

CCD Calibration

The following document will explain the steps needed to reinstall the CCD camera when the LV-290 Rotary is removed.

CCD Camera Calibration

• This calibration is to identify the offset between the laser beam and the CCD camera. This will allow for a very tight print cut.

Step One

• Follow the instructions in document "prep for lv laser engraver using adobe" and "Print Cut Work Flow" to generate a PRN file for this calibration.

Step Two

• You will need a black surface for this calibration. For this example, I am using a piece of 3" x 3", 3mm thick piece of wood which I covered in a black piece of vinyl.

Step Three

• Start SmartCONTROL software. Click ok on the pop-up and create a new file. Import the PRN from Print Cut workflow.

File> Import> Select the PRN then click open

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Step Four

• Select Vision> SmartCONTROL Vision



- Select "CCD Calibration"
- Use the slider to adjust the cutting power for the material being used.
- Next: click "Apply" followed by "Start Calibration"







Step Five

- Place the chosen black media on cutting table (top right recommended). Using the black knob on the right side of the LV-290, adjust the cameras light until the material is clearly visible in the display below.
- Click "Start Calibration". You will receive the pop-up message shown below. Gently adjust the carriage by hand placing the laser pointer over any unused area of the material near the upper left-hand side. *NOTE:* The area that will be marked is 3mm by 3mm.

Click "OK" to start the calibration marking process. *Note:* please make sure that the key is turned on and the lid is closed for these steps.





• The following image is an example showing how to use the laser pointer to line up where the LV-290 will mark/engrave.







Step Six

- When the calibration marking is complete, the CCD camera will automatically move over the top of the mark.
- Next: Click on "Mark Learning"
- Change the Mark to "0"
- Next: Using your mouse, drag and drop the Red ROI icon (shown below) over the new calibration mark.
- **Next:** click the "Start Learning" button. A snapshot of the image will be automatically taken to confirm.











Snapshot image shown below.

Progress	
Mark1 O Mark3 O Mark2 O Mark4 O Verify	USB Status CCD Status Laser Position $X = \boxed{-27.17}$, $Y = \boxed{2.47}$ CCD Center Position $X = \boxed{4.11}$, $Y = \boxed{3.85}$ Move Learn ROI with Arrows

Step Seven

- Click on "CDD Calibration" tab followed by "Start Calibration"
- Adjust the carriage by hand making sure the laser pointer is anywhere to the righthand side of the original mark.
- Next: Click "OK" on the pop-up box shown below.

SmartCONTROL Vision: LV-290		- 🗆 ×
CCD Calibration Mark Learning Advanced	DL × ep3: Move laser carriage to blank area OK Cancel	FDV:1280(H) x 1024(V) Pixels
	USB Status CCD Status Laser Position X= [-27.17], Y= [2.47] CCD Center Position X= [4.11], Y= [3.85]	Imagine.



Step Eight

SmartCONTROL Vision: LV-290	_	
CCD Calibration Mark Learning Advanced Offset X 31.280 V 1.388 Default Laser Power Apply '' 88% Start Calibration Save	SmartCONTROL X	F0V:1280(H) x 1024(V) Pixels
	Step3: Move laser carriage to blank area	
	USB Status CCD Status Laser Position X= [27.17], Y= [2.47] CCD Center Position X= [4.11], Y= [3.85] Move Learn ROI with Arrows	STOP ONTROL Vision

- Move carriage a different spot on the work piece and click "OK".
- The machine will mark and measure the laser offset.





• If the machine failed. Please repeat the steps in this document.

