

# DLF Training

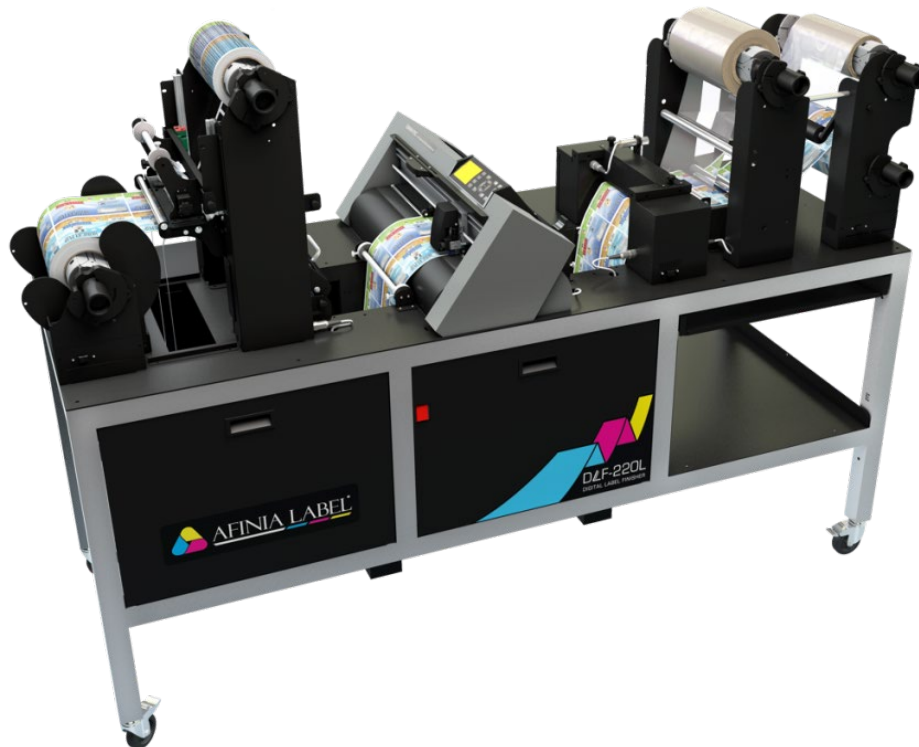
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# DLF L Series

	DLF-220L	DLF-350L
<b>Input / Output Roll Diameter</b>	9.84" (250 mm)	9.84" (250 mm)
<b>Minimum Web Width</b>	4.33" (110 mm)	4.33" (110 mm)
<b>Maximum Web Width</b>	8.86" (225 mm)	14" (355 mm)
<b>Maximum Cutting Width</b>	7.87" (200 mm)	13" (330 mm)
<b>Minimum Slitting Width</b>	0.75" (19 mm)	
<b>Minimum Label Length</b>	0.39" (10 mm)	
<b>Maximum Label Length</b>	15" (381 mm)	
<b>Lamination Module</b>	YES	
<b>Number of Slitting Blades</b>	up to 8	up to 13
<b>Minimum Media Thickness</b>	0.01" (0.25 mm) (10 mil)	
<b>Maximum Cutting Speed</b>	24 in/s (600 mm/s) in all directions	
<b>Roll Core Size</b>	3" (76 mm)	
<b>Agency Certifications</b>	CE, FCC, RoHS	
<b>Warranty</b>	One Year Parts and Labor. Usage Limitation may apply	



## 1. Installation

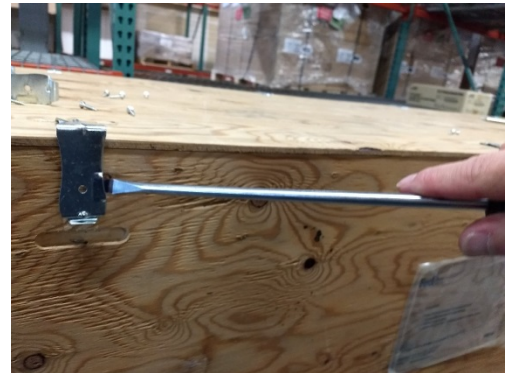
**Team Lifting is required when moving any of the DLF Series Finishers!**

### Uncrating

1. Remove screws from all clips on the front of the crate
  - a. The top, left, and right sides will have 1 screw on each side of the clip
  - b. The bottom clips will only have screws on the front, not on the bottom of the crate



2. Remove the clips using a flat-blade screwdriver



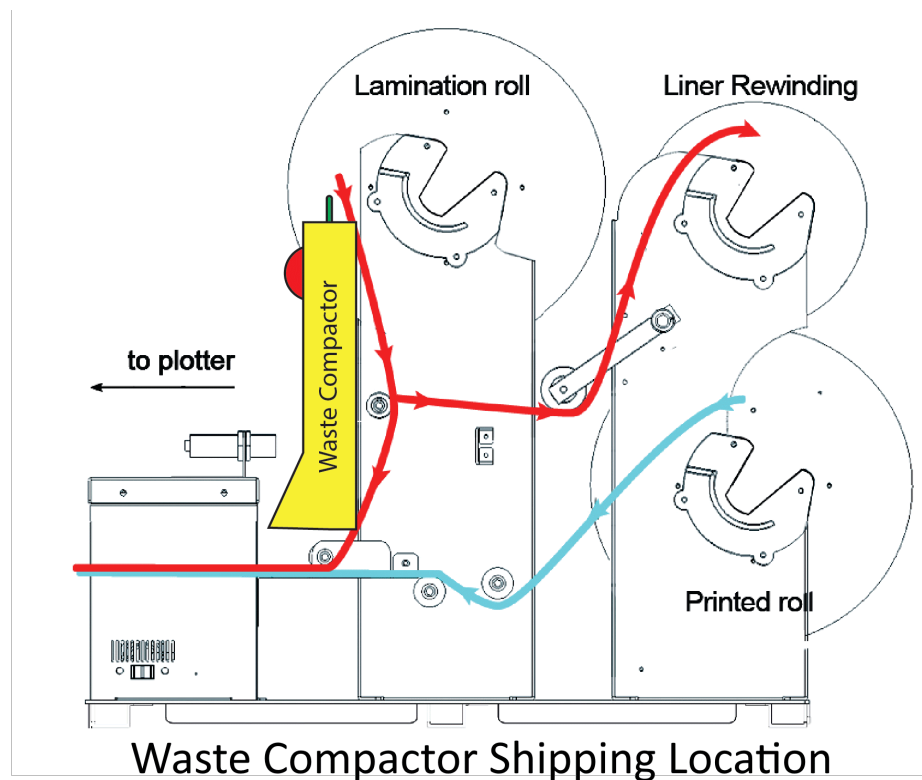
3. Remove all packing materials from inside the crate
4. The DLF will be mounted on top of two wooden stands inside the crate. You will need **THREE PEOPLE** to safely remove the DLF from the crate.
5. Partially slide the DLF on top of the two wooden stands until there is room on the sides of the DLF for a person on each side to have a hand hold
6. Carefully slide the DLF the rest of the way out of the crate and lower the DLF-220L to the floor
7. Remove stretch wrap, wire ties, foam, and bag from around the cutter

### Leveling

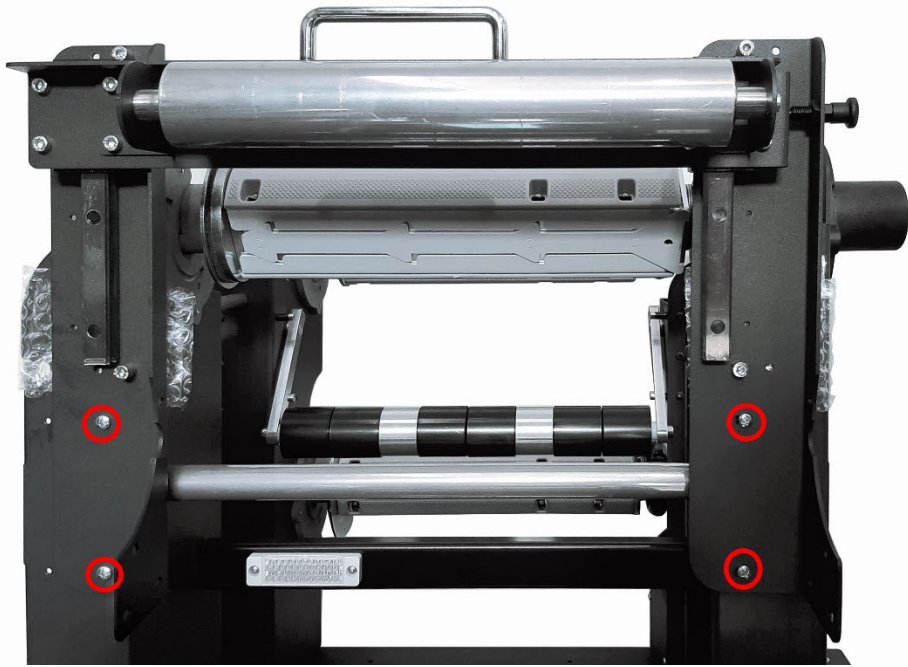
Although leveling is not critical, the DLF Series finishers should be operated in as level of an environment as possible.

## Waste Compactor Installation

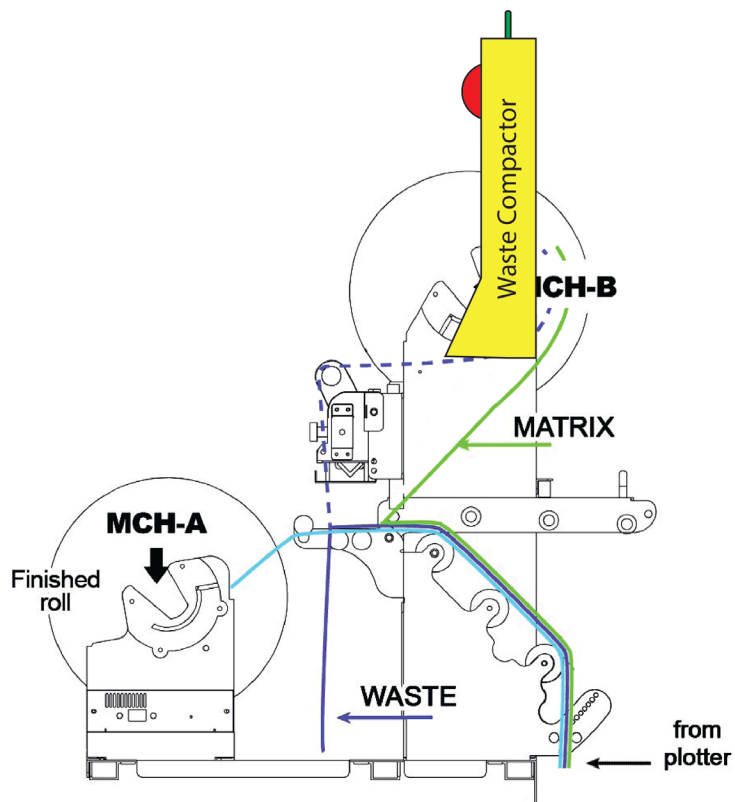
The DLF-220L units come with a waste compactor assembly that needs to be installed once the unit is uncrated. The assembly is installed due to shipping onto the Laminate Mandrel Tower of the unit and looks like the below images when removed from the crate.



The assembly is held temporarily with 4 Philips screws.

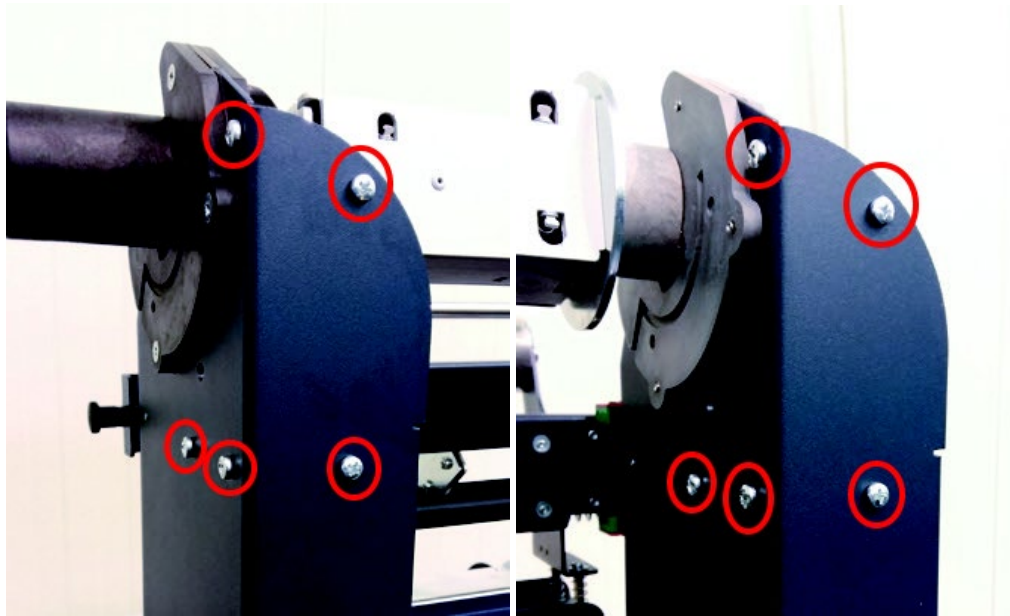


Once the assembly is removed, it is to be installed above the Waste Take-up Mandrel as shown below.



Waste Compactor Installed for Operation

In this location on the Waste Take-up Mandrel Tower there are 10 Philips screws pre-installed that need to be removed. Once the 10 screws are removed, you position the waste compactor onto the Waste Take-up Mandrel Tower and reinstall the screws.



Once installed, the Waste Compactor Assembly can be locked in the up position using the lock pin on the side of it as shown below.





## Dongle and USB Connections

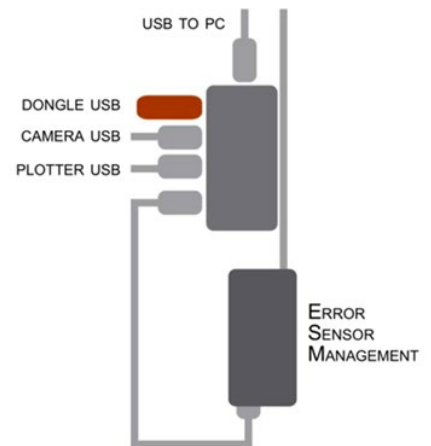
Verify power and USB connections to cutter, PC, and dongle is in place

### DLF-220L

- a. Power connection is located behind the left front panel, behind the center-left front support beam. The leftmost side panel on the operator side can be removed to view this plug location.



- b. USB connections and dongle are located behind the center front panel

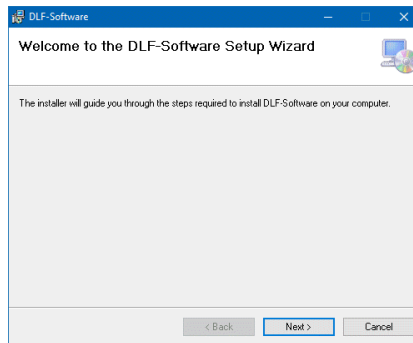




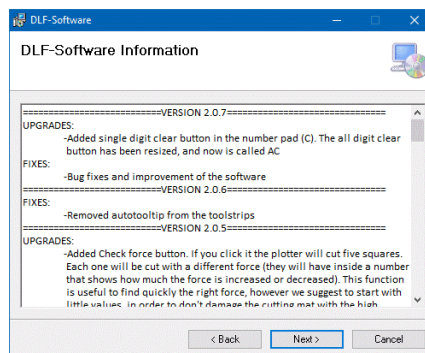
## DLF Software Installation

The DLF-Software needs to be installed on a Windows computer. You will want to disable any additional webcams/imaging devices on the computer so the Cutter's Webcam is properly detected by the software. Run the installer **BEFORE** turning on the DLF and plugging into the computer.

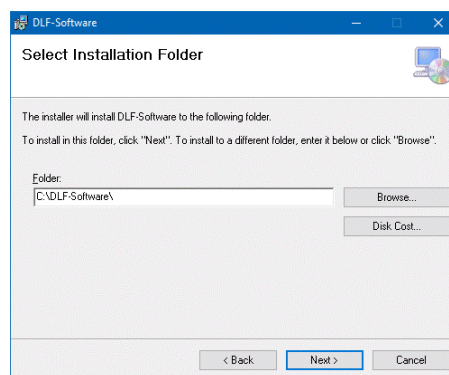
1. Open the Setup DLF-Software X.X.X (X referring to version number)
2. Once opened you will be presented with a DLF-Software Install Wizard, click Next



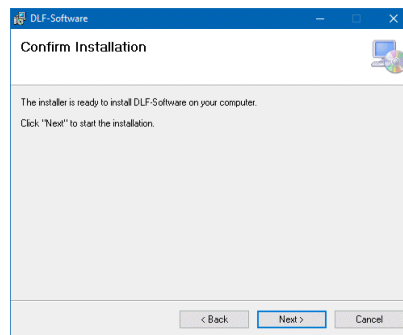
3. Next screen shows a change-log for the software. Click Next again



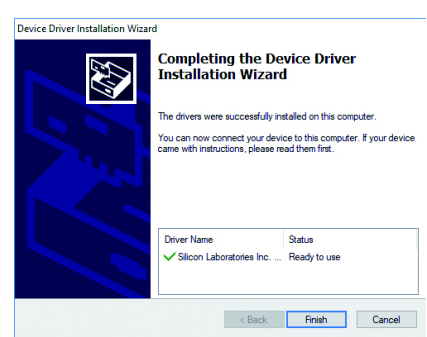
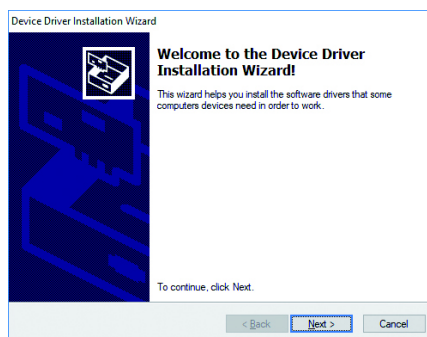
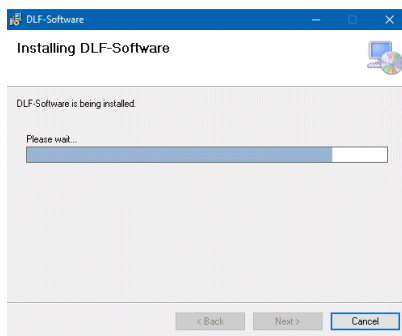
4. Next screen will show the default install directory for the DLF-Software (**C:\DLF-Software\**). It is recommended you don't change this. Click Next.



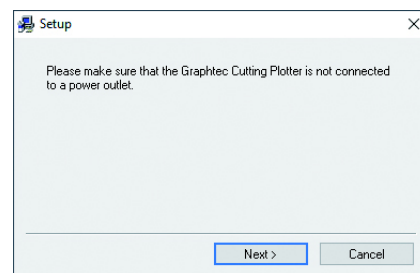
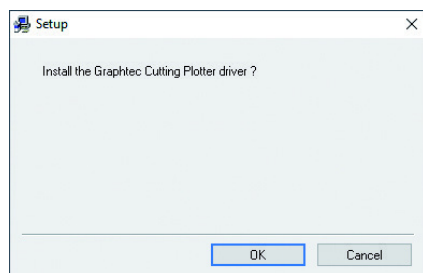
- Next screen is a confirmation window that the installer is ready to proceed. Click Next.



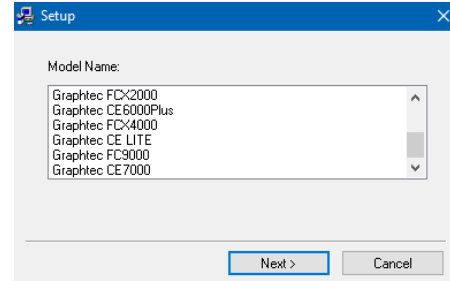
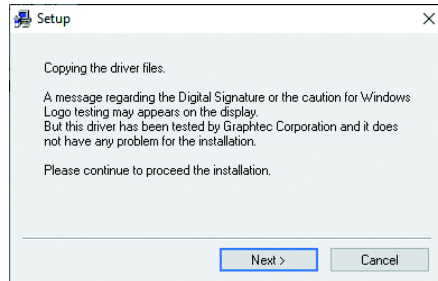
- The installer will start running the installation process and provide a progress bar. Once the progress bar is finished a second window will pop up, Device Driver Installation Wizard. Click Next on the Device Driver Installation Wizard Window. The driver will install and provide a confirmation that the driver installed properly. Click Finish



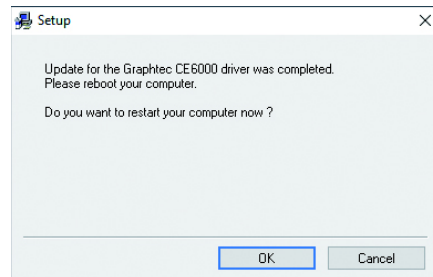
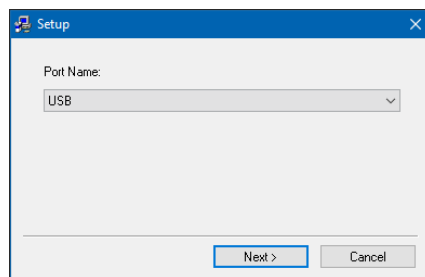
- After Clicking Finish on the Device Driver Installation Wizard, another window will pop up for the Graphtec Cutting Plotter Driver. Click OK to start the process. The next window will provide a prompt to confirm you have not plugged in/turned on the cutter on the DLF before proceeding to the next step. Click Next.



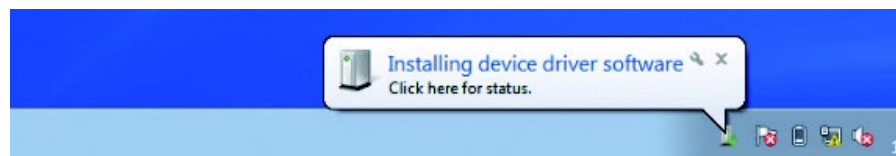
8. The next screen indicates that you might see a Digital Signature Driver install prompt when running this driver installer. Click Next. The next screen will show you the Graphtec Cutter Model Selection Screen. Check the model number on the top of the Graphtec cutter installed on your DLF unit. Select the appropriate Cutter name from the list (typically **CE6000Plus** or **CE7000** depending on age of unit). Click Next.



9. The next screen will ask what connection type you will be using to connect to the Graphtec cutter with. The DLF only support USB connections to the cutter, select USB and click Next. The installer will proceed with the installation and may prompt you with a Digital Signature Driver install prompt. Click Install on said prompt if it appears. After a few minutes you will be greeted with an Installation Complete screen. You may need to reboot your computer. Click OK.



10. After that the DLF-Software Installer will say it is complete and the software ready to use. A shortcut for the software will appear on your desktop.
11. At this time you can plug in/turn on the DLF unit. Your computer will prompt you that it is installing Device Driver Software. Once Windows is done with the installation of the drivers it will prompt you that your device(s) are ready to use.



## 2. Artwork

The requirements for the artwork, registration mark, and cut lines are the same across all current DLF models.

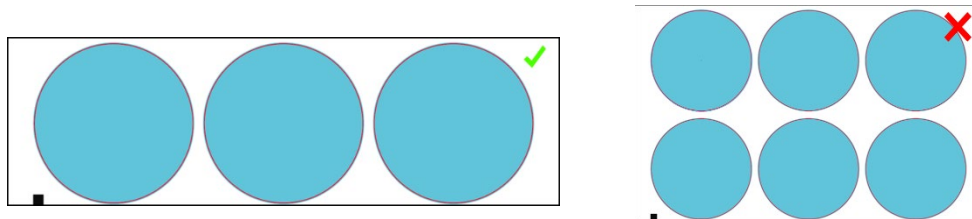
### Artwork Layout

It is recommended that the artwork be designed to the width of the stock being used.

This will help ensure during the design process that there is enough room on the stock for the artwork, registration mark, and any needed blank space for best operation of the finisher. Doing so reduces the chances of needing to modify the artwork once production begins.

All of the DLF Series cutters use 10mm pinch rollers. The pinch rollers press hard enough on the grit roller to impress the texture of the grit on the media. Because of this texture, artwork should never be closer than 10mm to either edge (the pinch rollers should always be fully on the stock, but as close to the edge as possible).

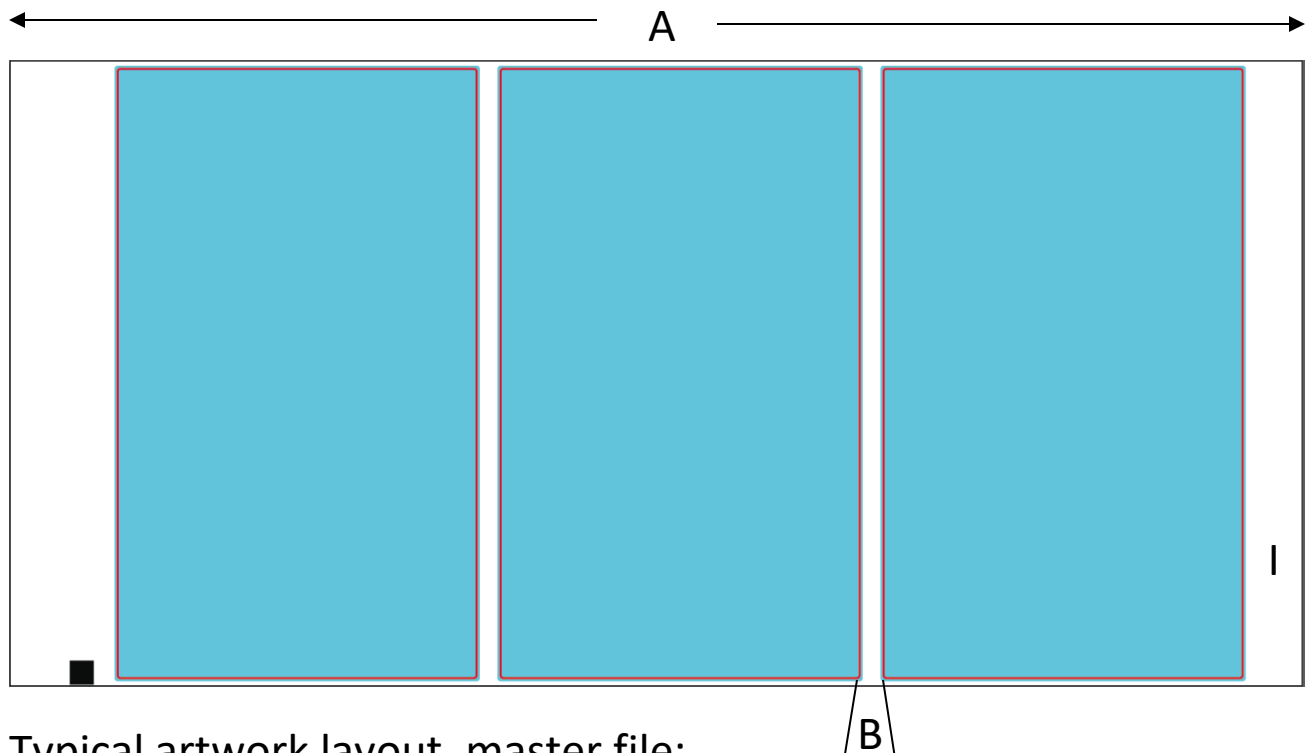
It is also recommended that you design your artwork as a single row, since multiple rows extend the distance away from the blackmark and reduces accuracy.



There are some additional placement requirements, which are discussed below.

### Registration Mark (Blackmark) Requirements

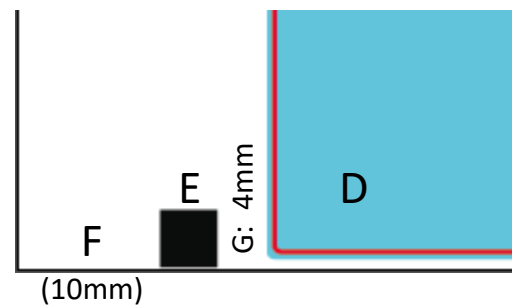
- **The registration mark must be either a 4mm x 4mm OR a 2mm x 2mm 100% black square**
  - a. Either can be used, but the correct reg mark size must be selected in the software. Software default is 4mm x 4mm.
- **The mark must be a minimum of 5mm from the left edge of the stock**
  - a. This does place the mark under the left pinch roller, which was not allowed with previous software. If the end user is concerned about reg mark recognition in the area of the stock textured by the grit roller, they can move it to 10mm or more from the edge.
- **The mark must be the lowest object in the artwork**
  - a. No part of the artwork or cut line can be below the bottom of the reg mark.
- **The mark must be the left-most object in the artwork**
  - a. The left edge of the reg mark must be the furthest left object in the artwork, but it doesn't have to be by much.
- **There must be 4mm of unprinted space between the reg mark and the artwork**
  - a. Generally the mark will be to the left of the artwork, minimizing the gap between pages
  - b. Alternately, the mark can be 4mm below the artwork (still left-most), but will need 4mm of blank stock top and bottom to ensure good reg mark identification.

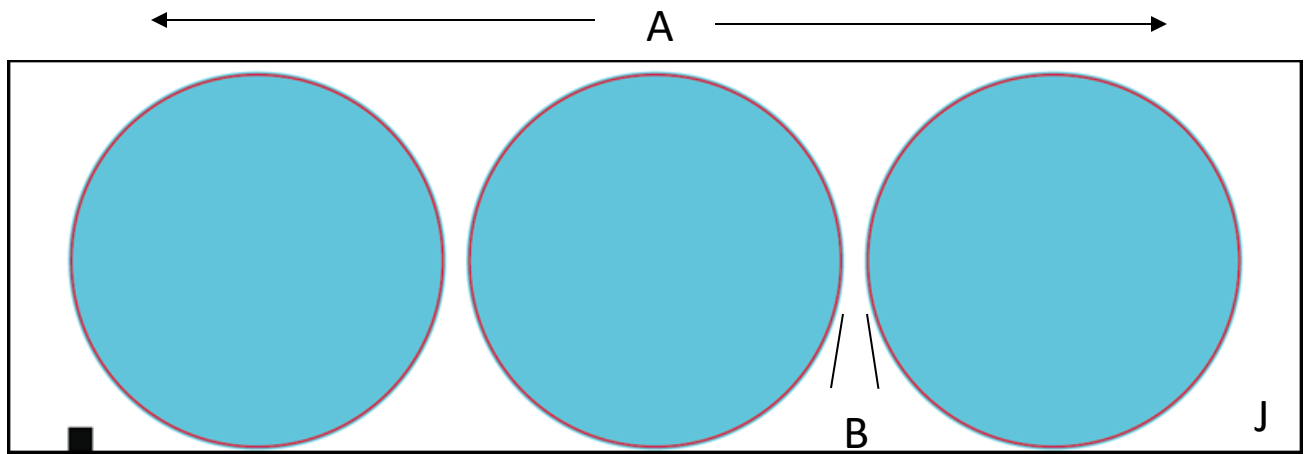


## Typical artwork layout, master file:

Cut lines in the above file are the red lines. These would be hidden for printing.

- A. 8.5" wide to match stock width
- B. Approximately 0.15" horizontal gap between labels for good weeding
- C. Gaps at top and bottom provide enough separation of pages (> 0.125") for good weeding
- D. 0.5mm overbleed past cut lines on all sides
- E. 4mm x 4mm reg mark
- F. Reg mark 10mm from left edge
- G. 4mm between right edge of reg mark and left edge of artwork
- H. Bottom of reg mark below bottom of artwork, cut lines
- I. Right edge of artwork at least 10mm from right edge of stock

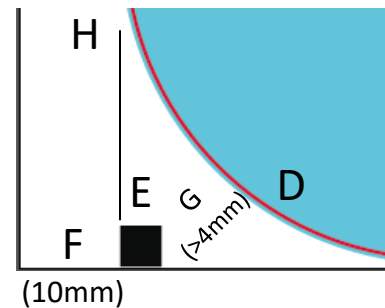


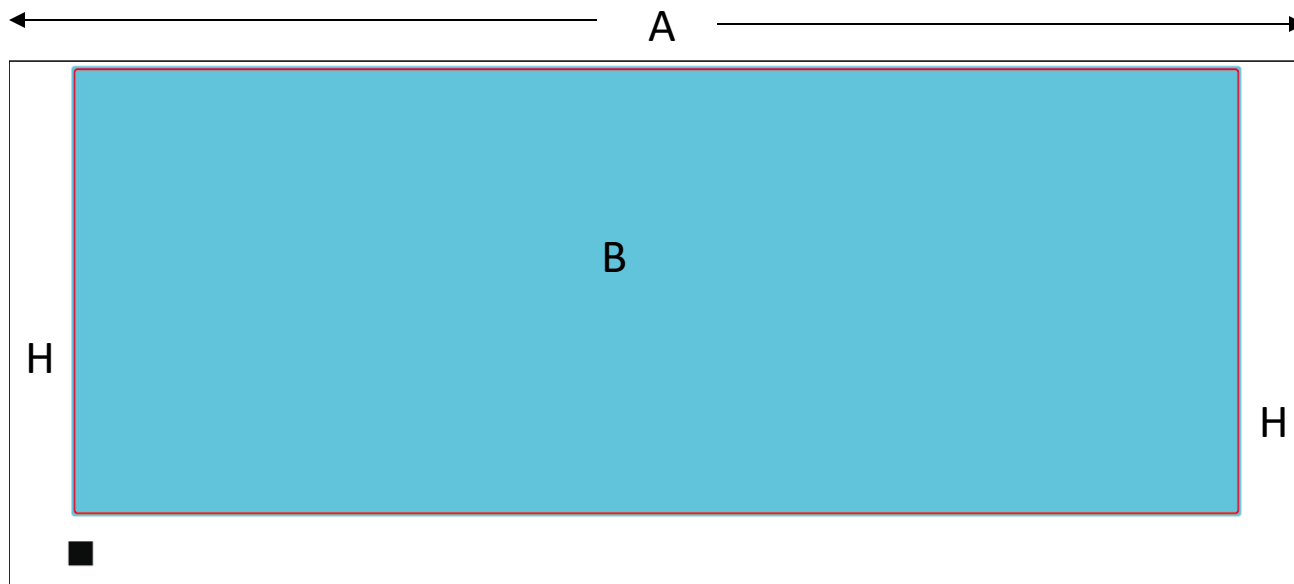


## Less typical artwork layout, master file:

Cut lines in the above file are the red lines. These would be hidden for printing.

- A. 8.5" wide to match stock width
- B. Approximately 0.15" horizontal gap between labels for good weeding
- C. Gaps at top and bottom provide enough separation of pages (> 0.125") for good weeding
- D. 0.5mm overbleed past cut lines on all sides
- E. 4mm x 4mm reg mark
- F. Reg mark 10mm from left edge
- G. > 4mm between reg mark and artwork
- H. Left edge of reg mark is slightly farther left than left edge of artwork
- I. Bottom of reg mark below bottom of artwork, cut lines
- J. Right edge of artwork at least 10mm from right edge of stock





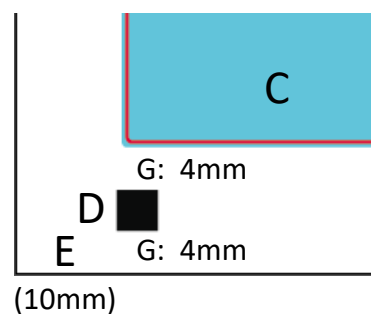
## Unusual artwork layout, master file:

This layout would be used to achieve maximum cut width, across the full width of the stock minus the pinch rollers.

This type of layout is not an efficient use of stock, as about a half inch of waste between labels will be created. Better results would be achieved by rotating art and cut lines 90 degrees and cutting multiple across, if possible. If multiple across would not fit on the stock, narrower stock would be the next better option.

Cut lines in the above file are the red lines. These would be hidden for printing.

- A. 8.5" wide to match stock width
- B. Width of cut lines is maximum width (approximately 196mm)
- C. 0.5mm overbleed past cut lines on all sides
- D. 4mm x 4mm reg mark
- E. Reg mark 10mm from left edge
- F. Reg mark still left-most object by slight amount
- G. 4mm gap required above and below reg mark
- H. Left and right edges of artwork 10mm from edge of stock



## Save the Master File

Ultimately, three files will be saved: the **Master** file, the **Print** file, and the **Cut** file.

The Master file will include all elements needed, such as the reg mark, artwork, and cut lines.

If any modification needs to be done to the artwork, those changes would be made in the master file, which would then be used to replace the print and cut files.



### Save the Print File

To create the Print file, hide the cut lines and save the file as a pdf (if not printing directly out of Illustrator).

### Save the Cut File

To create the Cut file, show the cut lines, **delete** (don't hide) the artwork layers, and save as a pdf (required for the cutter control software).

### Special Cut Line for perforations

Software versions 1.70 and later include an option to turn **100% Magenta** cut lines into perforated lines.

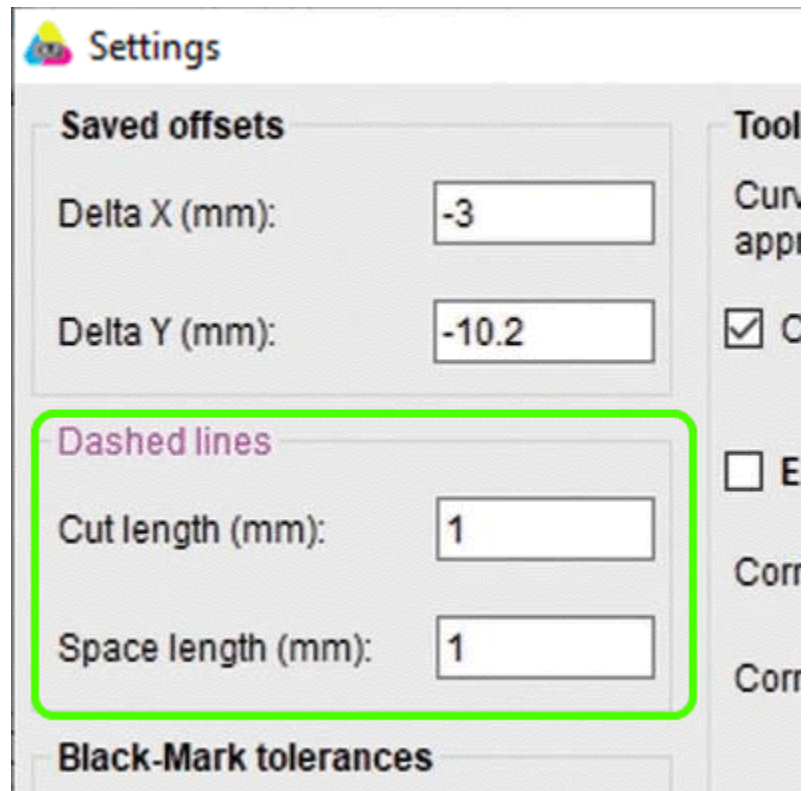
Select **Advanced**, then **Settings**.

Set the **Cut Length** and **Space Length** to define how long each cut is and how much space there will be between dashed cuts.

Click **Save** to change the values.

To cut 100% magenta lines as solid lines, set both the cut and space lengths to **0**.

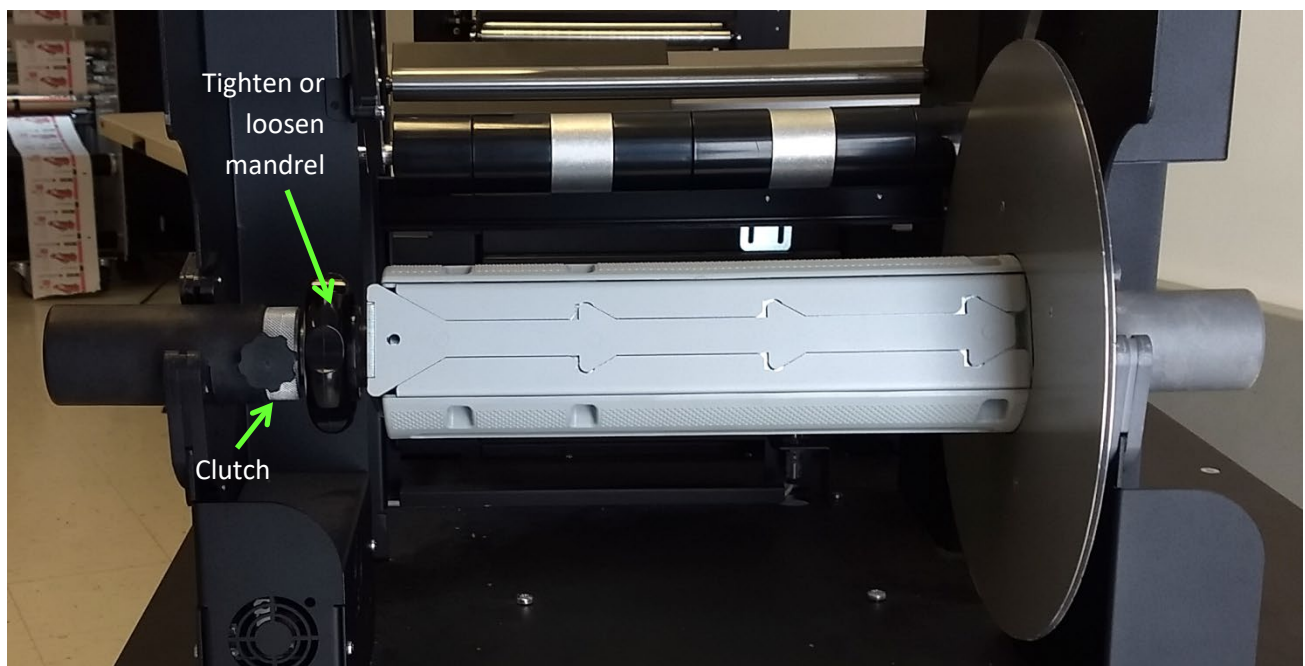
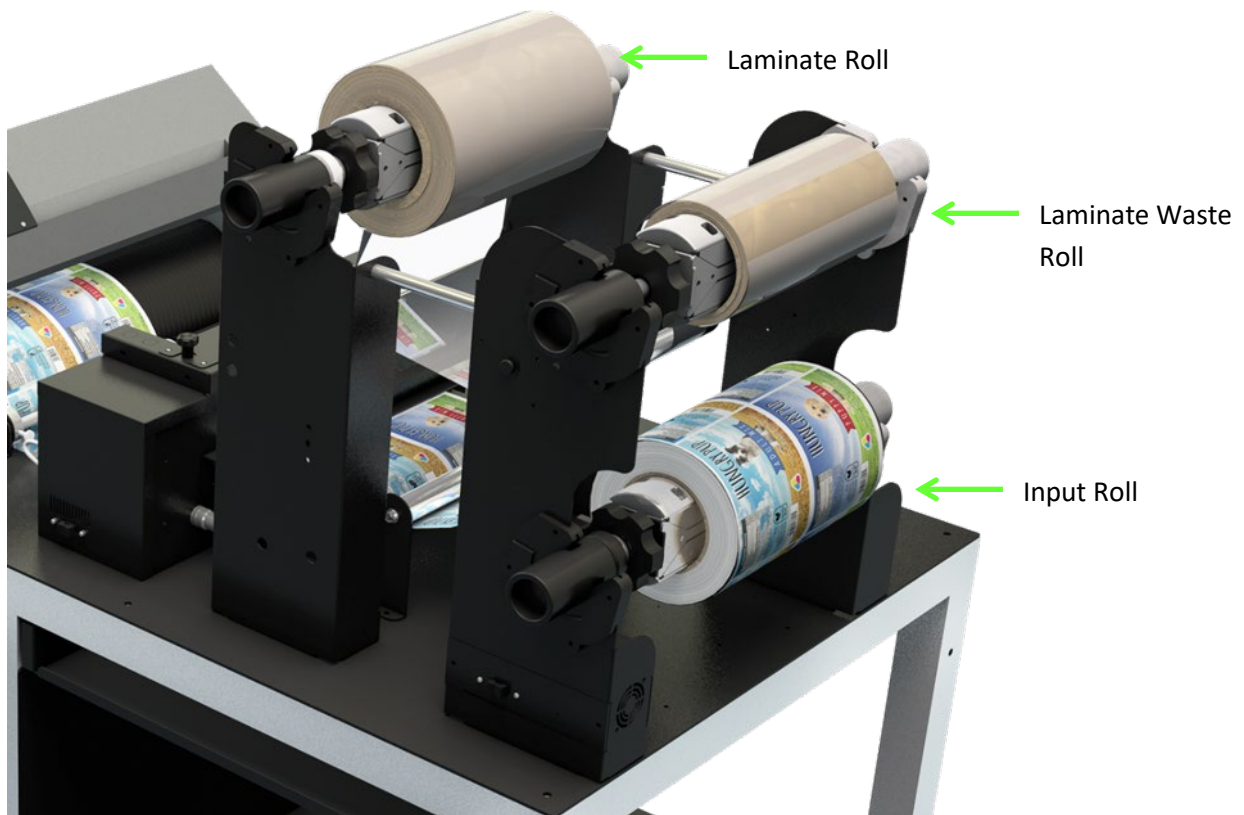
Additional Setting options in this menu will be addressed later in this training manual.



### 3. Loading Media and Laminate

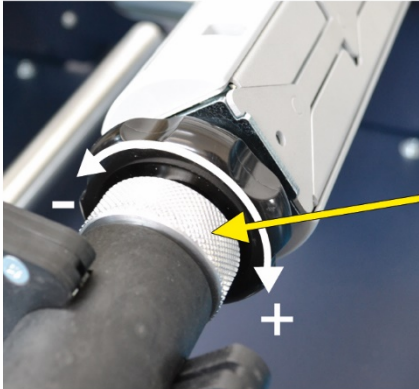
#### Loading Media

The DLF-L Series finishers have a maximum input roll OD of 9.84" (250mm)



Load the printed input roll onto the input mandrel, pushing the stock up against the mandrel plate. Turn the black knob clockwise to tighten the mandrel on the core.

Loosen the thumbscrew on the clutch to change the clutch tension; tighten the thumbscrew when the tension is set correctly.



- Turn the metal collar counter-clockwise to reduce tension if the roll will not turn easily
- Turn the metal collar clockwise to increase tension if the roll continues to unwind after the rollers stop pulling media

Too little tension is preferable to too much tension.

Unroll a length of printed media. Pass the media under the first metal roller and back over the next bar.

Feed the media into the roller and, with the roller switch set to MANUAL, press the FORWARD button to feed a small amount of stock through the rollers until the leading edge is visible on the output side of the roller assembly



## Loading Laminate

Like the media mandrel, the laminate also has a clutch (silver collar) that is used to hold the mandrel in place. Again, the clutch should be tightened only enough to keep the laminate from over-feeding.

The laminate should be narrower than the stock; recommend  $\frac{1}{4}$ " narrower minimum.

Because of this, the laminate should **not** be pushed all the way back to the laminate mandrel plate, but positioned so that it is centered on the loaded stock.

Load the laminate so it unloads with the adhesive side on the right. The roll will be unwinding counter-clockwise.

Adhere the laminate as smoothly as possible to the center of the stock, and as close to the metal roller as possible.

If using lined laminate, pass the liner under the waste tension arm and up onto a core on the laminate liner mandrel.

Once attached to the roll, turn the liner takeup switch to the ON position.





## 4. Loading Cutter

With the right panel switch set to MANUAL, press the FORWARD button to feed media and laminate.

The laminate will smooth out as material is being fed.

If the laminate is past the edge of the stock, loosen the laminate mandrel and reposition the laminate to a more centered position. Do not forget to tighten the laminate mandrel again!

Feed enough media to thread under the right tension arm and up through the right media guide.

Next, drop the pinch roller arm to release the rollers and pass the media through the cutter and under the pinch rollers.

Feed the media into the left media guide.

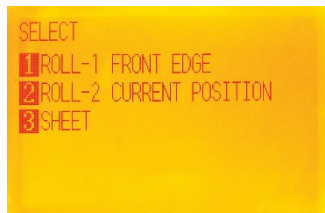
Position the stock so the back edge of the stock is slightly against the rear media guides.

Position the front moveable media guides so they are just touching the front edge of the stock. They should not be pressing against the stock.

Adjust the pinch roller positions so they are fully on the stock but as close to the edge of the stock as possible. The outer edge of the pinch roller wheel should align or be slightly inside the outermost edges of the media.

Lower the pinch rollers.

Press **2** on the cutter control panel to auto-detect the stock width.



Switch the right panel to AUTO. The green LED near the switch will turn on.

At this point, you can either continue to feed media through to complete the stock path or start cutting to reduce the amount of waste material.

## 5. Blade Exposure

Blade exposure is critical to accurate cutting, and should be the same thickness as the material you are cutting through.

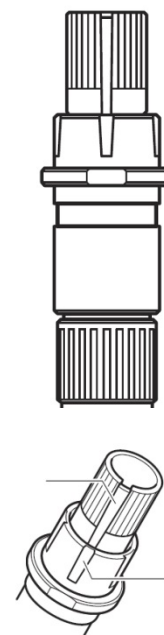
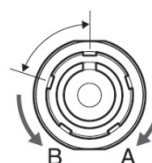
Too little blade exposure will keep the cut from being clean.

Too much blade exposure can result in cutting through the liner and potentially damaging the cut strip.

Too much exposure can also cause bad cut results by having too much space between the blue cap and the stock, which will allow the stock to lift.

Turn the blade holder knob clockwise (A) to increase blade exposure or counter-clockwise (B) to decrease blade exposure.

The notches in the knob indicate a change of approximately 0.1mm of blade exposure.



If you have a Blade Loupe (magnification tool to check blade exposure, shown on the Left), you can use this to determine blade exposure. Optimal blade exposure should be 0.2mm or 2 dash marks in the loupe viewfinder.

## 6. Software Operation

Launch the DLF Cutter Management Tool software using the icon on the desktop.

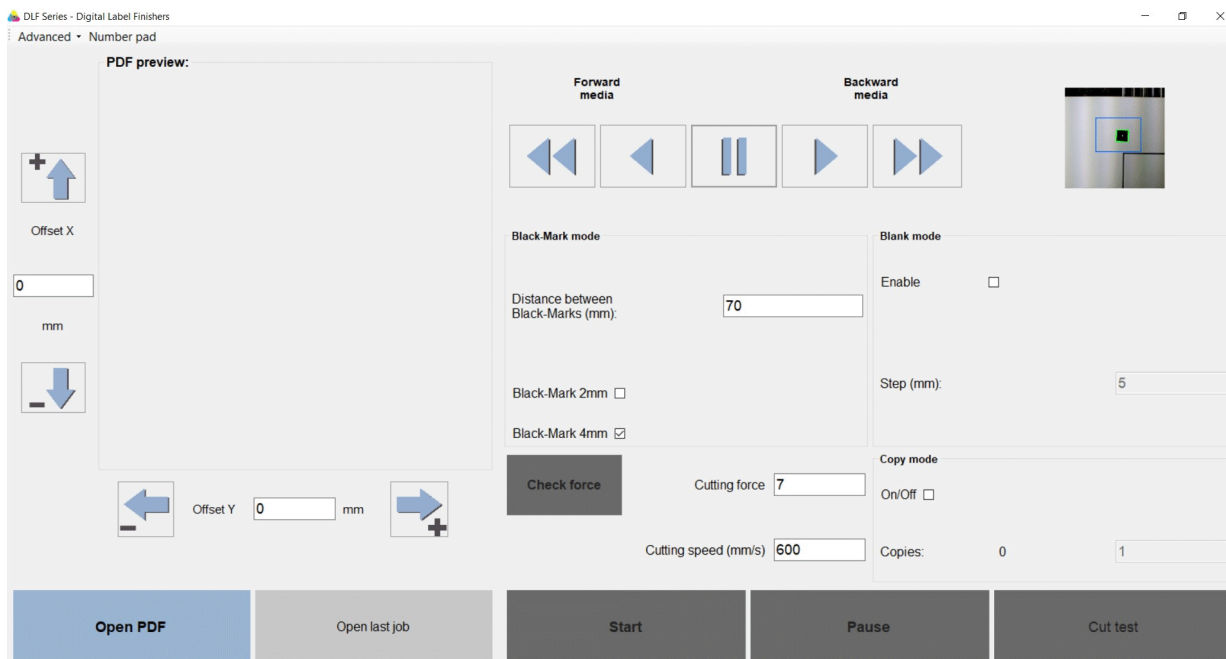


The software will only open if:

- The DLF is be connected to the PC
- The dongle is installed either in the finisher or in the PC
- Media is loaded and the stock width has been detected

If you see any error messages when starting the software, verify the above three points.

Once the software opens, you should see the following screen:



Cut files are pdf format files. The cut file should only contain the registration mark and cut lines. No hidden layers, vector graphics, or guides are allowed. See **Artwork** starting on page 9 for more information.

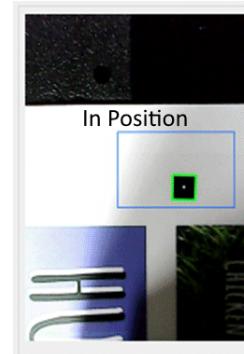
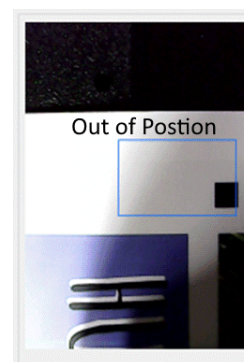
Click the **Open PDF** button to locate and select your cut file. The cut lines will appear in the preview in the upper left.

### Positioning the reg mark in the software image

Click **Single Arrow Forward Media** button to position the registration mark in the boundary box in the left image. Once it is centered in the box, press the **Pause** button. The mark will be outlined in green if it is in position.

Do not use the **Backward Media** buttons for the initial positioning, as this will create a negative starting position – the cutter cannot deal with that, and you will receive a prompt to move the stock to the next black mark.

The mark should be centered vertically as much as possible within the box for best mark recognition. Adjust the camera position if the mark is too close to the left or right sides of the box.





## Setting the cut parameters

The screenshot shows a control panel with three main sections:

- Black-Mark mode:** Includes a text input for 'Distance between Black-Marks (mm)' set to 70, checkboxes for 'Black-Mark 2mm' (unchecked) and 'Black-Mark 4mm' (checked), a 'Check force' button, a 'Cutting force' input set to 7, and a 'Cutting speed (mm/s)' input set to 600.
- Blank mode:** Includes an 'Enable' checkbox (unchecked) and a 'Step (mm)' input set to 5.
- Copy mode:** Includes an 'On/Off' checkbox (unchecked) and a 'Copies' input set to 1.

- **Black-Mark Mode**
  - **Distance between Black-Marks:** When using registration marks, set the distance from the top of one black mark to the top of the next (same edge to same edge measurement).
    - For better operation, adjust the distance figure accordingly if the registration marks in the two images are not positioned close to the same.
  - **Black-Mark** size options: Select either 2mm or 4mm mark size, depending on the actual size of the mark.
- **Cutting Force**
  - Sets the amount of pressure on the blade. It is recommended that this number start small and adjust up as needed to avoid cutting through the liner and damaging the cut strip. The type of materials being used will create a range of forces to use (this range **only applies** if the blade exposure is set properly as shown on page 18).
    - For unlaminated stock, force ranges from 7-9
    - For laminated stock, force ranges from 10-15
    - For abnormally thick/exotic material and laminate, force ranges from 16-20
    - If your cut force is above 20, then there is typically another issue occurring with the unit such as a damaged cut mat, worn cut blade, or worn blade holder
- **Cutting Speed:**
  - Can be set from 100 mm/s up to 600 mm/s.
  - Reduce speed if cutting long labels, complex shapes, or sharp corners
  - Also reduce speed if the label/distance between blackmarks is longer than 8"
- **Blank Labels Mode**
  - **Enabled:** Check if cutting blank labels
  - **Step:** Enter the size of the vertical gap you want between the blank labels (spacing between labels)
  - Note: that the **Black-Mark Mode** settings are ignored if the **Blank Labels Mode** box is checked.
- **Copy Mode**
  - **On/Off:** When checked, the cutter will cut as many frames as is specified in the **Copies** setting.
  - When unchecked, the cutter will cut until manually Stopped/Paused by the operator

### *Check Force*

Added in **DLF-Software version 2.0.7**, there is now a Check Force option to allow you to test your cut force without needing to run an entire **Cut Test** at first.

If you run this function, the cutter will take the input Cut Force as a reference point and cut out 5 squares on the material under the cutter head.

The 5 squares will have different levels of cut force, going from **-2, -1, 0, +1, +2** in the corresponding squares (i.e. If you have your cut force set to **10**, the squares will be cut at **8, 9, 10, 11, 12** in cut force pressures respectively).

In each square will be a number cut into the material to indicate the aforementioned pressure differences.

Be sure when you use the Check Force Function to run at a lower Cut Force to prevent cut through of the material on the higher cut force tests.

### *Cut Test*

Once the settings are selected, click the **Cut Test** button. This will cut one frame so you can verify that the settings are correct.

Note that when cutting using printed media, at least one cut test must be performed before the job can be started.

### *Check Cut Depth*

Check to see if the labels can be easily removed from the liner.

If the label is not fully cut, increase cut force by one or increase blade exposure.

If the liner is being cut, decrease cut force or decrease blade exposure. You can check if the liner is being cut into by feeling underneath the media in the recently cut section and feeling for indentations in the liner. If you feel bumps in the liner, then the blade is cutting into the liner.

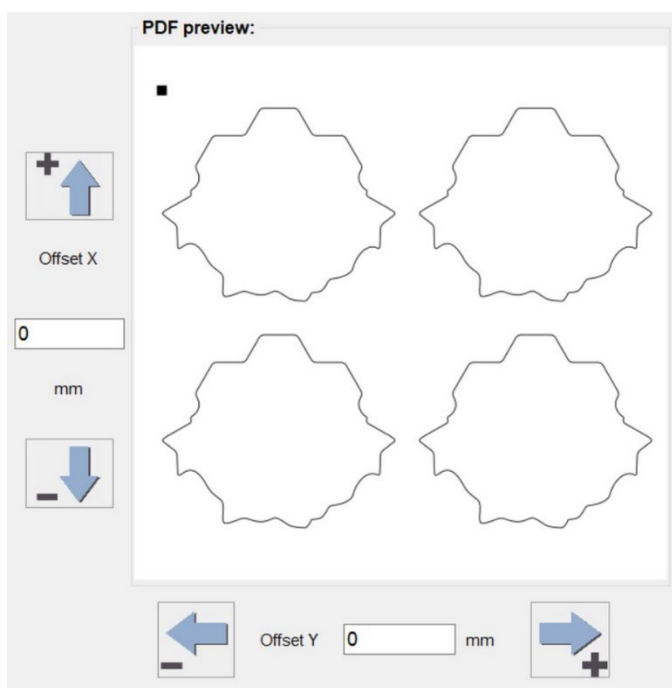
### Check Cut Position

At the same time as the cut depth is checked, the cut position should be checked and corrected if needed.

Adjust the position using the X and Y Offsets near the cut line preview on the left.

The offsets are in millimeters. Decimal values can be entered into the offsets.

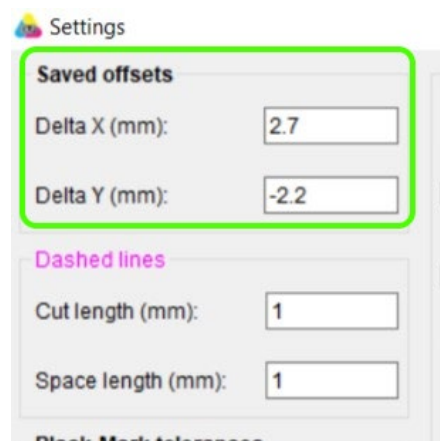
Try to center the cut within the printed area when cutting full-bleed labels.



### Repeat the Cut Test

Run a cut test after making changes to any of the settings or blade exposure and verify the results before starting the cut job.

Cut tests use the entered Offsets but do not modify the default offsets. The values entered will be applied to the Delta values (stored in the **Advanced / Settings** menu) for use as the new default offsets only after the cut job is started.



### Start the cut job

With everything set correctly, click the **Start** button to begin the cut job.

With the job active, the **Start** button changes to the **Stop** button, which will stop the job if clicked.

If the job needs to be paused, click the **Pause** button. When paused, the button will change to **Resume**.

**Only use the controls in the software to pause the job!** Using the Pause button on the cutter control panel will simply stop the job and not allow you to resume.

## 7. Waste Removal and Rewinding

Once enough material is through the cutter, you can complete the stock path.

With the left control switch set to OFF, run the stock under the output tension arm arm.



With the clutch assembly lifted and locked, thread the media through the guide with the edge of the media against the rear fixed guide.

The media will lie over the lower rollers and pass under the weed bar.

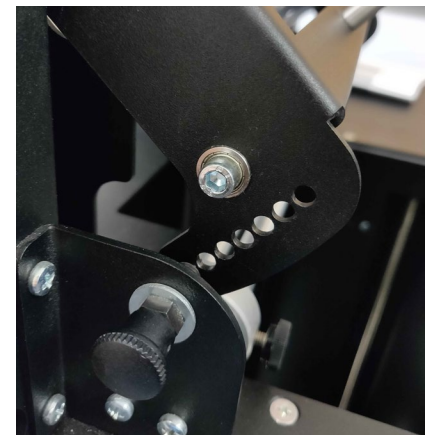
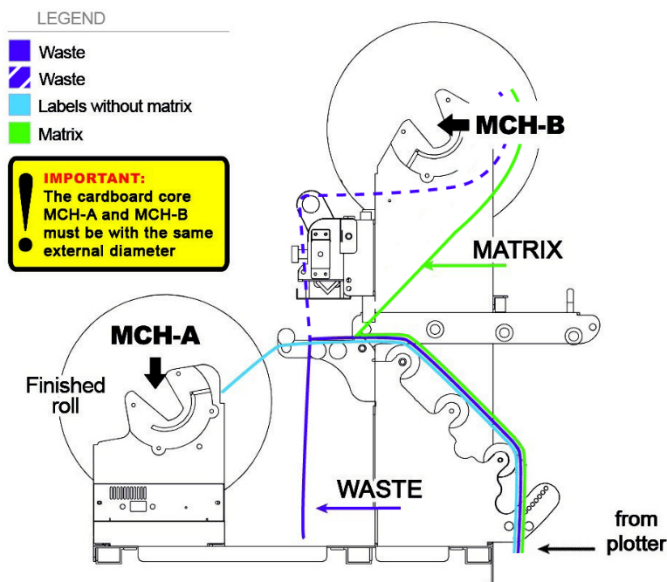
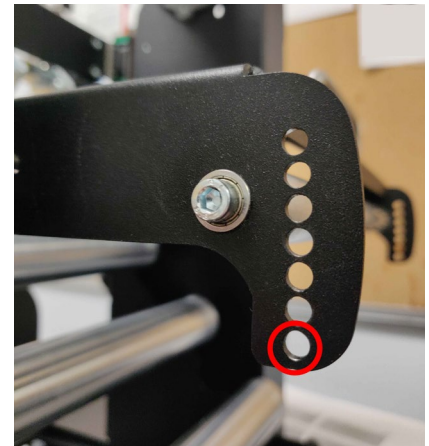
Feed the media until it is under the slit assembly to have enough slack for the following steps.



Lower the clutch and lock it into place via the 7 corresponding holes on the side of the assembly.

If you are using max width material (~8.5"), the bottom-most hole is the max you will need; additional pressure beyond that will overstress the rewind mandrels and cause damage to the units.

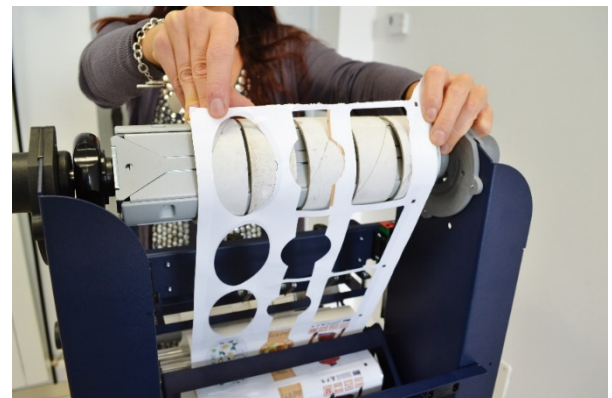
The higher position holes are for narrower width material and should be avoided in most scenarios.



Adjust the movable guide so it is just against the edge of the stock.

Peel the waste stock off the liner and attach it to the waste core.

Lower the waste compactor roller you installed earlier (not shown). This roller helps keep the waste roll diameter closer to that of the output roll.





Be sure to pass the stock under the last roller!



O-rings are included on the weed bar to improve the waste removal process.

If the labels are fully cut but are lifting off the liner with the waste, position the O-rings so they are over the labels but not on the waste between them.



Attach the liner to the output core, with the edge of the liner against the mandrel plate.

The output core(s) should be no wider than the finished labels and liner.

Check the media path through the output side. The stock should be flat with the same tension on either side of the stock.

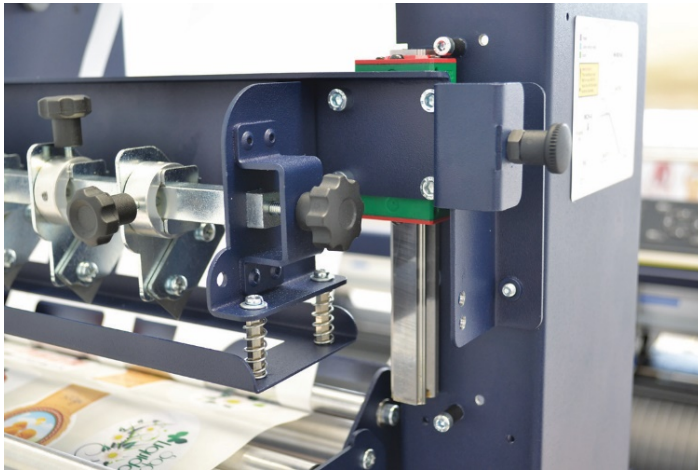
Change the left control switch to ON.

If the mandrels don't start rewinding the output and waste, lift the left tension arm until the motors engage and tighten the media.



## 8. Slitting

DLF-220L unit come with four slitter blade holders from the factory, you can add additional cutter blades to the slitter assembly.



The slitter assemblies all include three positions: Up, Adjustment, and Slitting. The assembly is held in these positions using locking screws, two on the DLF-L series.

For blade placement, lower the assembly to the second position for blade holder adjustment, as shown in the image above.

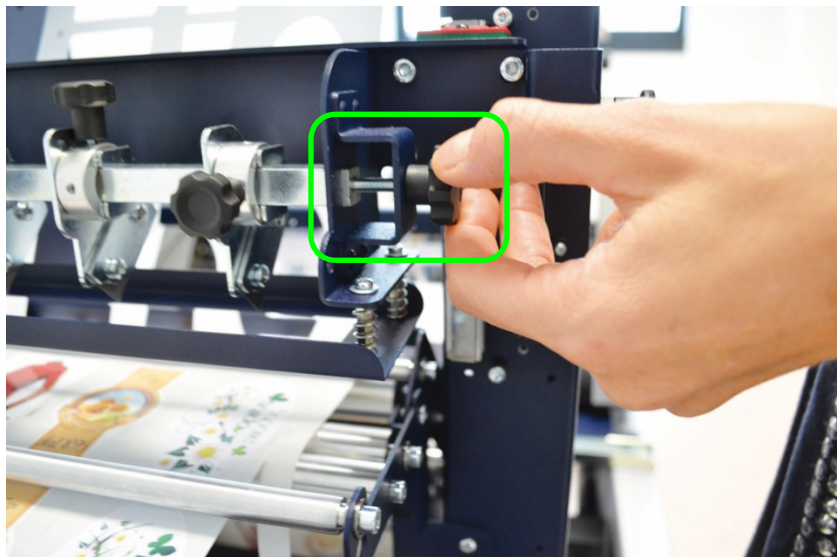
This will leave the blades above the media, but close enough to be able to position the blades accurately.

Loosen the thumbscrew, position the blade, and tighten the thumbscrew again.

Note that when tightening the thumbscrew, the position of the blade may shift. Hold the blade holder securely when tightening the screw.

Once the blades are in position, release the locking screws, lower the slitter assembly to the bottom slitting position, and lock the screws down again.

The DLF-L Series includes a left-right adjustment knob that can be used to shift the position of the entire slitter bar if necessary.





### Adding or Removing Slitter Blade Holders

More slitter blade holders can be added (purchased separately), with the condition being that the blades cannot be less than 0.75" apart due to the width of the blade holders.

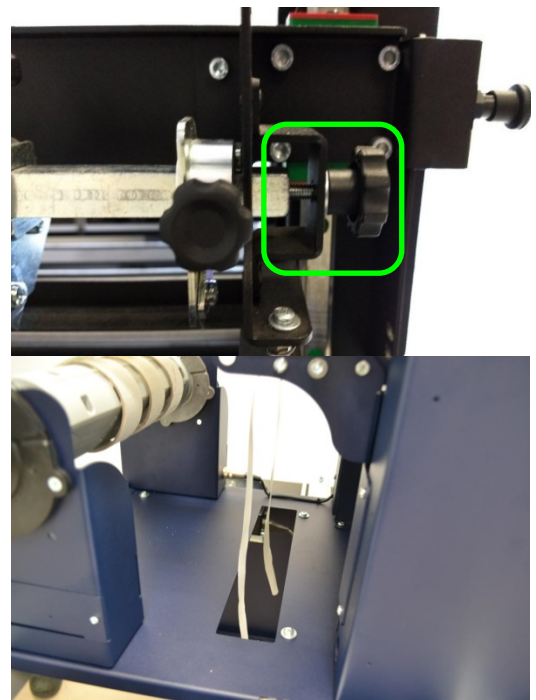
Remove the thumbscrew on the right side of the slitter assembly to release the bar (the bar is spring-loaded on the L Series). Once the bar is released, holders can be removed or added.



Replace the thumbscrew on the right end of the bar before operation.

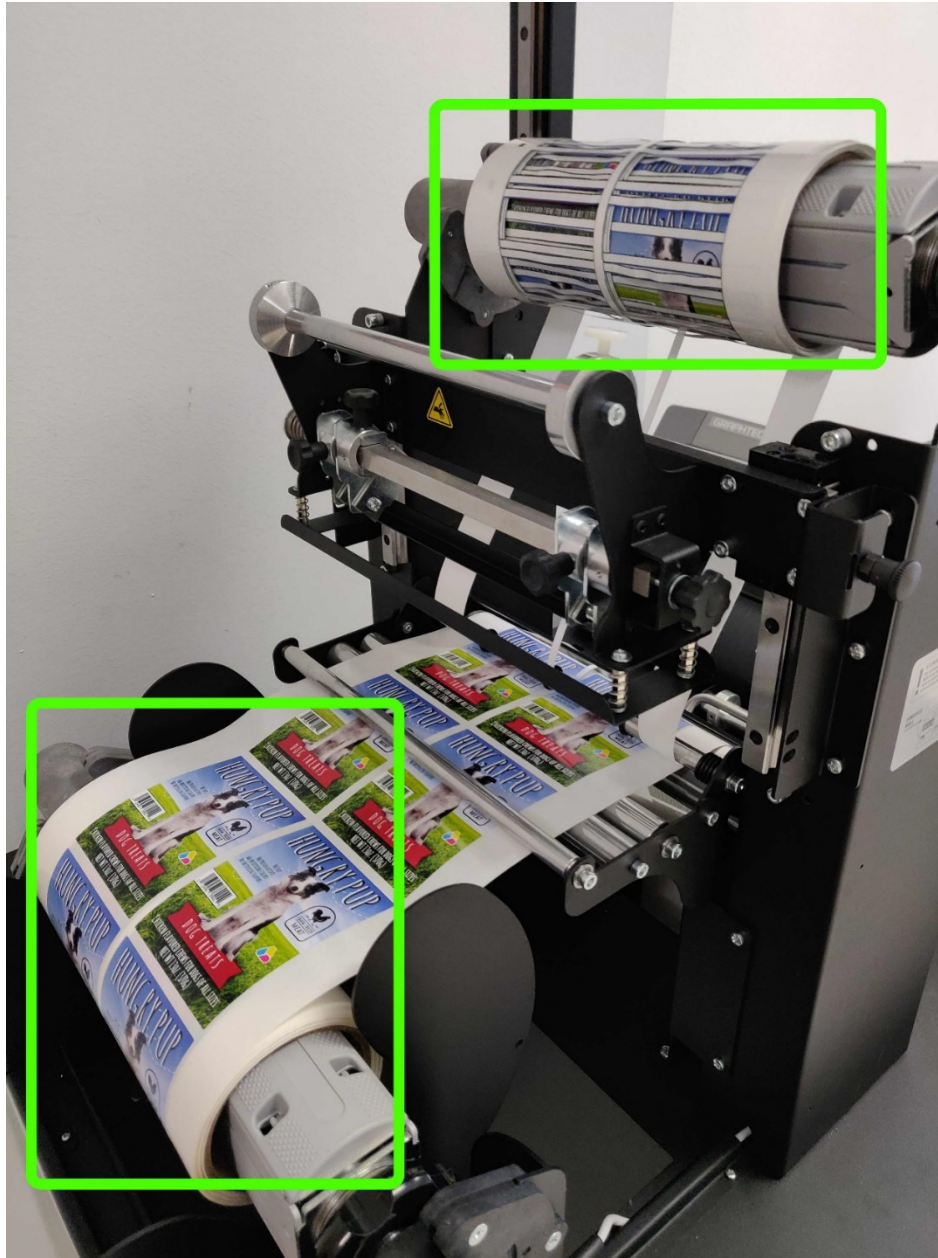
For the DLF-L Series, it is recommended that the thumbscrew be tightened so the end of the bar is centered in the gap between the metal brackets. This will give you the most available side-to-side adjustment during operation.

When slitting with the DLF-L Series, side waste liner is best routed through the gap in the frame just past the slitter blades.



## 9. Output/Waste Roll Removal

Once the job is finished, both the Output and Waste rolls need to be replaced. The Waste and Output Material Rolls are geared to the same turning ratio and will need to match to maintain proper tightness on the rolls and prevent overworking of the motors. When you have finished a job on your DLF unit and remove the finished media, **you have to replace the waste matrix core at the same time!**



## 10. Tension Arm Calibration

The tension arm sensors occasionally need to be recalibrated; each arm is calibrated individually.

The switch for the tension arm that is being recalibrated needs to be in the OFF or MANUAL position.

1. Locate the small programming hole to the right of the switch.
2. Raise the tension arm to the top.
3. Insert the end of a paperclip straight into the hole and push down for 5 seconds – the yellow LED will turn on.
4. Lower the tension arm all the way – the yellow LED will stay on.
5. Insert the end of the paperclip into the hole again and push down for 5 seconds – the yellow LED will turn off.



Tension arms on the input side of the finishers will increase the motor speed as they lift and decrease the motor speed as they drop.

Tension arms on the output side of the finishers will decrease the motor speed as they lift and increase the motor speed as they drop, the opposite of the input side.



## 11. Advanced/Settings Features

Standard Day to Day operation of the DLF does not require usage of the DLF-Software Advanced Settings typically, but there are several settings that can be useful for certain jobs and scenarios. The following section will go through these settings and address their use cases.

The screenshot shows the 'Settings' window of the DLF-Software. It is divided into several sections, each with numbered callouts (1-14) indicating specific settings:

- 1. Saved offsets:** Delta X (mm): -3, Delta Y (mm): -10.2
- 2. Dashed lines:** Cut length (mm): 1, Space length (mm): 1
- 3. Black-Mark tolerances:**
  - 4x4mm:** Minimum area (px): 2900, Maximum area (px): 4100
  - 2x2mm:** Minimum area (px): 484, Maximum area (px): 1156
- 4. Tools:** Curve approximation: Normal (dropdown), ☒ Cut sorting, ☐ Enable distortion fixer
- 5:** ☐ Enable distortion fixer
- 6:** Correction X (mm): 0, Correction Y (mm): 0
- 7:** ☒ Enable overcut
- 8:** Start length (mm): 0.7, End length (mm): 0, Rotation (deg°): 0.0
- 9. Check area:** x (px): 0, y (px): 0, Width (px): 250, Height (px): 150
- 10:** Sensors: ☒ Media/Lamination sensors, ☐ Check inline printer
- 11:** Save, Cancel, Reset, SAVE NEW DEFAULT SET buttons
- 12:** Save, Cancel, Reset, SAVE NEW DEFAULT SET buttons
- 13:** Save button
- 14:** Cancel button

### 1. Saved Offsets

- These are the delta/offset values used by the software with the cutter for cut alignment. These values will change based on your cut alignment adjustments done in Check Cut Position section on page 21

### 2. Dashed Lines

- Adjusts the Perforation Values for Magenta Cut lines as described on page 12

### 3. Black-Mark Tolerances

- Used to adjust the camera tolerance for detecting a 4x4 or 2x2 blackmark in the viewfinder. The values are sensitive and should only be adjusted per instruction by a technician if needed

### 4. Curve Approximation

- When cutting out curves, the DLF cutter needs to approximate the curve using a series of lines to create said curve. Adjusting this setting increases the number of lines used in the curve creation, making it

The close-up shows the 'Tools' section with the 'Curve approximation:' dropdown menu open. The menu options are: Minimum (selected), Minimum, Low, Normal, and High. The 'Cut sorting' checkbox is also visible.

a smoother curve edge but also slowing down the cutter as a result.

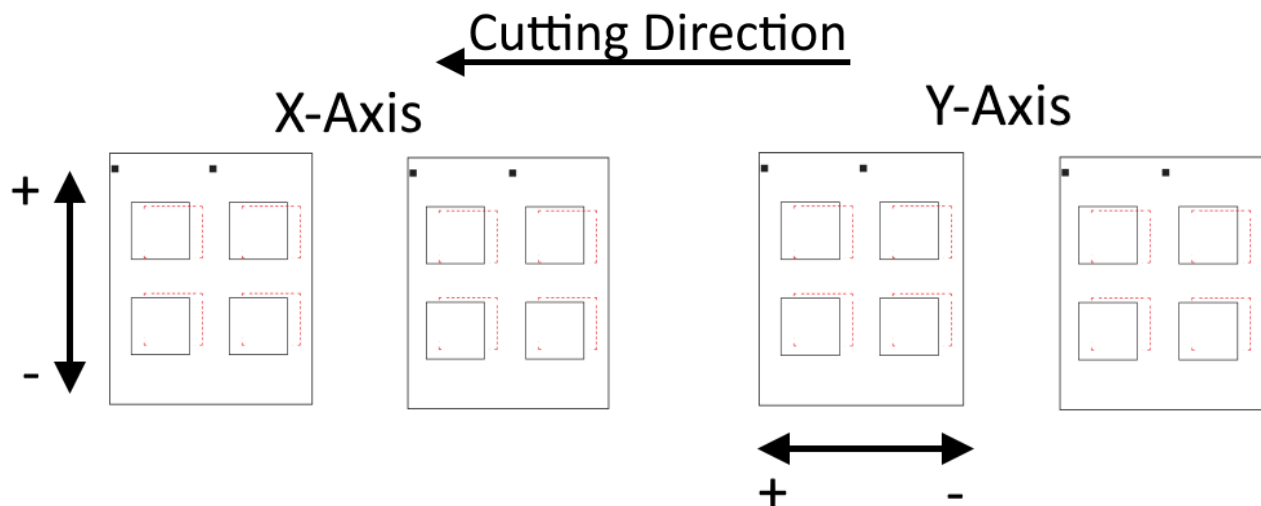
- When the option is set to **Minimum**, the curve approximation is reduced and the cutter will slow down and make smoother, more accurate curved cuts. Setting it to **High** will run the cutter at full speed but the curved cuts will be more jagged looking. Choose which best suits your production environment in regards to speed and quality.

#### 5. Cut Sorting

- Enabled by default, this uses an algorithm in the software to determine the fastest path to cut out your labels. Disabling this will set the cutter to cut each cut line based on its layer position in your artwork file.

#### 6. Distortion Fixer

- This option allows you to adjust your cut lines in the event the printed artwork from your printer is smaller/larger than the expected size. Typically this should be resolved on the printer side first but this option allows you to compensate for errors if they occur.
  1. Adjust Offsets so the **Bottom Left Most Part** of your Cut line aligns with your printed artwork
  2. Using the images below as reference, create positive or negative value adjustments to the Distortion on the X/Y Axes so stretch or shrink the cut lines to match the printed artwork



#### 7. Overcut

- This makes the cutter overcut the cut lines in the artwork. This can be used if there are issues with the cut path on your cut lines not meeting up precisely when the cutter moves around the perimeter of the cut line. You can set the blade to cut earlier in the cut line or end later in the cut line by up to 0.9mm

#### 8. Rotation

- This option allows you to compensate your cut lines in the event your printed artwork is skewed printed or skewed running through the cutter. Adjustments should be done in 0.1 Degree increments as the setting is very sensitive.

## 9. Check Area

- This section allows you to adjust the size and position of the blue acquisition box in the camera viewfinder used to detect the blackmark
  1. ***X and Y*** Options will allow you to move the acquisition box Left/Right and Up/Down in the viewfinder. **Note, any adjustments to this position will cause your offset adjustments to change each time it's adjusted and you will need to correct this using cut tests.**
  2. ***Width and Height*** Options adjust the size of the acquisition box in the viewfinder. **Note, adjusting the size to be larger/smaller than the default values can cause "Blackmark Not Found" Errors or consistency issues with detecting the blackmark apart from the printed artwork.**

## 10. Sensors

- This sensor enables/disables certain sensors on the DLF.
  1. ***Media/Lamination Sensors***
    - I. Enabled by default, this uses the sensors on the DLF to detect when media or lamination on the unit is empty and automatically pause the DLF to allow users to unload/reload materials. This option **SHOULD NOT** be turned off unless instructed.
  2. ***Check In-Line Printer***
    - I. This option is currently unused and should not be turned on.

## 11. Reset

- Resets the DLF-Software settings back to Factory defaults. This will also reset your offsets for the cutter, requiring adjustments to be done again.

## 12. Save New Default Set

- Sets the currently set values in the DLF-Software to be the global values used between cut files loaded in the software.

## 13. Save

- Saves the currently set values in the DLF Software for the current job only. Changing the cut file will change the values.

## 14. Cancel

- Exits the Settings window without saving settings.

## 12. Maintenance

### General Cleaning

In general, any surface that comes in contact with the stock or liner will require periodic cleaning.

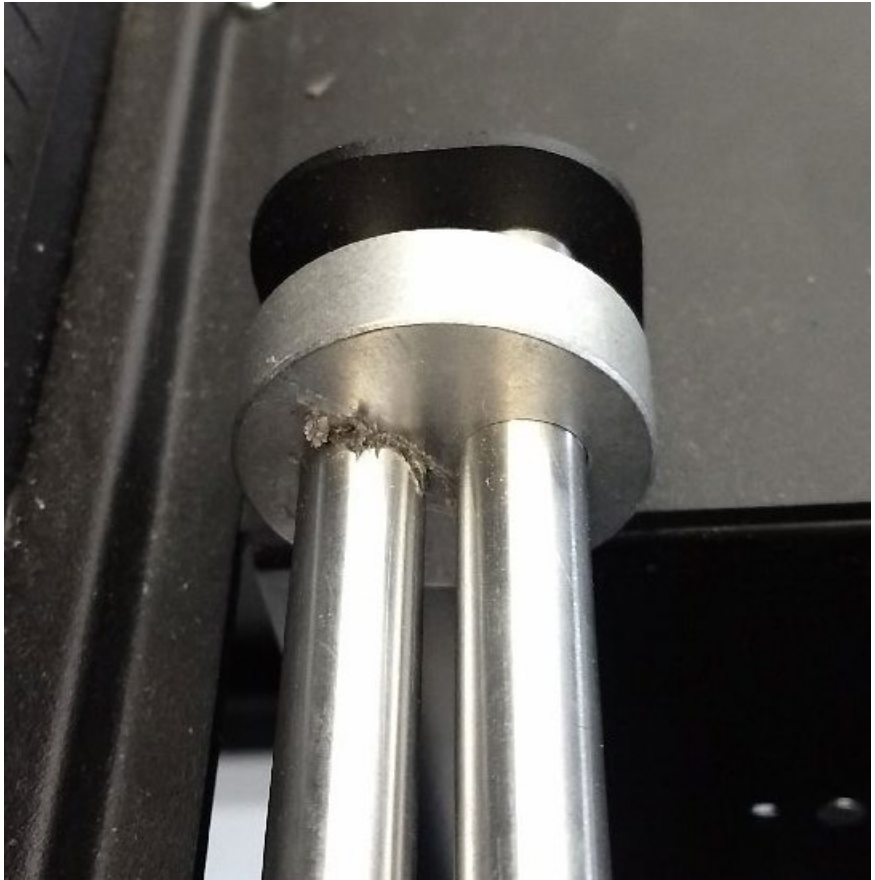
#### *Adhesive*

Adhesive will collect on the media guides and rollers, especially where the edges of the stock are contacted.

As this adhesive collects, it starts to drag on the media as it passes through the cutter and may affect cut position. It may also release onto the stock.

For best operation and cleaner labels, adhesive build-up should be cleaned when it is found.

The amount of adhesive that collects will depend on the media being used.



#### *Lint or paper fibers*

When cutting unlaminated paper stock, paper fibers will collect around the cutting blade. It is recommended that the blade holder be cleaned out every 50-100 cut frames when cutting unlaminated paper, depending on the exact material. Pause the cut job, and use canned air to blow the debris from the holder without removing the holder from the cutter. Be sure not to spray propellant onto the stock.

#### *Labels stuck to rollers*

If a label gets stuck to a roller, it should be cleaned off immediately, making sure that the entire label has been completely removed.

Leaving part of a label on a roller changes the diameter of the roller, which can cause wrinkles in the stock or a shift in path.

#### *Lubrication*

The rails the tension arm arms run on will need periodic lubrication. Linear bearing grease is recommended.

Lubrication will be needed if the tension arm arms are not moving smoothly during operation.

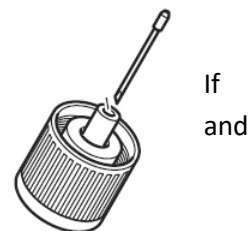


## Consumable Replacement

The blade holder, cutter blade, slitter blade, and cutting mat are considered consumables and will need replacing once unable to cut consistently.

### Cutter Blade/Blade Holder Replacement

To replace the cutter blade/blade holder, remove the blade holder from the cutter. replacing blade holder, swap blade to new blade holder with below instructions reinstall.



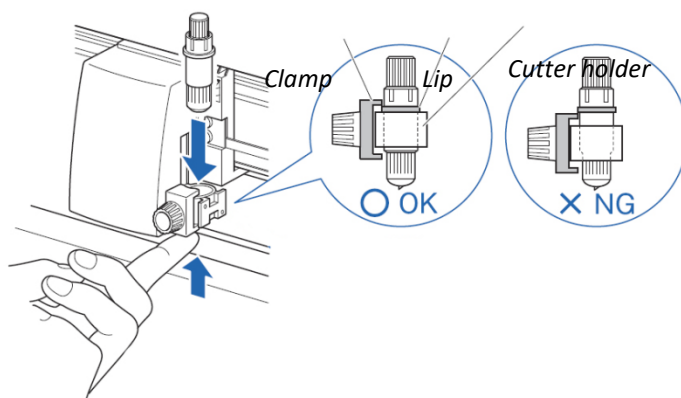
Unscrew the blue cap to expose the pivot end of the cutter blade.

Remove the old blade and insert the new blade.

Replace the blue cap, being sure to tighten it down completely.

Check the blade exposure! Any time the cutting blade is replaced, blade exposure may change. Check the exposure before operation and adjust accordingly to avoid damaging the new blade or cut strip.

Return the cutter blade holder to the cutter, being sure the lip on the holder is below the clamp.



### Cut Mat Replacement

To replace the cutting mat on the on the cutter, remove media from cutter. There is a 1cm wide strip of matte plastic that goes the width of the cutter, which is the cut mat. Remove the damaged cut mat by peeling up the plastic strip and removing the adhesive strip left behind (the strip is **not** reusable). Take a replacement cut mat and lay it down smoothly into the groove left behind by the removed cut mat.



### Slitter Blade Replacement

Release the slitter bar (see pages 28-29) and remove the slitter blade holder from the bar.

Remove the two screws holding the blade and plate down to release the blade.

Note that all four corners of the blade can be used. Flip the blade over so the unexposed end of the blade is in the cut position the first time the blade is dull.

Replace the plate and screws before replacing the holder onto the bar and re-securing the slitter bar.



### 13. Troubleshooting

Issue	Cause	Solution
Software will not start	DLF not connected to computer	Connect DLF to computer
	Media not loaded	Load media Press 2 on control panel
	Dongle not connected	Verify dongle is inserted in DLF or PC
Cut position is shifting side to side	Media path not straight	Adjust path. May need to rethread path completely
Labels not cutting completely	Blade exposure and/or cut force not correct	Increase exposure or cut force (not both at the same time)
	Blade Holder not allowing blade to spin properly (rotational or transitional cuts not clean)	Replace Blade holder on cutter head
	Laminate is wrinkling	Increase tension on the laminate roller, decrease tension on laminate mandrel clutch
	Blade dull	Replace blade
	Cut strip damaged	Replace cut strip
	Media not held flat in cut zone	Verify pinch rollers are not off the stock
		Blue cutter blade cap not holding stock down – reduce blade exposure
		Reduce tension on laminate mandrel clutch
X-Position error on cutter control panel	Stock not feeding correctly	Movable media guides are too tight against the stock; loosen
		Right control switch not set to Auto; manually feed media and change switch position
		Adhesive build-up is slowing down the stock movement; clean
Laminate is applied off edge of stock	Laminate roll too wide	Laminate should be at least ¼" narrower than stock
	Laminate roll not positioned on mandrel correctly	Reposition laminate roll; laminate roll should be centered over the stock, not pushed back to mandrel plate
Waste tearing during weeding	Cuts not deep enough	Adjust cut force, blade exposure
	Gap between labels too narrow	Modify artwork with more gap
	Not enough uncut stock at edges	Modify artwork to allow more uncut space on the edges Change to wider media

Labels not staying on liner while weeding	Cuts not complete	Adjust cut force, blade exposure
	Cuts complete but still coming off liner	Use o-rings to hold labels down

Issue	Cause	Solution
"Black Mark not found" message	Mark not in positioning box	Use the Forward button in the software to advance to the next mark, center mark vertically in positioning box
	Mark too far left or right	Position camera so mark is centered horizontally in positioning box
	Stock advancing too much or not enough	Verify the Distance between marks is correct, change as needed
	Mark is too close to artwork	Change artwork so mark is at least 4mm from artwork; reprint
	Mark is not 4x4 mm or 2x2 mm	Change artwork so mark is correct size; reprint
	Mark size does not match size selected in software	Select the correct mark size
Out of Stock or Out of Laminate message	Stock is out	Stop the job and load more stock
	Laminate is out	Load more laminate and continue job
	Sensors are out of calibration	Recalibrate sensors as needed