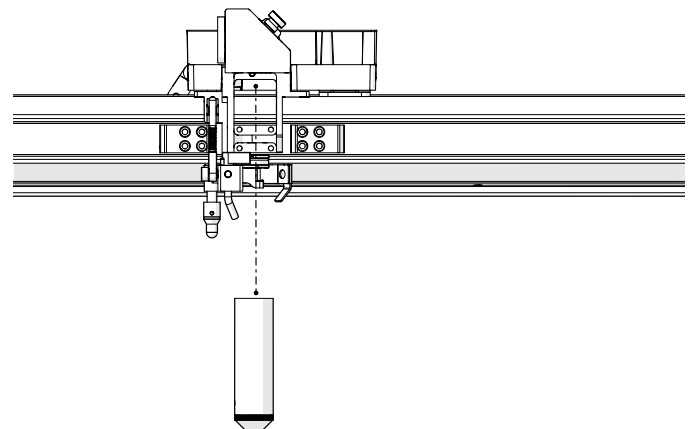
4. Manually move the x-axis assembly to the middle of the engraver:



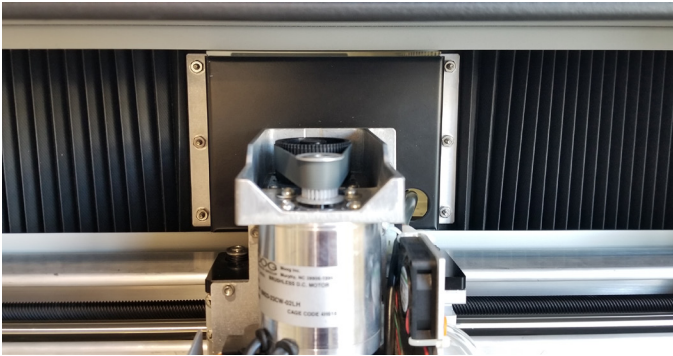
5. Loosen the Phillips screw on the lens tube retaining collar. Make sure to hold the lens tube to ensure that it does not fall:



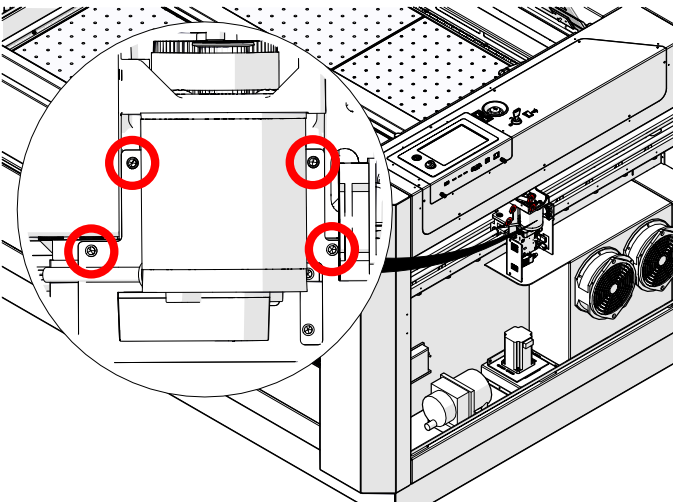
6. Remove the lens tube:



7. Remove the left and right bellows by loosening the six (6) 5/16" nuts and backing plate:

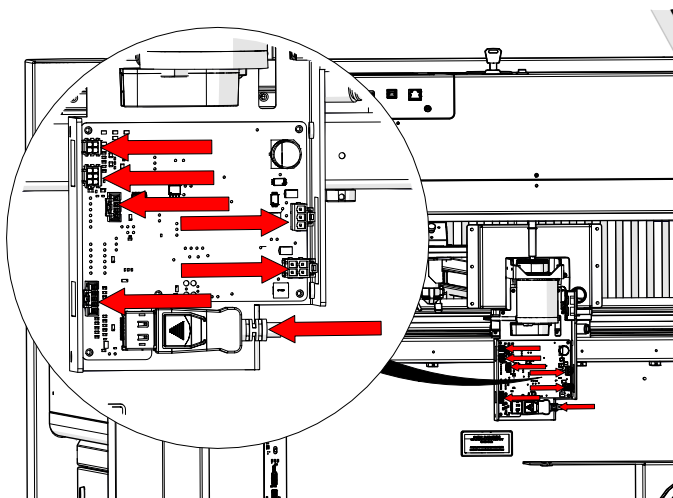


8. Loosen, but do not remove the four (4) Phillips screws that hold the x-axis drive board cover:

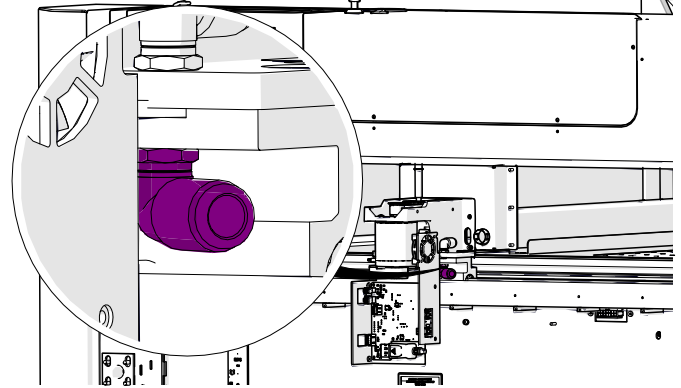


9. Remove the x-axis drive board cover.

10. Disconnect the seven (7) electrical connectors from the drive board:

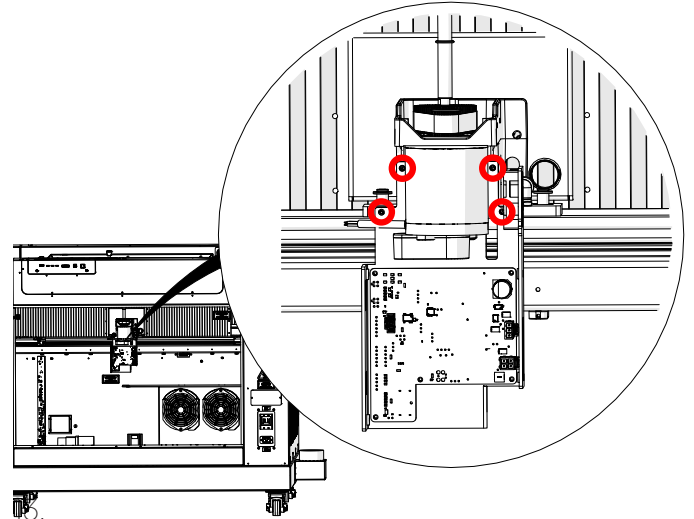


11. Disconnect the air tubing from the elbow connector at right side of the x-axis assembly:

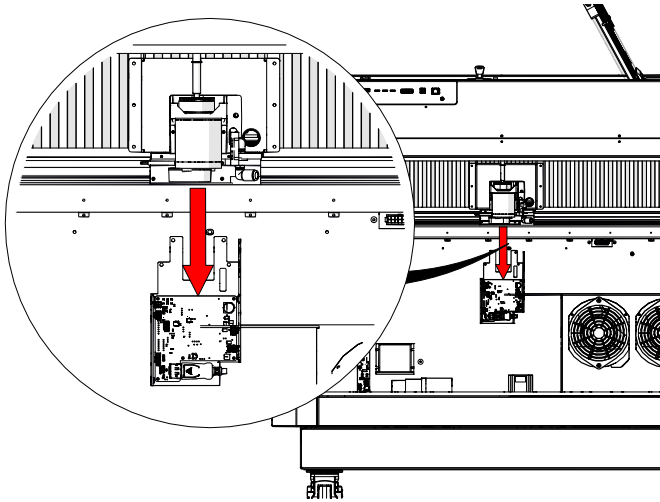


The air tubing is held by a retaining fixture. To remove the tubing, press the tubing into the fixture. Then, while holding the orange retaining ring tight to the fixture pull the air tubing away from it.

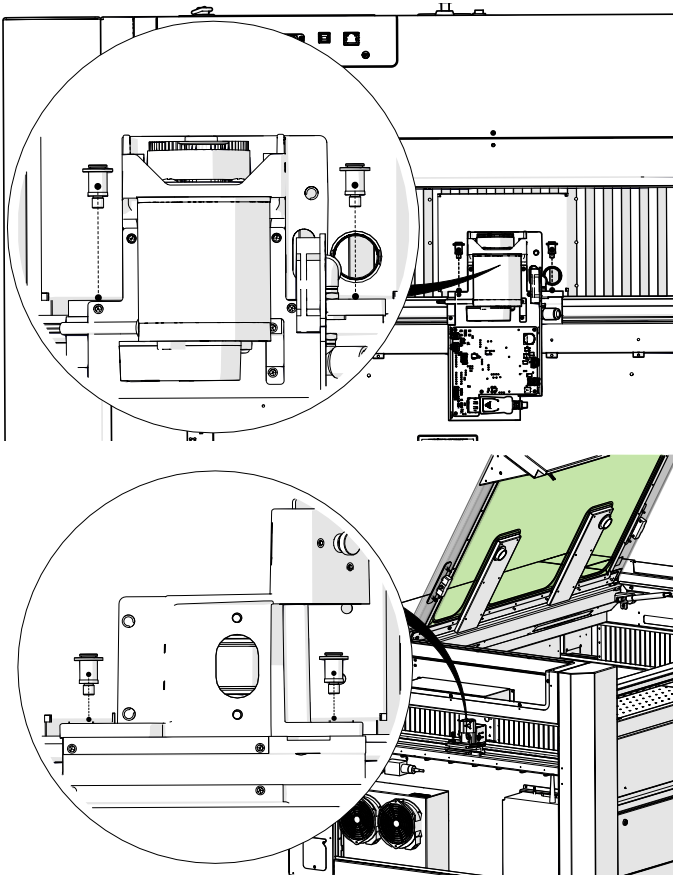
12. Loosen and remove the four (4) 7/64" hex screws that hold the x-axis drive board housing:



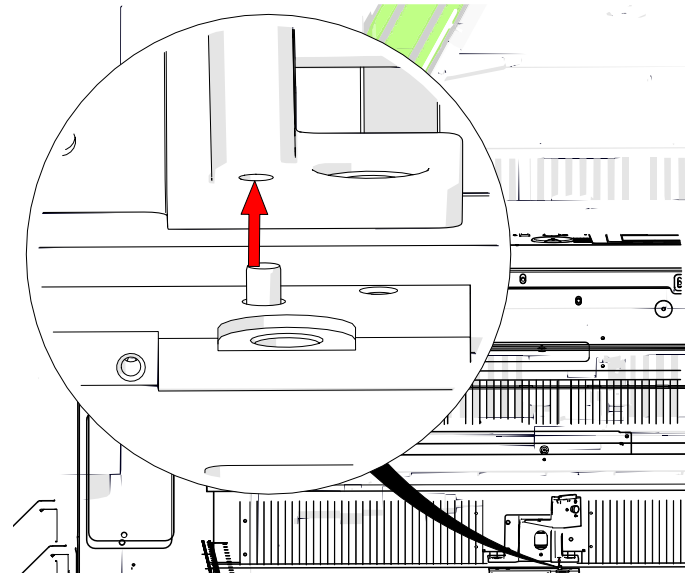
13. Remove the x-axis drive board housing:



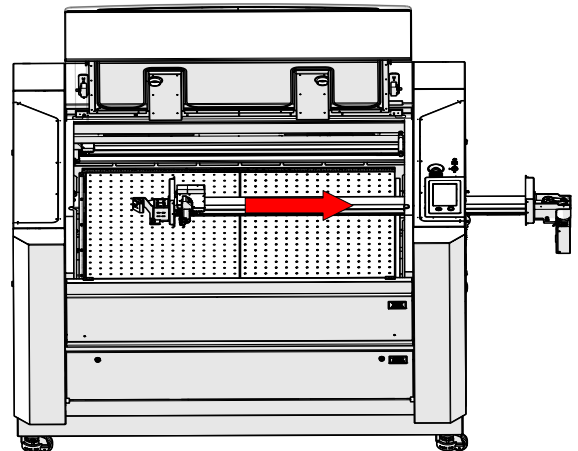
14. Remove and or loosen the four (4) 5/32" fasteners that secure the x-axis assembly to the y-axis bearings. There are two (2) on the right side and two (2) on the left side:



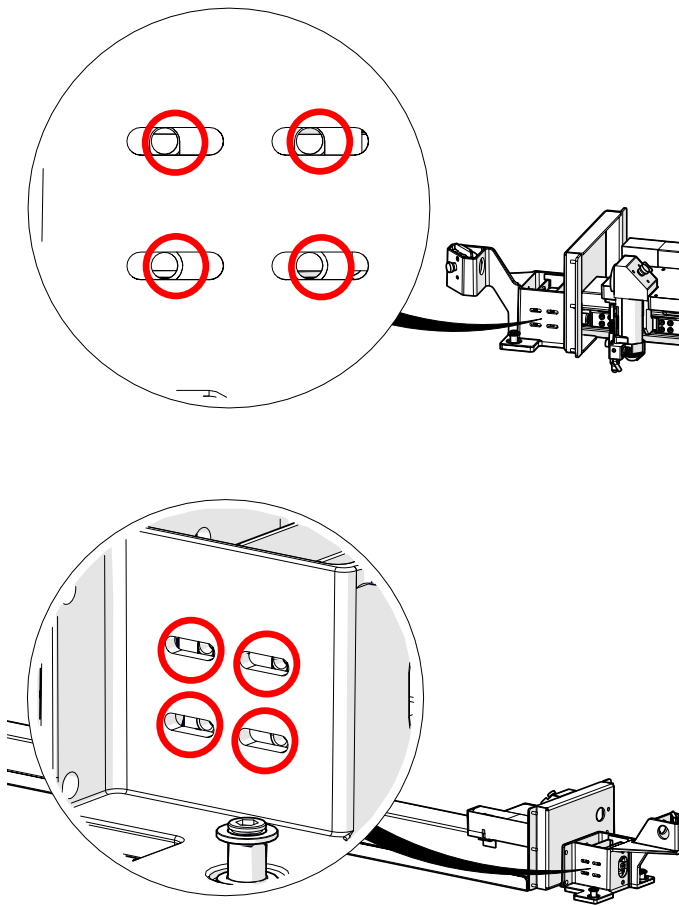
15. Lift the x-axis assembly upwards to clear the locator pins on the left and right y-axis bearing blocks:



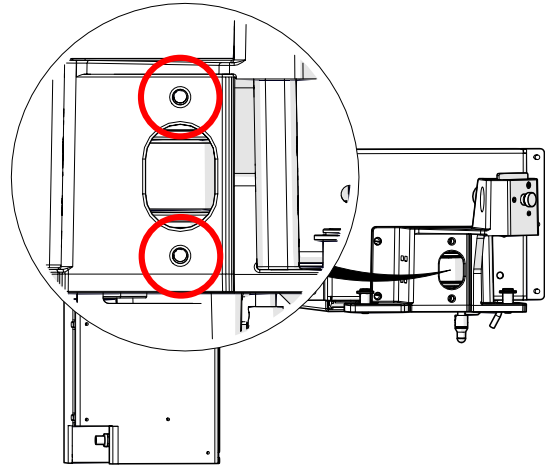
16. Slide the x-axis assembly out of the engraver through the right side:



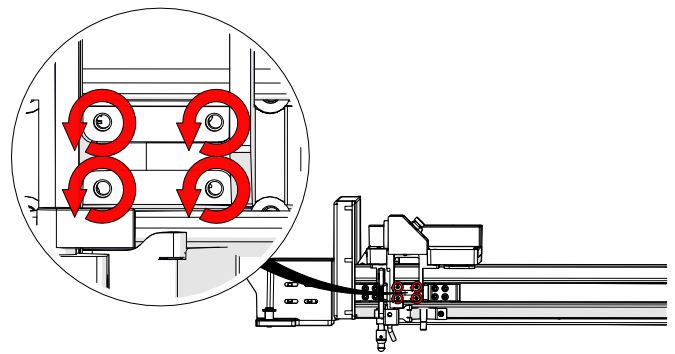
17. Loosen, but do not remove, the eight (8) 7/64" idler mounting screws located on the left side of the x-axis assembly:



18. Remove the tension from the x-axis belt by loosening the two (2) 7/64" screws on the idler assembly body:

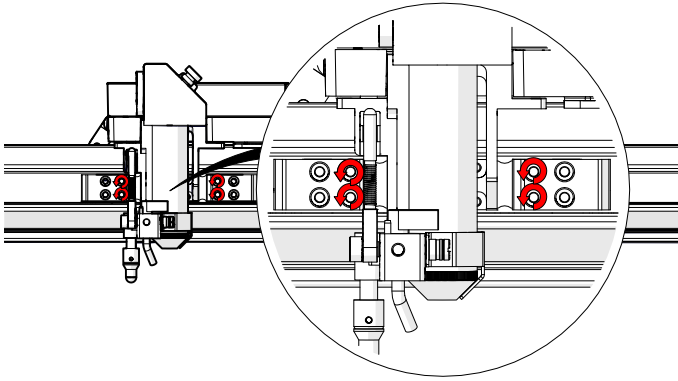


19. Remove the four (4) 3/32" Allen screws that secure the lens carriage assembly to the x-axis assembly:

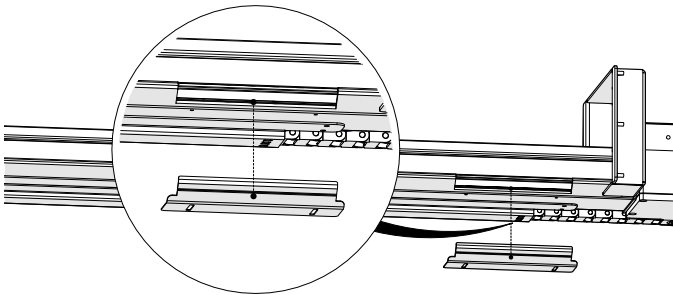


20. Gently rock the carriage assembly back and forth to unseat it from the retaining pin and remove it from the x-axis assembly.

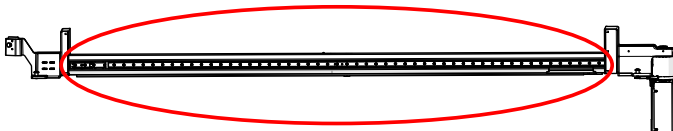
21. Loosen and remove the four (4) 3/32" x-axis belt clamp Allen screws and pull both sides of the x-axis belt away from the x-axis assembly:



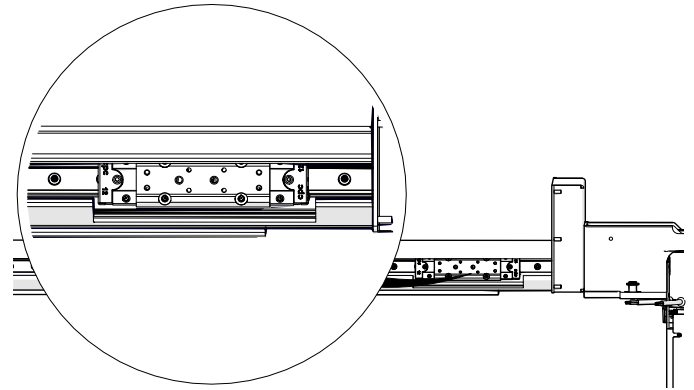
22. Loosen and remove the two (2) Phillips head screws and remove the access port cover located at the bottom-right side of the x-axis assembly:



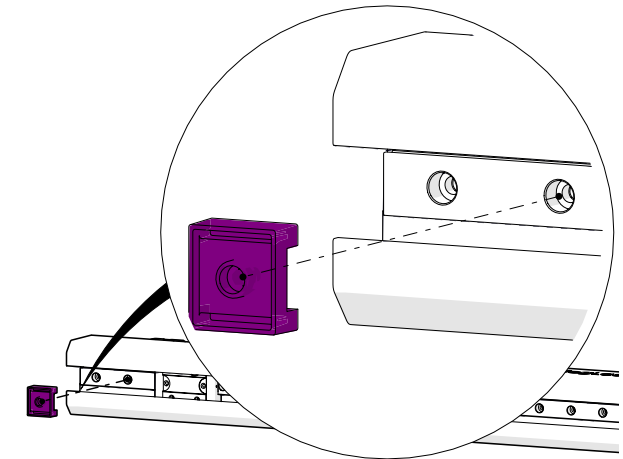
23. Beginning at the right side of the x-axis assembly, remove the 3/32" Allen screws which secure the IKO rail to the x-axis assembly.



24. After removing the 3/32" Allen screws on the right side of the linear guide, move the slider block on the linear guide to the right side of the x-axis assembly, ensuring that it rests over the access port:



25. Remove the remaining 3/32" Allen screws and the two (2) plastic bump stops (if present) on the linear guide and let the linear guide rest on the bottom of the x-axis assembly.



26. Remove the IKO rail from the x-axis assembly.

## Linear Guide Installation

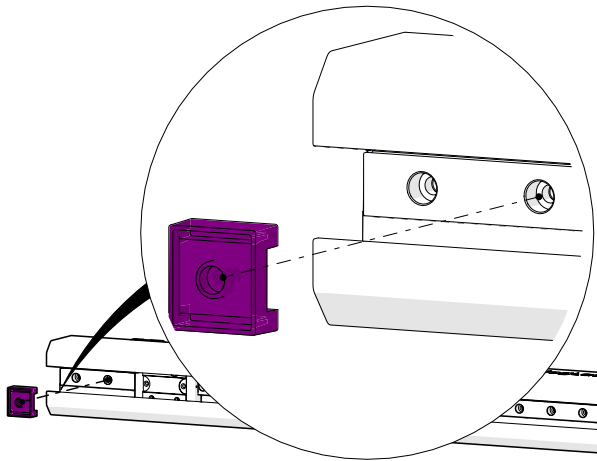
1. Position the IKO rail in the x-axis assembly.

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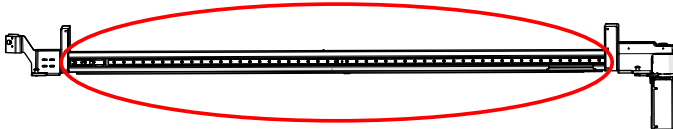
**The linear guide is not directional and does not require a specific orientation when being installed.**

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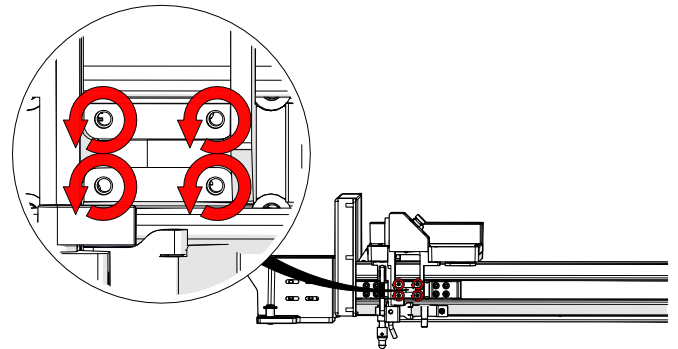
2. Install several (3-5) 3/32" Allen screws into the IKO rail to hold it in place.
3. Install the two (2) plastic bump stops on the IKO rail, securing them in place with two (2) of the 3/32" IKO rail screws:



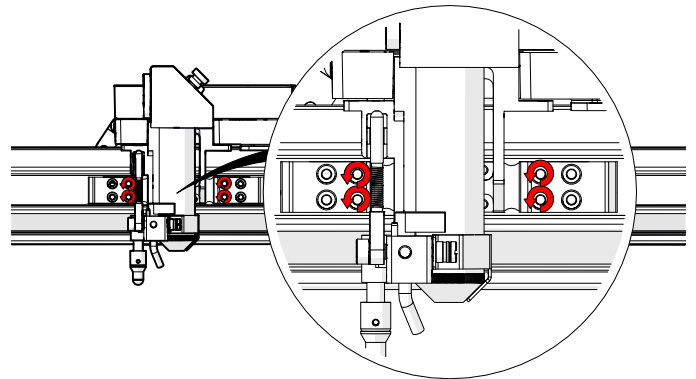
4. Install the remaining 3/32" IKO rail screws to secure it to the x-axis assembly.



5. Position the lens carriage assembly on the x-axis assembly. Install and tighten the four (4) 3/32" Allen screws:



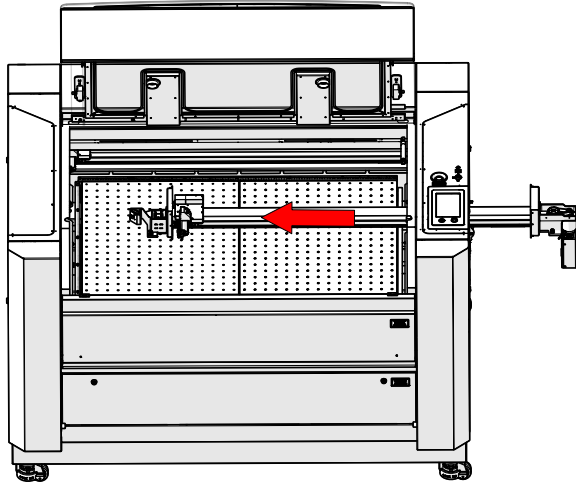
6. Place the x-axis belt clamps inside of the x-axis assembly. Install and tighten the four (4) 3/32" Allen screws:



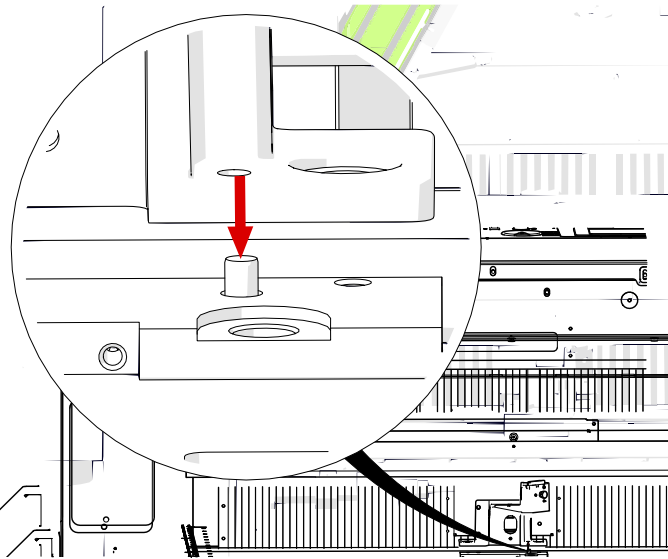


## 16000 - IKO Replacement

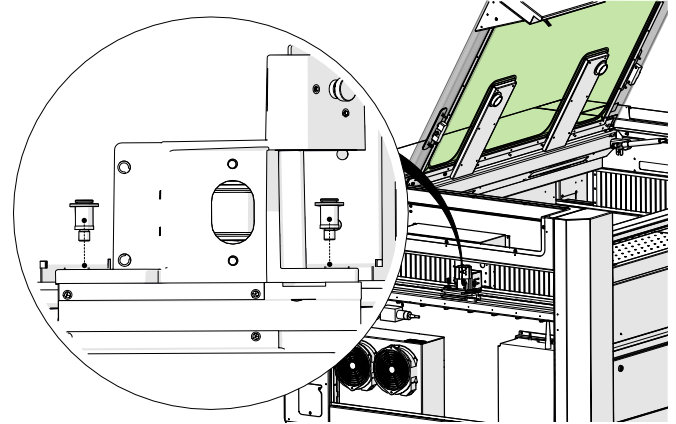
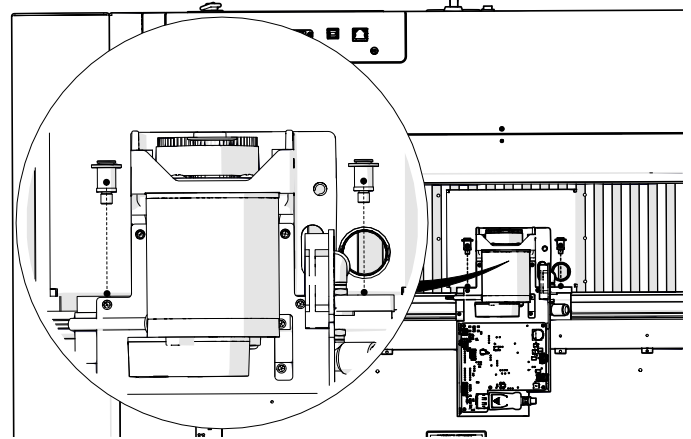
1. Slide the x-axis assembly into the engraver through the right side of the machine:



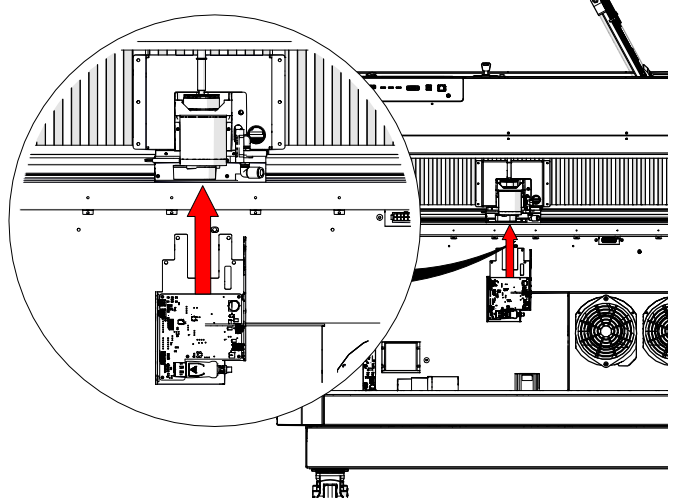
2. Place the x-axis assembly on the y-axis bearing blocks, ensuring that the locator pins enter the upper bearing block assembly:



3. Install and/or tighten the four (4) 5/32" fasteners that secure the x-axis assembly to the y-axis bearings. There are two (2) on the right side and two (2) on the left side:

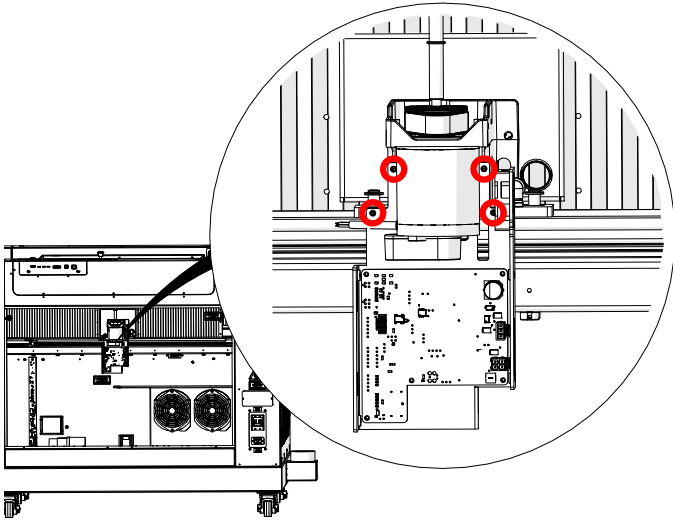


4. Position the x-axis drive board housing over the mounting holes:

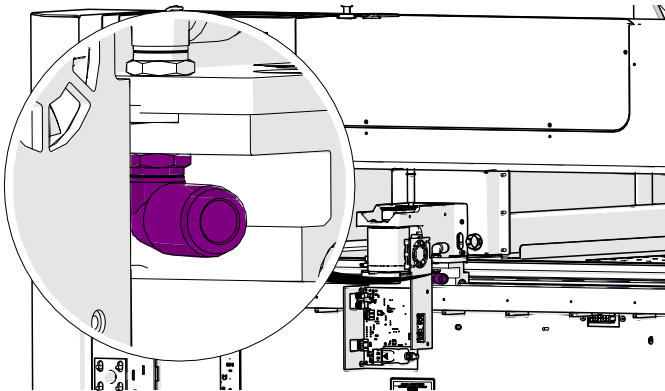




5. Install and tighten the four (4) 7/64" hex screws that hold the x-axis drive board housing:

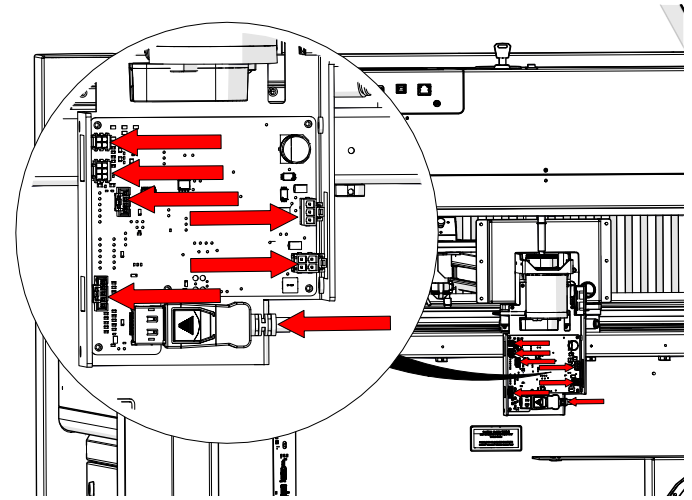


6. Reconnect the air tubing to the elbow fitting at the right side of the x-axis assembly:



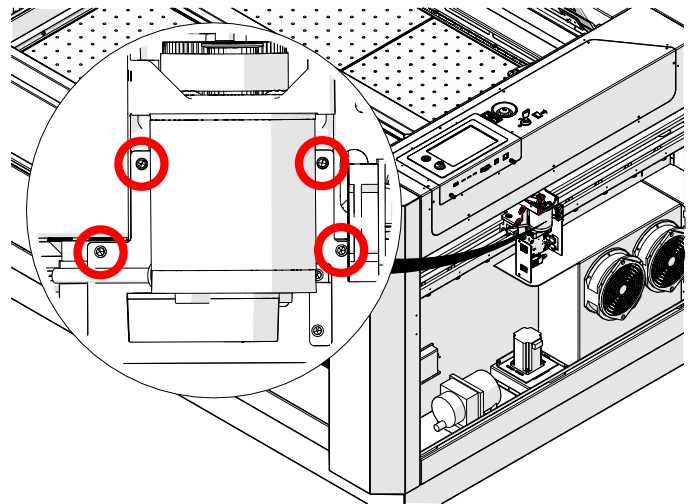
To reconnect the air tubing into the retaining fixture, simply insert the tubing into the collar. To ensure that it is securely connected, gently pull on the tubing.

7. Reconnect the seven (7) electrical connectors from the drive board:

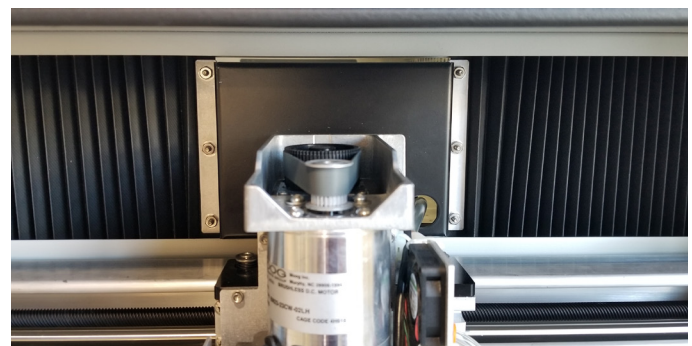


The electrical connectors on the drive board are all unique and will only fit into one receptacle.

8. Install the x-axis drive board cover and tighten the four (4) Phillips screws:

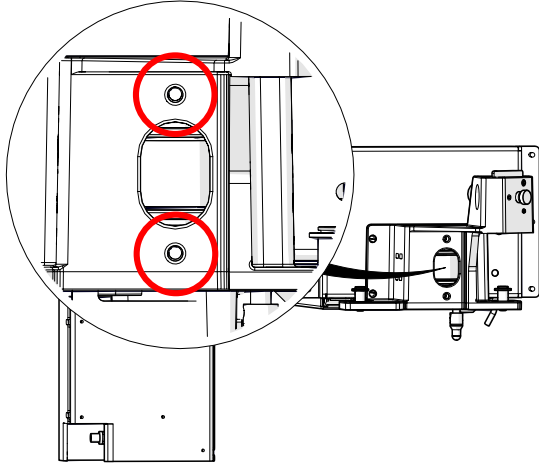


9. Install the backing plate and bellows. Install and tighten the six (6) 5/16" nuts that hold them in place:



## Tensioning the X-Axis Belt

1. Apply tension to the x-axis belt via the two (2) 7/64" x-axis belt tensioning screws:



2. Remove excess slack from the x-axis belt.
3. Once the slack is removed, reconnect to power and turn on the engravers.
4. Open your preferred illustrating program and create a black, raster box on an artboard that is:
  - For Pro 48: 46" or 1100mm wide
  - For Pro 32: 30" or 800mm wide
  - Roughly 4" or 100mm tall
5. Print to the Software Suite or Epilog driver and assign the following settings:
  - Speed: 100
  - Power: 0

**Power is unimportant, as the machine will be run with the lid open for the procedure.**

6. Send the job to the engraver and start the job.
7. At the display panel, press the gear icon in the upper right-hand corner of the display to open the Settings menu:



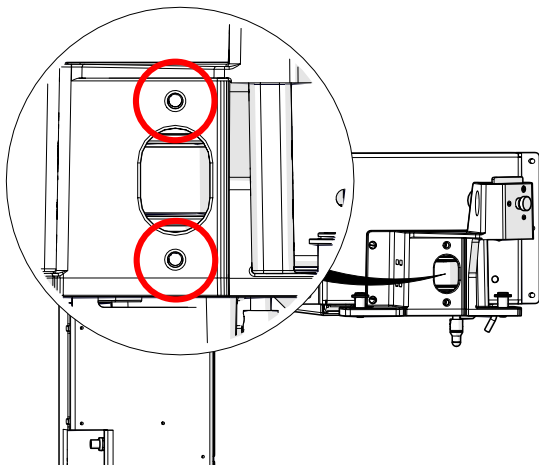
8. Press and hold the word "Settings" on the touchpad to gain access to the Advanced Settings menu:



9. Enter the Diagnostics menu and locate the RMS Current reading for the X-Axis Motor/Drive:



10. During the job, the x-axis motor RMS current should be between 5.2 - 6.2A.
- If the RMS current is lower than this, increase the tension on the x-axis belt by tightening the two (2) 7/64" tensioner screws on the x-axis idler assembly.
  - If the RMS current is higher than this, decrease the tension on the x-axis belt by loosening the two (2) 7/64" tensioner screws on the x-axis idler assembly:



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The RMS current levels given in this procedure are given as guidelines but should not be used as the only reference when adjusting belt tension.

After tensioning the belt to an acceptable RMS current range, complete a test engraving and inspect the quality.

Engrave a line of capital "T"s using Times New Roman and inspect the serifs.

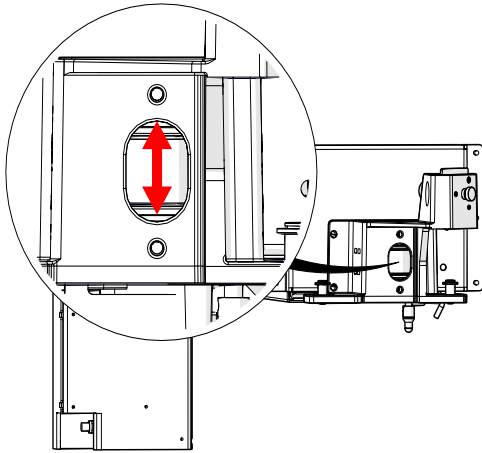
- An engraver with good x-axis belt tension will engrave the serifs with good definition.
- An engraver with loose belt tension will engrave the serifs with a doubling or skewed effect.
- An engraver with tight belt tension may produce more noise than usual and display error messages.

In certain cases where the RMS current cannot be brought above the lower limit, the belt may need to be trimmed. Use a pair of aviation or metal snips to remove two (2) teeth, and attempt the tensioning procedure again.

In certain cases where the RMS current cannot be brought below the upper limit, there may be other mechanical issues affecting the travel of the lens carriage. Ensure proper x-axis belt clamp placement, x-axis reducer belt tension, and investigate any physical obstructions or wear points.

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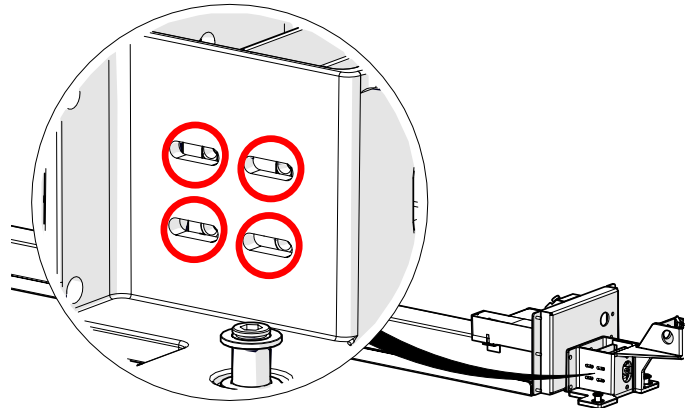
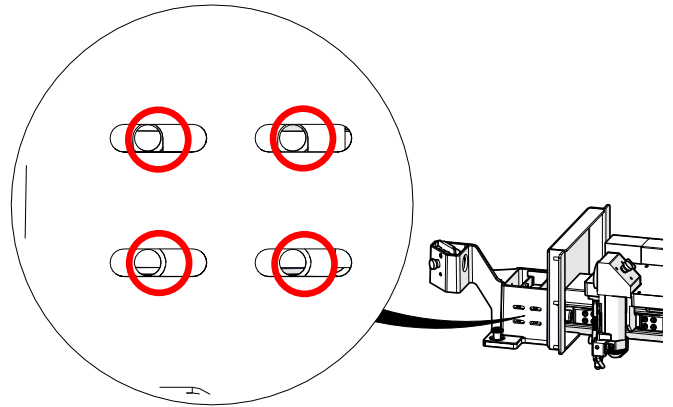
10. After tensioning the x-axis belt, ensure that the belt remains as centered as possible on the idler pulley when in motion:



11. If the x-axis belt is riding against the idler pulley flange, make equal but opposite adjustments to the two (2) 7/64" tensioner screws.

- If the x-axis belt is too high:
  - Tighten the top screw 1/4 turn
  - Loosen the bottom screw 1/4 turn
- If the x-axis belt is too low:
  - Loosen the top screw 1/4 turn
  - Tighten the bottom screw 1/4 turn

12. Repeat step 11 until the x-axis belt remains as centered as possible on the idler pulley when in motion.
13. Once the x-axis belt is centered and the optimal RMS current value has been achieved, tighten the eight (8) 7/64" idler mounting screws located on the left side of the x-axis assembly:



14. Replace the left side panel of the engraver.

If further assistance is required, contact Epilog Laser Technical Support by phone at 303-215-9171, or by email at [tech@epiloglaser.com](mailto:tech@epiloglaser.com).