



EPILOG LASER

16371 Table Mountain Parkway
Golden, Colorado 80403
Phone 303-277-1188 - FAX 303-277-9669
www.epiloglaser.com

Procedure Title: Optically aligning your FiberMark Laser Engraver

Tools Needed:

- #1 Phillips Screwdriver (For Side Panel)
- 3/32 Allen Wrench

Supplies provided:

- 1 ea. Alignment Target, provided with machine when new.



WARNING:

- **UNDER NO CIRCUMSTANCES ARE YOU TO ATTEMPT TO OPERATE THE FIBERMARK LASER ENGRAVER WITH THE SIDE PANELS REMOVED. SERIOUS, PERMANENT EYE DAMAGE MAY OCCUR.**



- **LEXAN SAFTEY GLASSES WILL NOT PROTECT YOUR EYES FROM THE FIBERMARKS LASER BEAM.**



Note:

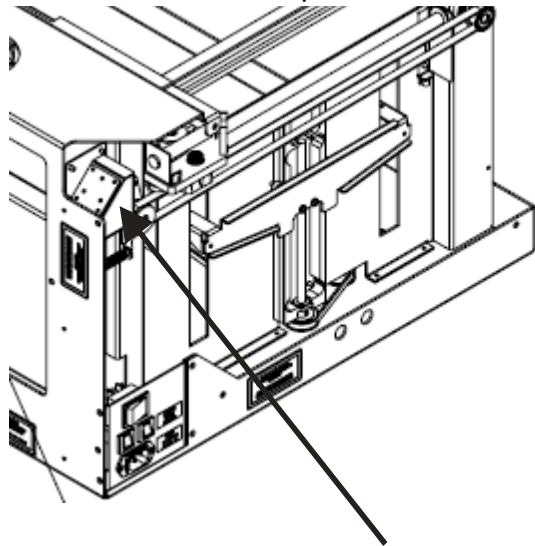
- Due to the construction of the Fiber Laser, the alignment will be performed using the Red Dot Pointer. There is no way to field align the red dot to the laser, as they are aligned internally in the laser.

Some conventions:

- The front of the machine is where the control panel is located. When facing the front of the machine, left is your left, and right is your right.

Procedure:

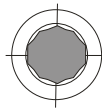
1. Turn off the power to the engraver
2. Unplug the engraver from its power source
3. Disconnect the Data Cable, USB and or Ethernet connection, from the engraver.
4. Remove the power cord from the engraver.
5. Remove the 6 #2 Phillips screws which secure the left hand side access panel. There are 4 on the side and 2 on the rear.
6. Locate the ORANGE periscope shown in diagram 2. This is located in the upper left rear corner of the engraver, behind the side panel that was removed earlier.



Left side of engraver
Arrow shows the "Periscope"
Diagram 2

7. Reconnect the FiberMark laser engraver to the power source. .
8. Install the Alignment target in the lens carriage

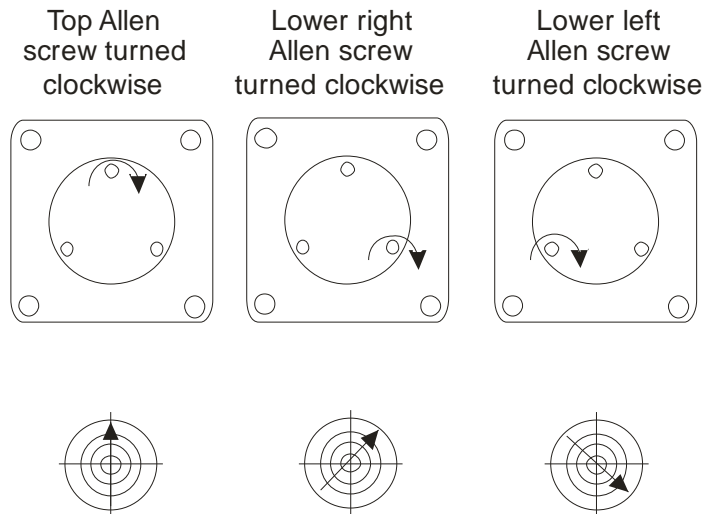
9. Turn on the engraver
10. Turn on the Red Dot pointer.
11. Depress the “X-Y Off” button on the control panel.
12. Depress the Go button, the carriage can now be moved around the table.
13. Move the X-Axis rail to the rear and the lens carriage to the far left hand side of the engraver.
14. Visually inspect the position of the red dot as it relates to the center of the target. Adjust the lower mirror (mirror 1) in the “periscope” until the red dot is centered in the alignment target. See the Diagram below for correct Red Dot position on Alignment Target.



Proper Red Dot position on alignment target

NOTE: The Red Dot pointer on the Fiber Laser is quiet large, roughly 3/8 of an inch when it is projected on to the surface of the target.

The diagram below illustrates the direction the Red Dot can be expected to move when the indicated mirror adjustment screw is turned.

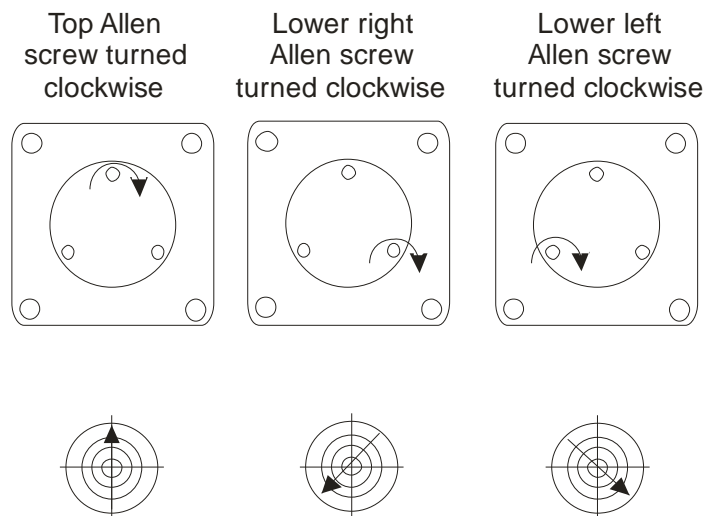


Mirror 1 adjustment diagram

15. Move the lens carriage to the left side of the X-axis rail and the rail assembly to the front of the engraver.
16. Adjust the Upper Mirror Mount so that the Red Dot pointer is located in the center of the Alignment target.

“Periscope” Upper Mirror (Mirror 2) Adjustment Diagram:

The diagram below illustrates the direction the Red Dot can be expected to move when the indicated mirror adjustment screw is turned.



Mirror 2 adjustment diagram

17. Move the X-axis assembly to rear of the engraver to verify the position of the Red Dot pointer.
18. If the pointer is not centered in the alignment target, adjust the Periscopes Lower Mirror so that the Red Dot is centered on the target.
19. Move the X-Axis assembly to the front of the engraver, again to verify that the Red Dot has not moved.

NOTE: By performing step XXX through step 19, you are minimizing the movement of the laser on the target when moving the rail from front to back. This is an important step and may require a couple of tries to minimize the amount of movement that you see with the red dot across the surface of the target.

20. With the X-Axis assembly all the way to the rear of the machine, Move the lens carriage to the far right hand side of the engraver. If the Red Dot image is on the target, using the adjustment screws on the back of the mirror mount, move the red dot in to the center of the target.

Carriage Mirror (Mirror 2) Adjustment Diagram:

The diagram below illustrates the direction the Red Dot can be expected to move when the indicated mirror adjustment screw is turned.

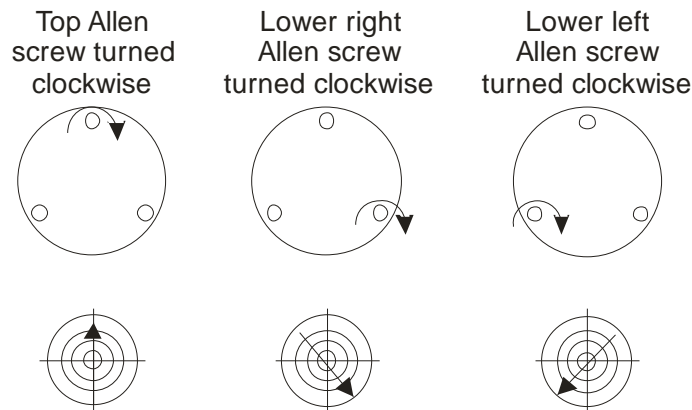


Diagram 1

21. Depress "Reset" to re-enable the axis, and to send the lens carriage back to the home position

This completes the replacing the optics portion of this technical note.

Confirming the Alignment

22. Install the Alignment target in the lens carriage
23. Turn on the Red Dot pointer.
24. Depress the "X-Y Off" button on the control panel.
25. Depress the Go button, the carriage can now be moved around the table.
26. Move the lens carriage to the left rear corner (position 1) of the engraver.
27. Check to see if the Red Dot is centered on the target.
28. If the Red Dot is not centered on the target, using the Lower "periscope" mirror and the "Periscope Lower Mirror (Diagram 4) Adjustment Diagram" above, adjust the Red Dot so that it is centered on the target.
29. Move the lens carriage to the left front of the engraver.
30. Using the Upper "periscope" mirror and Diagram 3 so that the Red Dot pointer is centered on the alignment target.

31. Move the lens carriage back to position 1 to verify that the alignment has not changed. If it has moved, complete steps 49 through 53 again, until there is little change in the red dot position when you move from the front to the back.
32. Move the X-axis rail to the rear of the engraver.
33. Check to see if the Red Dot pointer is on the target. Adjust as necessary to move the Red Dot image to the center of the target.
34. Move the lens carriage to the right, watching the position of the Red Dot, if it moves off of the target, stop; move the lens carriage back and adjust so the red dot is in the center of the target. Otherwise move the lens carriage to the far right hand side of the engraver, and adjust so that the Red dot is in the center of the alignment target.
35. One last time, with the Target in place and the Red Dot pointer on, move the lens carriage to the outer limits of the table, making sure that the Red Dot image stays in the center of the target.
36. You have now completed the Updating your FiberMark Optics.

If you have any questions please call Epilog's Technical Support

Phone 303.215.9171

Fax 303.531.7594

E-Mail: tech@epiloglaser.com