CATALYST
LASER MARKING SYSTEM

User's Manual

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Revision History

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FCC Compliance Statement: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For Users in the United States: This product is intended to be supplied by a UL listed Direct Plug-In Power Supply marked "Class 2"or a UL listed ITE Power Supply marked "LPS" with output rated 12VDC, 5A or higher. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Use of shielded cables is required to comply with the Class A limits of Part 15 of the FCC Rules. You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate and/or obtain warranty service for this equipment.

For Users in Canada: This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the Radio Interference Regulations of the Canadian Department of Communications. Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la class A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

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Section 1: Getting Started

THANK YOU…

...for choosing the Catalyst Laser Marking System. The Catalyst Laser Marking System will print razor-sharp text and barcodes, AND with the built-in digital die cutter you can cut and create your labels in any size or shape you choose.

This User's Manual is your complete step-by-step guide to quickly and easily setting up and printing with your new Catalyst Laser Marking System!

1A Important Safety Information

Please read the following important safety information before operating your Catalyst.

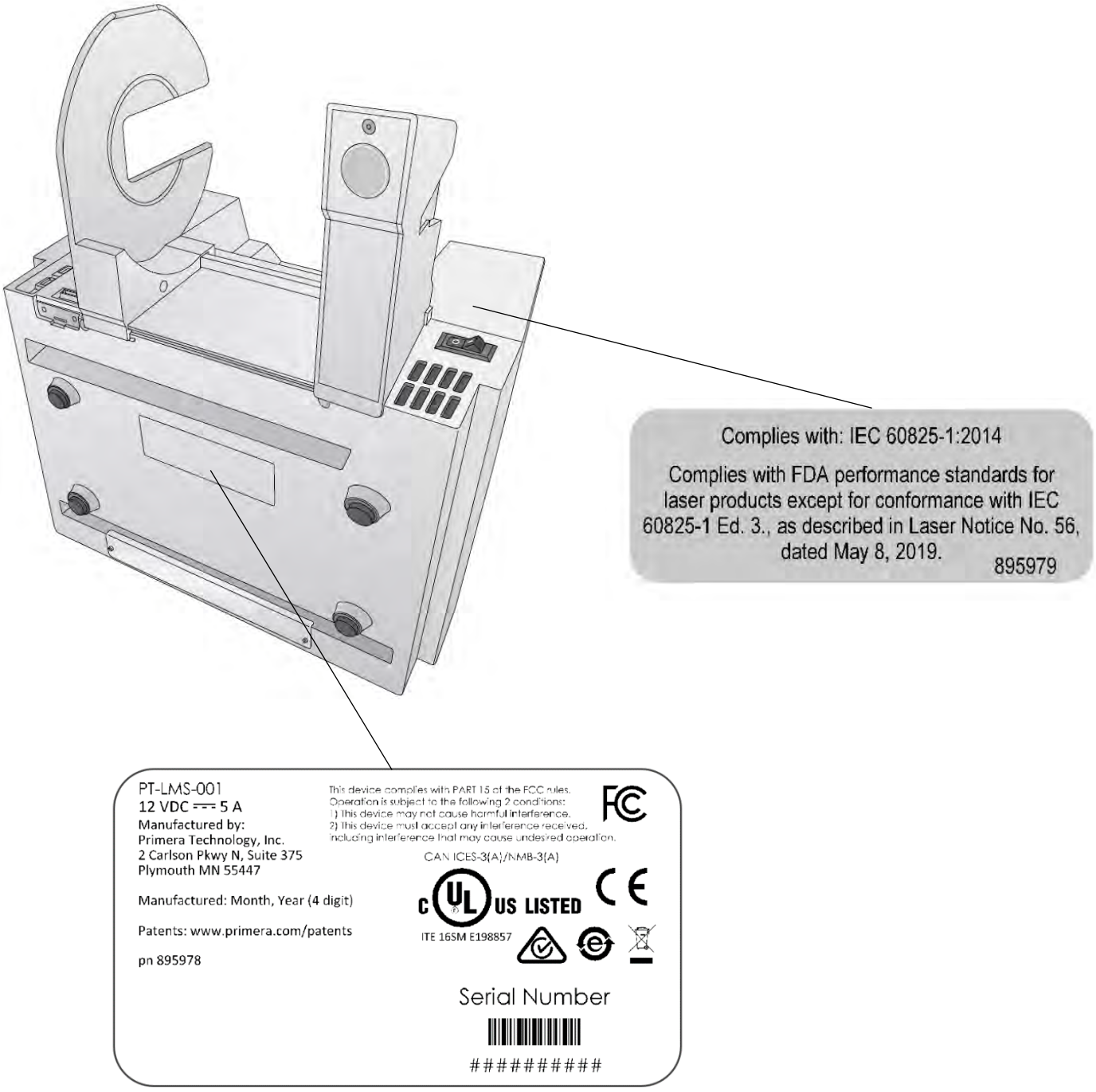
CLASS 1 LASER PRODUCT IEC60825-1:2014

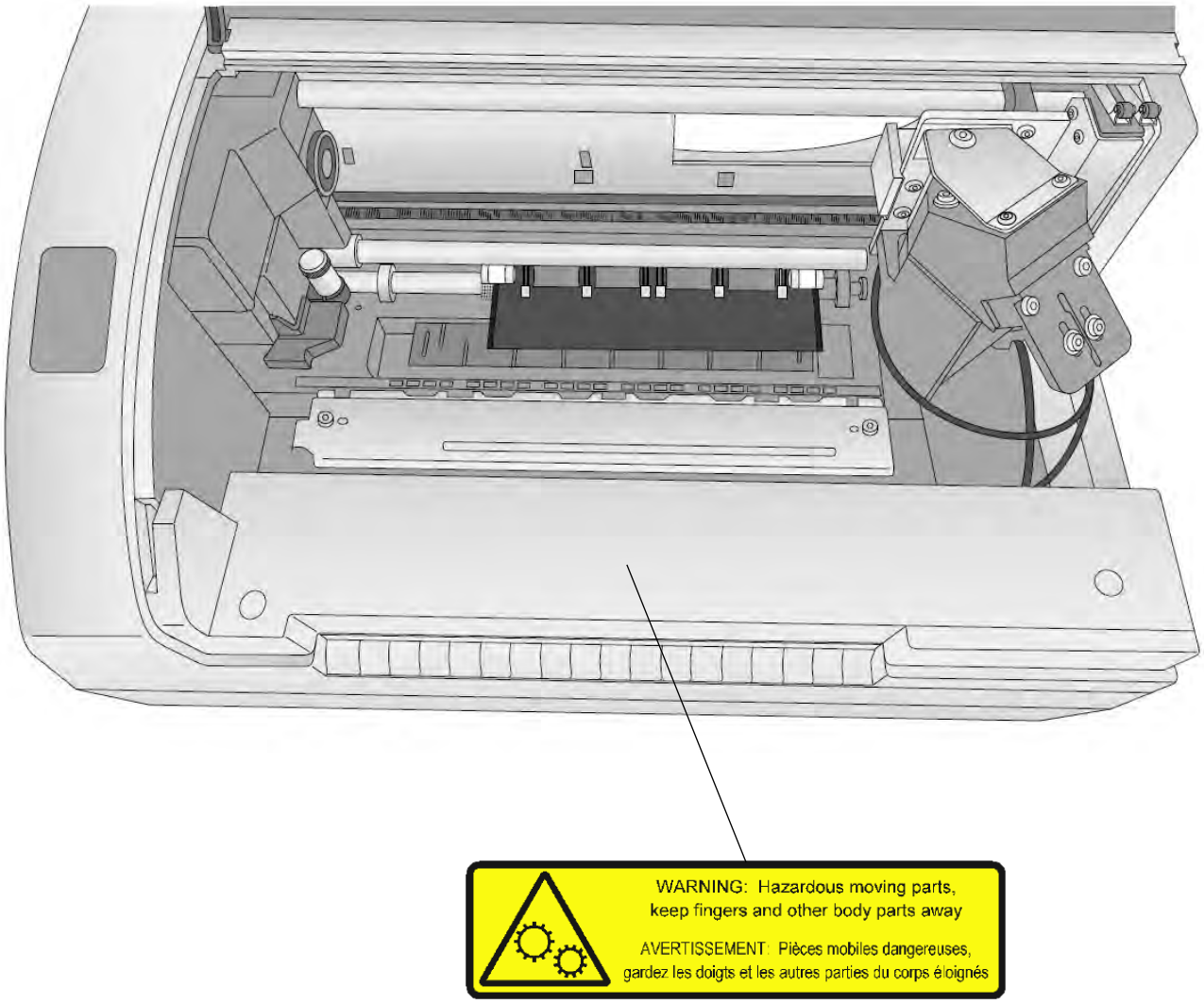
WARNINGS

- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Do not attempt to operate the Catalyst with the Top Cover open. To prevent injury, the internal laser will switch off as soon as the Top Cover is opened.
- Do not attempt to defeat the cover sensor which triggers the automatic switch off of the internal laser. Serious eye injury can occur.
- Do not modify the Catalyst in any way or operate the Printer with any damaged components.
- Do not attempt to print to other label material not approved by Primera. This material often requires a smoke filtration system this Printer does not have. Using non-approved material can be health hazard.
- To prevent fire or shock hazard, do not expose the unit to rain or moisture. To reduce the risk of electric shock, do not remove exterior panels. No user-serviceable parts are inside. Refer to qualified service personnel.
- Operate the unit with only proper electrical specifications as labeled on the unit and the AC adapter.

Safety Labels

Safety labels are affixed to the Printer in the following locations:




WARNING: Hazardous moving parts,
keep fingers and other body parts away
AVERTISSEMENT: Pièces mobiles dangereuses,
gardez les doigts et les autres parties du corps éloignés

1B Choosing a Good Location

- Place the Printer on a flat surface in a location with adequate air circulation to prevent internal heat buildup.

- Do not place the Printer near heat sources such as radiators or air ducts, or in a place subject to direct sun light, excessive dust, mechanical vibration or shock.

- Allow for adequate clearance in front of the Printer to accommodate the printed label stock as it is leaving the Printer to avoid the possibility of binding or jamming of the label stock.

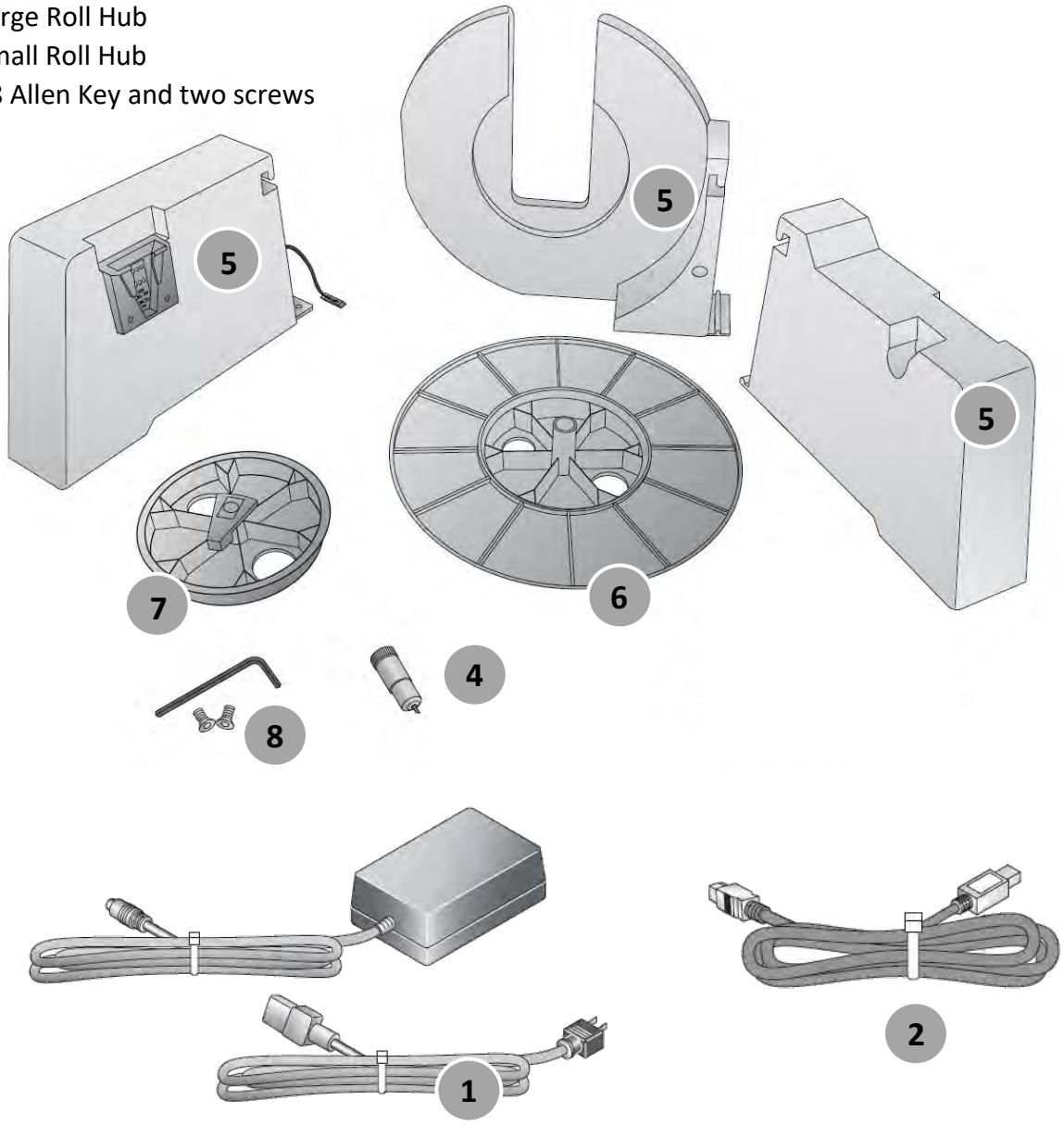
- Allow for 6” of clearance behind the Printer to accommodate loop creation during cutting operations. The area directly behind the Printer must also not be obstructed by USB or power cables connected to the Printer.

- Allow for adequate overhead clearance for opening the top cover to allow easy access to the label stock. The Printer will require 7 inches (17.78 cm) of additional space on the top side to completely open the cover (Total = 16.5" or 41.91 cm).

1C Unpacking and Inspection

While unpacking your Printer, inspect the carton to ensure that no damage has occurred during shipping. Make sure that all supplied accessories are included with your unit. The following items are included in the supply box:

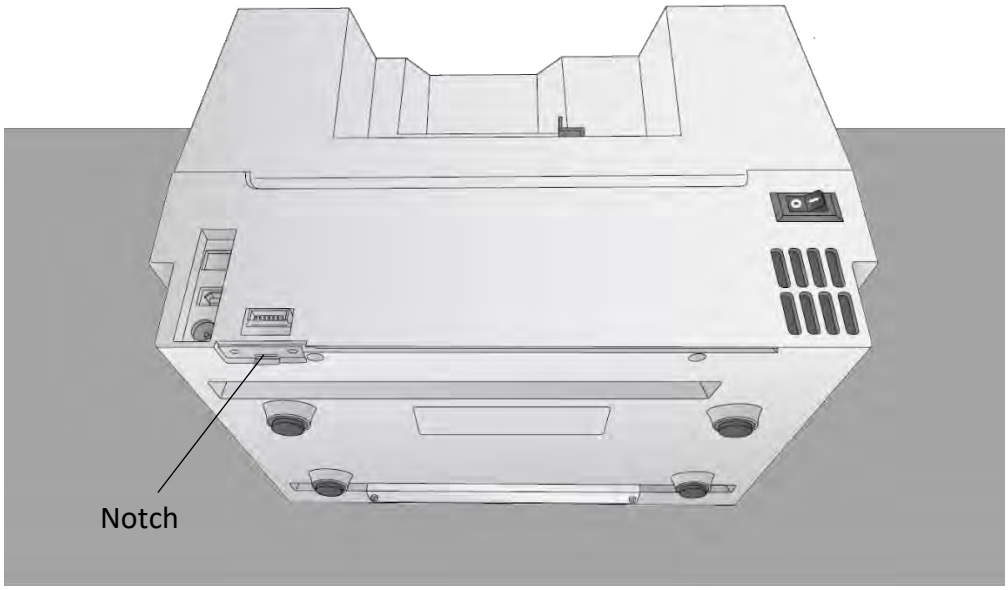
1. Power Adapter and Cord
2. 6’ USB Cable (If other USB cable is used, it must be 6’ (2 M) or less)
3. Printed documentation
4. Die Cutting Knife Holder with knife preinstalled
5. Label roll holders (Assembly required – section 1C)
6. Large Roll Hub
7. Small Roll Hub
8. T8 Allen Key and two screws



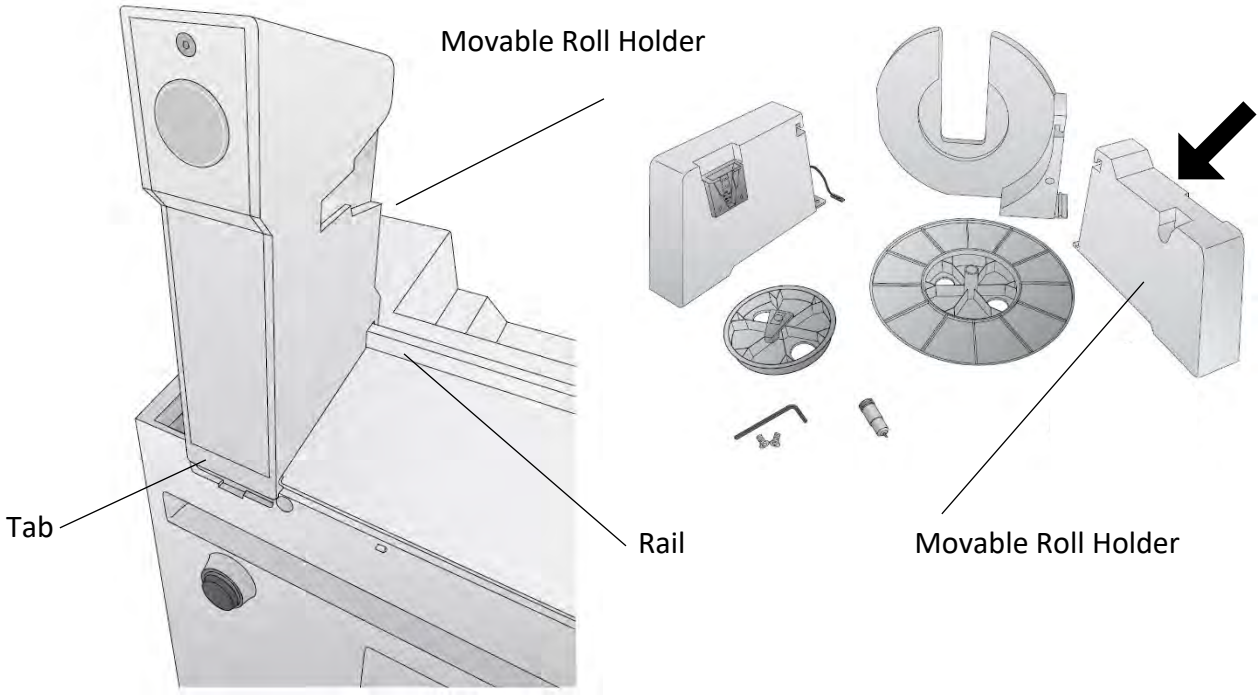
1D Installing the Roll Holders

Some light assembly is required before operating the Printer. Follow these instructions to install the roll holders.

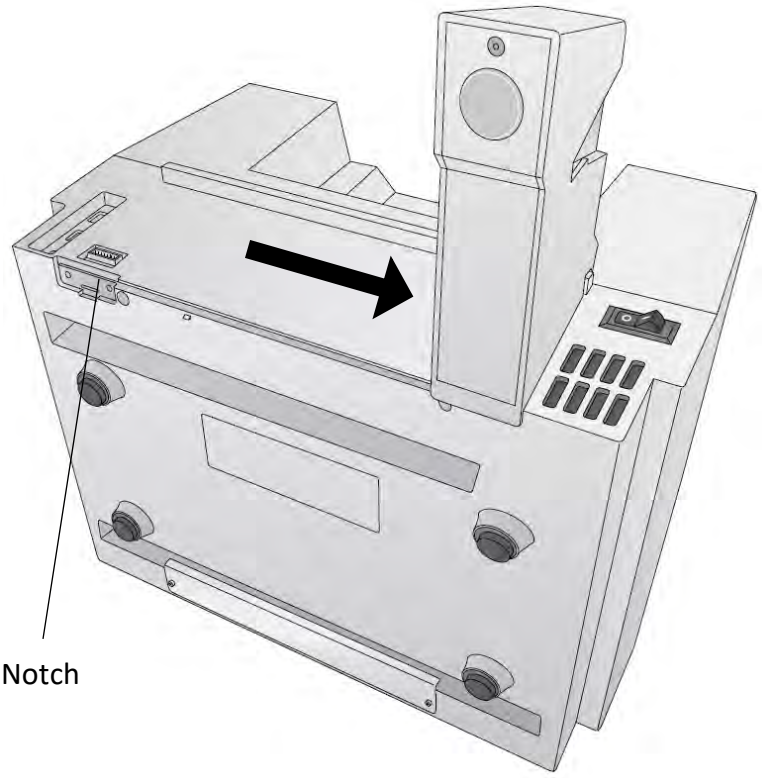
1. Set the Printer on its front so the bottom is facing you.



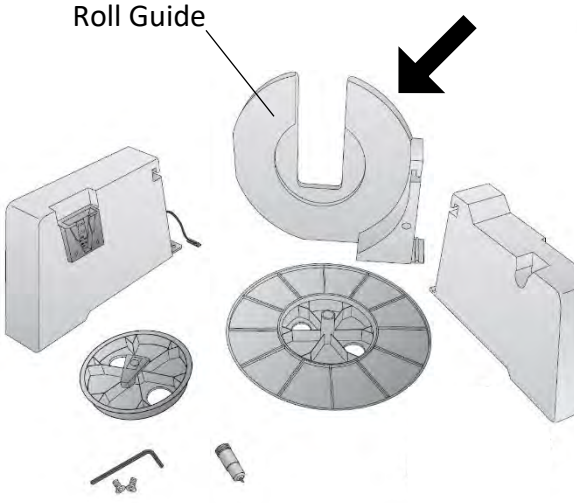
2. Install the movable label roll holder by attaching the hooked end on the rail. The bottom of the holder will fit in the notch on the Printer.

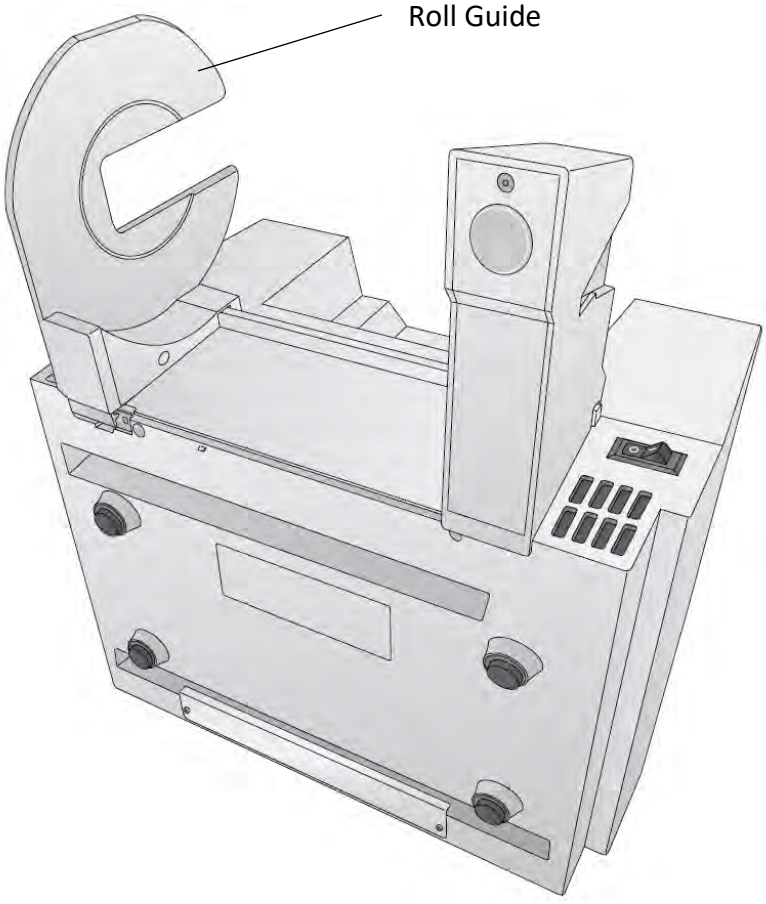


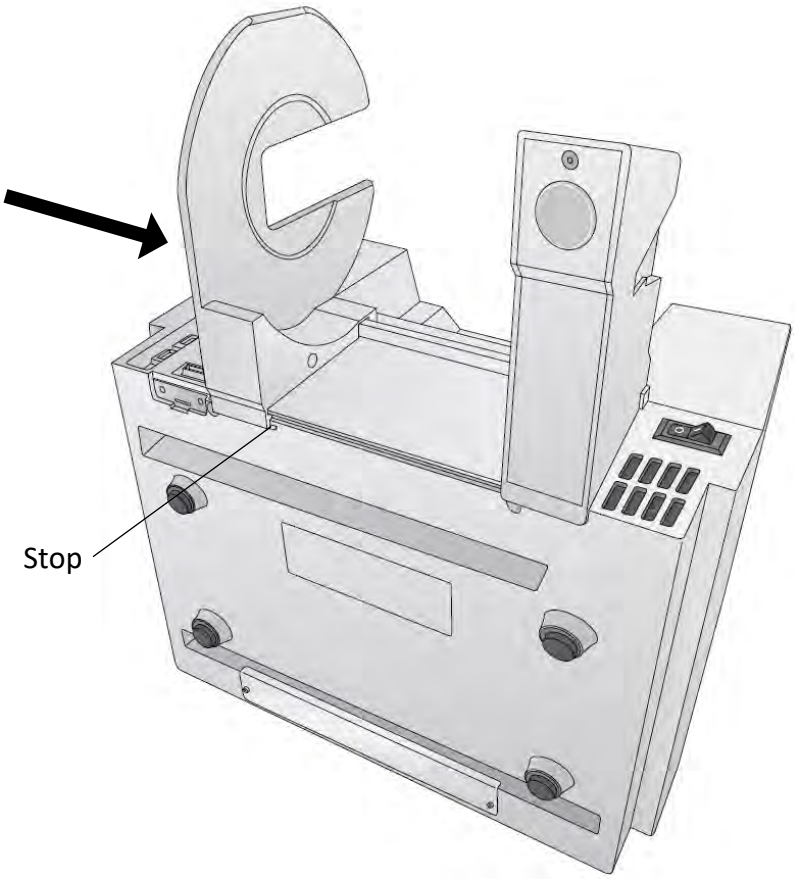
3. Slide the Roll Holder to the far right.



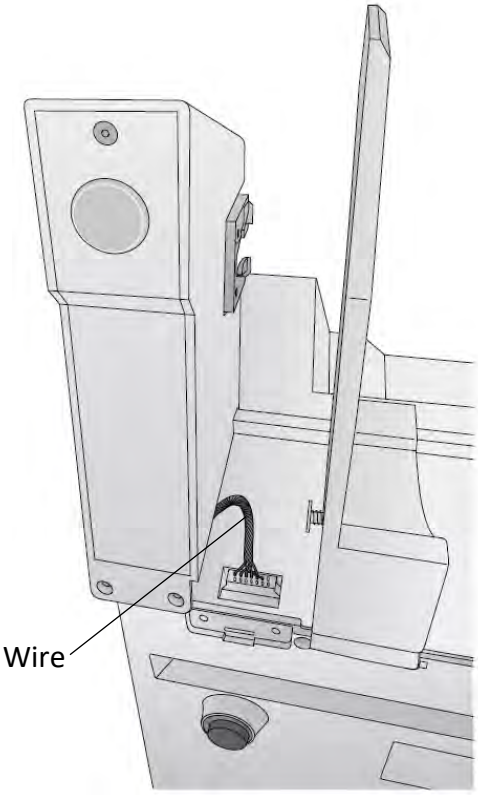
4. Install the roll guide by attaching the hooked end on the rail. The bottom of the holder will fit in the notch on the Printer.



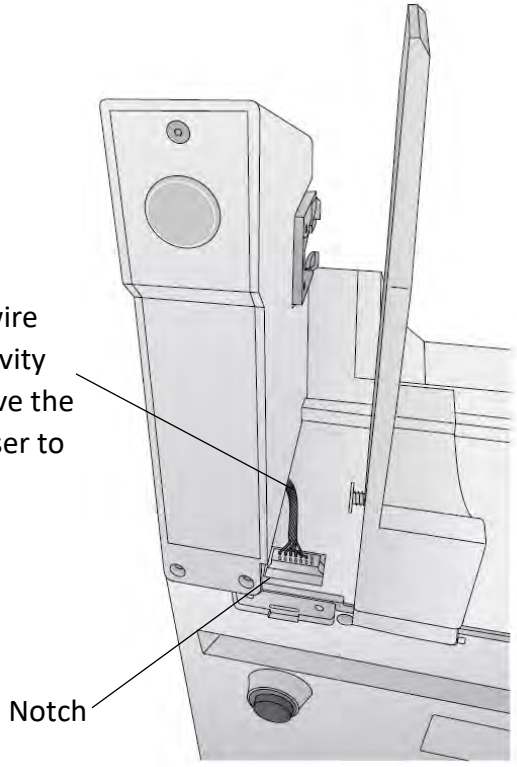




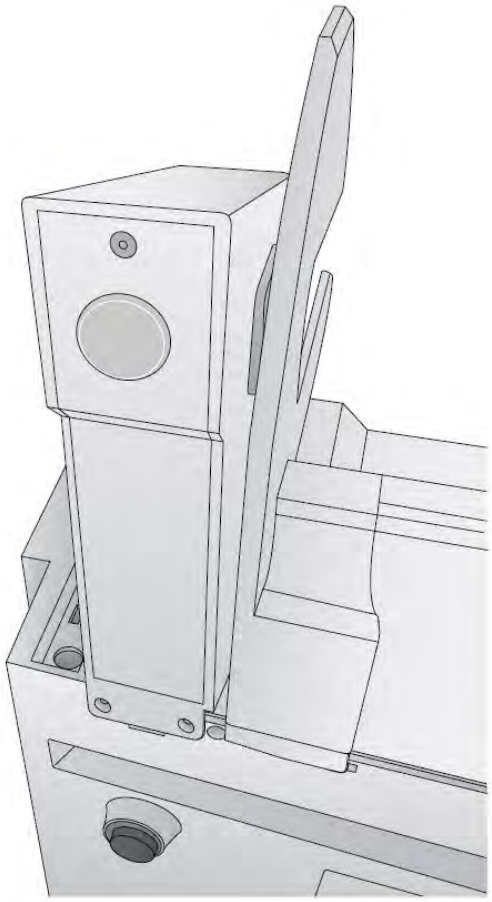
5. Slide the guide to the stop.
6. Locate the remaining roll holder with the protruding wire. Connect the wire to the port on the Printer. Tuck the wire inside the cavity.

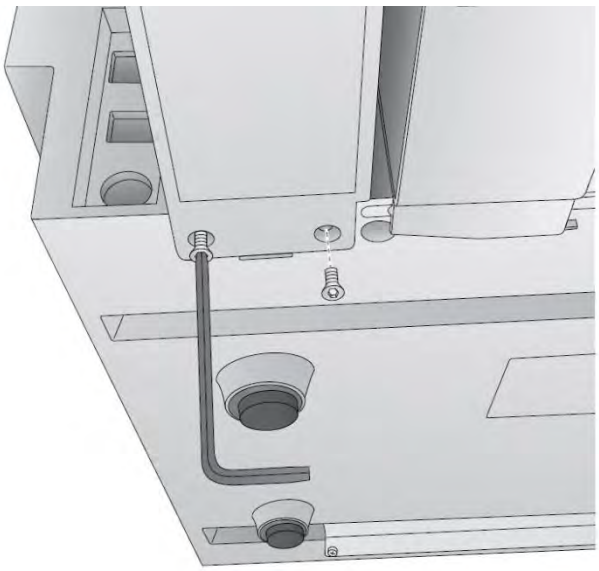


Push the wire into the cavity as you move the holder closer to the notch



7. Snap the holder in place so the two screw holes line up with the holes on the Printer.



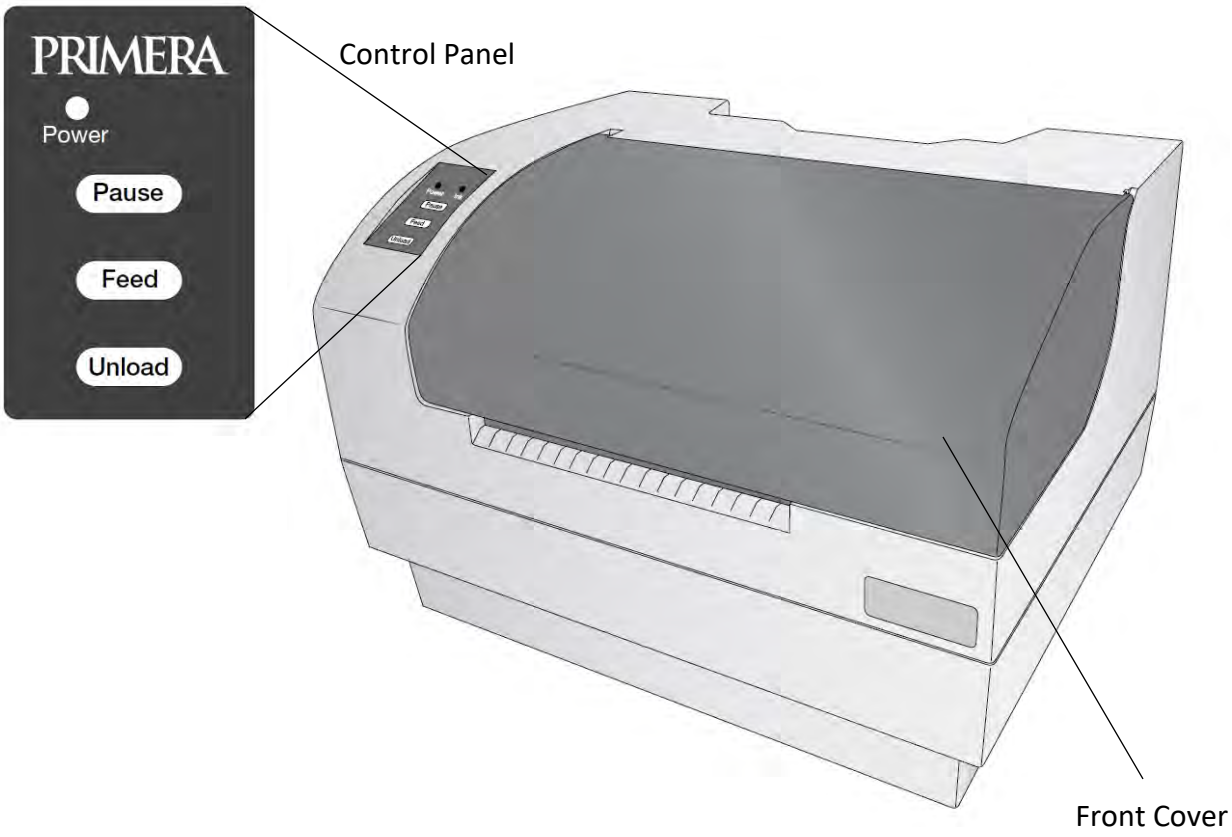


8. Install the T8 screws using the INCLUDED Allen key or a Torx T8 screwdriver.

9. Rotate the Printer back on its feet.

1E Identifying the Parts

The illustrations on the following pages show the Printer from various angles so all important parts can be identified.



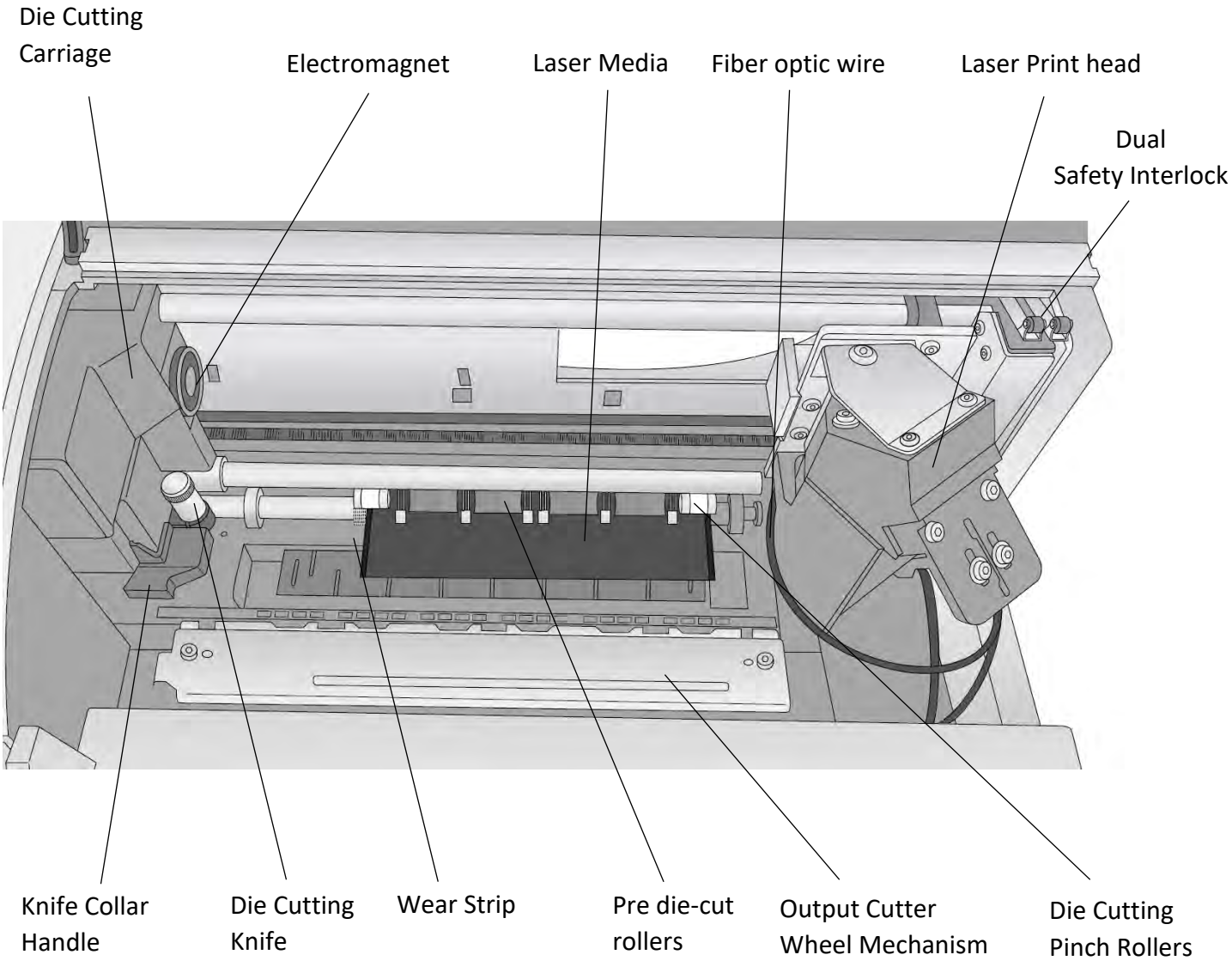
The **Power LED** indicates that the Printer is on and ready to receive print jobs.

The **Pause Button** is pressed to pause a job to allow for loading of label stock and ink cartridges. The Printer pauses after the printing of the current label has finished.

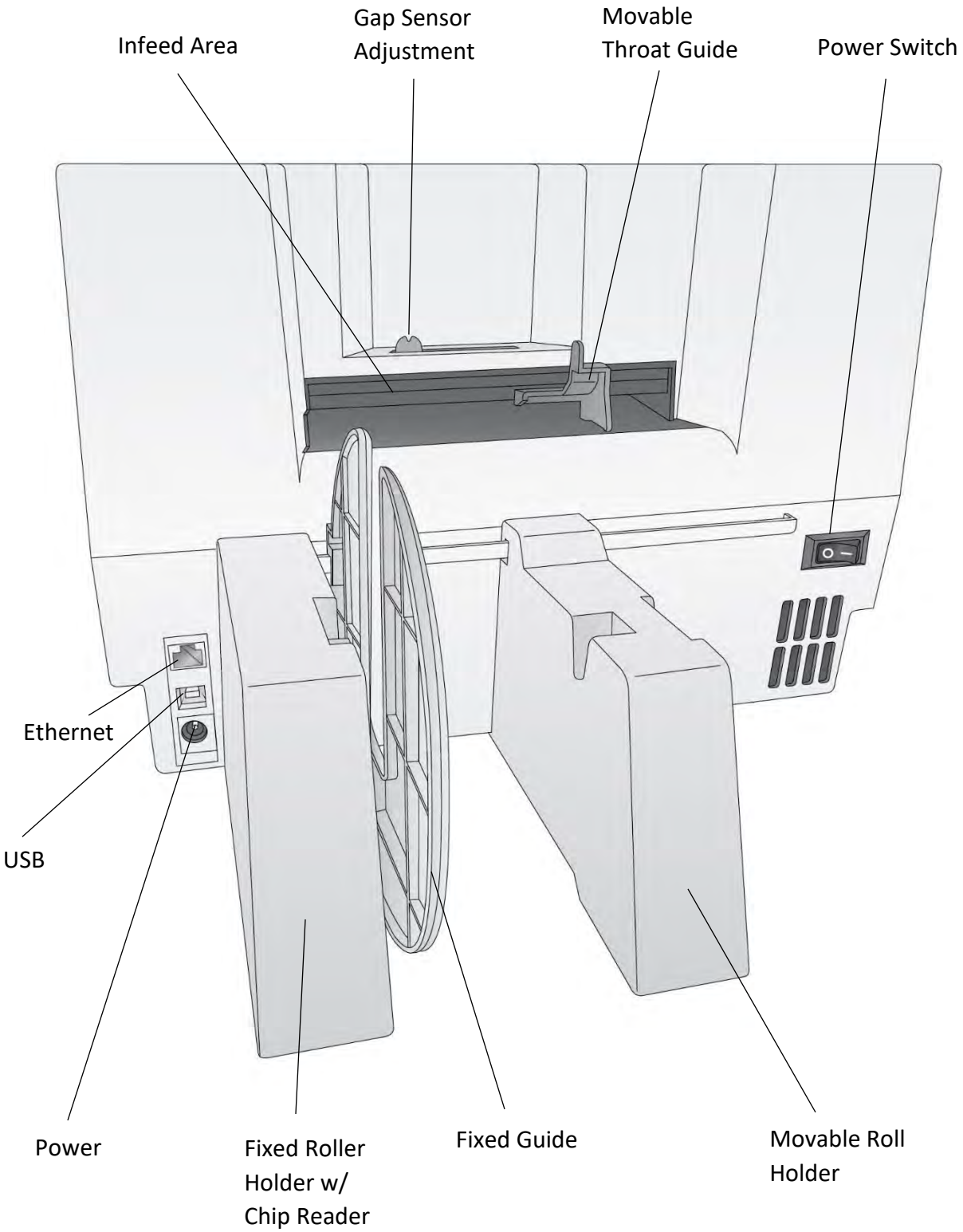
The **Feed Button** is pressed in order to load label stock if the Printer does not automatically detect the stock. When stock is loaded each press of the button will cause one label or a few inches to be fed through the Printer.

The **Unload Button** is pressed to unload label stock after you receive an End of Roll message in PrintHub. The Printer will reverse the label stock through the feed area.

Interior


Die Cutting Carriage
Electromagnet
Laser Media
Fiber optic wire
Laser Print head
Dual Safety Interlock
Knife Collar Handle
Die Cutting Knife
Wear Strip
Pre die-cut rollers
Output Cutter Wheel Mechanism
Die Cutting Pinch Rollers

Back

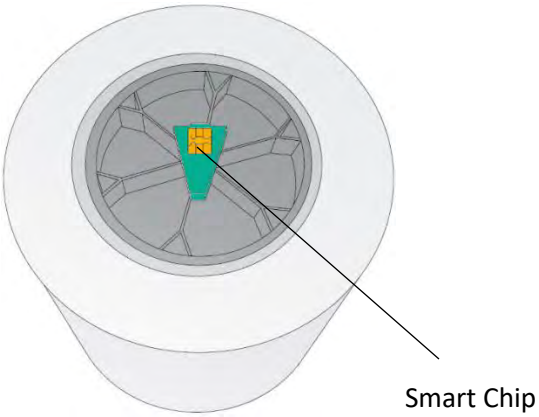

Infeed Area
Gap Sensor Adjustment
Movable Throat Guide
Power Switch
Ethernet
USB
Power
Fixed Roller Holder w/ Chip Reader
Fixed Guide
Movable Roll Holder

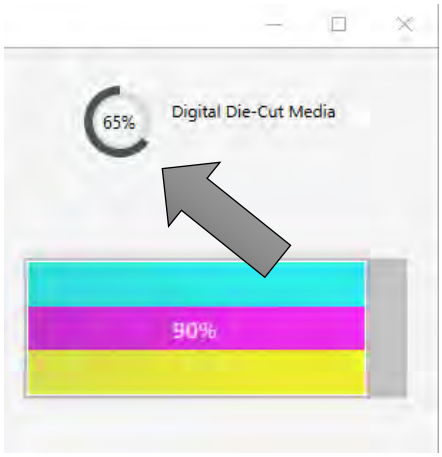
Section 2: Media and Knives

2A Label and Roll Specifications

Two types of media can be used.

1. **Digital Die-Cut Labels.** If you are using the Printer to digitally die-cut your own shapes and sizes only Primera label stock can be used. This media comes from Primera with a smart chip that identifies the media, tracks the percentage remaining and automatically sets the sensor type to continuous. You will know it is installed when you see the Digital Die-cut Media percentage in the upper right corner of PrintHub. If you do not see this indication, the digital die cutter will not be enabled and you will not be able to cut shapes.





Primera offers laser marking media from Schreiner which is a black media with a yellow liner. Text and graphics appear white when the media is marked.

Other media cannot be used even if you take the chip from new/old Primera media for the following reasons:

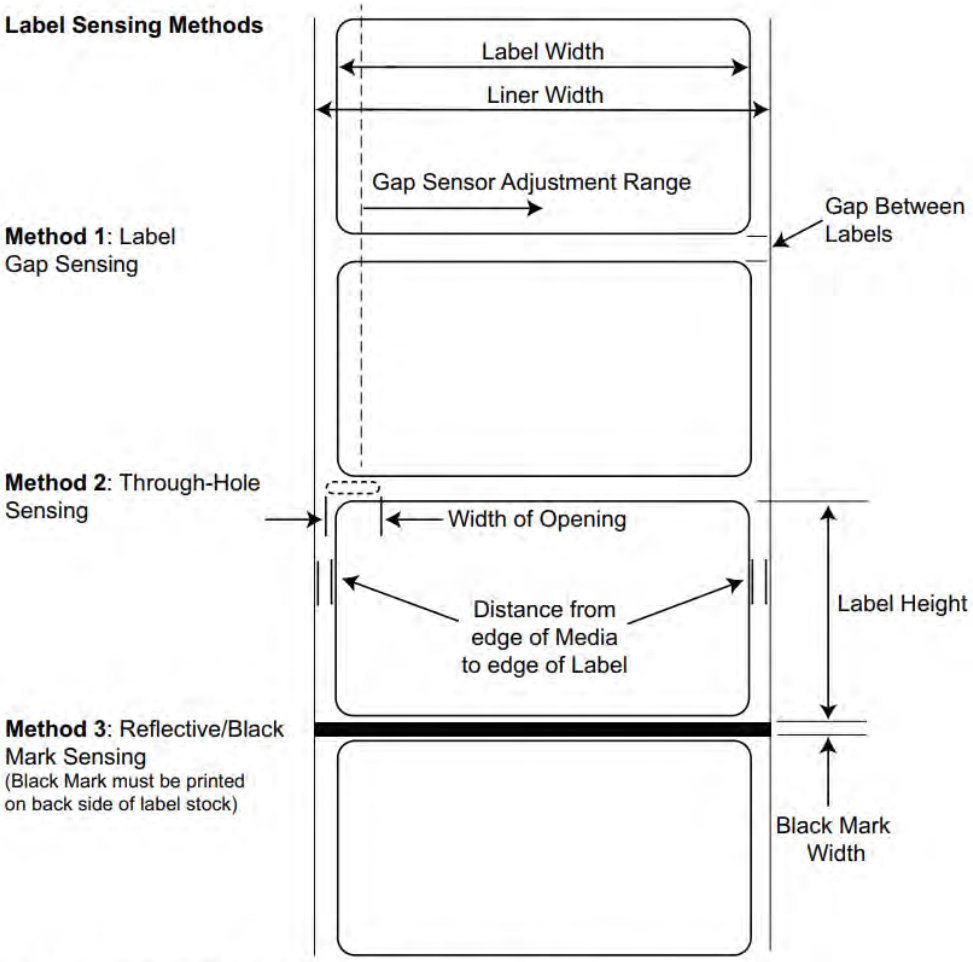
- Old chips cannot be reused once they reach 0% remaining.
- Other media has liner that may be too thin. Liner on Primera media is specially created for our Printer to prevent cut through to the wear strip
- Other media is not compatible with this laser marking system and either will not be marked or will produce smoke/fumes when marked.

2. **Pre Die-Cut Labels.** Pre die-cut sized label stock can be used in the Printer. This media has the shape already cut on the roll before you load it into the Printer. Refer to the

specifications and settings in the following sections before ordering custom stock from other companies.

Important!

- Catalyst can only be used with phase change laser marking label stock manufactured or approved by Primera. This Printer will not work with media that produces smoke/fumes/etc that will obscure the laser. There is no integrated filtration system to clear the smoke.



Note: See table below for Max and Min values in inches and mm.

	Max	Min
Label width	5” (127mm)	0.5" (13mm)
Liner/media width	5.125 (130.17mm)	2.125" (54mm)
Label height/length	12” (305mm)	0.5" (13mm)
Gap between labels	10" (253mm)	0.10" (2.5mm)
Width of through-hole	0.5" (12.65mm)	0.25" (6.325mm)
Gap Sensor Adjustment Range (from right edge)	2.05" (52mm) (see diagram below)	0.40" (10.16mm)
Reflective/Black Mark Width*	N/A	0.1" (2.54mm)
Max Outer Diameter (OD)	6.0"(152.4mm)	N/A
Inner Core Diameter (ID)	3.0" (76.2mm)	3.0" (76.2mm)
Recommended Total Thickness (Liner + Label)**	.0010” (10 mil)	
Distance from edge of media to edge of label	Printer assumes 2mm (1/16”) gap. However, this is adjustable via the left margin offset.	

* The Reflective/Black Mark should be opaque to infrared light. The mark should be between the labels. The end of the mark should correspond with the beginning of the label.

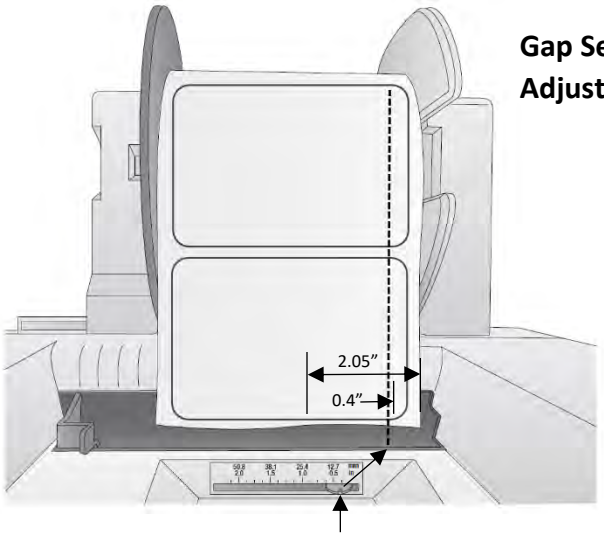
** This is the recommended maximum. There are two factors that determine whether the Printer will accept any particular stock thickness.

1. The ability for the Printer to pull the paper through the print area.
2. The ability for the sensor to read through the backing if the sensor is set to die-cut.

If you are printing in continuous or reflective label sensing mode number 2 does not apply. The fact that the Printer must read through the backing in die-cut mode will limit the thickness much more than the Printer's ability to pull the paper through the print area. However, if you adjust opacity level of the liner enough to allow the label to be seen by the stock sensor, the thickness will only be limited by the Printer's ability to pull it through the printer area. For these reasons the weight or thickness of the liner is a variable that cannot easily be defined. Primera recommends and uses 40# liner with all Pre Die-Cut label stock.

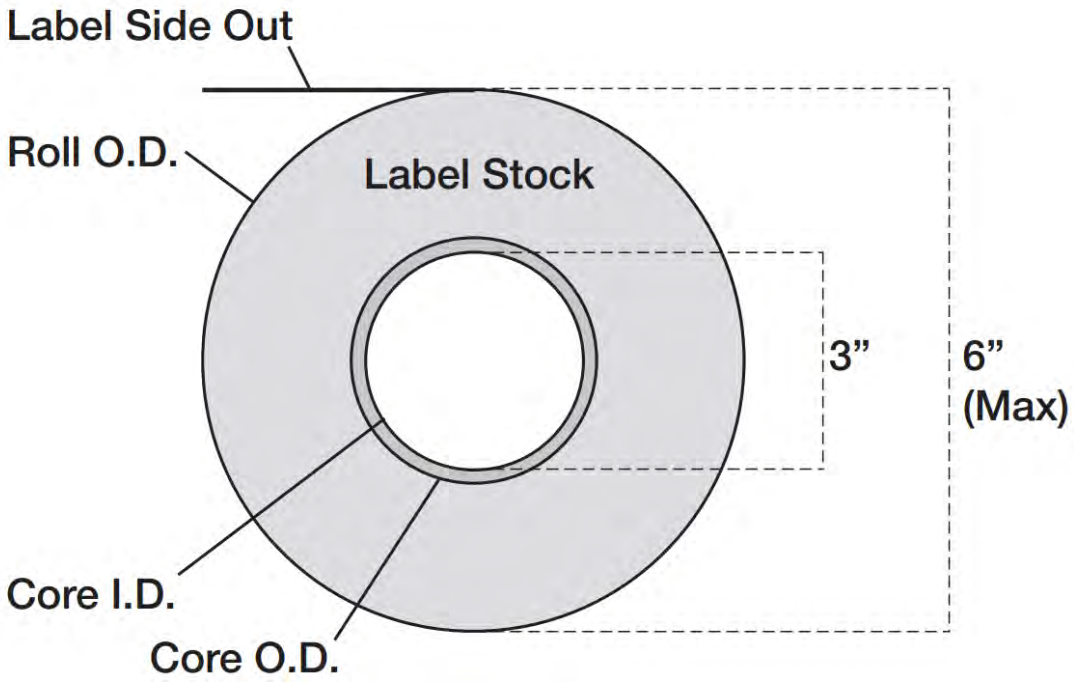
It is important to test all label stock with the intended Printer before ordering large quantities!

Gap Sensor Adjustment



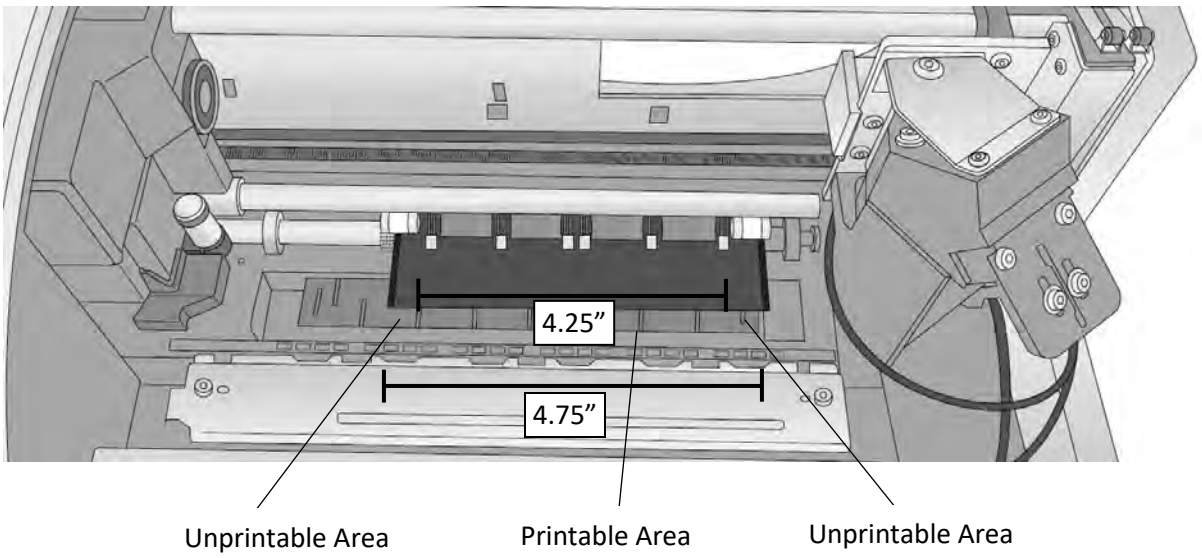
Gap Sensor Position Indicator from right edge of media. The position indicator corresponds to the ruler NOT the installed label stock.

Roll Specifications:



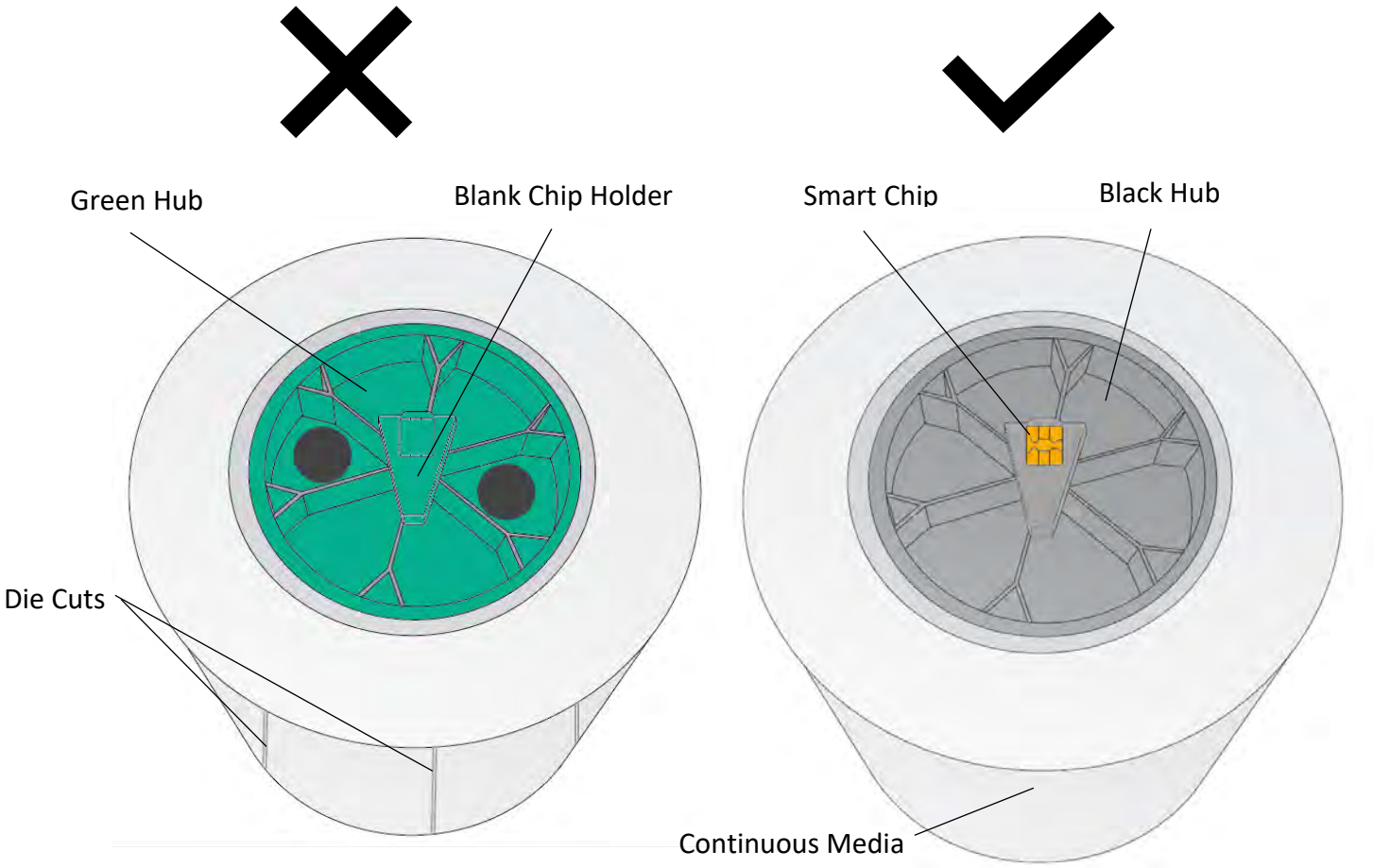
Note on Label Orientation: If you are using an applicator to apply your labels, be sure to order label stock with the correct orientation for your applicator. For example, most applicators will apply the side of the label first, so you will want to print the labels sideways.

Digital Die Cut Media Notes: Even though the width of the media is 4.75 inches, the drive rollers on either side prevent printing in the areas indicated. The knurled rollers that bite into the media to drive it, damage the printable surface in this area. The actual printable area is 4.25 inches.



2B Installing Digital Die-Cutting Label Stock

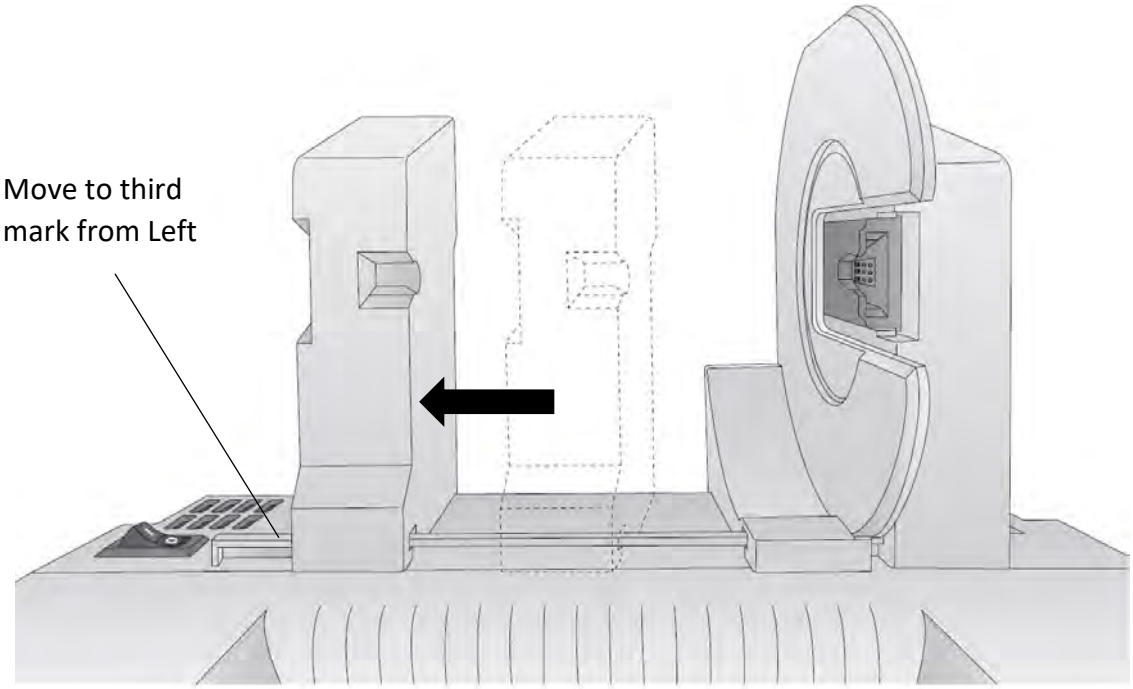
Digital Die-Cut Labels. If you are using the Printer to digitally die-cut your own shapes and sizes only Primera label stock can be used. This media comes from Primera with a smart chip that identifies the media, tracks the percentage remaining and automatically sets the sensor type to continuous. You will know it is installed when you see the Digital Die-cut Media percentage in the upper right corner of PrintHub. If you do not see this indication, the digital die cutter will not be enabled and you will not be able to cut shapes.



Pre Die-Cut Roll
(User must install Green Hub)

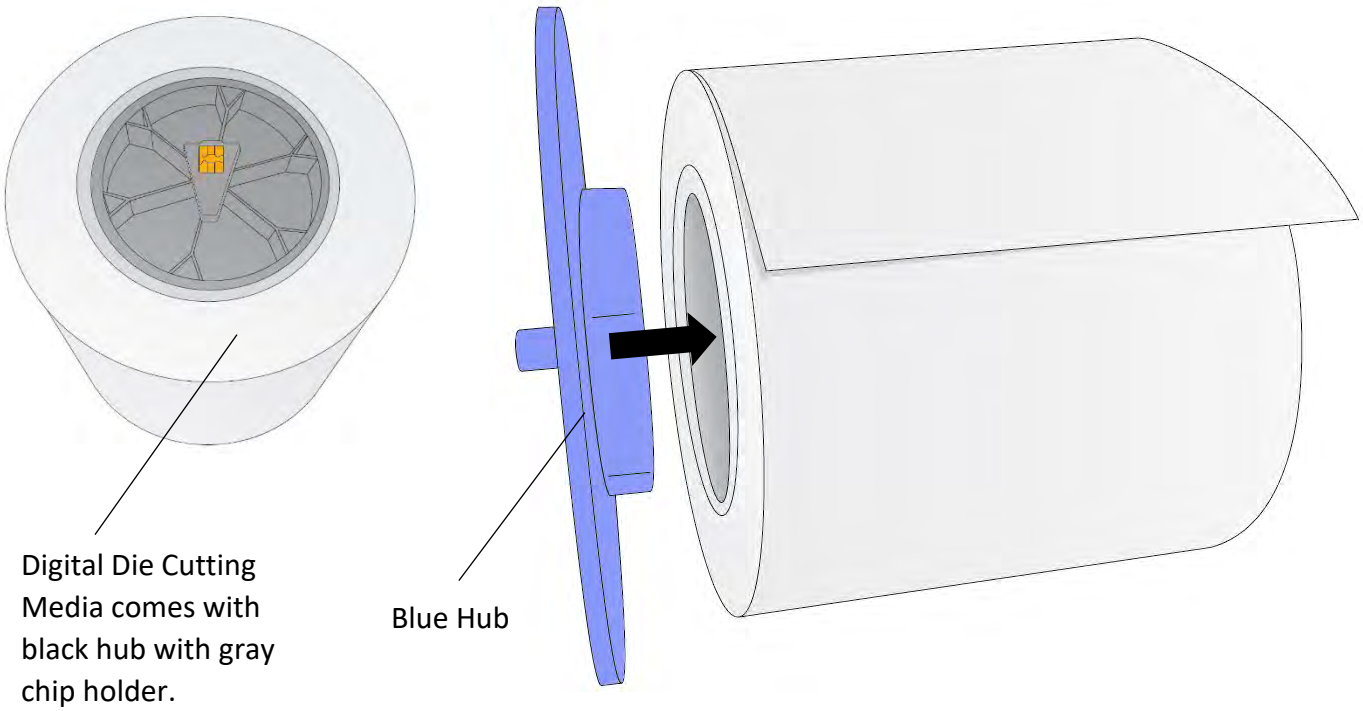
Digital Die-Cut Roll
(Hub/Chip comes preinstalled)

1. Move the roll holder to the preset position for on demand digital die-cutting (3rd mark from the left – 1.25”)

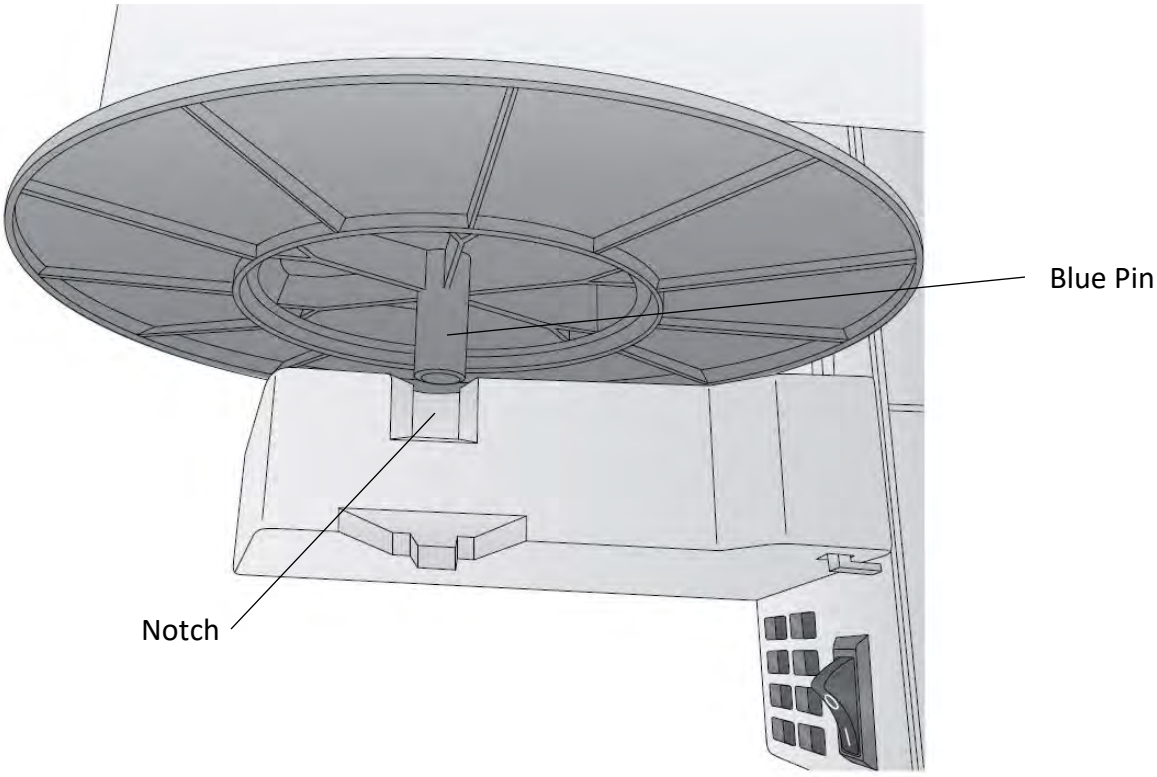


2. Install the Blue Hub on the open side of the digital die-cutting media.

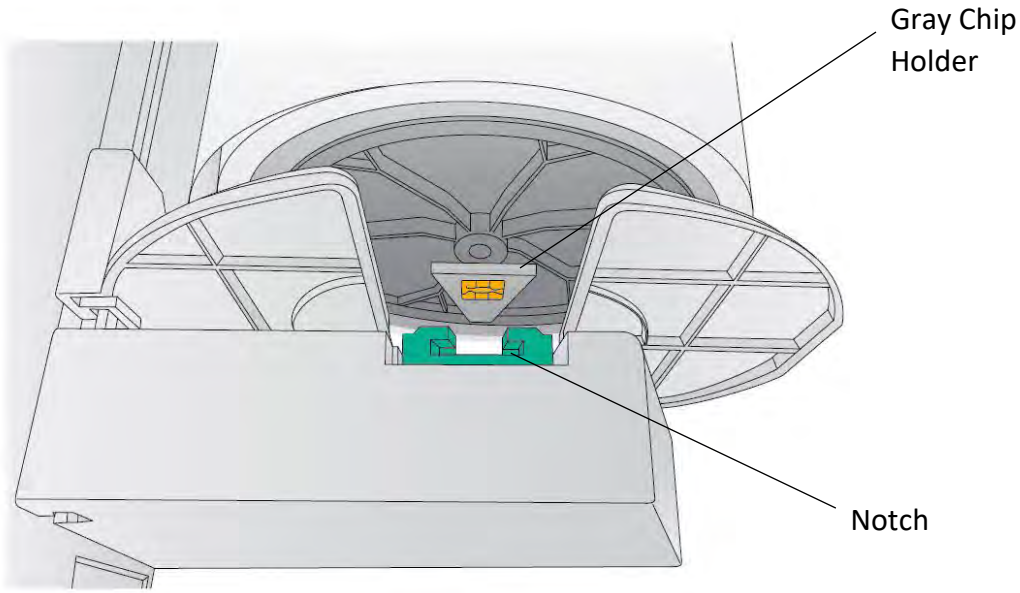
Note: The green hub is not needed for digital die-cutting and can be stored in the notch on the movable holder.



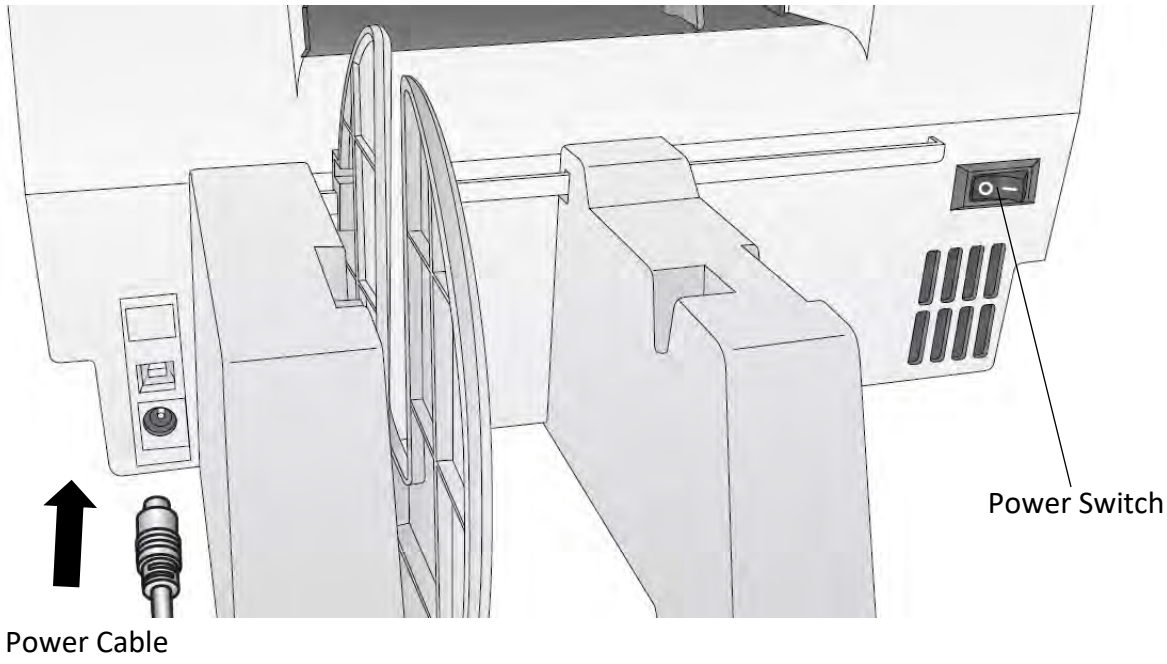
3. Set the roll in place so that the blue pin sits in the notch on the roll holder.



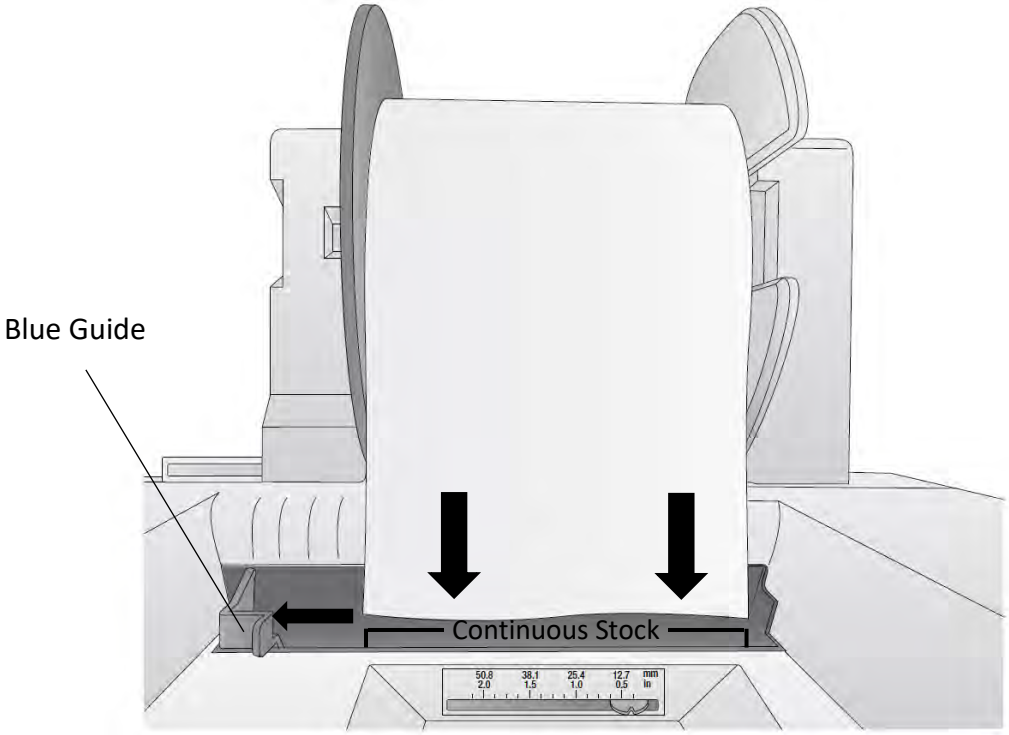
4. Make sure the gray chip holder fits in the green slot on the roll holder.



5. Before feeding the stock, you must plug-in power and switch on the Printer.



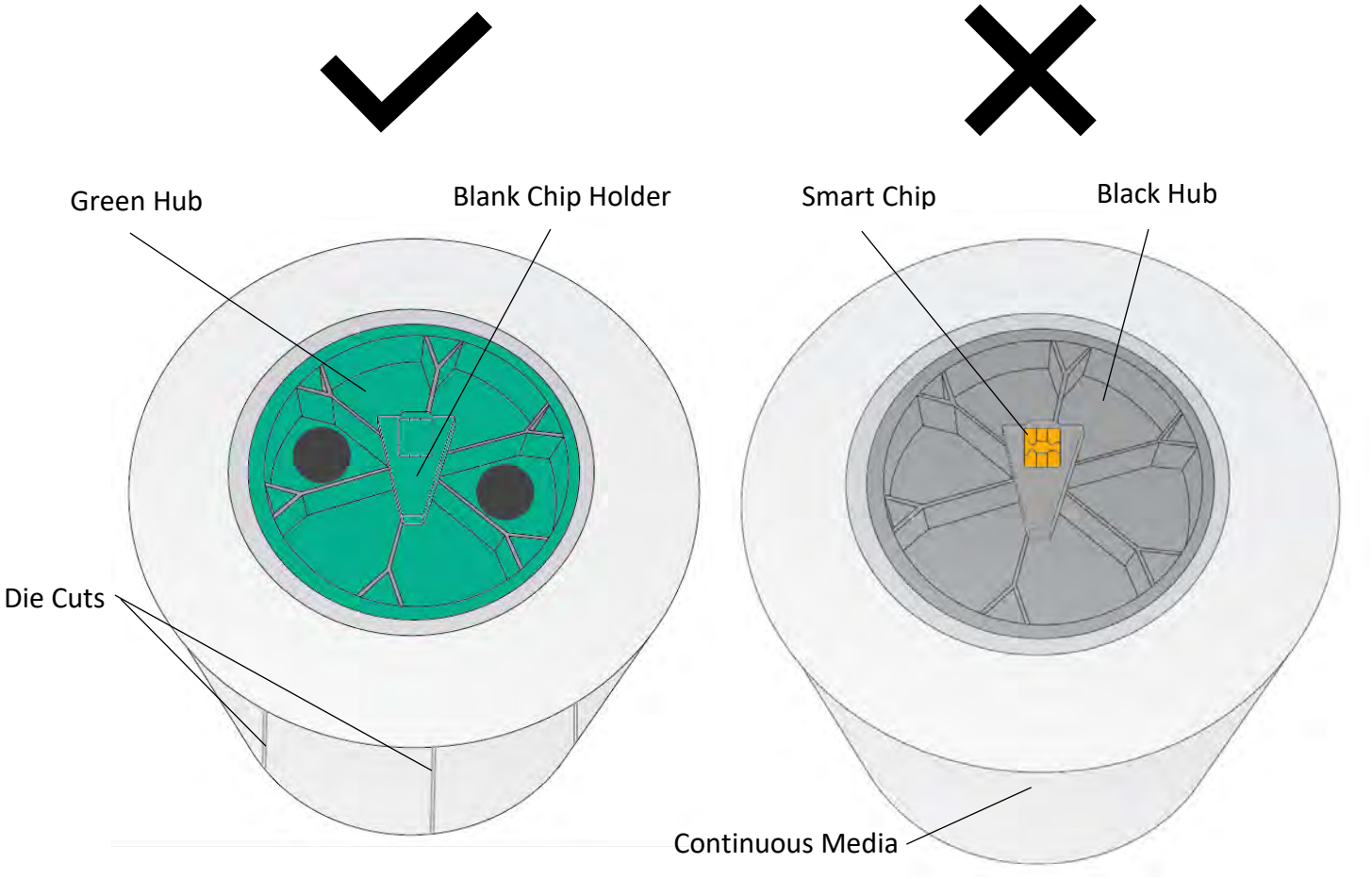
6. Guide the leading edge of the roll into the feed area. Move the blue guide to the far side. Align the media with the “Continuous Stock” marks in the plastic infeed area.



7. Push until the Printer detects the stock, grabs it and pulls it through the Printer.

2C Installing Pre Die-Cut Label Stock

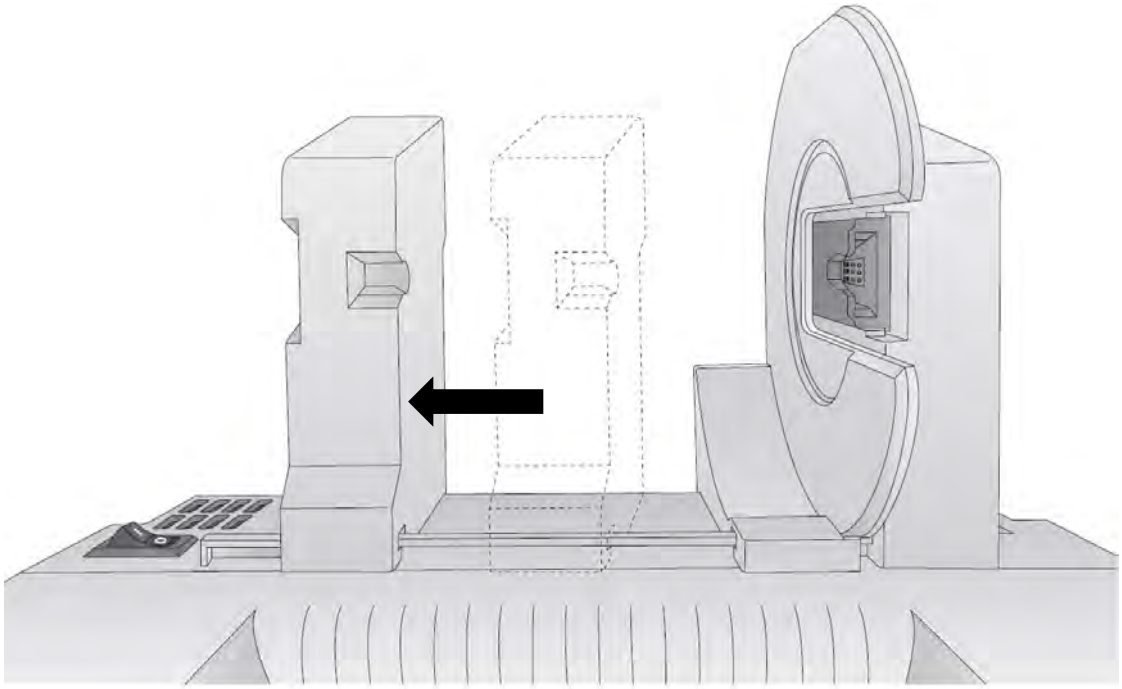
Pre Die-Cut Labels. A wide variety of pre-die-cut label stock can be used in the Printer. This media has the shape already cut on the roll before you load it into the Printer. The plotter cutter is not used for this label stock. These are available from Primera or other companies.



Pre Die-Cut Roll
(User must install Green Hub)

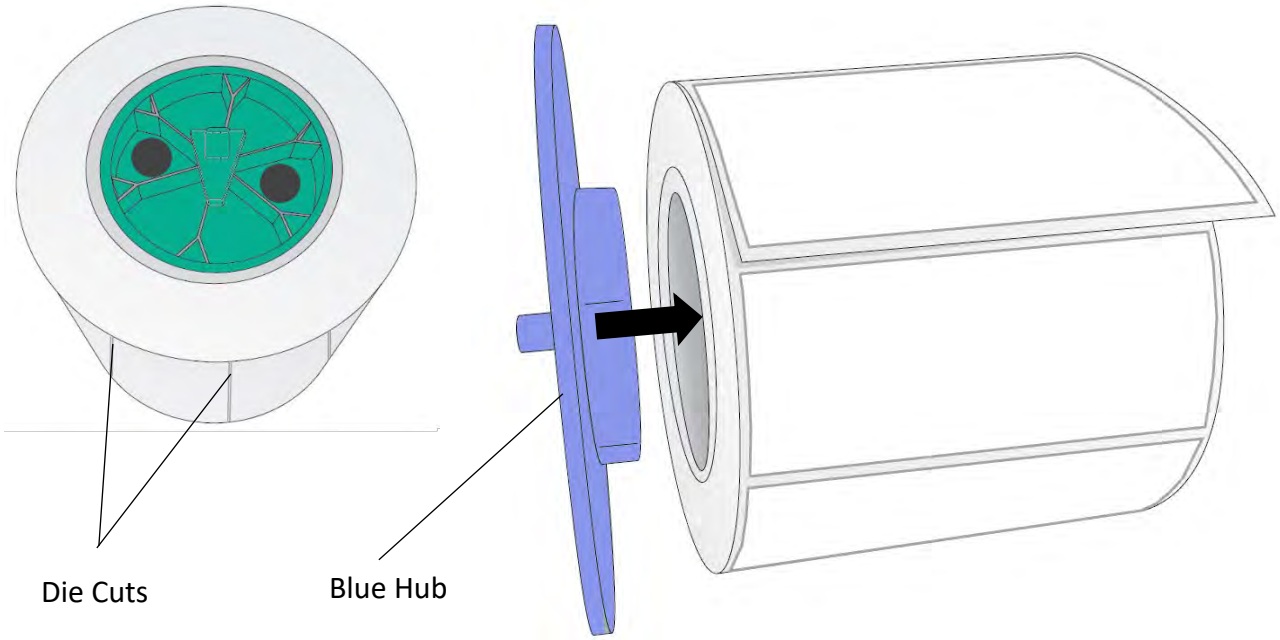
Digital Die-Cut Roll
(Hub/Chip comes preinstalled)

1. Move the roll holder to the approximate position which matches the width of the stock you are installing. You can always fine-tune this later.

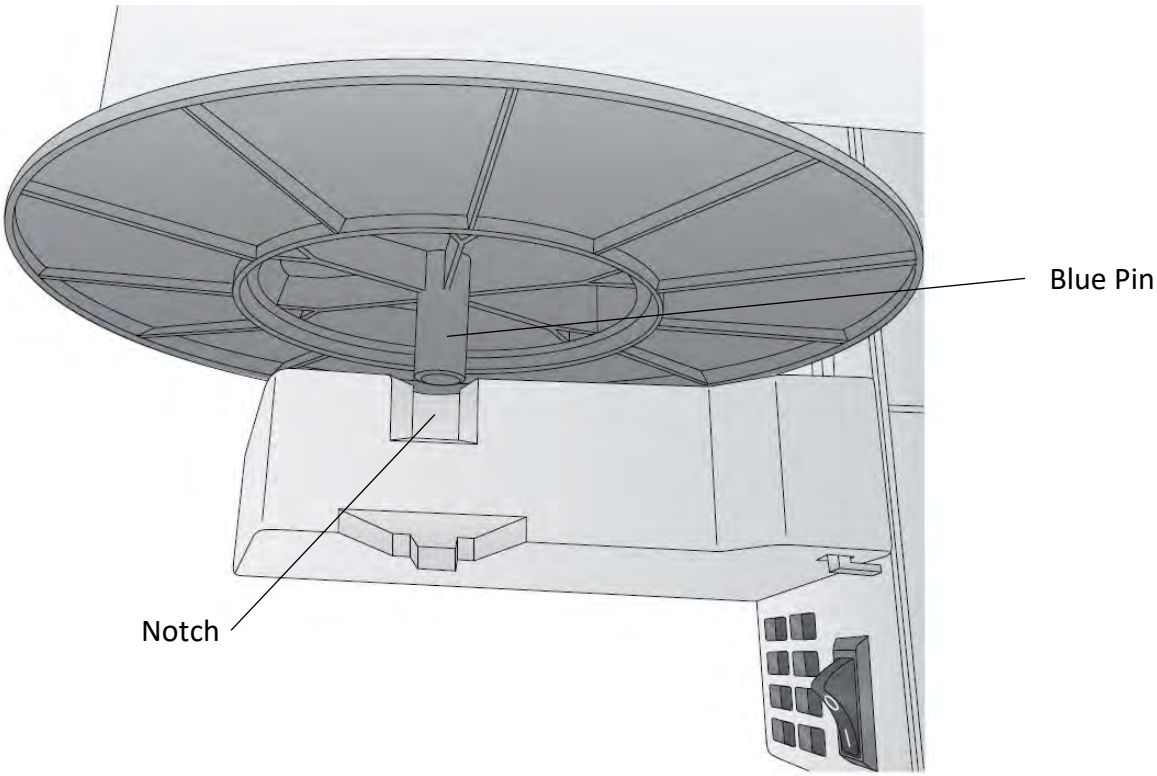


2. Install the Green Hub on the right side of the pre die-cut media.

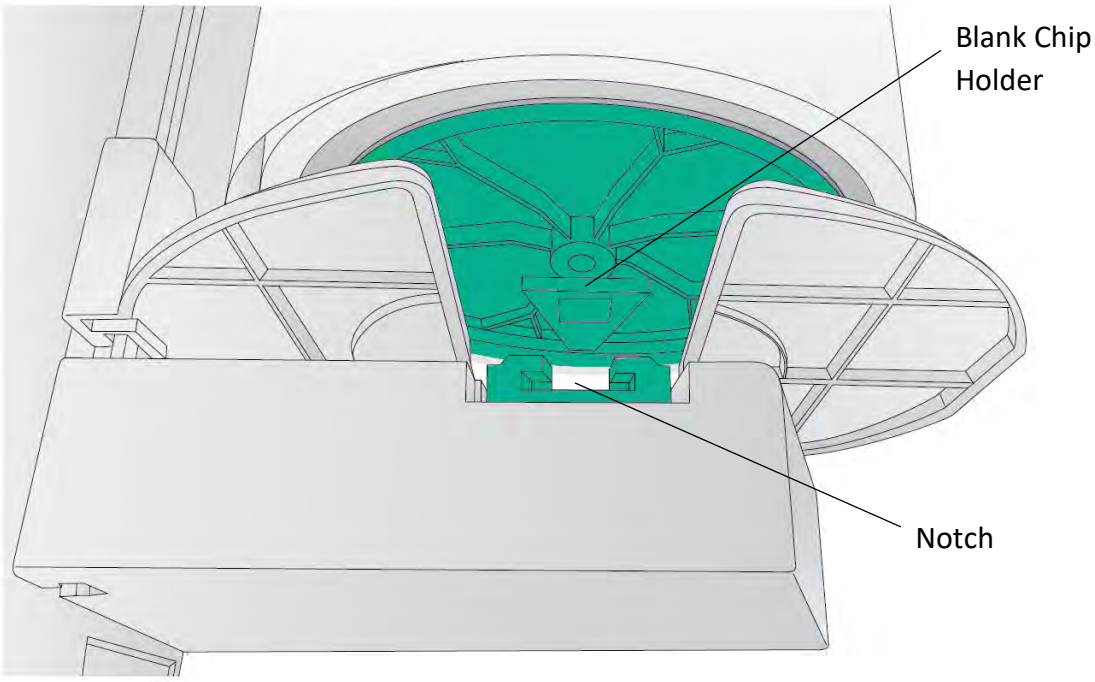
3. Install the Blue Hub on the left side of the pre die-cut media.



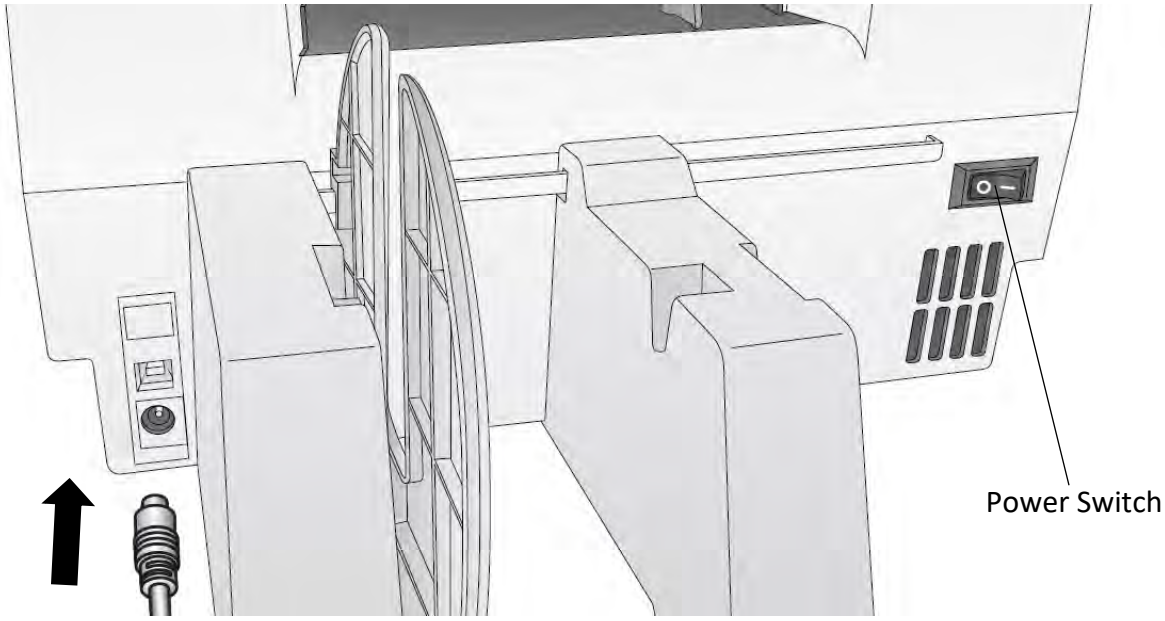
4. Set the roll in place so that the blue pin sits in the notch on the roll holder.



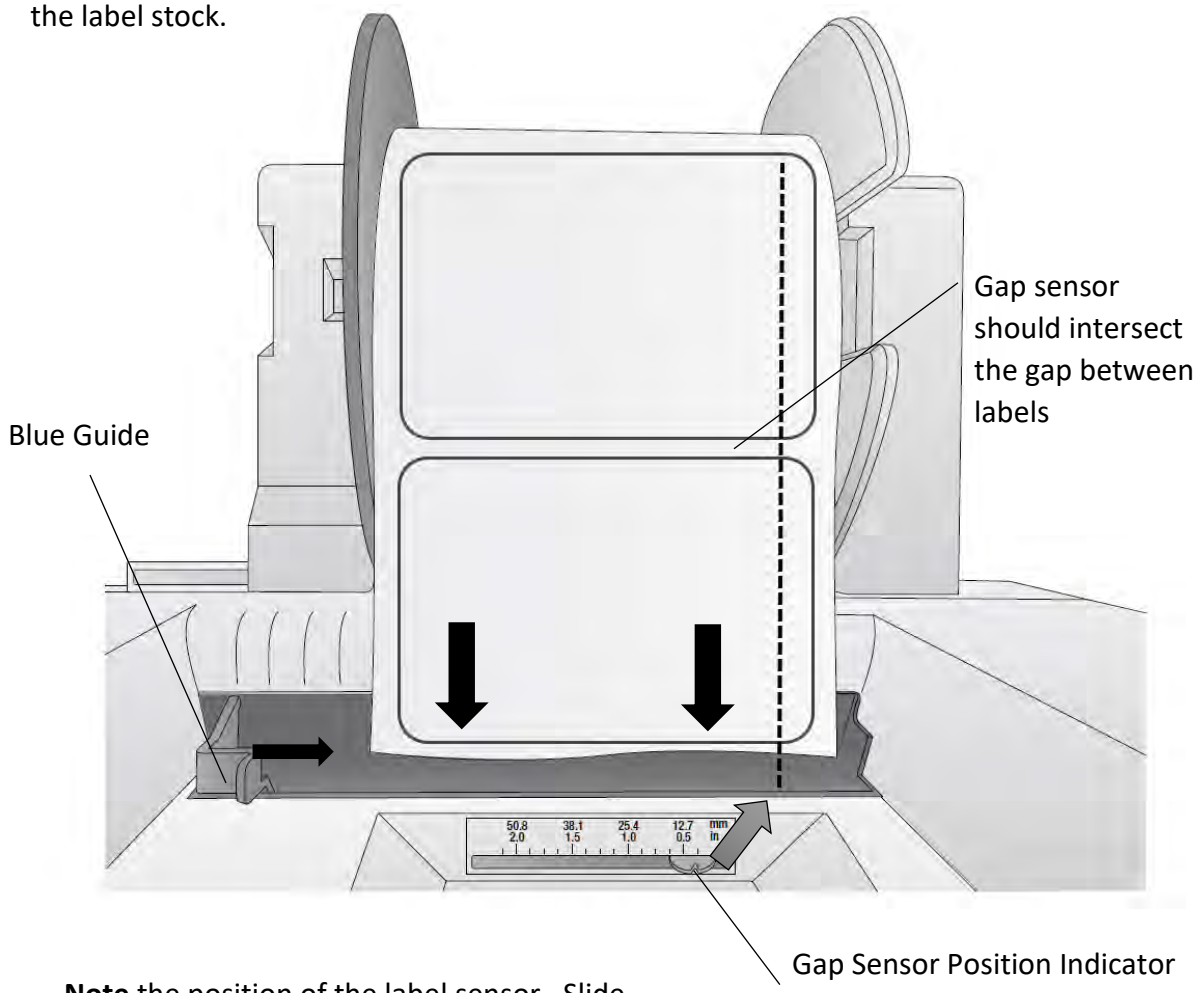
5. Make sure the green blank chip holder fits in the corresponding green slot on the roll holder.



Before feeding the stock you must plug in power and switch on the Printer.



6. Guide the leading edge of the roll into the feed area. Move the blue guide so that it touches the label stock.



Note the position of the label sensor. Slide the sensor position indicator so that it intersects with the gaps between your labels. For most label stock you will not need to move this.

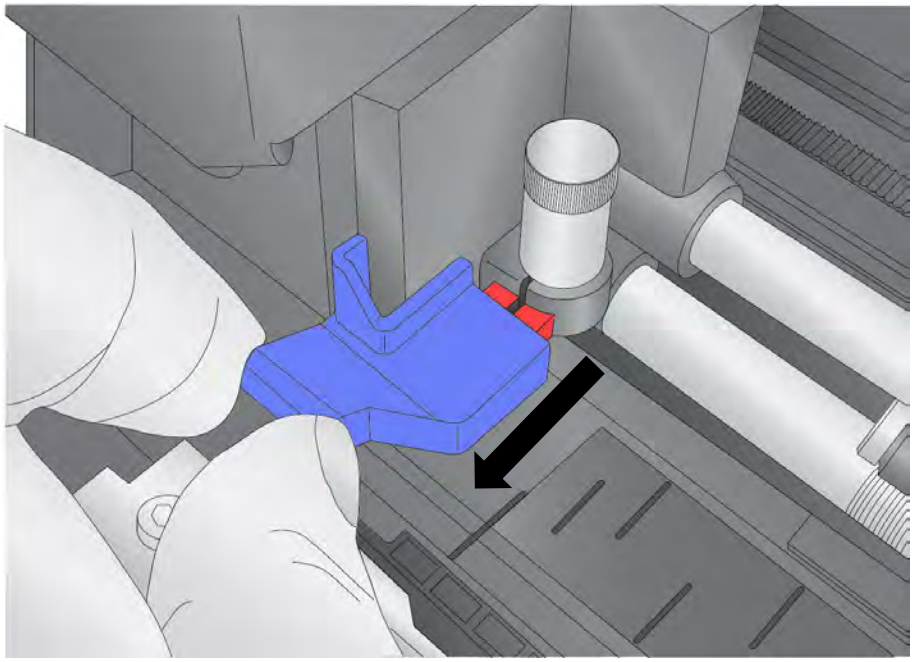
7. Push until the Printer detects the stock, grabs it and pulls it through the Printer.

2D Replacing the Digital Die-Cutting Knife holder

Install the included die-cutting knife shown here.

1. Open the cover.

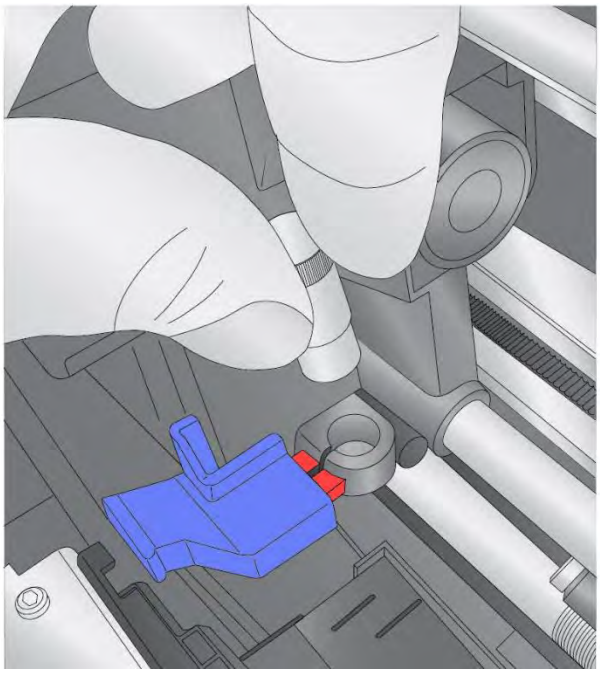
2. Pull out on the blue handle to loosen the knife collar.

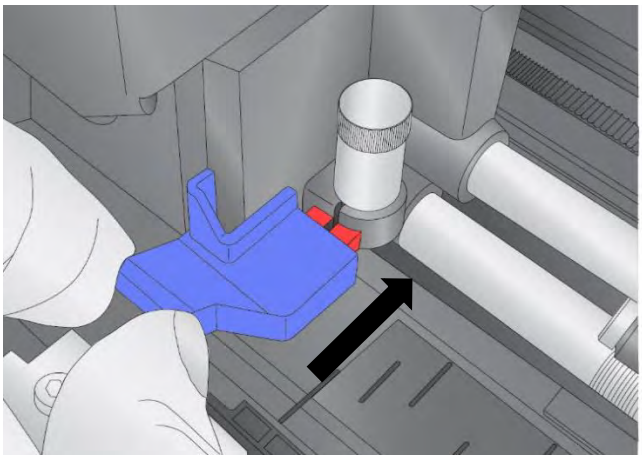


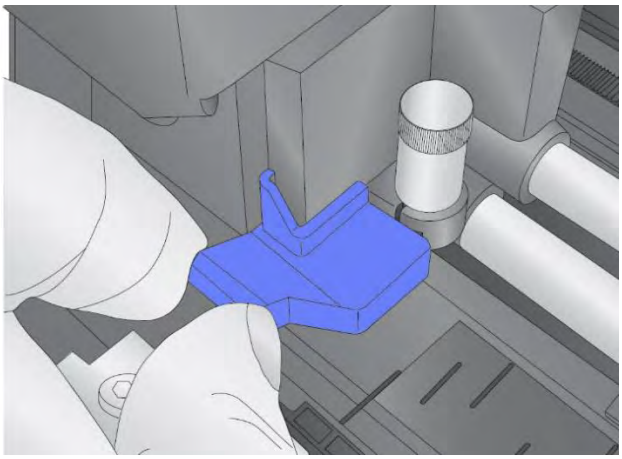
3. Install the knife holder.

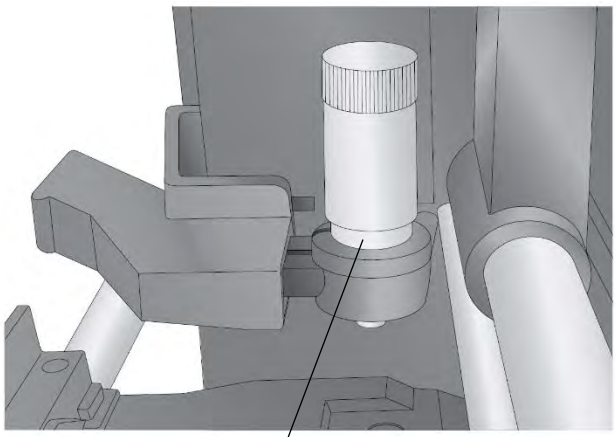
4. Push on the knife so it goes all the way down before pushing the collar in.

5. Push the collar to tighten the knife holder and allow it to cut.

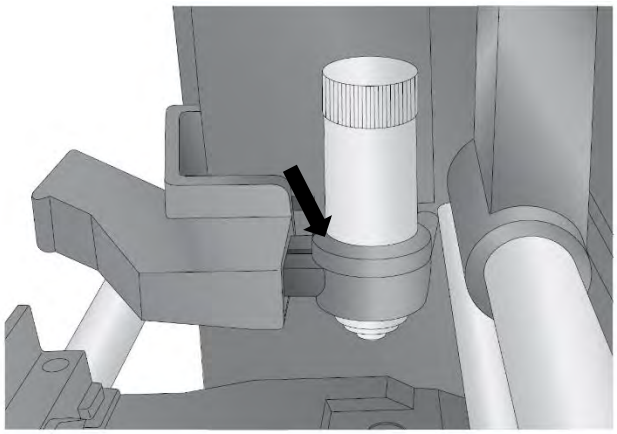








Incorrect



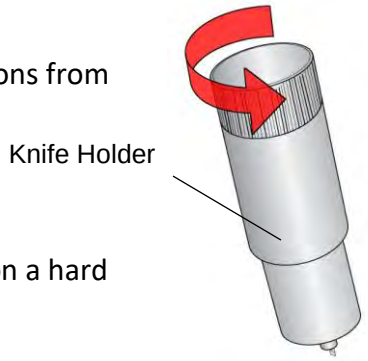
Correct

2E Replacing the Cutting Knife

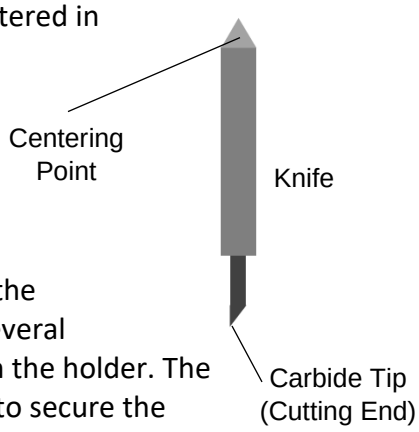
When a knife is dull it will no longer cut through the label at maximum pressure. You will start to see ragged cuts or cuts that do not cut all the way through the label material. You can attempt to increase the pressure but you'll probably need to replace the knife.

If a knife cuts through the liner and contacts the wear strip it may break the tip of the knife. This can be seen under 10x magnification using a loupe or magnifying glass. If the tip is broken the knife must be replaced.

If your knife needs replacement, follow this procedure:



1. Remove the knife holder from the carrier using the instructions from section 2D.
2. Rotate the cap of the knife holder counter-clockwise.
3. Remove the knife from the holder. You can tap the holder on a hard surface to free the knife from the holder.
4. Locate a new knife. Remove the molded plastic cover from the knife. The plastic cap covers the cutting end of the knife. However, both sides are sharp! The cutting end has an angled carbide tip. The top end comes to a point so it can be easily centered in the receiving divot on the knife holder cap.

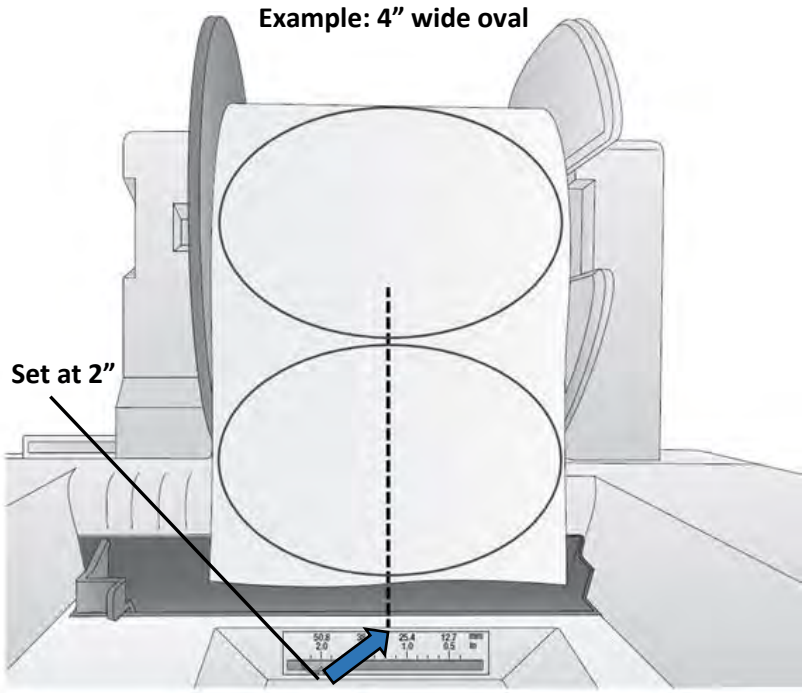


5. Insert the cutting end into the knife holder.
6. Using the knife holder cover center the back end of the knife in the holder. You may need to screw down the cover and reverse it several times until the knife has been centered. Do not force the cap on the holder. The carbide tip will break. A very light amount of force is necessary to secure the knife holder cap.

Replacement Cutter Knife 5 pack Part Number: 074332
Replacement Knife Holder Part Number: 074548

2F Adjusting the Gap Sensor Position (Pre Die-Cut Labels Only)

If you are using label stock other than standard square / rectangular die-cut labels such as circular die-cut labels or through-hole stock use the instructions below to adjust the position of the label stock gap sensor. The sensor can be adjusted using the slide bar on the back of the Printer. Below the slide bar is a measurement which represents the distance between the edge of the label stock and the sensor. Measure the distance from the edge of the label stock to the correct position on the stock. Set the sensor so the side of the slide bar lines up to this measurement. See dashed line in the illustration below.



Important Note: You must adjust the stock sensor before loading nonstandard label stock.

Circular Labels

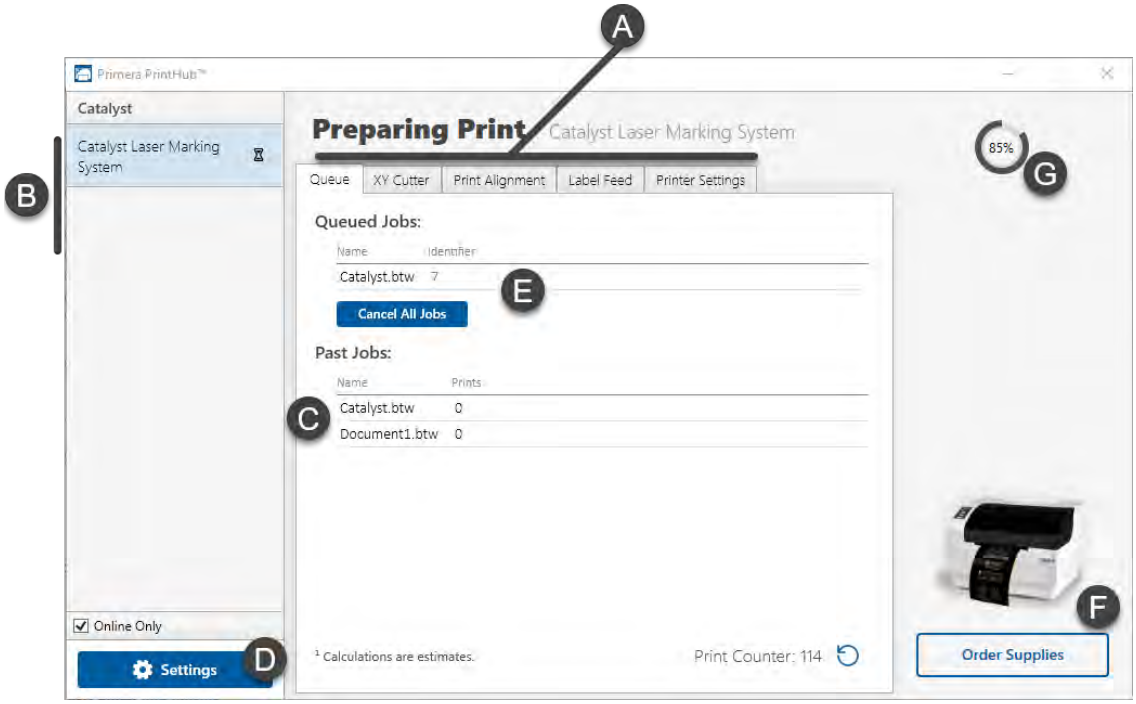
If you are using Circular Labels you must adjust the stock sensor to correspond with the very top of the label where the circles are closest together. If the sensor is too far to the right or the left the Printer will still sense the label but the image may be offset downward because the Printer will start printing at the wrong position. If you are using stock that has multiple labels across, make sure the sensor corresponds to a place on the stock that has a label and not a vertical gap

The sensor can only be moved a maximum of 2 inches from the left side of the printable area. This means that the maximum diameter circular label that can be printed is 4 inches. For circular labels larger than 4 inches in diameter, you must have a black mark printed on the back of the label stock. This means that you must change the Stock Sensor Mode to Reflective. The Printer will now look for the black mark representing the beginning of the next label instead of the die-cut. For more information on changing the Stock Sensor Mode see section 3C.

Section 3 Primera PrintHub (PC Only)

Primera PrintHub is used to interact with the Printer for status, maintenance, alignment, and several other functions. You can use it to manage these functions on multiple Catalyst printers and other Primera label printer models. PrintHub automatically installs with your printer driver and can be accessed through the printer driver preferences or as a program on your Windows start menu.

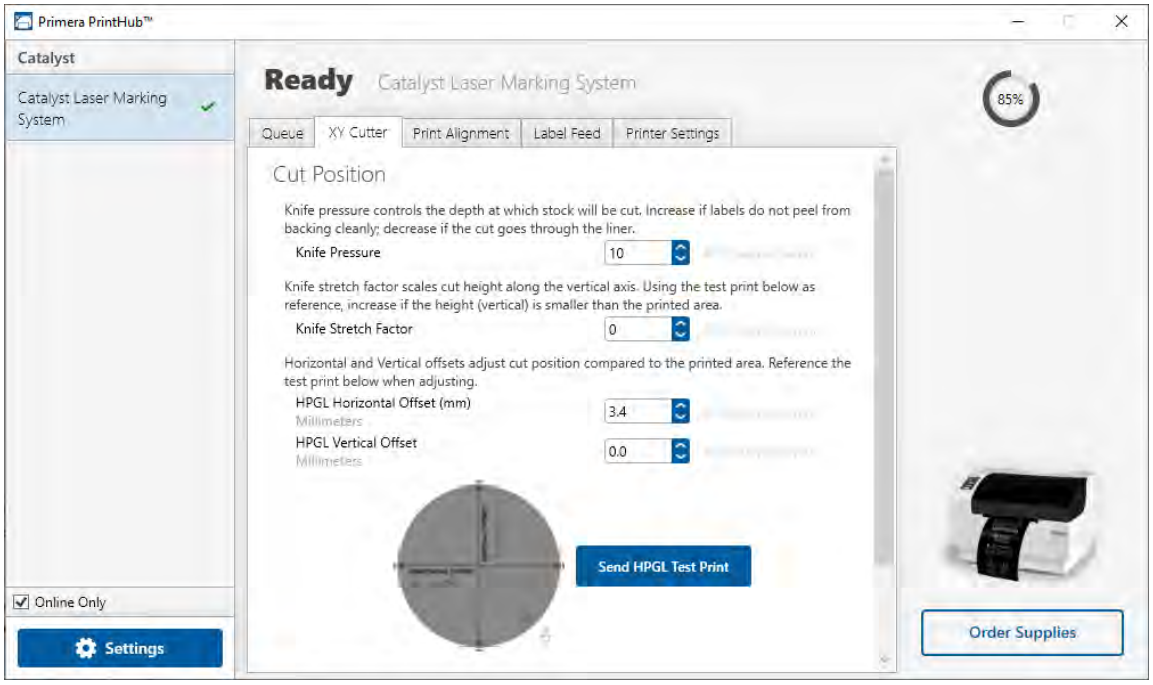
1. Connect the Printer via USB and turn on the power. The PrintHub accesses most of the information it uses from the Printer itself so the Printer must be turned on and communicating for the program to be useful.
2. Go to Start - Programs - Primera Technology - Primera PrintHub.



A. Adjust alignment, sensor mode, output mode and advanced settings.
B. If you have multiple Primera printers connected, they will be listed here.
C. Past jobs will show the last 5 jobs.
D. Application Settings
E. Print Queue shows the currently printing job.
F. Order Link
G. Digital Die Cutting Media Status and Remaining Amount (If installed)

3A XY Cutter Settings – Cut Offsets, Knife Pressure and Stretch Factor

Cut Offsets, Knife Pressure and Stretch Factor settings can be found in Primera Print Hub on the XY Cutter Tab.



Cut Offsets If your cut does not line up with your printed image, you can adjust it using the **Horizontal Offset** and **Vertical Offset** settings. Press the Send Test Print to help you determine which direction to move the offsets or refer to the image below.

Knife Pressure affects how deep into the media the knife will cut. Ideally you want to cut deep enough to cut through the label layer on the top but not so deep that you cut through the backing paper (liner). When you cut through the backing paper your label will not peel cleaning off the backing paper. You will also score the wear strip under the cutting knife which can cause the knife tip to break. You will also need to replace the wear strip more often if you cut too deep.

Each roll of media will have a recommended value to add or subtract from the default baseline values used for Knife Pressure and Knife Stretch Factor. These values are listed below and printed on a label attached to the inside of the core.

Knife Stretch Factor can be increased or decreased to compensate for different feed thicknesses and textures of media. Thickness and texture can affect the feed speed of the media usually causing it to feed more slowly. This will cause the height/length of your cut to be shorter. If you find that your cut height/length is longer or shorter than the height specified in the print software, you may need to increase or decrease the stretch factor. Increasing this value with create a longer cut. Decreasing it will create a shorter cut.

Adjusting Knife Pressure over time.

Eventually, the knife blade will begin to wear and require more cut pressure to cut at the same depth as when it was brand new and sharper. Therefore, you may need to add cut pressure when cutting any media.

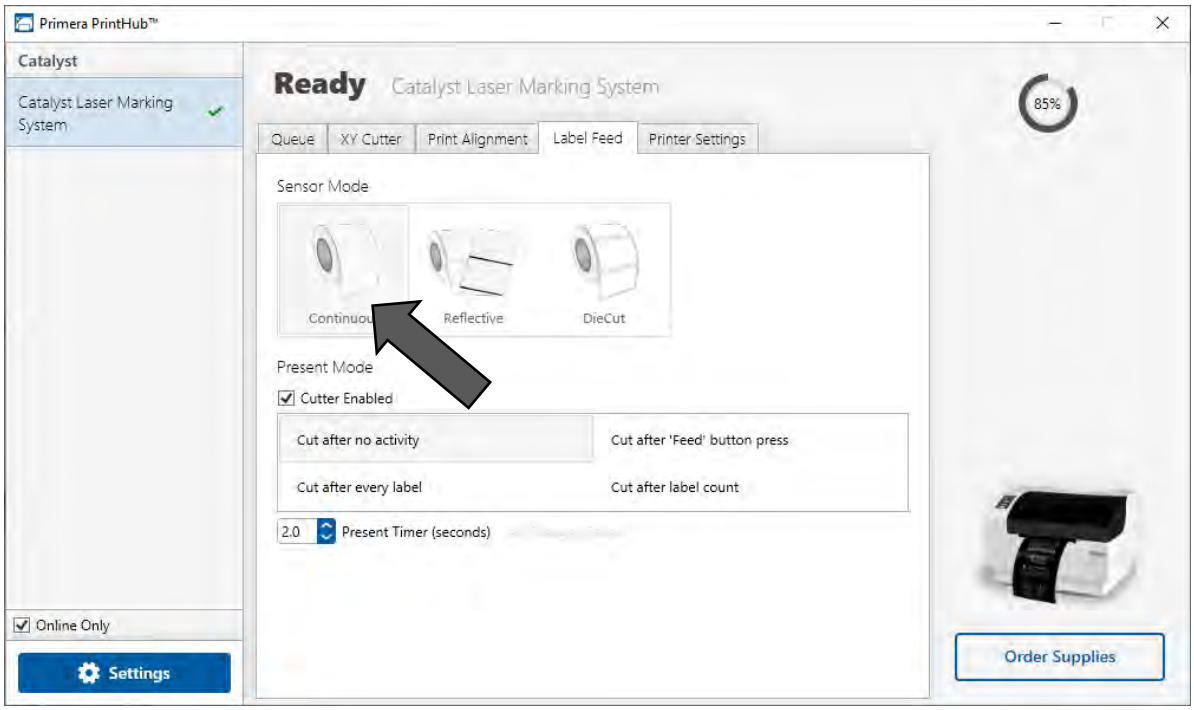
To determine if cut pressure should be increased or decreased, follow these steps.

1. Print and cut 1 copy and then attempt to peel the label from the liner.
2. Check for tear. If the label tears when you remove it, you will need to increase the cut pressure. Increase pressure in small increments to avoid over compensating and cutting through the liner.
3. Check the liner. Once you peel up the label, check the liner. If it has been cut through, decrease pressure.
4. Continue increasing or decreasing pressure until the label no longer tears when removed or the liner is not cut through.

3B Set the Gap Sensor Mode (Pre Die-Cut Labels Only)

The stock sensor mode refers to the method the Printer will use to detect the print starting position for each label. To adjust the stock sensor mode, open the PrintHub. In most cases you will NOT need to change this setting. By default, it is set to sense standard Pre die-cut labels. It is only necessary to change this setting if you are using clear labels or any label with a black sensing mark on the back. When you install Digital Die-Cutting Label Stock this setting will automatically be set for you.

1. Connect the Printer via USB and turn on the power. The Stock Sensor Mode setting is stored in the Printer's internal memory so you will not be able to access it unless the Printer is turned on and properly communicating with the computer.
2. Go to Start - Programs - Primera Technology - Primera PrintHub.
3. Click on the Label Feed (3rd tab from left).
4. Select the Stock Sensor Mode by clicking on the graphic that most closely corresponds to the stock you intend to install.
5. Load the label stock after you have set the sensor mode



There are three sensor modes:

Die-Cut (Default). If you are using standard die-cut labels that look similar to the graphic, use this setting regardless of the size of the label. Also, use this setting for Through-hole label material where a hole is punched through each label or a notch is cut in the side.

Reflective. Use Reflective for label material where a black pre-printed line (black mark) on the back of the label stock indicates the break between labels. Black marks are required on clear label stock

rolls, or label where the label waste matrix (waste) is left on the liner. Black marks can also be used for irregular shaped labels, circles larger than 4 inches or on any stock where the print starting position cannot be sensed using the label itself.

Continuous. (Sensor off) If you have continuous stock with no die-cut, reflective mark or holes, set the sensor type to Continuous. This will turn off the stock sensor. In this mode there is no way to set the print starting position. The Printer will simply start printing the first label and print each subsequent label immediately after that previous one. To produce a gap between prints simply add the desired amount of white space to the end of the label being printed. The Printer will automatically switch to this setting when Digital Die Cutting Label Stock is installed. It will also lock out the Die-Cut and Reflective options.

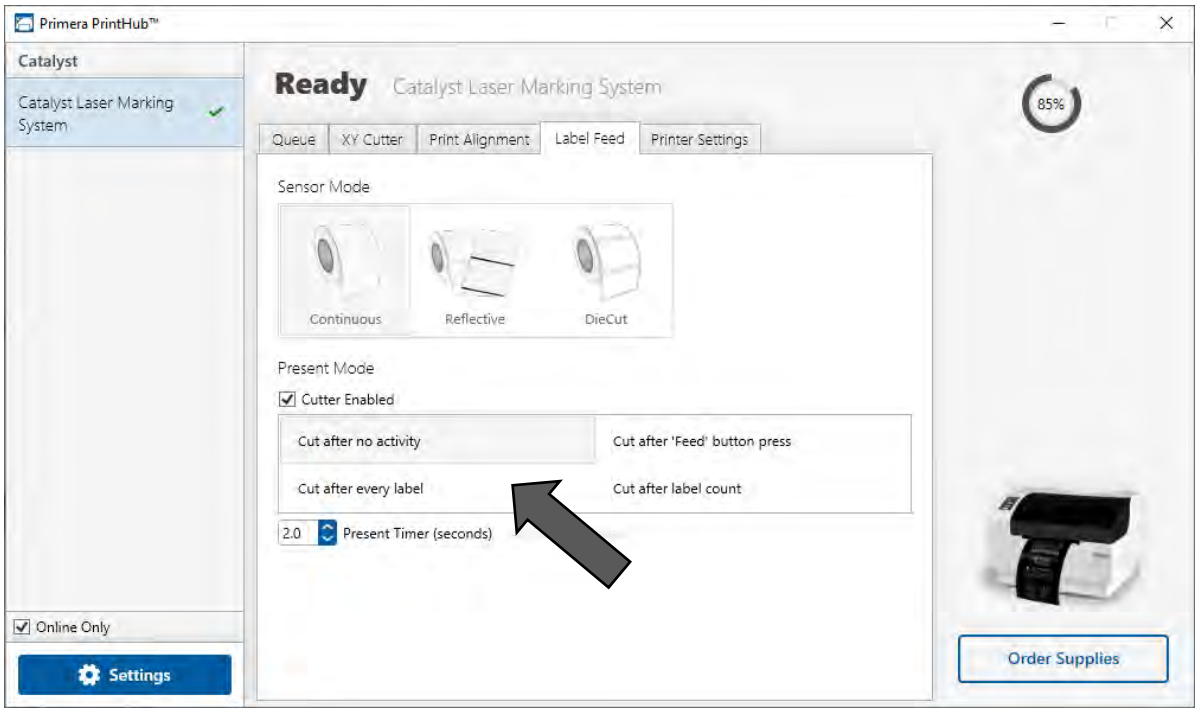
Important Note: You must also set the Stock Sensor Position (Section 2G)

3C Set the Label Feed / Cut Mode

Use the Present/Cut Mode to adjust how the Printer presents labels after they are printed or if/when they are cut after printing. To adjust the Present/Cut Mode, open the PrintHub program.

1. Connect the Printer via USB and turn on the power. The Output/Cut Mode Setting is stored on the printer main board so you will not be able to access it unless the Printer is turned on and properly communicating with the computer.
2. Go to Start - Programs - Primera Technology - Primera PrintHub.
3. Click on the Label Feed Tab.
4. Click on the Output/Cut Mode button.

Cutter Options



Cut after button press. This setting will cut after you press the Load/Feed button on the Printer. This can be used after one label or an entire job. This feature is useful if you will not be present at the end of the print to catch the cut label.

Cut after label count. This option will cut after the number of labels specified in the toggle box that appears when this option is selected. This is useful if you have front/back labels or sets of labels.

Cut after no activity. This setting will cut at the end of a print job if the Printer does not receive another print job within one second of the last print job in the queue. You can use this feature to cut at the end of multi-copy job, multi-page job or multiple individual jobs in the queue.

Cut every label. This setting will cut after every label.

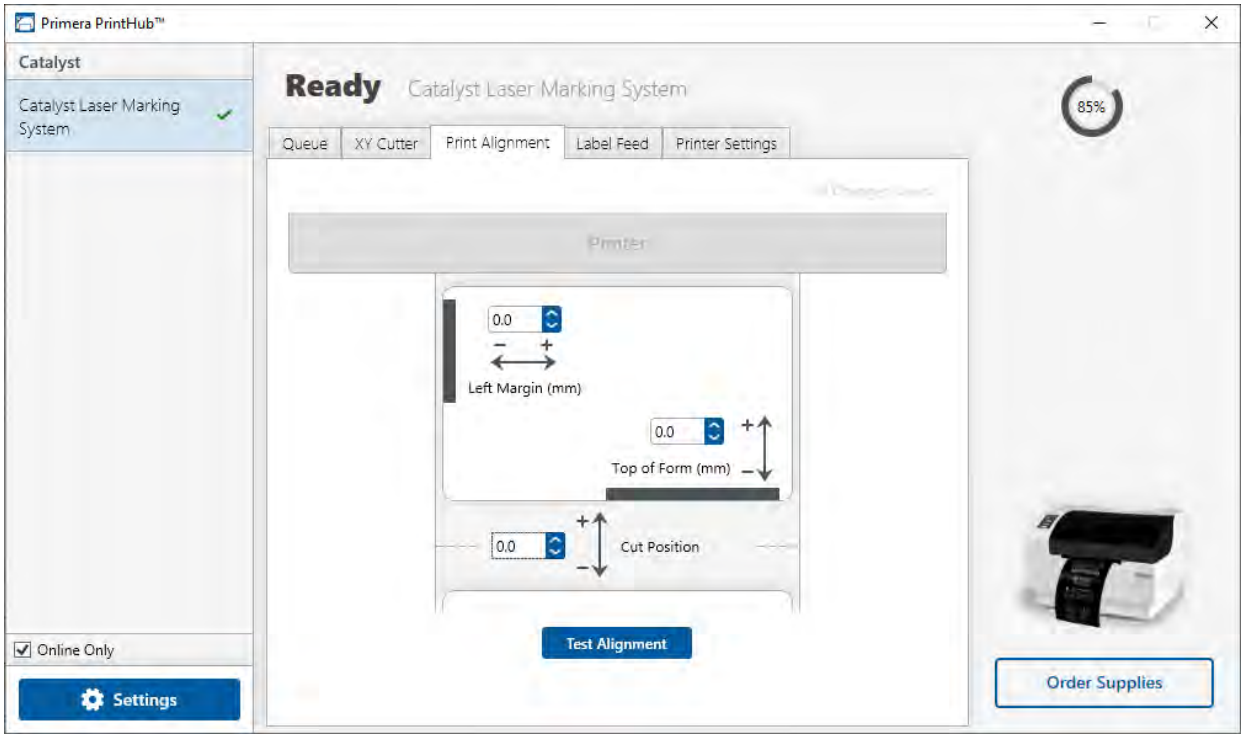
3D Adjusting Print Alignment

If your previous experience with printing is limited to printing letters and cards to 8.5 inch by 11 inch paper you probably are not familiar with an essential part of a label printing - Print Alignment. Standard printers feed a sheet and start printing based on the start of the sheet. They also prohibit printing to the edge of the sheet. This is to avoid any need for alignment.

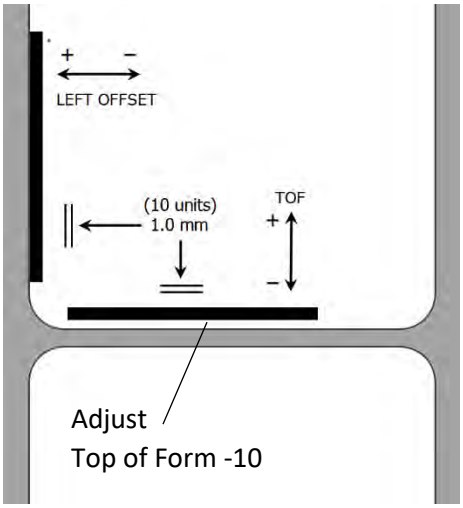
The Catalyst senses the beginning of the label with an optical sensor and is capable of printing to top, bottom, left and right edge. Because of this it is necessary to align the Printer to work with specific types of label stock.

The Catalyst comes factory calibrated to print exactly to the edge of Primera label stock. However, due to variations in the left margins and other variables it may be necessary to fine tune these settings at the beginning of each roll.

Adjust print alignment using the PrintHub. Go to the Print Alignment Tab (second tab).



Click on Test Alignment to print the alignment shown to the right. Look at the print to determine how much white space is visible on the edges. The black lines should print right on the leading edge and left edge. In this example the Top of Form needs approximately - 10.



1. **Left Margin Offset.** This value moves the printed label left or right. Add to the current value to move the printed label to the right. Subtract from the current value to move the printed label to the left.

2. **Top of Form (TOF).** This value moves the print start position up or down on the label. Add to the current value to move the printed label down or toward the Printer. Subtract from the current value to move the printed label up or away from the Printer. The value is automatically saved as soon as you set it. You may have to make several adjustments to one or more of these values. After each adjustment you can click the Test Alignment button to print a small test pattern on the label. This will help you find the proper alignment value.

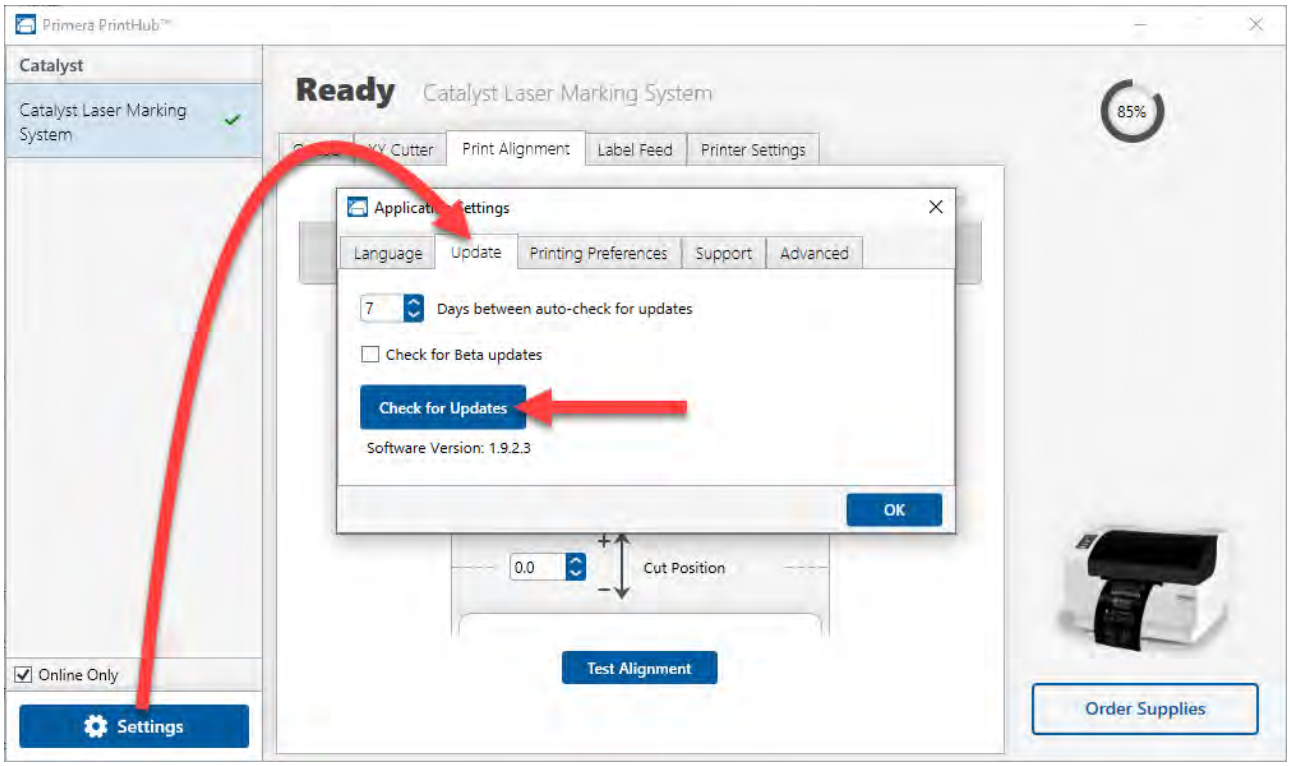
3. **Tear off/Cut Position.** This value adjusts the position of the last label printed after it has been presented. This only applies if the output mode is set to "Present the label." Add to the current value to move the tear point closer to the Printer. Subtract from the current value to move the tear point away from the Printer. The value is automatically saved as soon as you set it.

3E PrintHub Settings

General application settings that apply to the software and all printers can be found by clicking the blue “Settings” button in the lower left. Printer specific settings can be found on the “Printer Settings” Tab. See next section.

Language. Typically, the language is set to match the language setting in the operating system. However, you can override currency settings on the Language Tab.

Automatic Updates. Automatic Updates will update PrintHub, the printer driver and the printer firmware. Every 7 days you will be prompted to update the software if there are any newer versions. You can choose to increase or decrease that automate check. You can also perform a check for updates immediately by clicking the “Check for Updates” button. Finally, if you would like to receive beta software check the “Check for Beta updates” box



Printing Preferences. You can choose to close PrintHub after printing completes by checking the “Close this application after printing completes” box. PrintHub automatically opens whenever you send a print job to the Printer. If you do not want PrintHub to open in front of other programs, you can check the “Launch minimized during print” option.

Support. Click the “Generate Support Report” button to generate a zip file on your desktop containing all recent log files. Send this to tech support so they can help solve any printing problems.

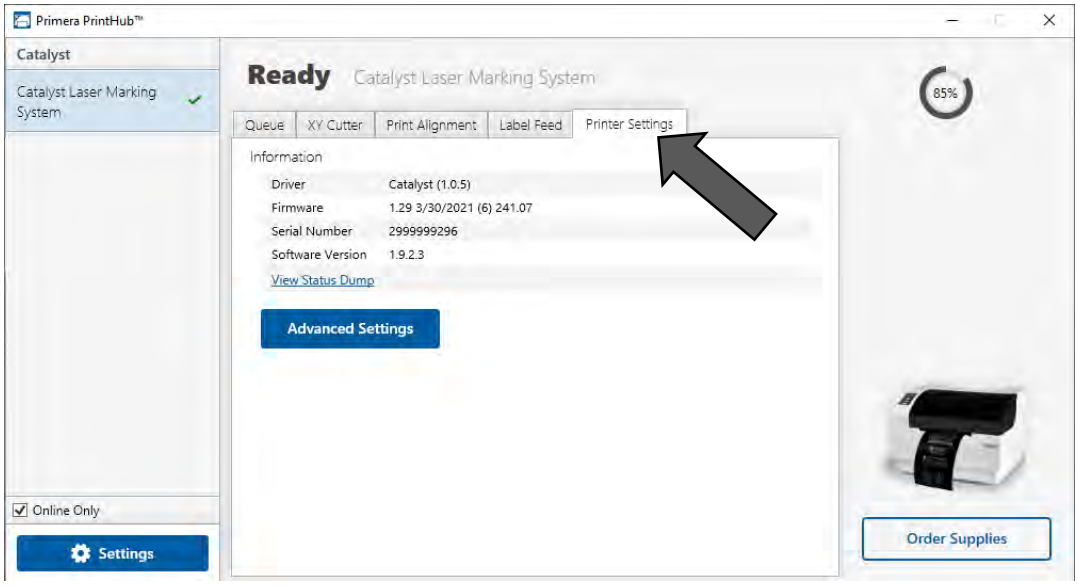
Advanced. Check the “Generate Printer Status XML” box to create an XML at

"C:\ProgramData\PTI\PrintHub\PrinterStatus.xml".

Software developers can use this file to display status information such as error messages and ink levels in 3rd party applications.

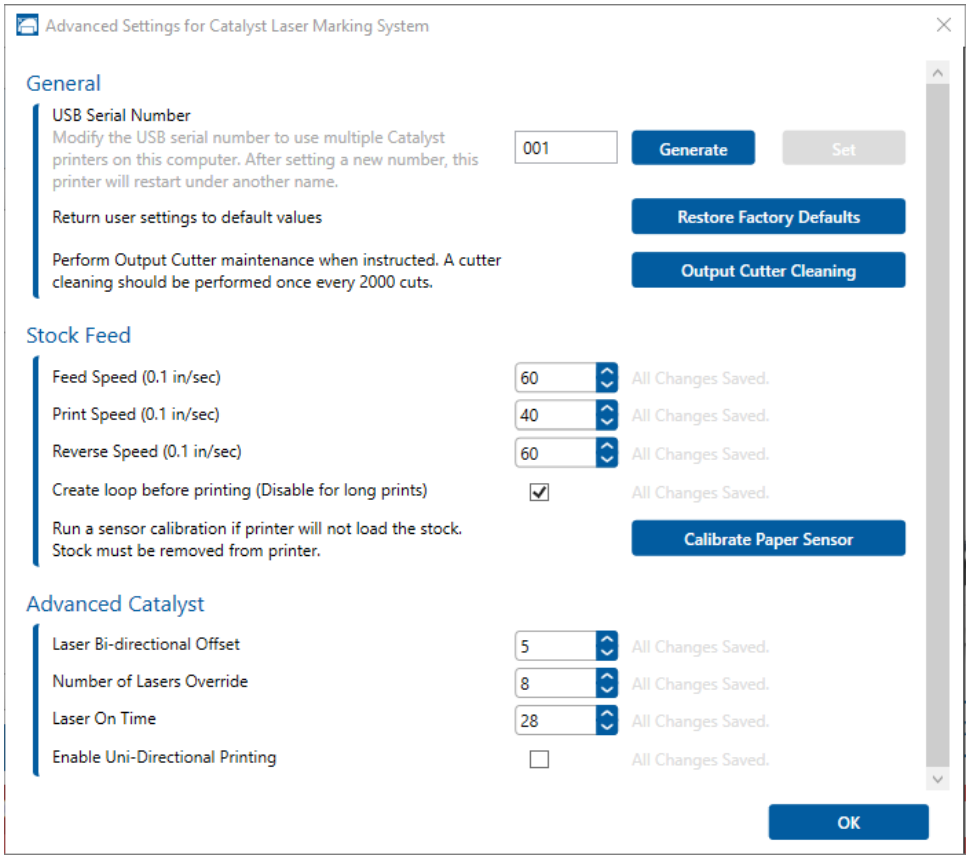
3F PrintHub Printer Settings

Printer settings can be found in Primera Print Hub on the Printer Settings Tab for the Catalyst.



Information. This section displays all current driver, software and firmware versions.

Advanced Setting Button. Click the Advanced Settings button to view the following settings.



General Settings

3F1. Multiple Printer Support.

You can install multiple printers to the same computer and use them simultaneously. To do so you will need to change the USB serial number identifier of one of the two printers, two of three printers, three of four printers etc. To change serial numbers:

1. Connect each new Printer one at a time. The current USB Serial Number will be displayed.

2. Click Generate. It will find the next available USB Serial Number based on the currently connected printers. For the first one it should set it to 2 and for the next printer 3 and so on.

3. Click Set. You will hear the Printer reset and the settings window will turn gray. After it resets you will be able to see the settings window again. Keep the Printer connected.

4. Now you can connect the next Printer. Windows will automatically install a new driver for that new Printer and name it Catalyst (Copy 1). You can rename it later by editing the printer properties in the Windows printer list.

5. You will now see a second printer appear in the left column – Catalyst (Copy 1). Click on it to display information about this Printer. If this is the last Printer, you will connect you are done. If you wish to connect additional printers follow through steps 2-4.

Restore Factory Defaults. This will set all Print alignment and other calibration settings back to factory defaults.

Stock Feed Settings.

Adjust these settings only if directed to do so by Tech Support.

Calibrate the paper sensor if you are receiving TOF errors. The calibration process will prompt you to remove all paper/stock from the Printer before calibrating.

Advanced Catalyst.

Adjust these settings only if directed to do so by Tech Support.

Laser Bi-directional Offset. Increase or decrease offsets if text, graphics, or barcodes are blurry. Test if this is necessary by checking the enable uni-directional printing box.

Number of Lasers Override. Manually switch off lasers. As you reduce lasers, print time will be increased.

Laser On Time. Increase to improve quality if you see black in areas that should be white. These areas are not fully ablated and need more laser time. Large blocks of printing may require increasing this value.

Enable Uni-directional Printing. If text is blurry there may be and offset problem which can be verified by enabling this setting. Print time will be increased.

Section 5: Printing with BarTender

5A Using BarTender for Pre Die-Cut Printing

Primera Special Edition BarTender UltraLite is included with the Catalyst. You can download it at the link below. Use the code below when prompted after installation.

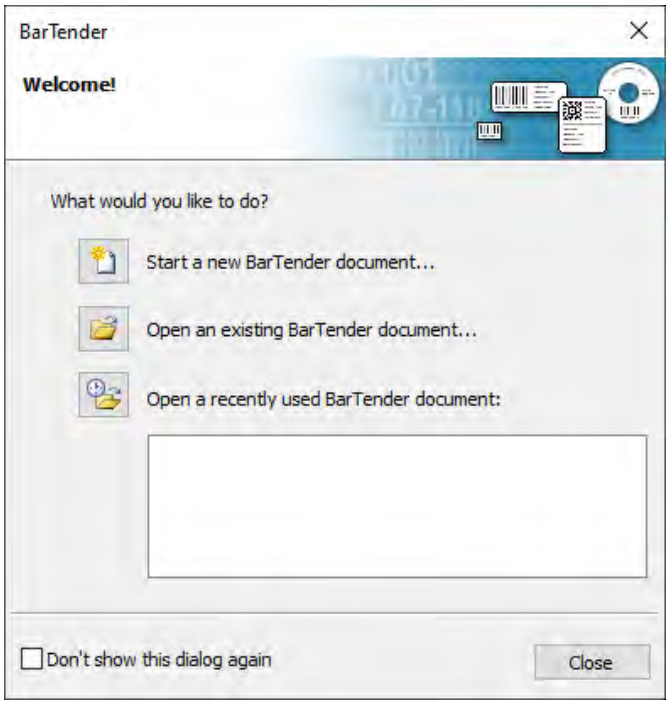
Download: https://portal.seagullscientific.com/downloads/bartender

Code: Z3T0-7ZJY-JFD1-3J9P

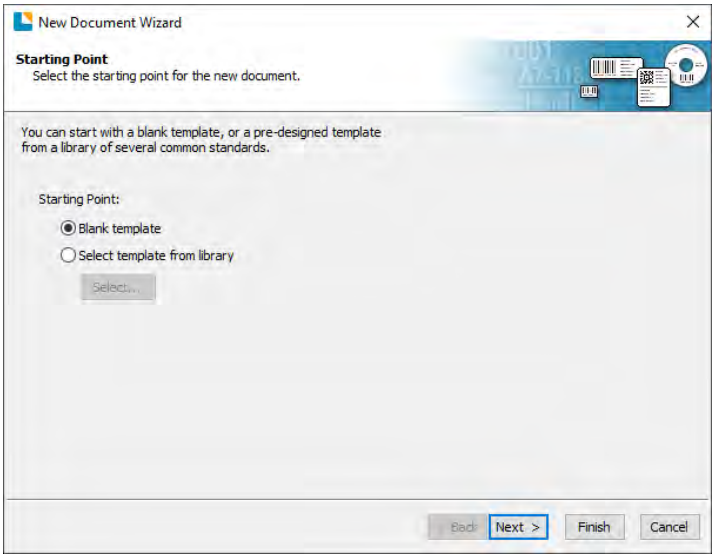
When you open BarTender you will be given the choice to select an existing label or create a new one using a wizard. Use the following instructions as a guide through the wizard setup process.

Choose "Start a new BarTender document..."
Use the following instructions as a guide through the wizard setup process.

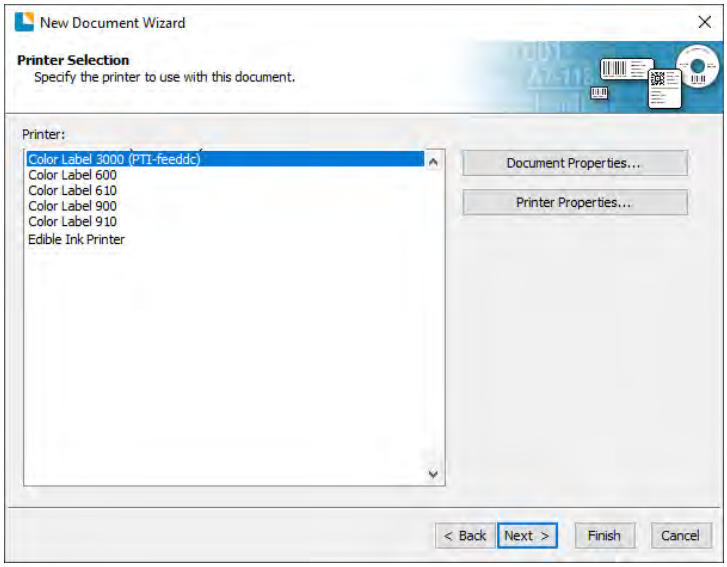
1. Choose "Start a new BarTender document..."



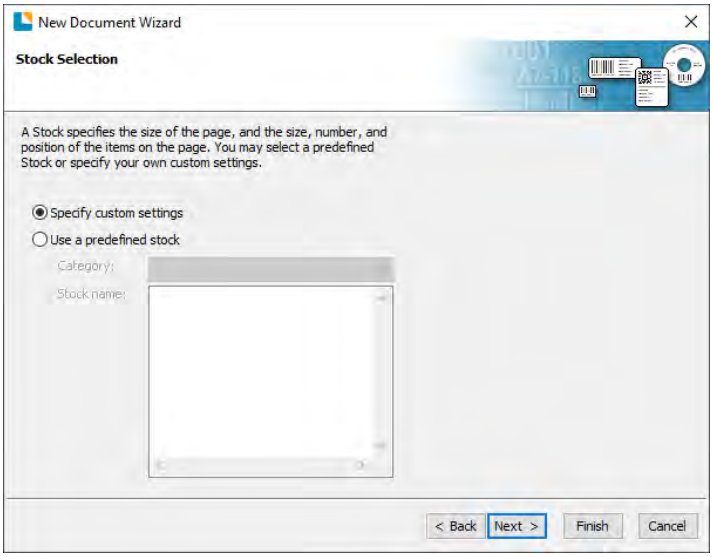
2. Select "Blank Template". Click "Next".



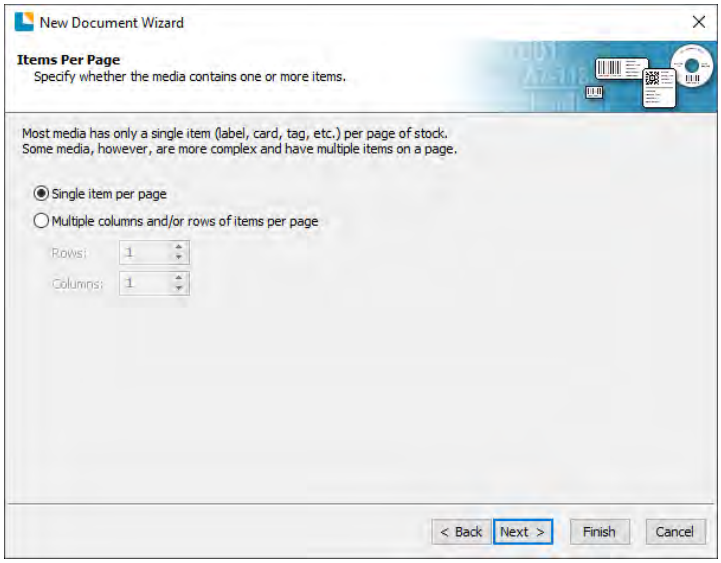
3. Select "Catalyst". Click "Next".



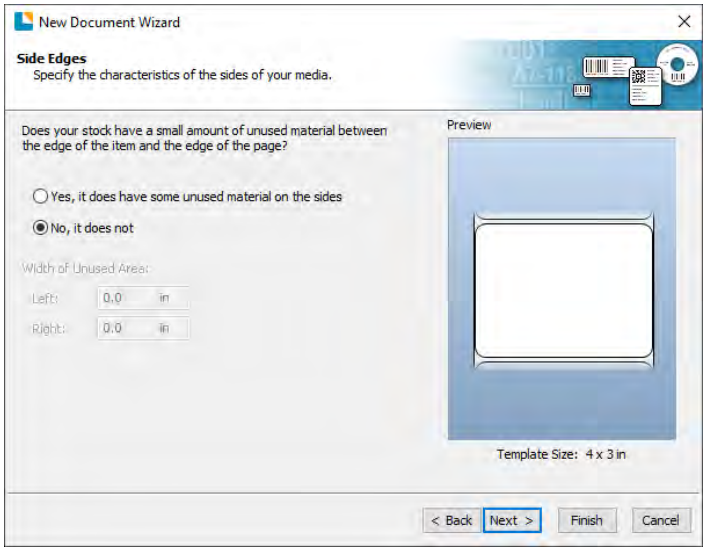
4. Select "Specify Custom Settings". Click "Next".



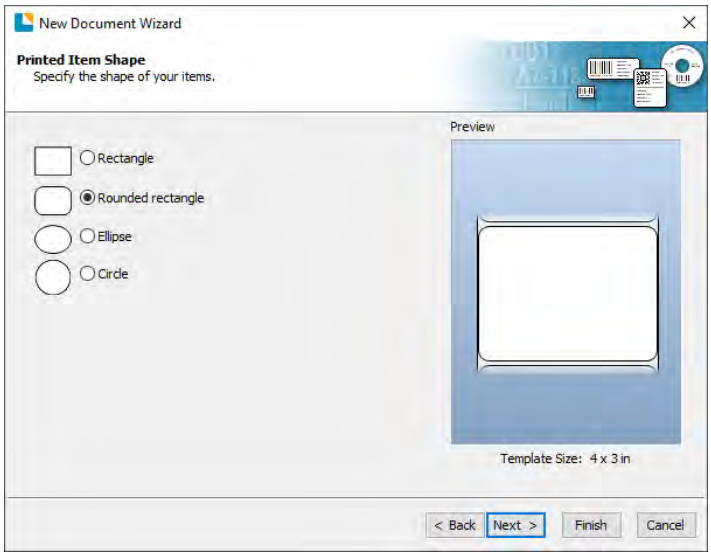
5. Select Single Item per page. Click “Next”.



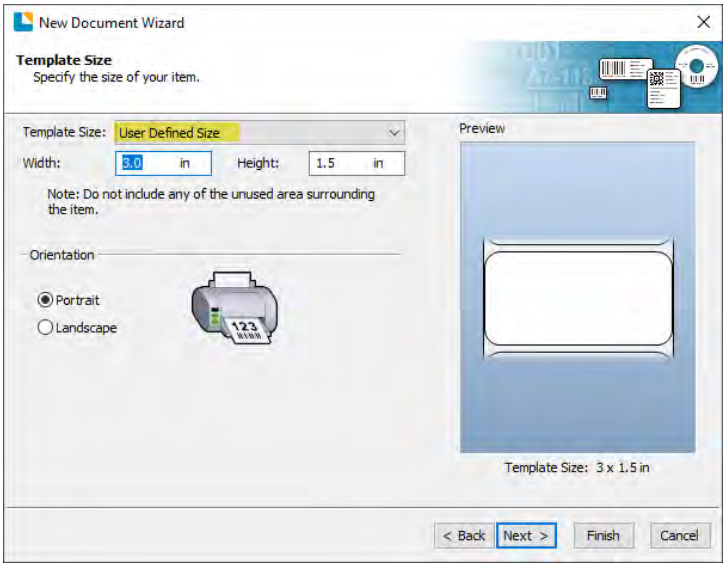
6. Select No, it does not for Side Edges.



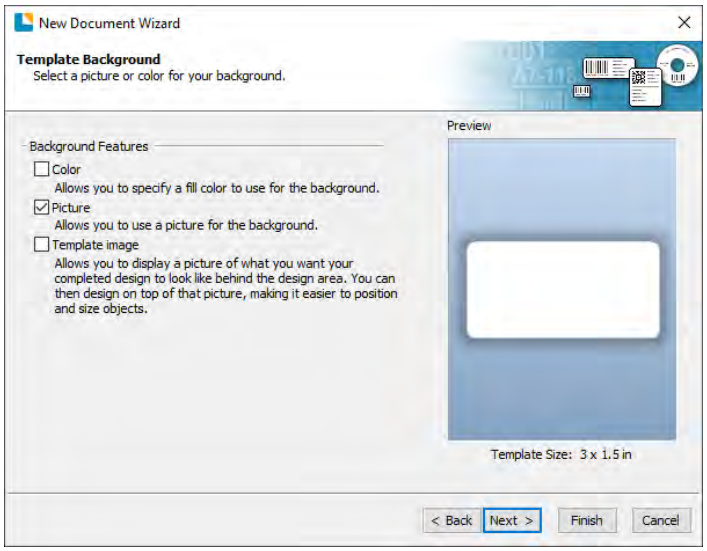
7. Select your label shape. This is typically "Rounded Rectangle" for standard labels from Primera with a .125 corner radius. Click Next.



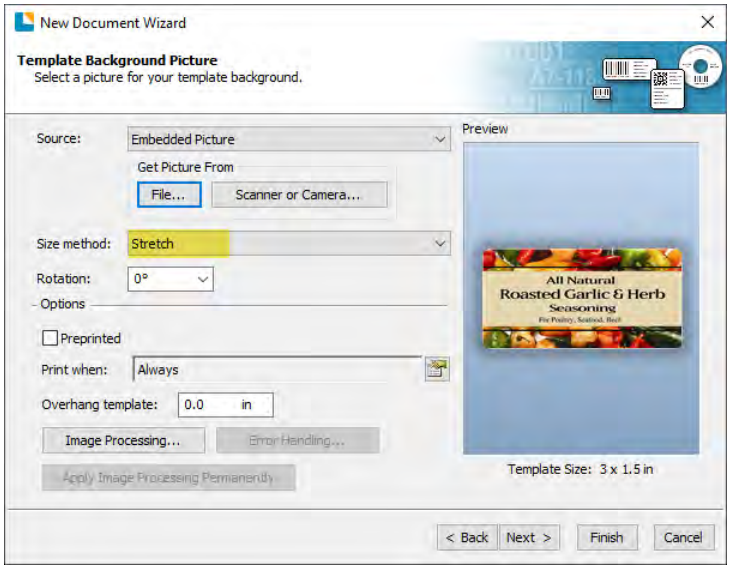
8. Set the template size to match labels installed in the Printer. Change the Template Size to User Defined Size to gain access to width and height. Click "Next".



9. Check the "Picture" box to add a background photo or graphic to your label. Click "Next". If you click "Finish", the remaining default wizard options will be set and no picture will be added.

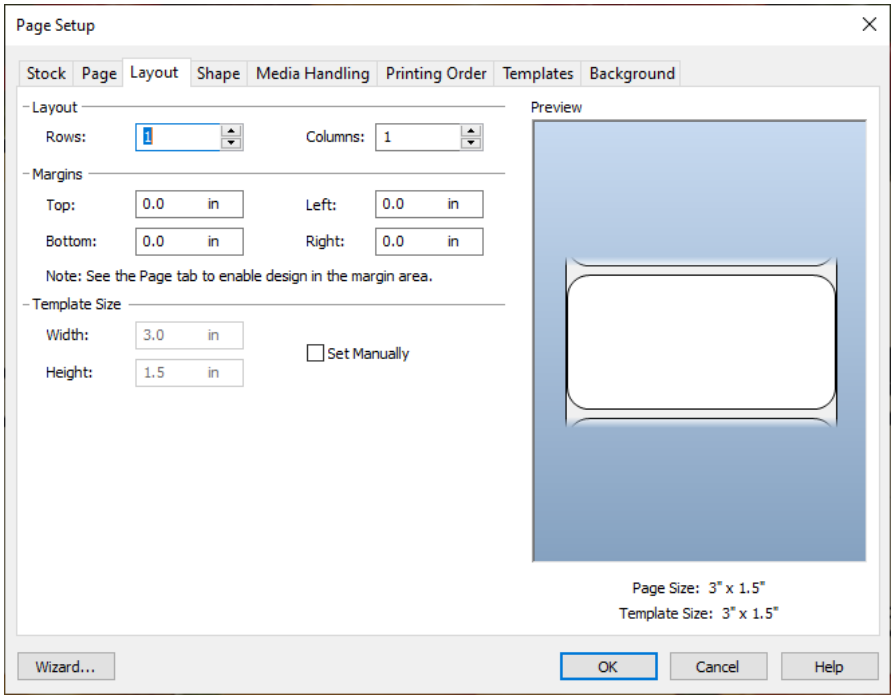


10. Select "Embedded Picture". Click the "File" Button to browse to the location of your photo/graphic file. Set the Size Method to "Stretch". Note the preview to the right. Click "Next" if you are satisfied with the layout of the photo or graphic. Otherwise, you may try one of the other Size Methods in the drop-down menu.



11. Review the label setup summary. If it is correct, click "Finish". Your blank label or label with background will be displayed.

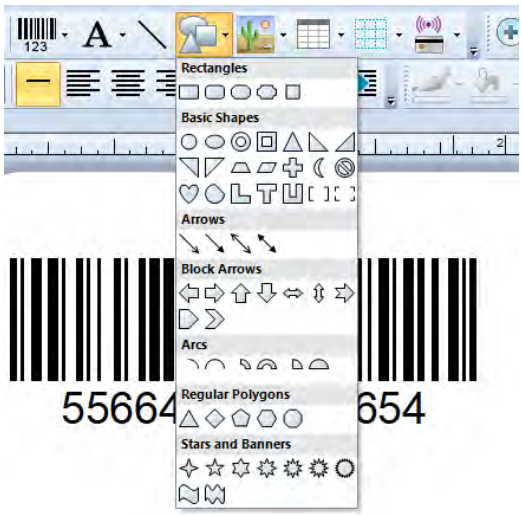
You can edit any of these initial settings by going to the File Menu and selecting "Page Setup". Basic and advanced settings are available on the various tabs.



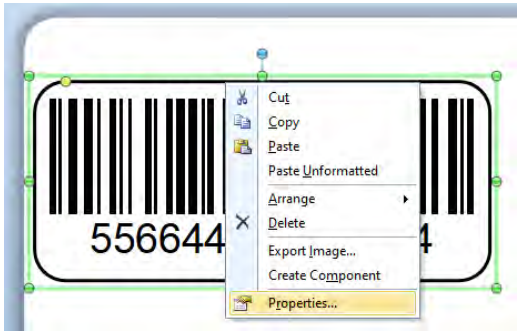
5B Using BarTender to add cut lines

Any Shape can be converted to a cutline that your Catalyst printer can cut.

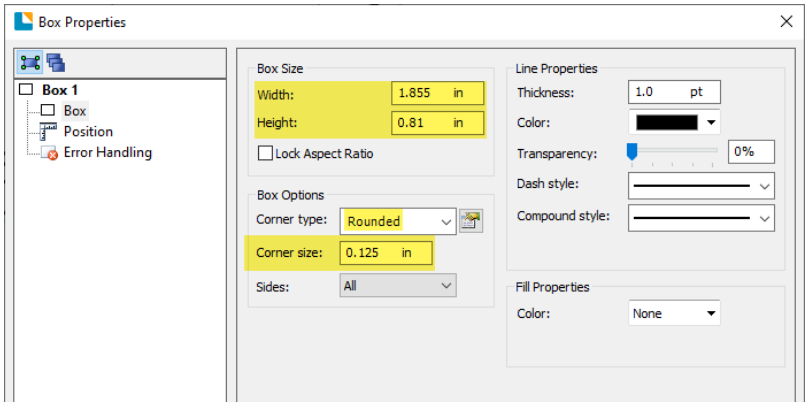
1. Click the shape icon on the tool bar.



2. Drag the shape around the object(s) you want to cut. Adjust the size by dragging or set the size exactly by clicking properties.

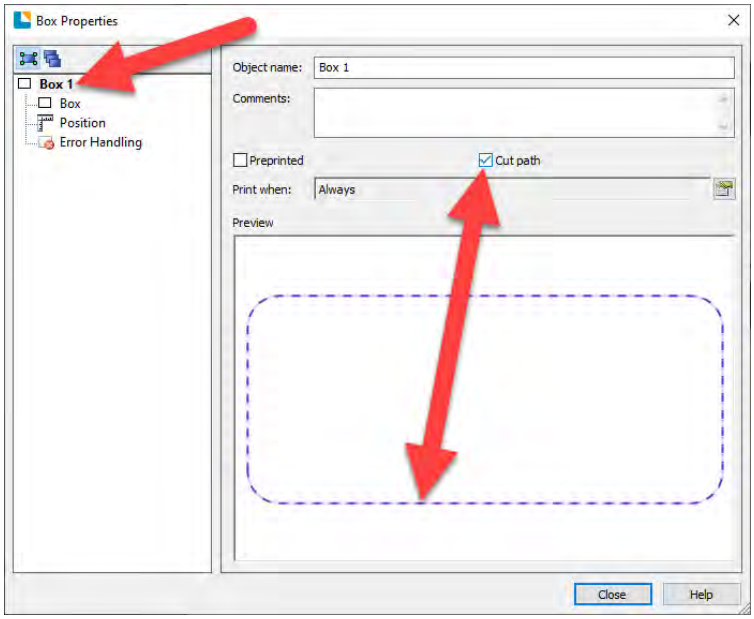


3. Adjust the Width, Height, Corner Type and Corner Size (Radius). A typical corner radius is .125”.



4. To convert it to a cut line click on the name of the object. By default, it will be named "Box 1" or "Ellipse 1" (for circles). You can also change the name to anything, but it will always be listed first in the properties window.

5. Now check the “Cut path” box. You will see the box outline convert to a dashed line.



6. Repeat the procedure for all the objects you want cut on your page.

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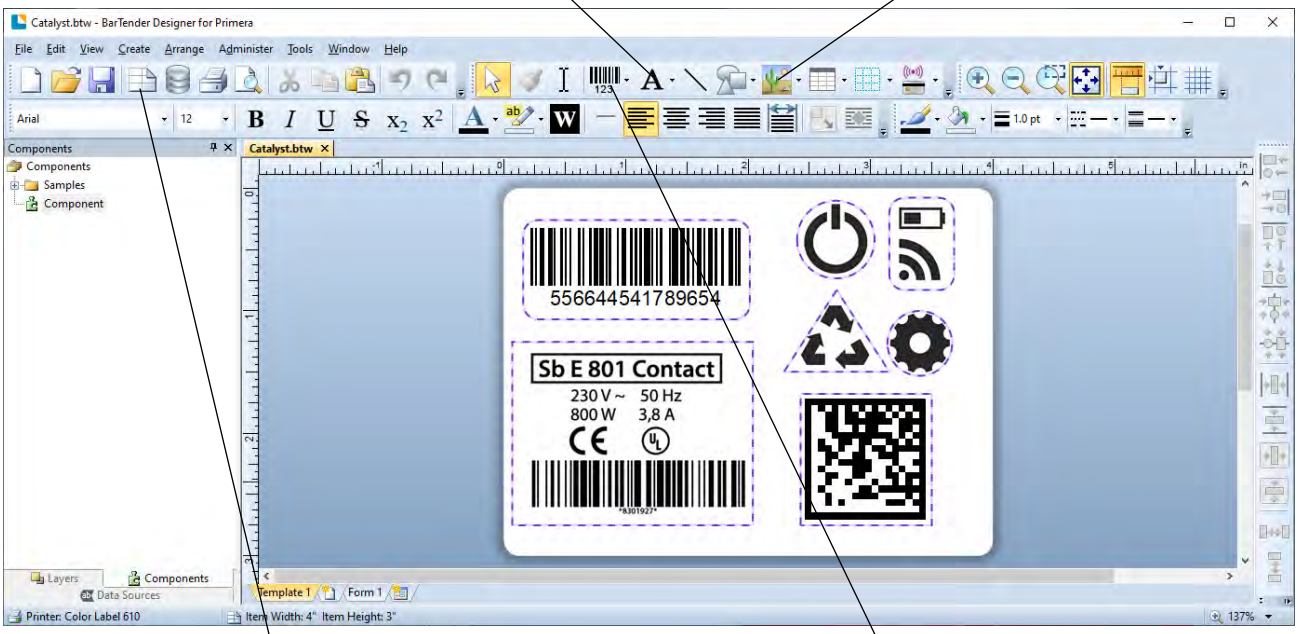
5C Add Text, Barcodes and Graphics to a BarTender Label

Once you have created your label size you will be able to add text, a barcode and/or graphics. This can be done using one of the buttons on the button bar at the top of the screen.

Add Text. Click the Text button. Now click anywhere on your label. "Sample Text" will appear. Edit the text on screen or double click it to open up text settings to change font, size and other settings.

Add Graphic. Click the Image button. Now click anywhere on your label. An Image icon will appear. Double-click it to open up image settings and browse to the image/graphic that you would like to insert.



Page Setup. Click the Page Setup button to change your label size, adjust corner radius or change the shape.

Add Barcode. Click the Barcode button. Now click anywhere on your label. A barcode settings window will appear. Here you can choose any type of barcode and enter the value.

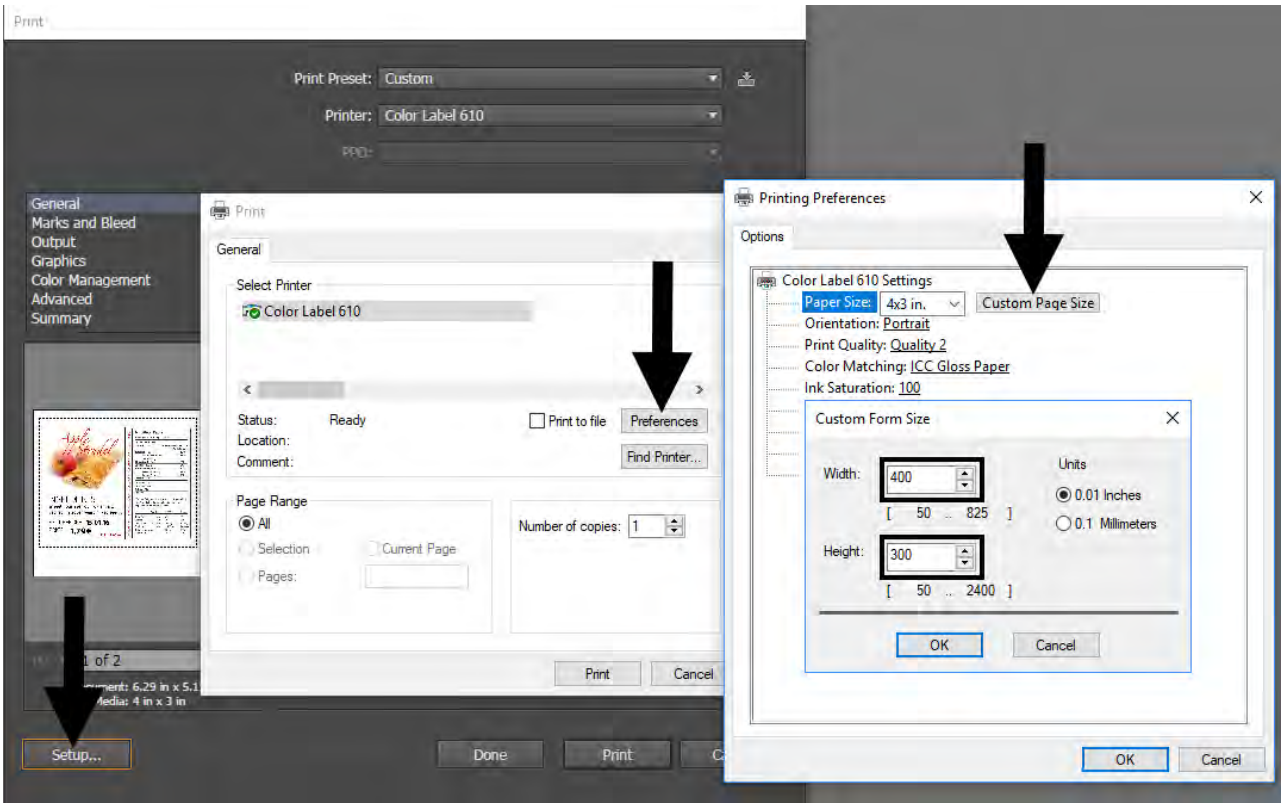
Tip! Double-click any object to open settings for that object.

Tip! Go to the Help menu to access the BarTender Manual and Tutorials.

5D Printing ONLY from Other Programs

Since this Printer uses a standard Windows printer driver you can print from any application you would like. There are just a few things to remember that will make it much easier.

1. Set the Page/Label Size in the Driver. BarTender automatically prompts you for the size of the label that you are using. When printing from any other program you must do this manually. Before you print, simply set the custom page size just as you would set print quality in the printing preferences. In the example below the label size is 4" x 3" so the custom page size is set to 400 x 4300 (displayed in .01 inch units).



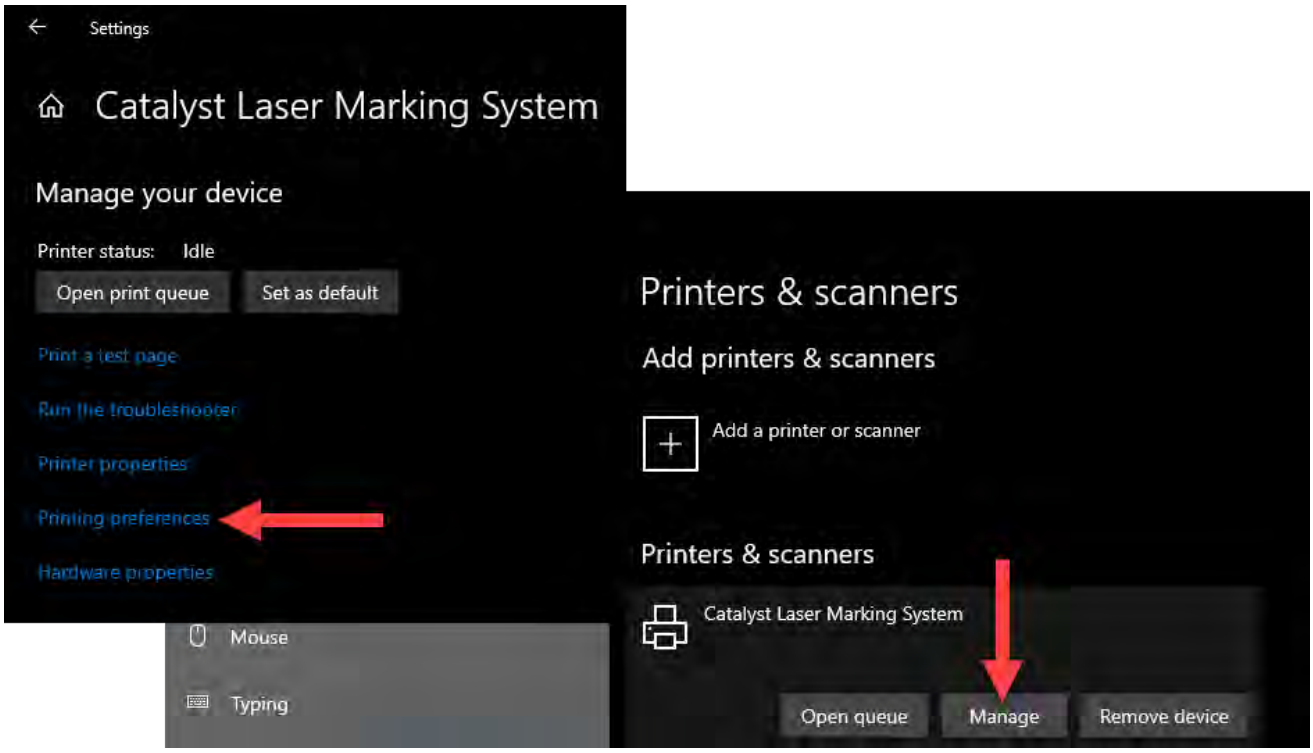
2. Check the image or document size. The image size or document size set in Illustrator should match to the Page/Label Size set in the driver. If you have set your page size to 4" x 4" but your image is actually 5" x 3" the printer driver will automatically shrink your image to fit inside the 4" x 4" label. The result is that the actual printed label is 4" x 2.4". Avoid this by setting your document size or image size to match the label size.

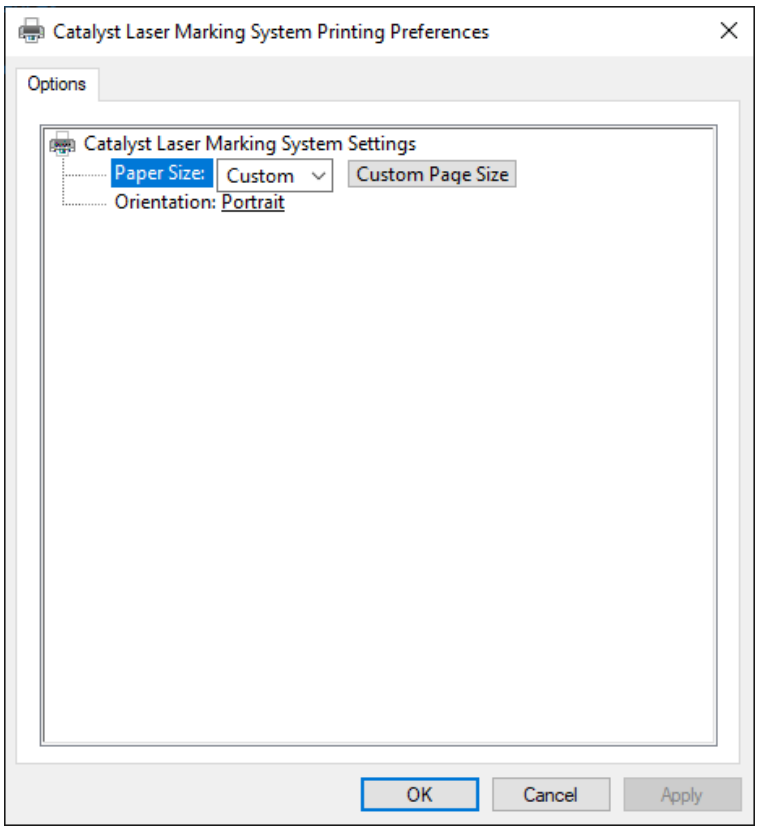
3. Choose the right printing program. There are many different applications that are capable of printing to the Catalyst. However, there are only a few that are ideal printing applications. For example, Adobe Illustrator is an excellent design program but is not always the best printing program. It can be difficult to find the printing preferences or to know the exact size of the art board. It is best to save as a PDF file and print from Adobe Reader or export as a 300 dpi JPG and print from BarTender.

5E Printer Driver Settings

Once the printer driver has been successfully installed, you will need to setup the driver with the appropriate print options. Refer to the following steps to change or verify your default printer driver preferences. These settings will apply to all new designs created in BarTender or other programs after the preferences were changed. Existing labels saved in BarTender will not be affected since the preferences are saved with the label. To change these preferences, you will have to change printer preferences through BarTender. (File Menu - Printer Settings)

Click the Start button, search for "Printers". Select Printers and Scanners. Select the Catalyst Laser Marking System. Choose Manage. Select Printing preferences.





Note on PC Settings:

Most applications allow you to change these same printer driver options from their "Print" and/or "Printer Setup" screens. Some applications such as BarTender save your settings with the label, others use settings only for the current print job just sent to the Printer.

Paper Size

If you are using BarTender, this setting is adjusted during the label setup wizard. If you are using a program other than BarTender you will need to set this to the dimensions of your label. Keep in mind that the dimensions are always relative to the width and height of the actual label in the Printer. Orientation of an image on the label should not change this setting. See Section 2A for minimum and maximum label sizes.

Orientation

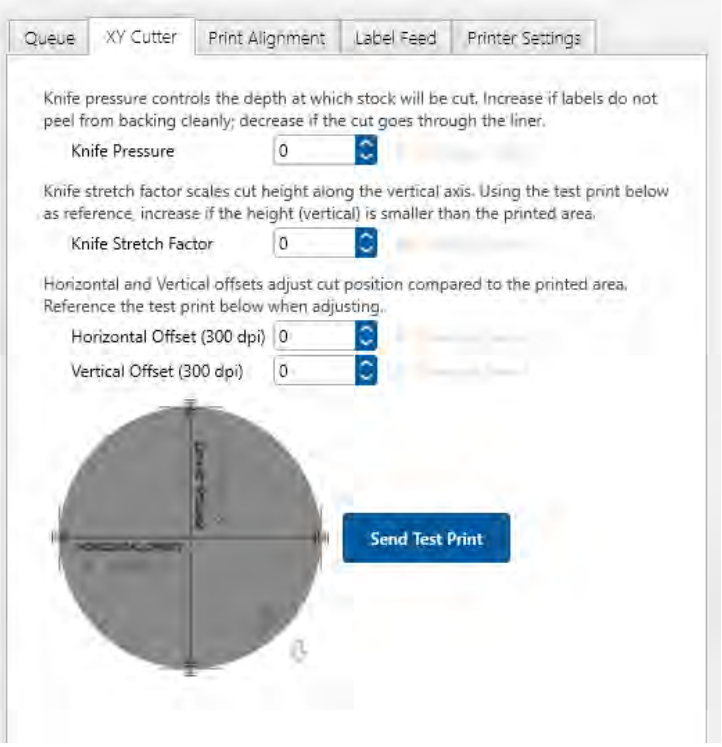
There are two settings for orientation, Portrait and Landscape. If your text and graphics print left to right or as shown on the screen, select portrait. If you wish your printing to rotate 90 degrees from what you see on the screen so it is printing horizontally, select landscape as your orientation. Remember, this does not change the width and height Paper Size. It is only a tool for viewing a label upright on screen that will be printed sideways on the Printer.

Section 6: Troubleshooting

6A Solving Cut Alignment Offset Problems

Cut alignment is calibrated at the factory. However, it is possible that you may need to adjust the cut line position for certain prints/cuts.

Adjust Cutter Offsets by opening Primera Print Hub. Go to the XY Cutter tab. Click the Test Print button and adjust cutter offsets according to the diagram. To move the cut to the right increase the Horizontal Offset. To move the cut to the left decrease the Horizontal Offset. To move the cut up increase the Vertical Offset. To move the cut down decrease the horizontal offset. Remember the top of your document prints first so it prints upside down if you are standing in front of the Printer.



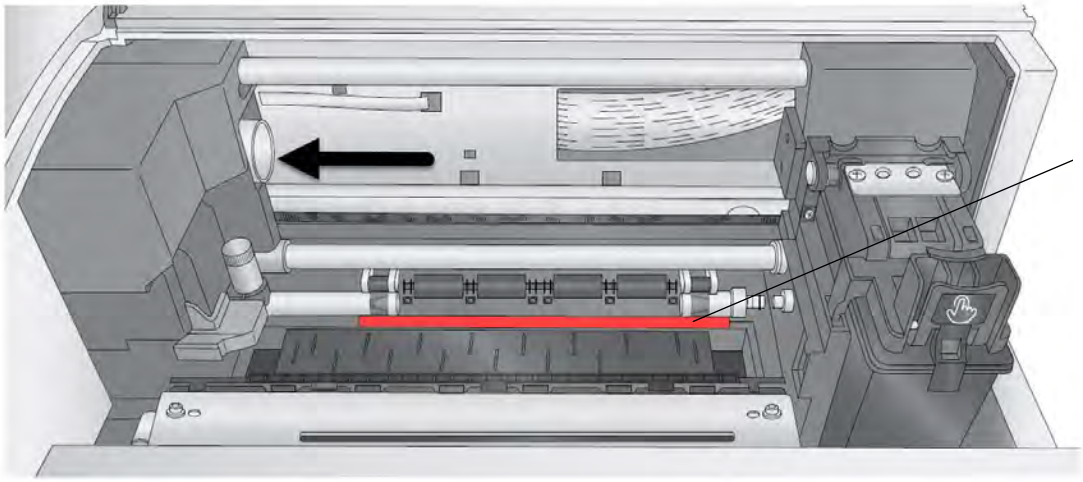
6B Maintenance

Replacing the Cutter Wear Strip

The wear strip is the surface directly underneath the cutting blade in the cutter mechanism. Over time this strip will wear down due to cutter knife pressure. It can also be damaged if the knife cuts through the liner and contacts the wear strip.

To replace the wear strip remove any media from the cutter mechanism. Power off the Printer. Push the knife carrier gently to the left. Grab one end of the wear strip and pull it off the cutter. If necessary, use a utility knife to get under the strip to start it. The wear strip is held in place with adhesive so there may be adhesive residue. Clean off the adhesive with isopropyl alcohol.

Remove the liner from the new wear strip. Press the strip into place. Make sure it is fully seated in the recessed pocket.



Wear Strip Location
(Red Color is only meant to highlight location)

Replacement Wear Strip Part Number 074549 (10 pack)

Label Cut Dust

Label cut dust can accumulate at any place along the cut path.

Dust build up does not cause any specific immediate problems but it can eventually cause problems with the moving parts and electronics in the cutter.

Periodically vacuum the cutter area and rollers.

Cleaning the Printer

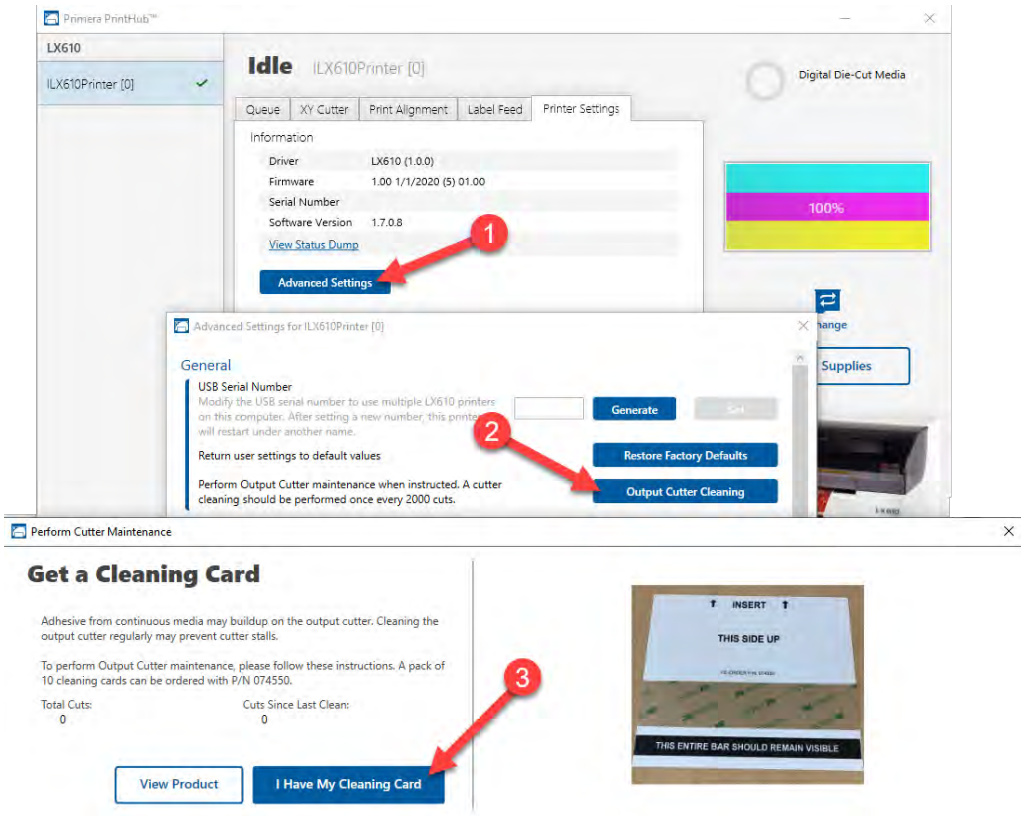
The case of the Printer can be cleaned with an ammonia based window cleaner and a lint-free cloth.

6D Cleaning the Output Cutter

Every 2000 cuts you will be prompted to clean the output cross cutter using a cleaning card. If you have the card, you may follow the prompts to complete the cleaning procedure. Otherwise you can purchase a pack of ten cleaning cards at the link below.

Cleaning Card 10 Pack – SKU 074550 - https://www.primera.com/output-cutter-cleaning-cards.html

To manually perform a cleaning in PrintHub, go to the Printer Settings tab – Advanced Settings – Output Cutter Cleaning.

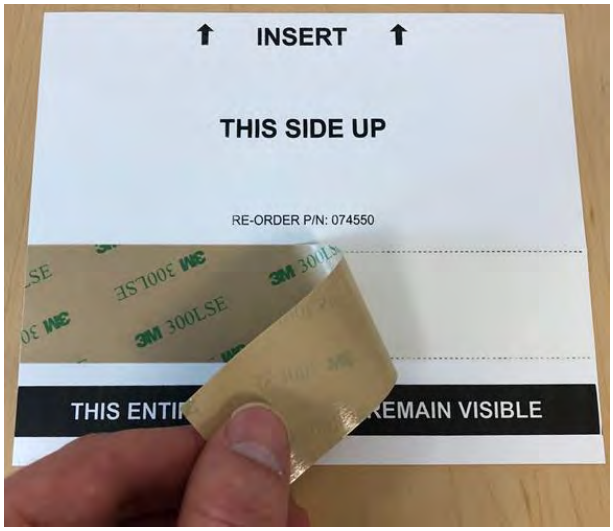


Instructions:

Cleaning Cards are used to clean the output cutter wheel that cuts between each label or at the end of a group of labels. If the cutting wheel cuts through continuous adhesive backed paper (such as Catalyst digital die cutting media), it can accumulate adhesive build-up that will eventually cause cutting problems.

Recommend Cleaning Interval: Every 2000 Labels. PrintHub software tracks this and will alert you when cleaning is necessary.

2. Locate the cleaning card.



1. Peel off the protective strip covering the adhesive.

3. Unload label stock from the printer. Insert the cleaning card into the front output of the printer.

4. When the exposed adhesive strip is aligned with the output cutter path, open PrintHub – Select Printer Settings – Advanced. Click on Output Cutter Cleaning. Once the cutter cycles, remove both parts of the card from the printer.

6E Technical Support

If you have difficulties operating your Printer, contact technical support using one of the methods listed below.

Source	Location
Primera Knowledge Base	www.primera.com/kb
Email Support	www.primera.com/customer-support
Phone Support	**763-475-6669** (Mon - Fri 7 a.m. - 10 p.m CST and Saturday 11 a.m. – 8 p.m.)
Chat	**www.primera.com – see chat icon in lower right corner** (Mon - Fri 7 a.m. - 10 p.m CST and Saturday 12 noon – 9 p.m.)

Section 7: Technical Specifications

Print Technology:	Fiber-optic coupled laser diodes
Print Resolution:	300 x 300 dpi, 300 x 600 dpi
Min. Print/Cut Width:	0.5” (13mm)
Max. Print/Cut Width:	4.1” (104mm) – Die-Cut 5” (127mm - Pre-Die Cut)
Max. Print/Cut Height:	12” (305mm)
Media Width:	4.72” (120mm) – Die-Cut 2.125” (54mm) to 5.25” (133mm) – Pre-Die Cut
Media Type:	Schreiner Color Laser Film (CLF)
Label Types:	Pre-die cut, continuous and black marks
Media Colors Available:	Black with white print
Media Sensing:	See-through and black mark sensors for pre-die cut labels, TOF sensing for digital die-cutting
Label Design Software:	BarTender Designer Software included; other versions available for more features and integrations
Operating System:	Windows 10+
Data Interfaces:	USB 2.0, Ethernet 10/100/1000
Electrical Rating:	12VDC, 5.0 Amps
Power Requirements:	100-240 VAC, 50/60 Hz
Agency Approvals:	UL, UL-C, CE, FCC Class A
Laser Safety Certifications:	CDRH and IEC 60825-1
Weight:	12.5 lbs. (5.7kg)
Dimensions:	13.6” W x 9.5” H x 17” D (345mm W x 242mm H x 432mm D)
Environmental:	TBD
Warranty:	One-year parts and labor; lifetime phone, chat and email support
Operating Temperature	50 to 95º F (10 to 35º C)
Recommended Operating Temperature	61 to 87º F (16 to 32º C)
Storage Temperature	-4 to 140º F (-20 to 60º C)
Operating Humidity	10 to 60% RH (non-condensing)
Storage Humidity	10 to 80% RH (non-condensing)
Laser Specifications	Wavelength: 980nm Beam Divergence: 11.3° Pulse Duration: 20uSec typical Maximum Power: 10 Optical Watts/laser Class 1 Laser

FCC

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.