

## SECTION 12: OPTIONAL FEATURES

11. **Hunting Routine:** The laser carriage will start moving to find the first registration mark and precisely locate its exact location on the laser bed. The same process is followed to precisely locate the second mark.



After locating the second mark, the carriage will stop moving while it is directly over the second mark. At this point, the vector files is transferred to the Fusion and the Fusion is ready to start cutting.

12. **Close the lid** of the laser. Click the **Go** button on the keypad to start the job. The laser will then move away from where it stopped over the second registration mark and start the job.



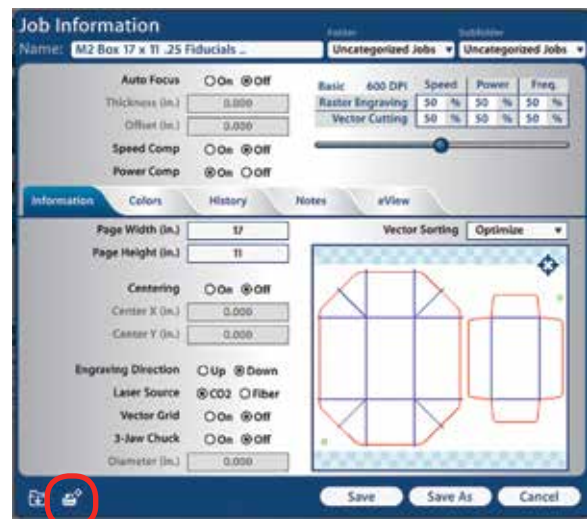
### Quick Print a Job

When you are cutting duplicate prints, you can quickly move from one piece to the next by using the Quick Print feature.

1. After you have run your first laser cutting, open the door to the laser and place your next item to cut in the same direction and vicinity as the last so the registration marks are within 1.5" (38 mm) of the

last position.

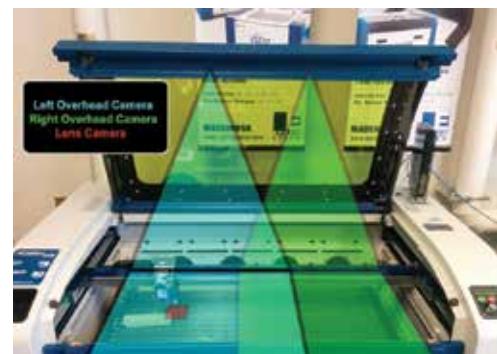
2. With the door to the laser closed, click on the Quick Print icon in the Job Manager. The camera system will move out to do a quick hunt for the registration marks then start the cutting process.



### Camera Calibration Routines

There are three camera calibration routines available to align the two overhead and one lens carriage camera. If you see severely blurry or double images from the overhead cameras, you will need to calibrate the system. Since the overhead cameras are used to approximate the location and orientation of the printed artwork, **slight imperfections in the video feed will not impact the precision of the vector cut paths.**

**All three calibration routines should be run *in the correct order* to correctly calibrate the cameras.**



## Checking Camera Calibration

To check the overhead camera calibration, you must have set up your laser system in the Epilog Job Manager. For more details, see **“Activate a Laser” on page 38.**

1. To check the overhead camera calibration, **open the top door.** Open the Job Manager and find one of the eView Camera jobs you have sent to the laser. If you still need to setup a file, see **“Setting Up the Print File” on page 133.**
2. Click on the **eView tab**, and the screen will show the video feed from the overhead cameras. When the door cameras are properly calibrated, the image is crisp, clear and covers the entire table.
3. If there is a severe double image, then the cameras will need to be calibrated. **You will need to follow all three calibration steps that follow.**



If you see a double image, first make sure the table is in focus. An out of focus image will cause distortions in the image.



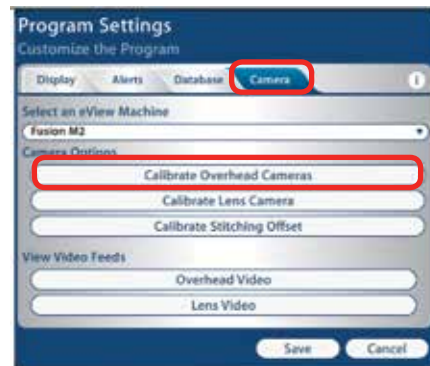
Remember, the two overhead cameras in the door show the approximate location and orientation of your printed artwork on the laser bed. Slight imperfections in the video feed of the overhead camera will not impact the precision of the vector cut paths. If you see slight blurriness of the display, there is no need to run the calibration settings.

## 1) Overhead Camera Calibration

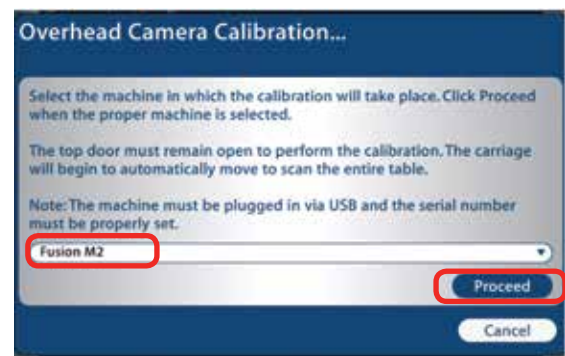
1. Click on the settings icon in the upper right corner of the Epilog Job Manager.



2. Click on the **Camera tab**, then **Calibrate Overhead Cameras.**



3. Select your laser from the drop-down menu, then click the **Proceed button.** The calibration routine will start immediately. The lens carriage will move across the bed left and right, from top to bottom, in order to map the entire Fusion table.



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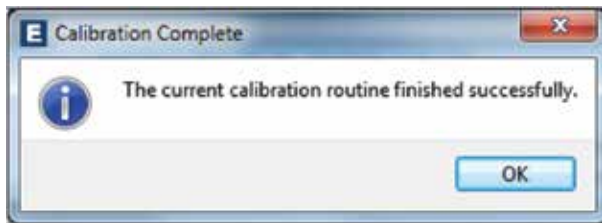


This will take approximately ten minutes but can take longer under low light conditions.

- 4. As the carriage moves across the table, the overhead cameras precisely map and record the exact location of the Lens Registration mark that is on top of the carriage. It then uses a complex calculation to precisely pinpoint where the carriage is located at any point above the laser bed.



- 5. When finished, the calibration video feed will disappear and the Calibration Complete window will appear. **Press OK.**



After running the Calibrate Overhead Cameras routine, **you must run the Calibrate Lens Routine and the Calibrate Stitching Routine.** Move on to the Lens Camera Calibration.

## 2) Lens Camera Calibration

The second step requires the calibration of the camera located at the lens carriage. The lens carriage camera takes the images from the overhead camera and uses them to precisely define the location and orientation of your artwork on the laser bed.

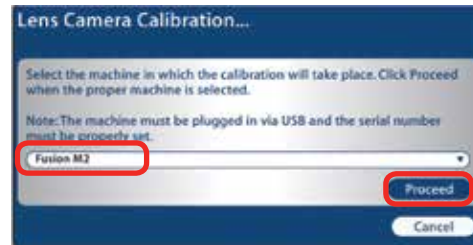
- 1. In the Job Manager, click the Settings icon.



- 2. Click the **Camera tab** then, **Calibrate Lens Camera.**



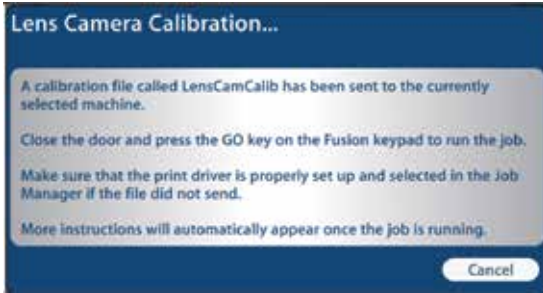
- 3. This process engraves five location points onto a piece of anodized aluminum. You will need a 6" x 6" (152.4 x 152.4 mm) or larger piece of anodized aluminum or other very high contrast material (such as black and white plastic) to complete this process.
- 4. Place the aluminum into the upper left corner of the laser bed.
- 5. Select your machine and click the **Proceed** button.





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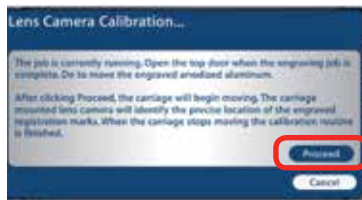
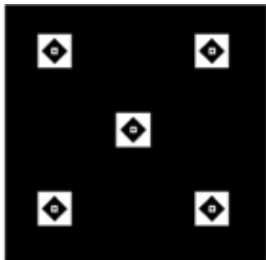
- 6. Clicking the Proceed button sends a job titled “**LensCamCalib**” to your laser. Close the top door and press the **Go** key on the Fusion keypad to run the job.



- 7. The job engraves five specially designed registration marks on the anodized aluminum piece.



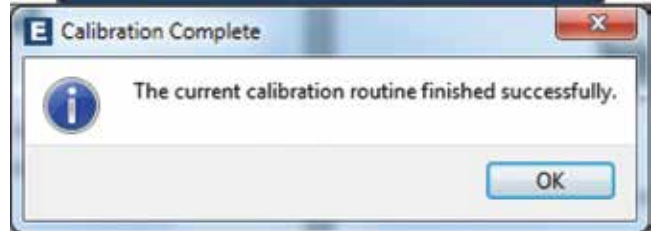
Once the engraving is complete, open the door, but do not touch or move the engraving until all of the steps below have been completed. Press the **Proceed** button.



- 8. The system will now analyze the exact position of the registration marks by moving the carriage over the engraved piece. The system will annotate the images with cross-hairs as it calculates the precise location of the lens camera relative to the engraving.



- 9. Once the Lens Camera Calibration routine has finished, the lens camera will be fully calibrated. Press the **OK** button and move on to the third step - calibrating the stitching offset.



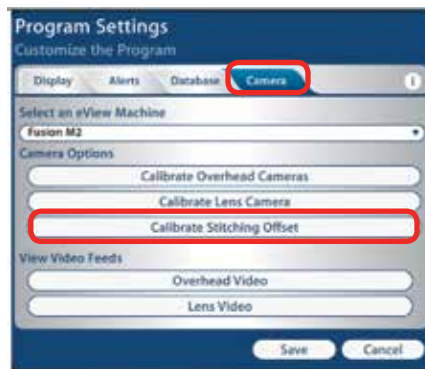
## 3) Calibrate Stitching Offset

After calibrating the overhead and lens cameras, you will need to run this routine. The calibration routine stitches the two overhead camera views together where they overlap in the middle of the table.

- 1. Click the **Settings** icon.



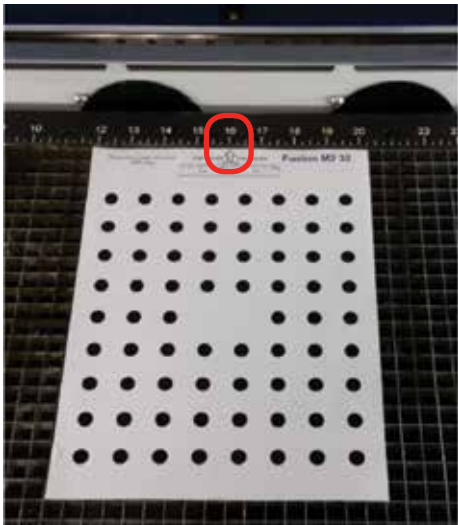
- 2. Select the **Camera** tab, then **Calibrate Stitching Offset**.



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### Dual Source Option

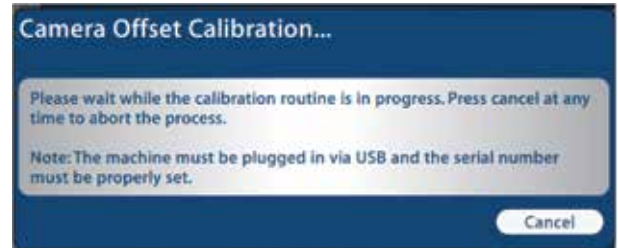
- You will need to print out the alignment form before you can proceed with this routine. Download the form at [www.epiloglaser.com/calibration](http://www.epiloglaser.com/calibration).
- Place the arrow on the calibration printout up against the top ruler at the middle of the table. This routine identifies the size and location of the circles on the printed paper to perform the stitching calibration. You do not need to remove the vector grid to perform this routine.



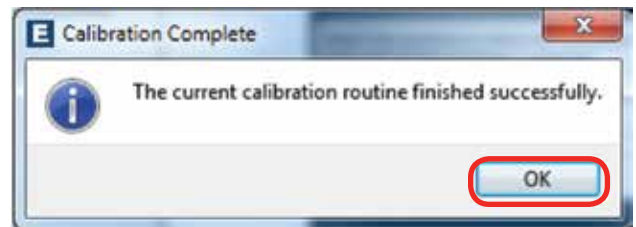
- After properly placing the calibration form, click the **Proceed** button.



- The carriage will automatically move back and the table will move to its focus position before the calibration routine begins. This routine only takes a few seconds.



- When the stitching calibration is complete, the Finished window will pop up. Click **OK** and the calibration routine is complete. Press the Reset key on the Fusion keypad to return the carriage to its standard Home position.



## Dual Source Option

If you have chosen the dual source option on the Fusion M2 32, you get the benefit of a CO<sub>2</sub> and fiber laser source both in one system. The operation of this system is fundamentally the same as running either the CO<sub>2</sub> or fiber laser separately. In a typical job when you are using only the CO<sub>2</sub> or only the fiber laser, you will set your laser source in the Default Settings section of the Epilog Dashboard Print Driver.

