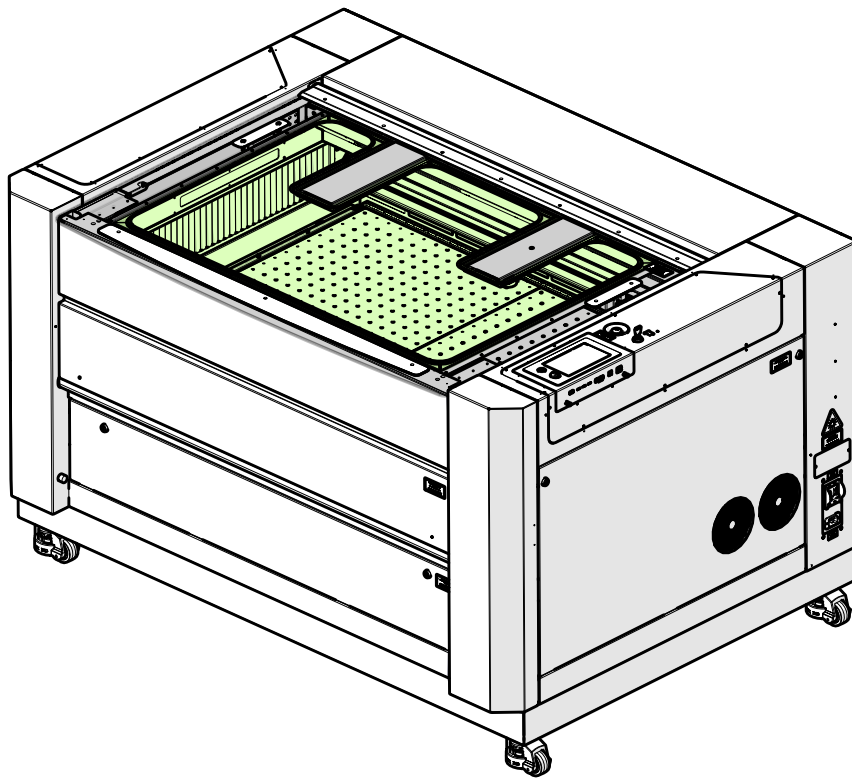


X-Axis Rail Assembly Replacement Fusion Pro 32 & 48



Parts Required

- Pro 32 - CS1200 - X-Axis Rail Assembly
- Pro 48 - CS0400 -X-Axis Rail Assembly

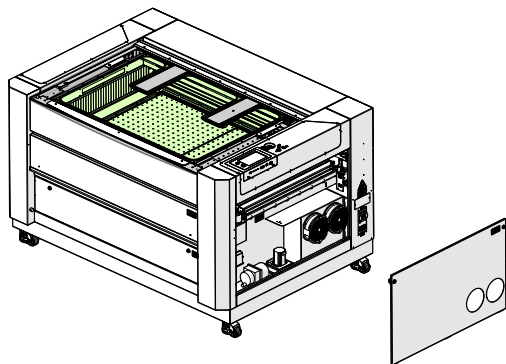
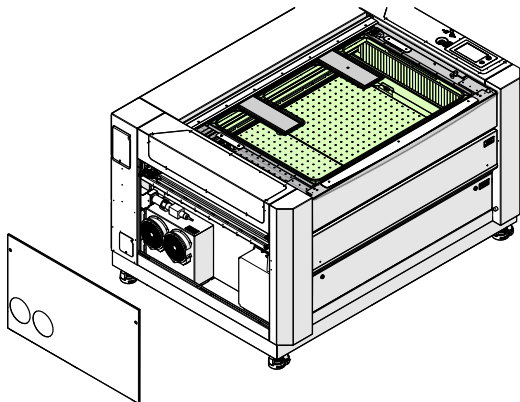
Tools Required

- 5/32" hex wrench
- 5/16" nut driver or wrench
- Phillips head screwdriver

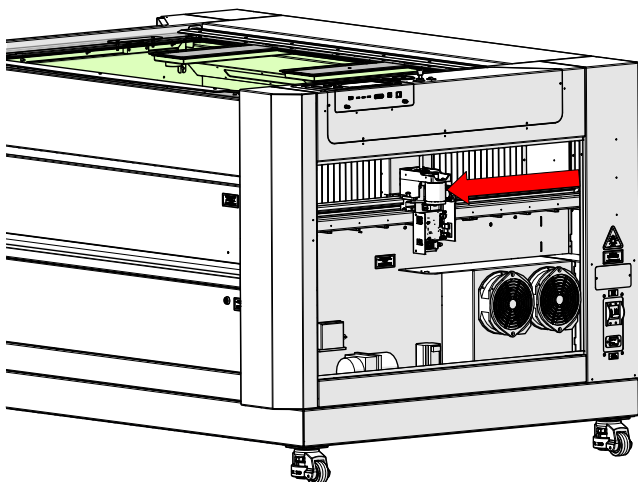
PRO 32 & 48 X-AXIS ASSEMBLY

X-Axis Assembly Removal

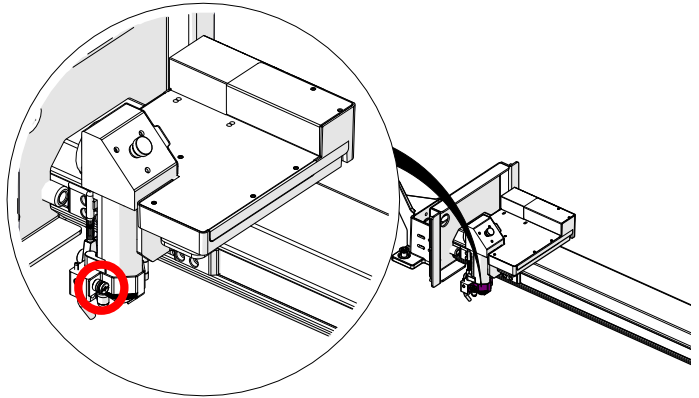
1. Turn off the engraver.
2. Disconnect engraver from power source.
3. Remove the left and right panels of the engraver by loosening the 5/32" cam locks:



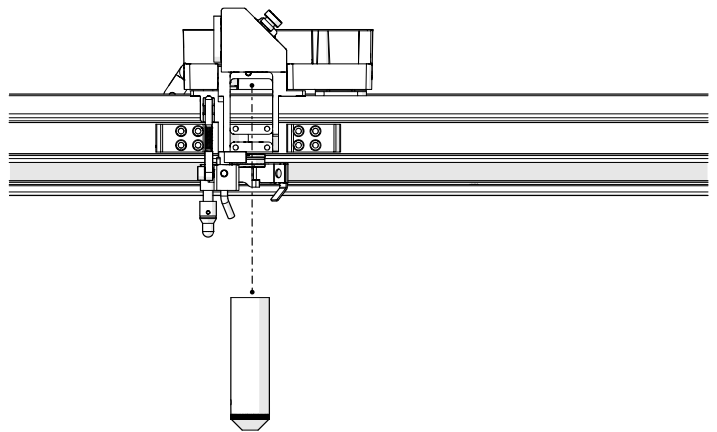
4. Manually move the x-axis assembly to the middle of the engraver:



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:

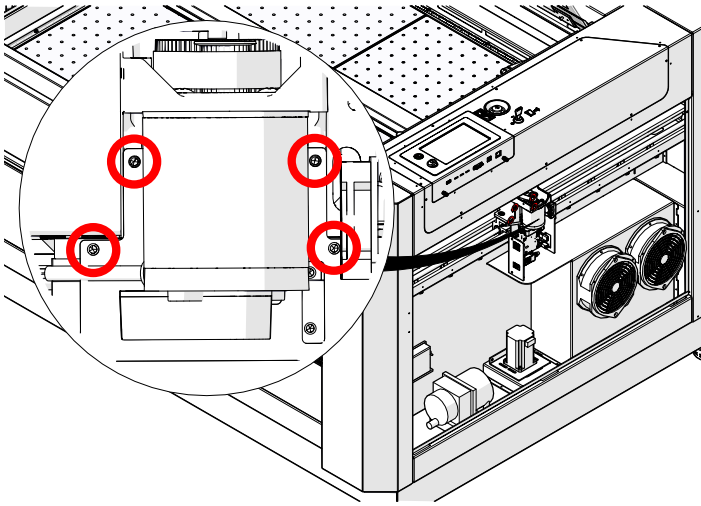


7. Remove the left and right bellows by loosening the six (6) 5/16" nuts and backing plate:



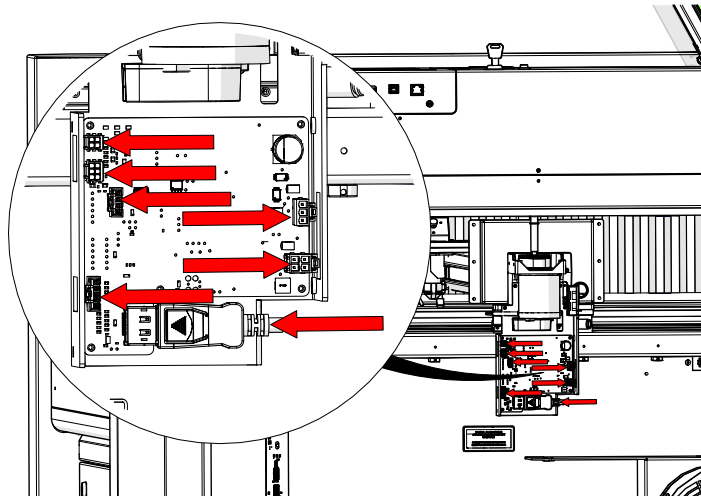
PRO 32 & 48 X-AXIS ASSEMBLY

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

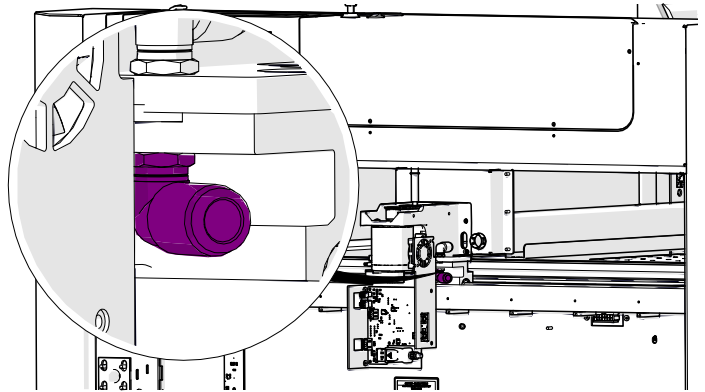


9. Remove the x-axis drive board cover.

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

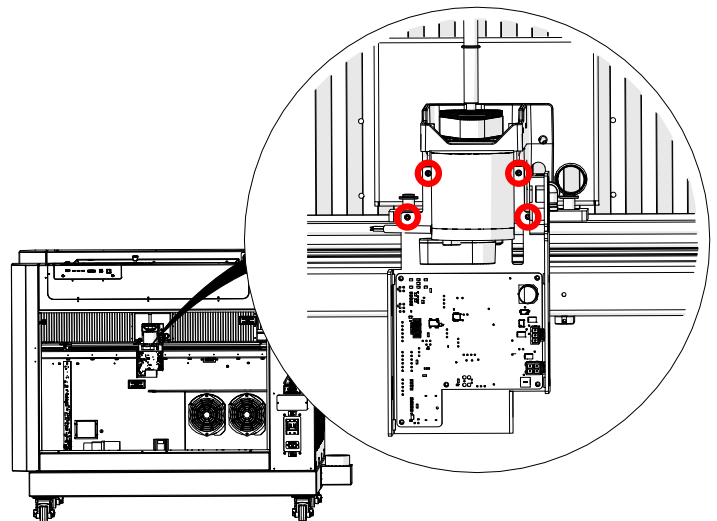


12. Disconnect the air tubing from the elbow connector at right side of the x-axis assembly:



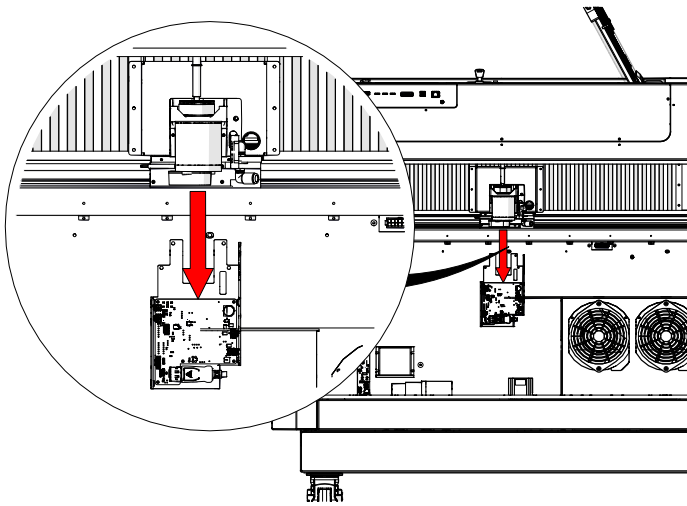
The air tubing is held by a retaining fixture. To remove the tubing, press the tubing into the fixture. Then, while holding the orange retaining ring tight to the fixture pull the air tubing away from it.

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

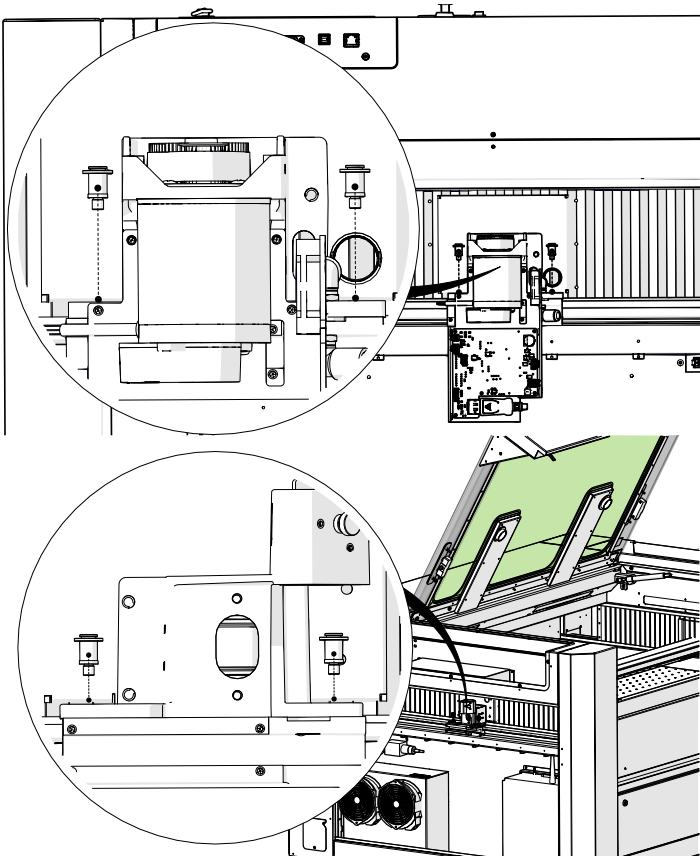


PRO 32 & 48 X-AXIS ASSEMBLY

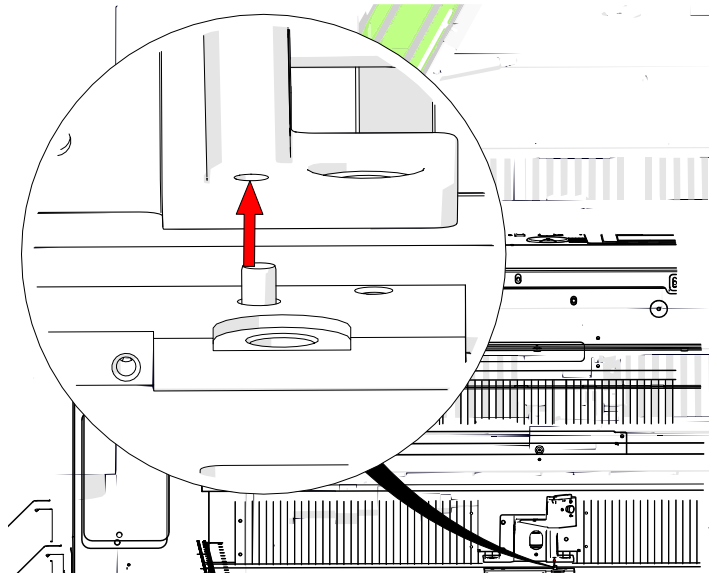
14. Remove the x-axis drive board housing:



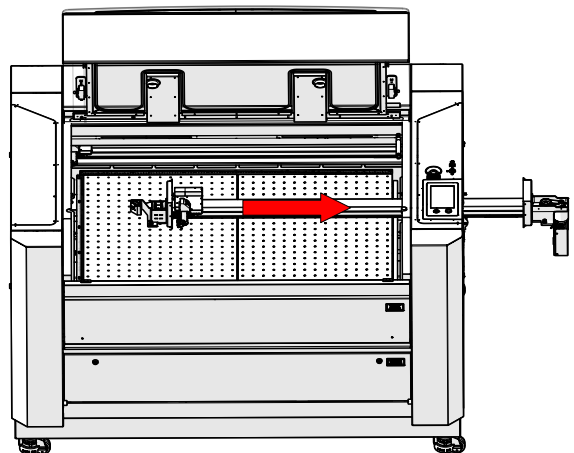
15. Remove and or loosen the four (4) 5/32" fasteners that secure the x-axis assembly to the y-axis bearings. There are two (2) on the right side and two (2) on the left side:



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



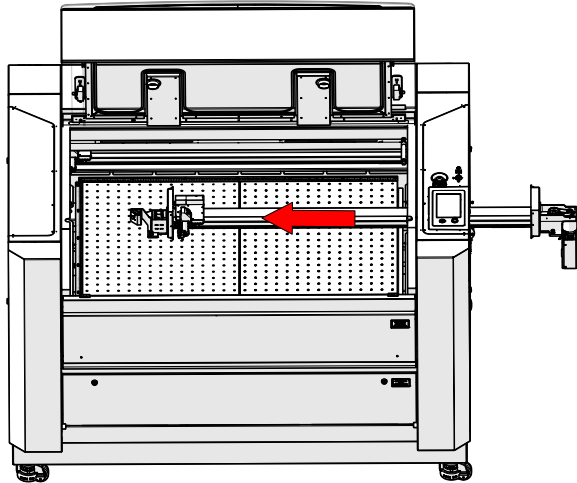
17. Slide the x-axis assembly out of the engraver through the right side of the machine, taking care to clear the carriage assembly through the opening without damage:



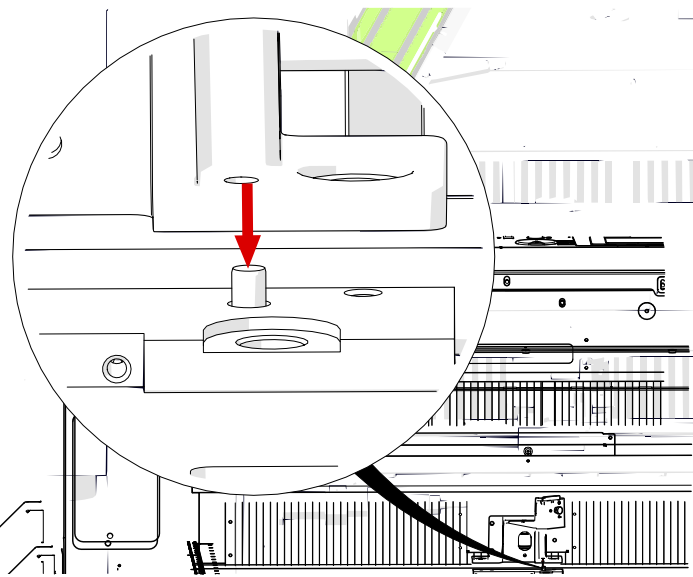
PRO 32 & 48 X-AXIS ASSEMBLY

X-Axis Assembly Installation

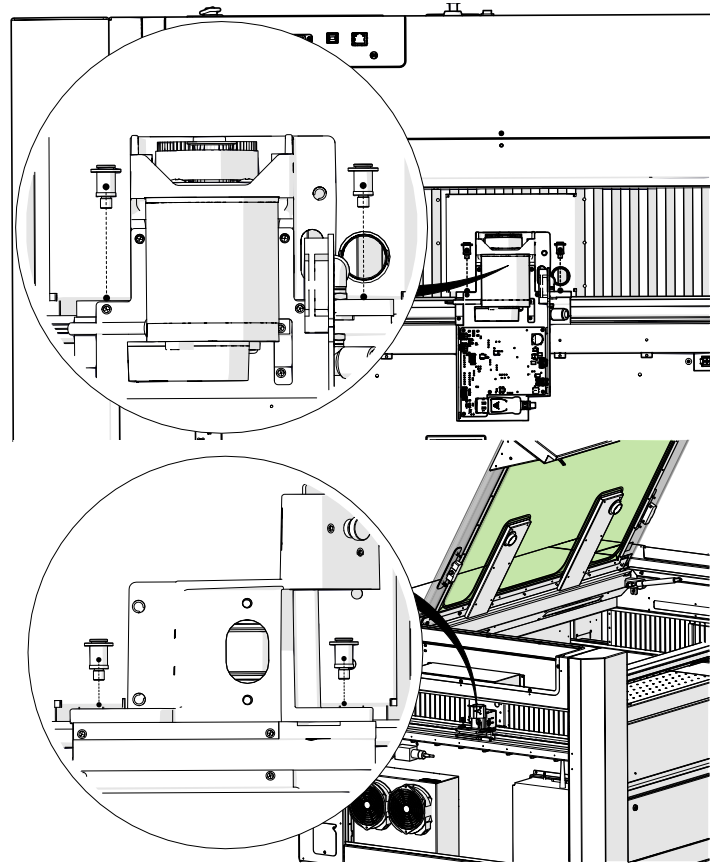
1. Slide the x-axis assembly into the engraver through the right side of the machine, taking care to clear the carriage assembly through the opening without damage:



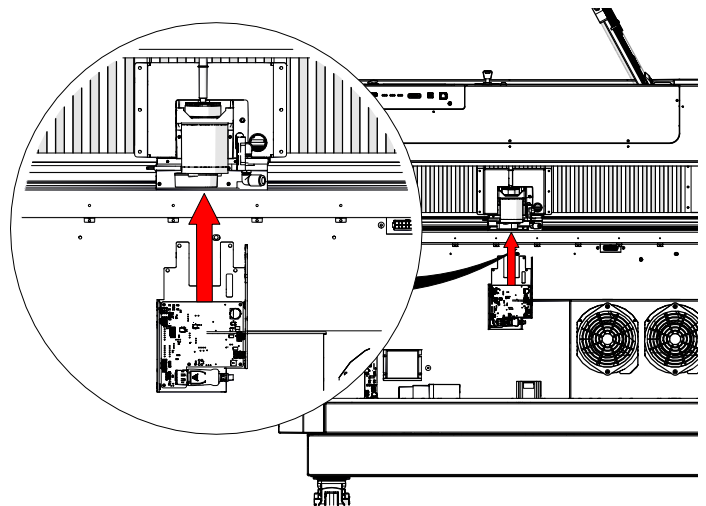
2. Place the x-axis assembly on the y-axis bearing blocks, ensuring that the locator pins enter the upper bearing block assembly:



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:

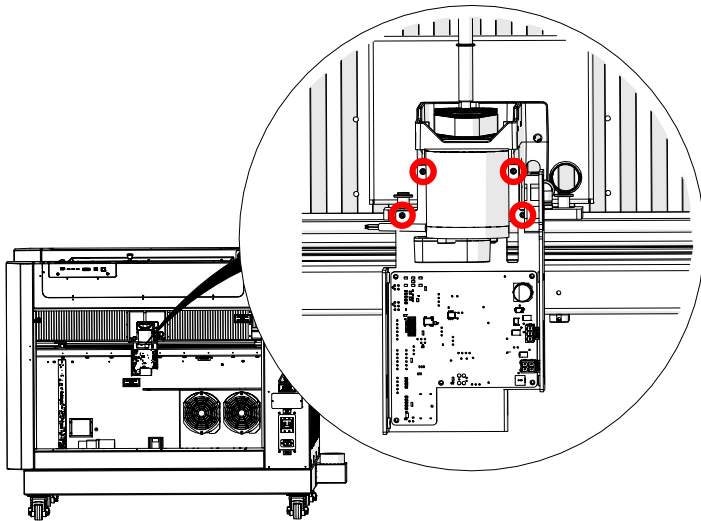


4. Position the x-axis drive board housing over the mounting holes:

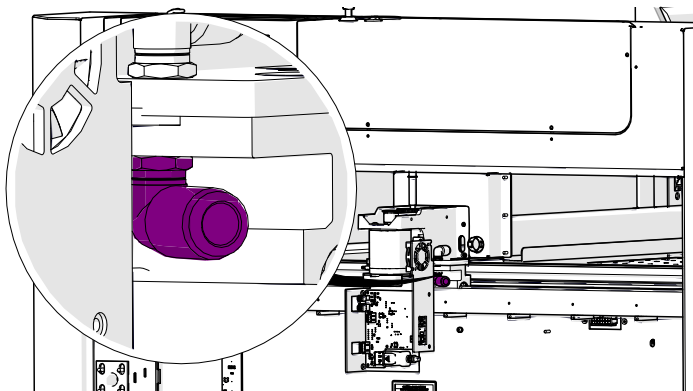


PRO 32 & 48 X-AXIS ASSEMBLY

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

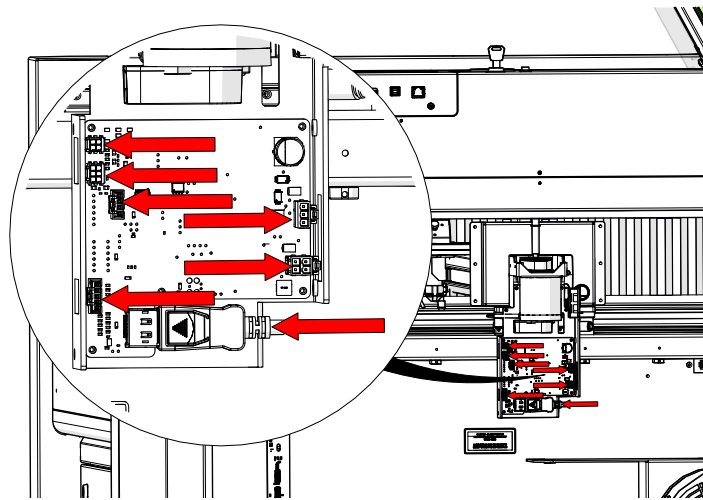


6. Reconnect the air tubing to the elbow fitting at the right side of the x-axis assembly:



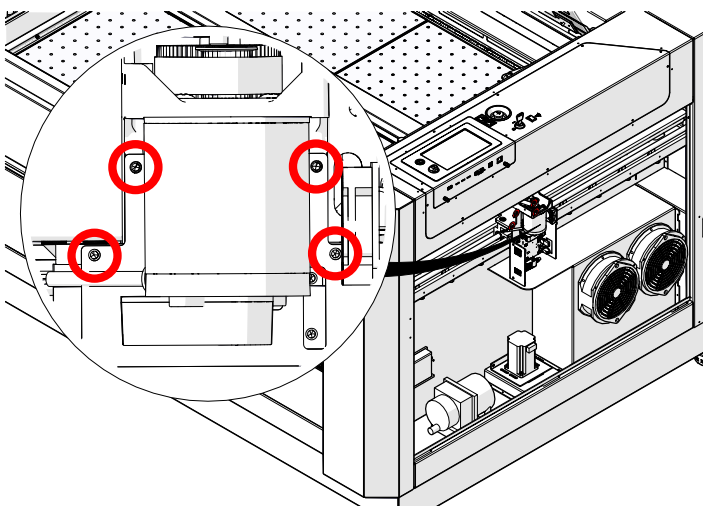
To reconnect the air tubing into the retaining fixture, simply insert the tubing into the collar. To ensure that it is securely connected, gently pull on the tubing.

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

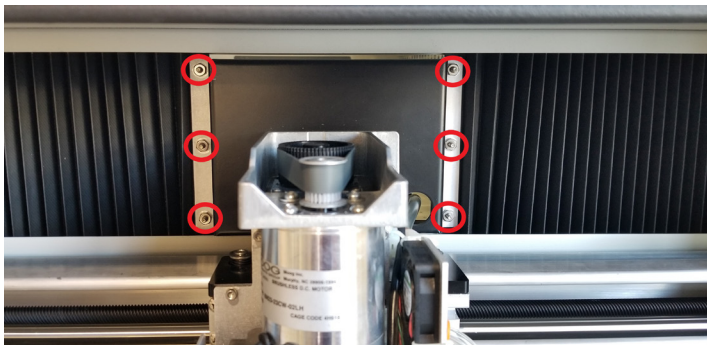


The electrical connectors on the drive board are all unique and will only fit into one receptacle.

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

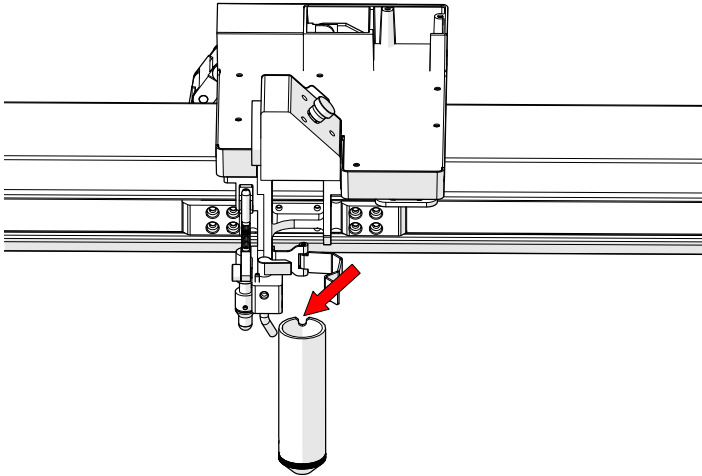


9. Install the backing plate and bellows and tighten the six (6) 5/16" nuts that hold them in place:

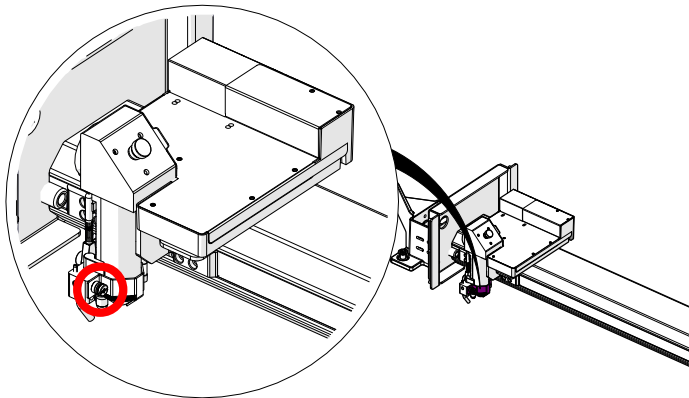


PRO 32 & 48 X-AXIS ASSEMBLY

10. Position the lens tube in the lens assembly, ensuring that the notch in the tube faces the rear of the engraver. Make sure to hold the lens tube after inserting to ensure that it does not fall:



11. Tighten the Phillips screw on the lens tube retaining collar:



12. Replace both the left and right panels of the engraver.
13. Reconnect the engraver to power and boot up the machine, ensuring proper boot sequence.

Updates and Calibrations

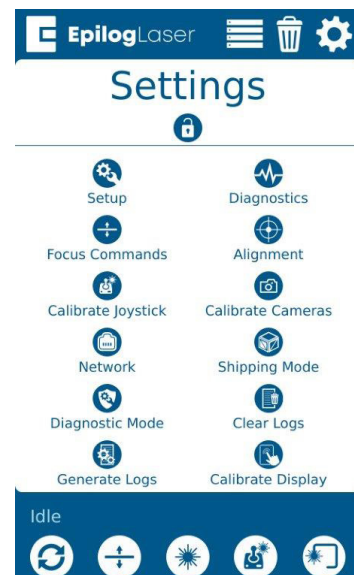
The x-axis assembly contains many components, including circuit boards, cameras, and a motor. Further procedures are required.

Updating the Carriage Camera

1. On the display, press the gear icon to enter the Settings menu:

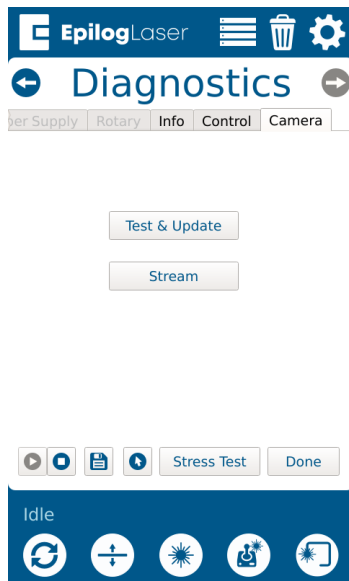


2. Press and hold the word “Settings” that appears at the touch of the touchpad to gain access to the Advanced Settings menu:

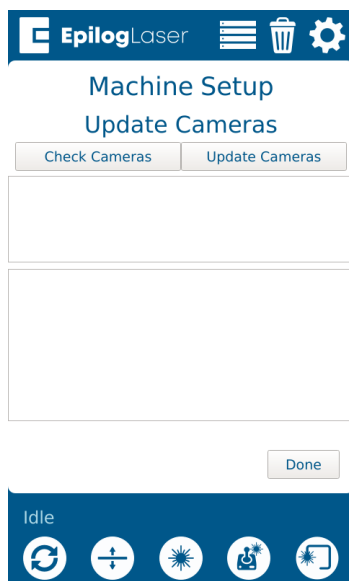


PRO 32 & 48 X-AXIS ASSEMBLY

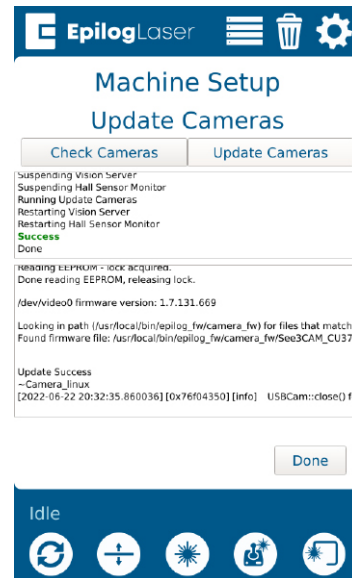
3. Enter the Diagnostics menu and scroll to the Camera tab. Press Test & Update:



4. Press Update:



5. Allow the engraver to complete the update. Once done, a success message will appear:



Updating the Peripherals

1. At the display panel, press the gear icon in the upper right-hand corner of the display to open the Settings menu:

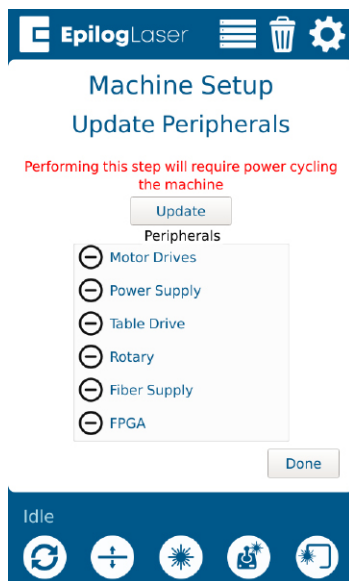


PRO 32 & 48 X-AXIS ASSEMBLY

2. Press Program to enter the Peripheral Update menu:



3. Once in the Peripheral Update menu, select Motor Drives and FPGA. Press Update:



When running a peripheral update, do not power off the engraver. During a peripheral update it is common for the display to power off. Once the update has been applied, the engraver will prompt to restart.

4. Once the engraver prompts you to restart, power cycle the engraver.

Calibrating the Focus

Focus Calibrations for CO2- Only Engravers

Focus calibration must be completed in the order outlined in this procedure.

Table Calibration

The table calibration is a crucial step in the laser focus calibration. During this procedure, the table moves from the top to the bottom of the z-axis, locating the magnetic sensors along the z-axis PCB. This step must be completed for a successful and accurate focus calibration.

Before completing the table calibration install the raster table.

Since the table will rise to depress the autofocus plunger, use the Jog feature to position the lens carriage in a position which will prevent the autofocus plunger and lens cone from coming into contact with the left and or top ruler guides.

1. On the display, press the gear icon to enter the Settings menu:



PRO 32 & 48 X-AXIS ASSEMBLY

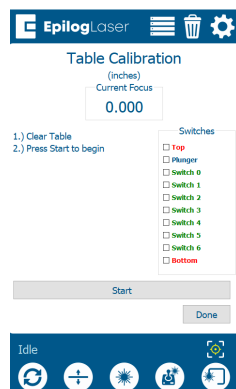
- Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:



- Press the Table button:



- Press the Start button to start the table calibration:



- Allow the engraver to complete the calibration. Once complete, a success message should appear.

Move to the CO2 Focus Procedure.

CO2 Focus Calibration

The CO2 focus calibration establishes the focal height of the laser and manual focus gauge. You will run a small job while adjusting the table height to find the correct focal height.

A small piece of anodized aluminum (at least 3" x 3" or 75mm x 75mm) is required to complete this procedure.

- Open your preferred illustrating program and create a black, raster box measuring ~2" x 2" or 50mm x 50mm.
- Send the job to the Software Suite.
- Ensure that the process shows as an engraving job and set the both power and speed at 5-10%.

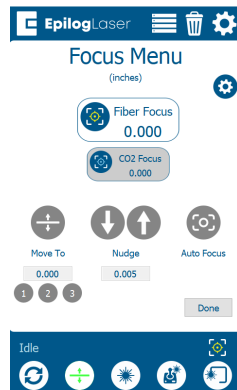
If completing the procedure on the Fusion Pro 32, place the artwork and material in the upper left corner of the engraving table, ensuring that the artwork appears over the anodized aluminum.

If completing the procedure on the Fusion Pro 48, place the artwork and material in the center of the engraving table, ensuring that the artwork appears over the anodized aluminum.

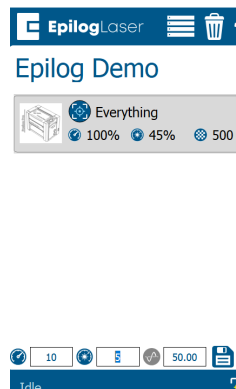
- Send the job to the engraver.

PRO 32 & 48 X-AXIS ASSEMBLY

- Once the job is running, press the Focus button and slightly raise and lower the table with the joystick while observing the spark coming from the laser hitting the anodized aluminum:



- While raising and lowering the table, find the height where the spark appears the brightest. If it is difficult to determine, turn off any overhead lights in the room.
- Once the appropriate table height is found, use the touchpad to lower the power to 3-5%:



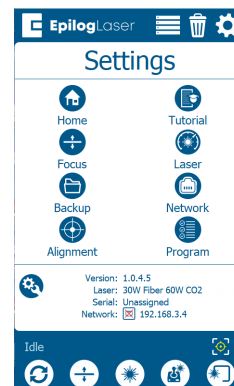
- Continue to raise and lower the table height with the lower power setting to find the height where the spark appears the brightest.

Using the lower power setting allows you to more finely dial in the correct focal height as the spark fades very quickly when the material becomes out of focus.

- Once the correct focal height has been found, let go of the joystick and press the Go/Stop button to stop the job. Then press the Reset button to return the laser head back to the home position.
- Remove the anodized aluminum from the engraver.
- On the display, press the gear icon to enter the Settings menu:



- Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:

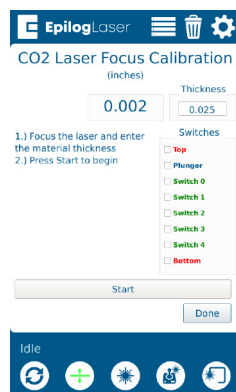


PRO 32 & 48 X-AXIS ASSEMBLY

13. Press the CO2 Focus button:



14. Ensure that the material thickness used during the previous step is entered in the Thickness box. If using anodized aluminum provided by Epilog Laser, the default value of 0.025" corresponds to the material.



15. Press the Start button. This calibration is very fast as the engraver simply notes and saves the current position of the table.

16. Press Done.

Move to the Autofocus Calibration procedure.

Autofocus Calibration

The autofocus calibration takes note of, saves, and uses the CO2 focus calibration value to ensure that the table moves to the correct focal height when running a job with the autofocus enabled. During this calibration, the table will rise up, depress the autofocus plunger, and then move back to the appropriate focal height.

Before completing the table calibration install the raster table.

Since the table will rise to depress the autofocus plunger, use the Jog feature to position the lens carriage in a position which will prevent the autofocus plunger and lens cone from coming into contact with the left and or top ruler guides.

1. On the display, press the gear icon to enter the Settings menu:

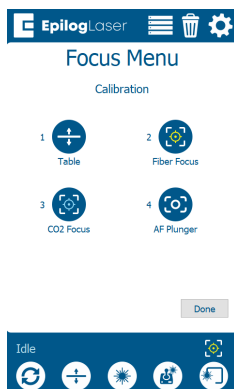


PRO 32 & 48 X-AXIS ASSEMBLY

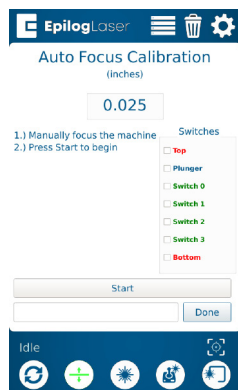
2. Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:



3. Press the AF Plunger button:



4. Press the Start button.



5. Allow the engraver to complete the calibration. Once complete, a success message should appear.

Focus Calibrations for Fiber- Only Engravers

Focus calibration must be completed in the order outlined in this procedure.

Table Calibration

The table calibration is a crucial step in the laser focus calibration. During this procedure, the table moves from the top to the bottom of the z-axis, locating the magnetic sensors along the z-axis PCB. This step must be completed for a successful and accurate focus calibration.

Before completing the table calibration install the raster table.

Since the table will rise to depress the autofocus plunger, use the Jog feature to position the lens carriage in a position which will prevent the autofocus plunger and lens cone from coming into contact with the left and or top ruler guides.

1. On the display, press the gear icon to enter the Settings menu:



PRO 32 & 48 X-AXIS ASSEMBLY

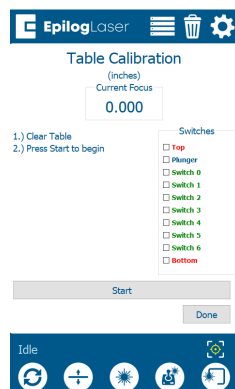
- Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:



- Press the Table button:



- Press the Start button to start the table calibration:



- Allow the engraver to complete the calibration. Once complete, a success message should appear.

Move to the Fiber Focus Procedure.

Fiber Focus Calibration

The CO2 focus calibration establishes the focal height of the laser and manual focus gauge. You will run a small job while adjusting the table height to find the correct focal height.

A small piece of anodized aluminum (at least 3" x 3" or 75mm x 75mm) is required to complete this procedure.

- Open your preferred illustrating program and create a black, raster box measuring ~2" x 2" or 50mm x 50mm.
- Send the job to the Software Suite.
- Ensure that the process shows as an engraving job and set the both power and speed at 5-10%.

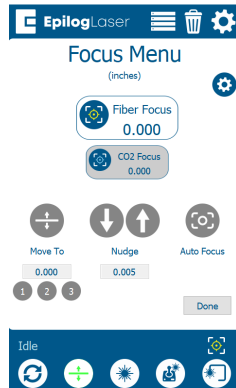
If completing the procedure on the Fusion Pro 32, place the artwork and material in the upper left corner of the engraving table, ensuring that the artwork appears over the anodized aluminum.

If completing the procedure on the Fusion Pro 48, place the artwork and material in the center of the engraving table, ensuring that the artwork appears over the anodized aluminum.

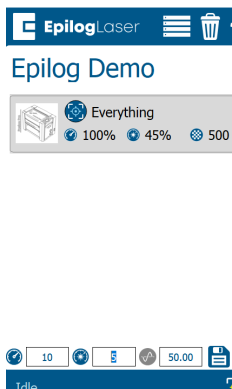
- Send the job to the engraver.

PRO 32 & 48 X-AXIS ASSEMBLY

5. Once the job is running, press the Focus button and slightly raise and lower the table with the joystick while observing the spark coming from the laser hitting the anodized aluminum:



6. While raising and lowering the table, find the height where the spark appears the brightest. If it is difficult to determine, turn off any overhead lights in the room.
7. Once the appropriate table height is found, use the touchpad to lower the power to 3-5%:



8. Continue to raise and lower the table height with the lower power setting to find the height where the spark appears the brightest.

Using the lower power setting allows you to more finely dial in the correct focal height as the spark fades very quickly when the material becomes out of focus.

9. Once the correct focal height has been found, let go of the joystick and press the Go/Stop button to stop the job. Then press the Reset button to return the laser head back to the home position.
10. Remove the anodized aluminum from the engraver.
11. On the display, press the gear icon to enter the Settings menu:



12. Ensure that the material thickness used during the previous step is entered in the Thickness box. If using anodized aluminum provided by Epilog Laser, the default value of 0.025" corresponds to the material.
13. Press the Start button. This calibration is very fast as the engraver simply notes and saves the current position of the table.
14. Press Done.

Move to the Autofocus Calibration procedure.

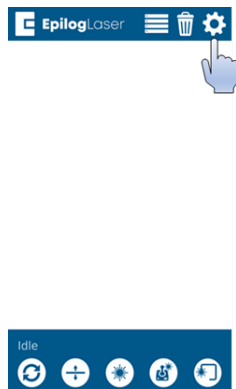
PRO 32 & 48 X-AXIS ASSEMBLY

Autofocus Calibration

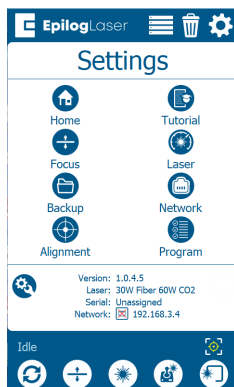
Before completing the table calibration install the raster table.

Since the table will rise to depress the autofocus plunger, use the Jog feature to position the lens carriage in a position which will prevent the autofocus plunger and lens cone from coming into contact with the left and or top ruler guides.

1. On the display, press the gear icon to enter the Settings menu:



2. Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:



3. Press the AF Plunger button:



4. Press the Start button.



5. Allow the engraver to complete the calibration. Once complete, a success message should appear.

Focus Calibration for Dual Source Engravers

Focus calibration must be completed in the order outlined in this procedure.

Table Calibration

The table calibration is a crucial step in the laser focus calibration. During this procedure, the table moves from the top to the bottom of the z-axis, locating the magnetic sensors along the z-axis PCB. This step must be completed for a successful and accurate focus calibration.

PRO 32 & 48 X-AXIS ASSEMBLY

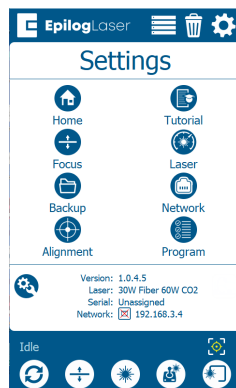
Before completing the table calibration install the raster table.

Since the table will rise to depress the autofocus plunger, use the Jog feature to position the lens carriage in a position which will prevent the autofocus plunger and lens cone from coming into contact with the left and or top ruler guides.

1. On the display, press the gear icon to enter the Settings menu:



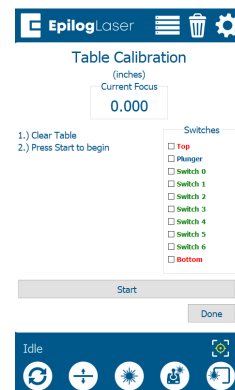
2. Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:



3. Press the Table button:



4. Press the Start button to start the table calibration:



5. Allow the engraver to complete the calibration. Once complete, a success message should appear.

Move to the Fiber Focus Procedure.

Fiber Focus Calibration

The CO2 focus calibration establishes the focal height of the laser and manual focus gauge. You will run a small job while adjusting the table height to find the correct focal height.

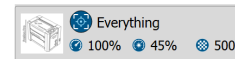
A small piece of anodized aluminum (at least 3" x 3" or 75mm x 75mm) is required to complete this procedure.

PRO 32 & 48 X-AXIS ASSEMBLY

1. Open your preferred illustrating program and create a black, raster box measuring ~2" x 2" or 50mm x 50mm.
2. Send the job to the Software Suite.
3. Ensure that the process shows as an engraving job and set the both power and speed at 5-10%.
6. While raising and lowering the table, find the height where the spark appears the brightest. If it is difficult to determine, turn off any overhead lights in the room.
7. Once the appropriate table height is found, use the touchpad to lower the power to 3-5%:



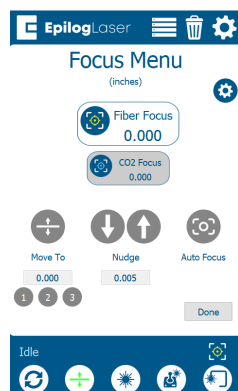
Epilog Demo



If completing the procedure on the Fusion Pro 32, place the artwork and material in the upper left corner of the engraving table, ensuring that the artwork appears over the anodized aluminum.

If completing the procedure on the Fusion Pro 48, place the artwork and material in the center of the engraving table, ensuring that the artwork appears over the anodized aluminum.

4. Send the job to the engraver.
5. Once the job is running, press the Focus button and slightly raise and lower the table with the joystick while observing the spark coming from the laser hitting the anodized aluminum:



8. Continue to raise and lower the table height with the lower power setting to find the height where the spark appears the brightest.

Using the lower power setting allows you to more finely dial in the correct focal height as the spark fades very quickly when the material becomes out of focus.

9. Once the correct focal height has been found, let go of the joystick and press the Go/Stop button to stop the job. Then press the Reset button to return the laser head back to the home position.
10. Remove the anodized aluminum from the engraver.

PRO 32 & 48 X-AXIS ASSEMBLY

11. On the display, press the gear icon to enter the Settings menu:



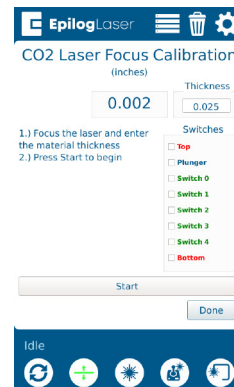
12. Ensure that the material thickness used during the previous step is entered in the Thickness box. If using anodized aluminum provided by Epilog Laser, the default value of 0.025" corresponds to the material.
13. Press the Start button. This calibration is very fast as the engraver simply notes and saves the current position of the table.
14. Press Done.

The CO2 focus must be set to the same height as the fiber focus before moving onto the CO2 Focus Calibration. Failure to complete this step will result in an inaccurate focus calibration.

15. Press the CO2 Focus button:



16. Ensure that the material thickness used during the previous step is entered in the Thickness box. If using anodized aluminum provided by Epilog Laser, the default value of 0.025" corresponds to the material.



17. Press Done.

CO2 Focus Calibration

The CO2 focus calibration establishes the focal height of the laser and manual focus gauge. You will run a small job while adjusting the table height to find the correct focal height.

A small piece of anodized aluminum (at least 3" x 3" or 75mm x 75mm) is required to complete this procedure.

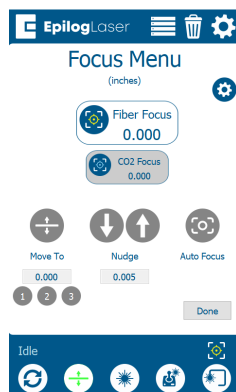
1. Open your preferred illustrating program and create a black, raster box measuring ~2" x 2" or 50mm x 50mm.
2. Send the job to the Software Suite.
3. Ensure that the process shows as an engraving job and set the both power and speed at 5-10%.

If completing the procedure on the Fusion Pro 32, place the artwork and material in the upper left corner of the engraving table, ensuring that the artwork appears over the anodized aluminum.

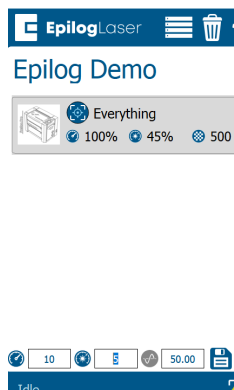
PRO 32 & 48 X-AXIS ASSEMBLY

If completing the procedure on the Fusion Pro 48, place the artwork and material in the center of the engraving table, ensuring that the artwork appears over the anodized aluminum.

4. Send the job to the engraver.
5. Once the job is running, press the Focus button and slightly raise and lower the table with the joystick while observing the spark coming from the laser hitting the anodized aluminum:



6. While raising and lowering the table, find the height where the spark appears the brightest. If it is difficult to determine, turn off any overhead lights in the room.
7. Once the appropriate table height is found, use the touchpad to lower the power to 3-5%:



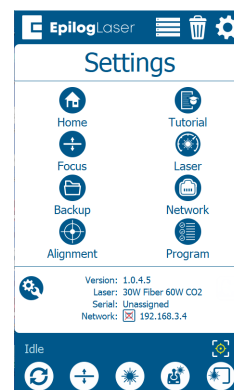
8. Continue to raise and lower the table height with the lower power setting to find the height where the spark appears the brightest.

Using the lower power setting allows you to more finely dial in the correct focal height as the spark fades very quickly when the material becomes out of focus.

9. Once the correct focal height has been found, let go of the joystick and press the Go/Stop button to stop the job. Then press the Reset button to return the laser head back to the home position.
10. Remove the anodized aluminum from the engraver.
11. On the display, press the gear icon to enter the Settings menu:



12. Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:

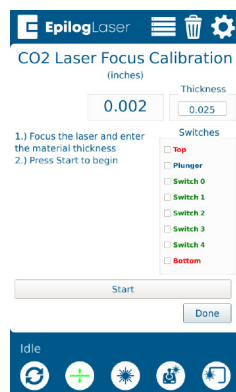


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13. Press the CO2 Focus button:



14. Ensure that the material thickness used during the previous step is entered in the Thickness box. If using anodized aluminum provided by Epilog Laser, the default value of 0.025" corresponds to the material.



15. Press the Start button. This calibration is very fast as the engraver simply notes and saves the current position of the table.

16. Press Done.

Move to the Autofocus Calibration procedure.

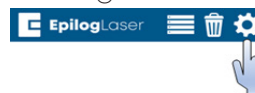
Autofocus Calibration

The autofocus calibration takes note of, saves, and uses the CO2 focus calibration value to ensure that the table moves to the correct focal height when running a job with the autofocus enabled. During this calibration, the table will rise up, depress the autofocus plunger, and then move back to the appropriate focal height.

Before completing the table calibration install the raster table.

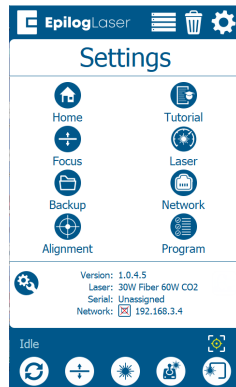
Since the table will rise to depress the autofocus plunger, use the Jog feature to position the lens carriage in a position which will prevent the autofocus plunger and lens cone from coming into contact with the left and or top ruler guides.

1. On the display, press the gear icon to enter the Settings menu:



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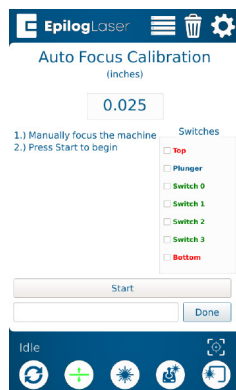
2. Once in the Settings menu, press the Focus button to enter the Focus Commands/Calibrations menu:



3. Press the AF Plunger button:



4. Press the Start button.



5. Allow the engraver to complete the calibration. Once complete, a success message should appear.

If further assistance is required, reach out to Epilog Laser Tech Support by phone at 303-215-9171, or by email at tech@epiloglaser.com.