

# FORMAX<sup>®</sup>

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ColorMaxŠÚ  
Digital Color Printer

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**Edition**

ColorMaxLP Digital Color Printer User Guide Edition 1. March 2014.

# Safety Precautions



## Electrical Shock Hazard

Do not disassemble any part of your printer. There are no user-repairable parts inside the printer. Disassembly of any part of the printer will void all warranties.



## Fire Hazard

Keep the printer well away from all heat sources and flammable substances.

Switch your printer off immediately and unplug the power cord from the wall socket if you notice any of the following:

- Smoke rising from the printer.
- An acrid smell coming from the printer.
- Sparks being emitted from printer.

Contact your supplier as soon as possible.

## Installation

- Install the printer on a flat, level surface.

The printer must remain level at all times. Tilting the printer may cause undue leakage of ink and may damage the printer.

- Avoid wide temperature variations.

Install the printer in a protected location away from direct sunlight, open windows or any other places subject to temperature extremes.

## Power Supply

- Always use the Power button on the control panel to turn the printer off. Removing power to the printer in any other manner may damage the printer.
- Use only the supplied power adapter and cord.

Use of any other power supplies or cords may damage the printer and void your warranty.

## Printer Usage

- Ensure adequate ventilation to the printer.  
Blocking ventilation openings around the printer may cause it to overheat and become damaged.
- Keep liquids and heavy objects away from the printer.  
Heavy objects may warp the outer shell, damaging the printer. Liquids may discolor or damage the skin and, if they penetrate it, may damage the printer beyond repair.
- Use only authorized consumables.  
Use of any printhead other than authorized Formax technology printheads will damage the printer and void your warranty. Use of unauthorized inks or ink cartridges may damage the printer and will void your warranty.
- Clear media jams promptly.  
To avoid further problems, promptly attend to all media jams, as well as any other cause of printer failure.
- If you are moving the printer, allow sufficient time after installation for the temperature and humidity of the internals of the printer to arrive at equilibrium with the surroundings.

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## Chapter 1

# Setting Up the Printer

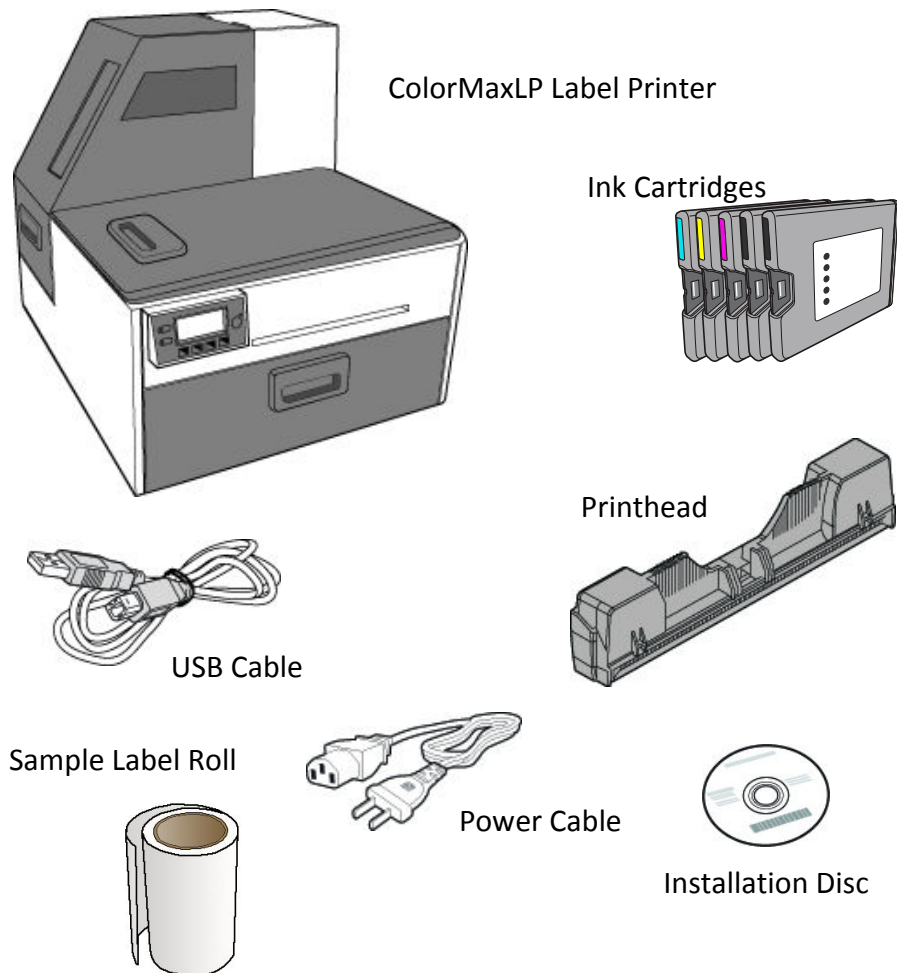
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# Start

Set up the printer on a flat, level surface away from direct sunlight (see [Safety Precautions](#) on page 3). Ensure that there is:

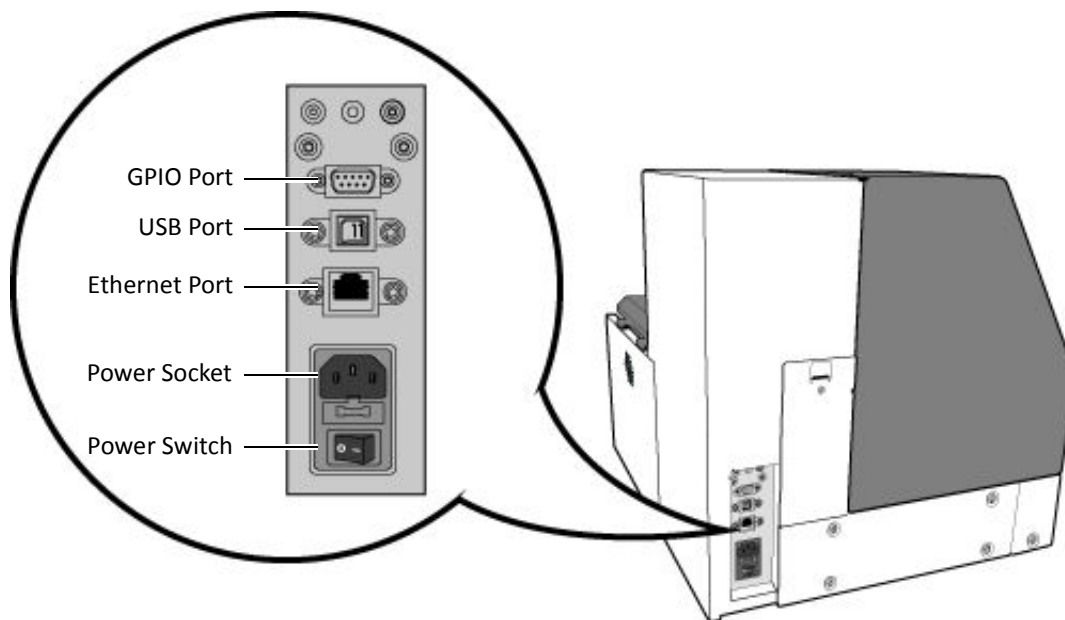
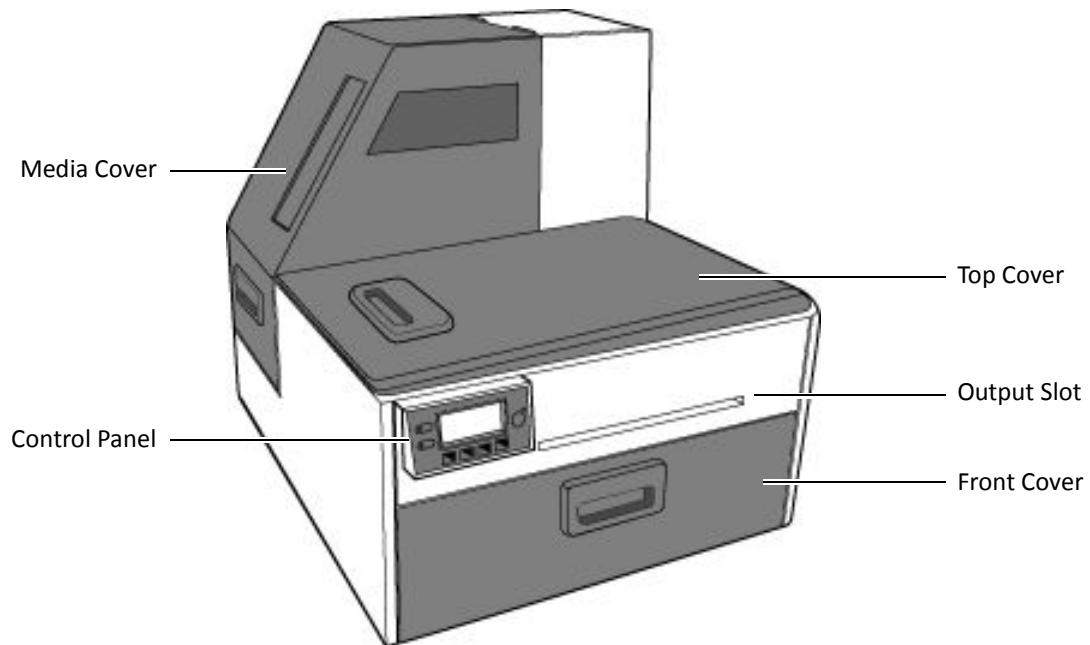
- A power outlet nearby.
- Sufficient space to work with the printer. The media cover and top cover open upwards, and media loading is from the left side of the printer.

## In the Box





## Parts of the Printer

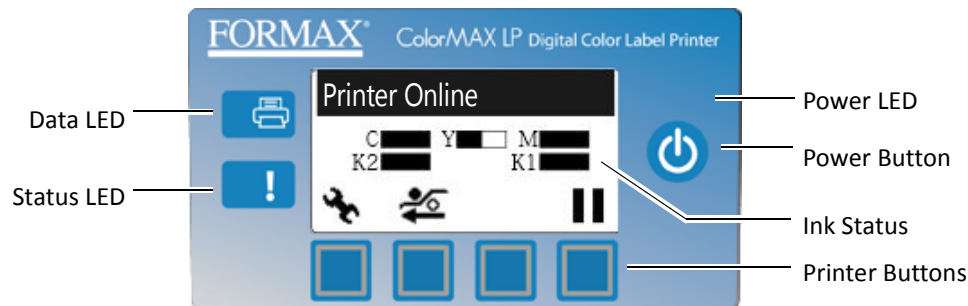


# The Control Panel

The printer is ready to print when the control panel displays Printer Online. The Data and Status LEDs together with messages indicate the printer status and any potential problems (Table 1).

The control panel also shows the estimated levels of the ink cartridges. In the example below, the yellow ink cartridge level is between 25 to 50%.

The icons above the printer buttons indicate their functions, which change depending on the current operation (see Table 2).








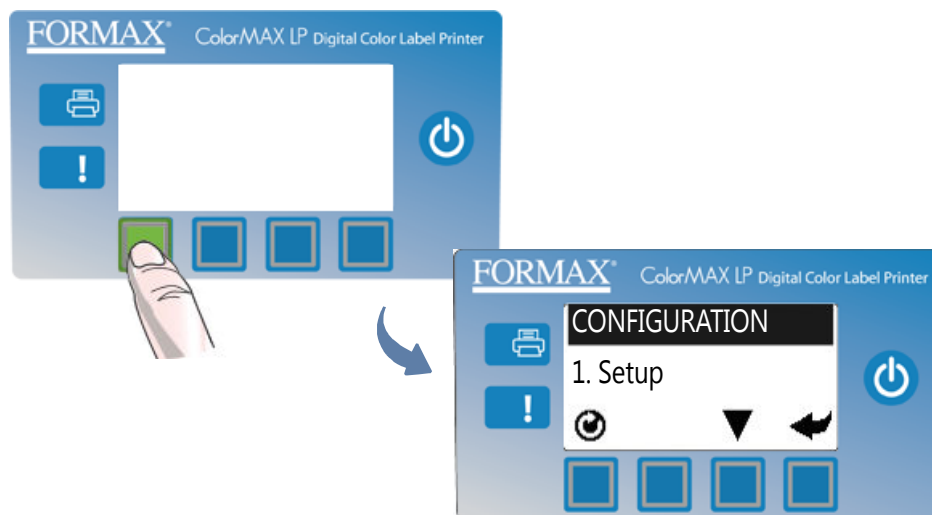
**Table 1** Printer LEDs

LED	Description
<b>Data LED</b>	
Blinking	Printer is receiving data from the computer.
On	There are print jobs in the printer memory.
<b>Status LED</b>	
Blinking	<ul style="list-style-type: none"><li>• Printhead is being serviced, or</li><li>• Attention needed; a message will be displayed. (See <a href="#">If Error Messages Appear</a> on page 62.)</li></ul>
On	<ul style="list-style-type: none"><li>• An error has occurred; a message will be displayed. (See <a href="#">If Error Messages Appear</a> on page 62.)</li></ul>










## Using the Control Panel

The icons above the printer buttons indicate their functions ([Table 2](#)).

- When the printer is online, press  (Config) to access the configuration menus. The options are described in [Config Options on the Control Panel](#) on page 73.
- Press  and  to scroll through the menus.
- Press  (Select) to select an option or setting.
- Press  (Return) to return to the previous menu.




**Table 2** Printer Buttons

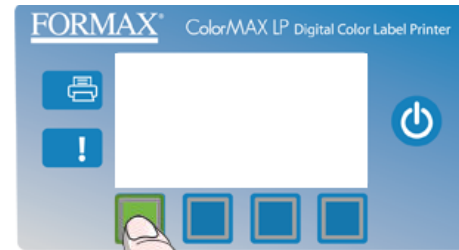
Function	Description
 Config	Access the Configuration menus.
 Up,  Down	Move through the menu options.
 Select	Select a menu option or confirm a setting.
 Return	Return to previous menu.
 Unload Media	Unload the labels.
 Pause,  Resume	Pause or resume printing. If printing roll to roll, the printer pauses for 10 seconds, then prints the next page and pauses again. It will continue to print and pause.
 Cancel	Cancel printing.

## Selecting the Security Level

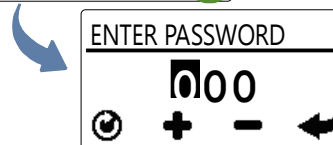
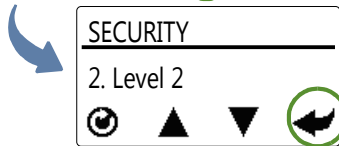
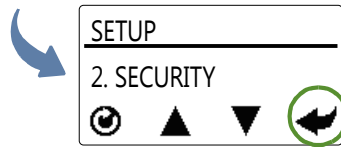
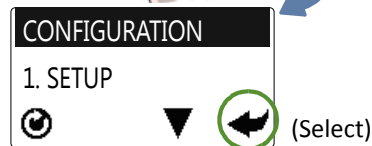
By default, the printer powers up in security Level 0 (operator), which does not allow changes to some printer settings. For the initial Printer Setup, it is recommended that you change the Security Level to 2 (Administrator) before changing those settings.

**NOTE:** During initial Setup, Security may already be preset to Level 2. The display will immediately go to the **Language** setting if it is.


1. On the control panel, select  (Config) > Setup > Security > Level 2.
2. Enter the 3-digit password (default is **123**).



(Config)



Enter the first password digit using the **+** or **-** button, then press **Select**. Repeat for next two digits. Authenticated message will appear with the right password

3. Press  to return to the main menu.

**Table 3** Security Restrictions

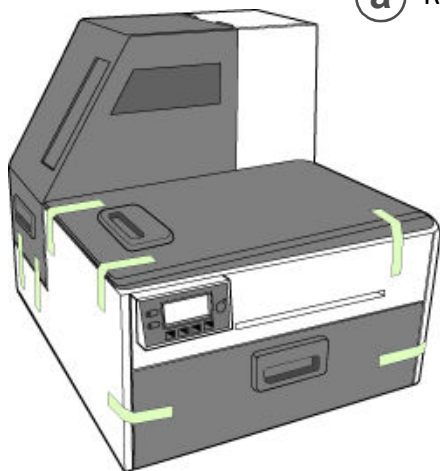
Security Level	Restricted Settings
Operator (Level 0)	Language, Reset, LCD Contrast, LCD Brightness, Date/Time, Unit, <b>Service Station</b> , <b>Sensor</b> , <b>Ext Signal Print</b> , <b>Adjust Offset</b> , DHCP Setting, IP Settings
Supervisor (Level 1)	Reset, Day/Time, DHCP Setting, IP Settings
Administrator (Level 2)	No restrictions

Items in bold indicate no access to an entire menu; others are specific functions.

# Unpacking, Setup, and Installation

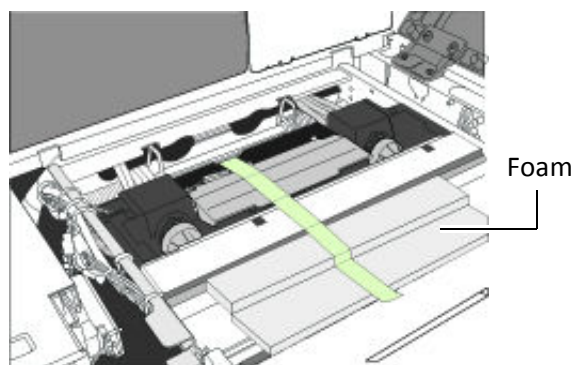
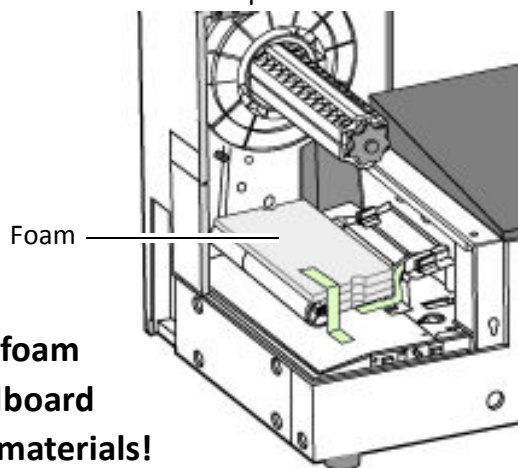
## 1 Remove tape and packing materials

**a** Remove tapes.

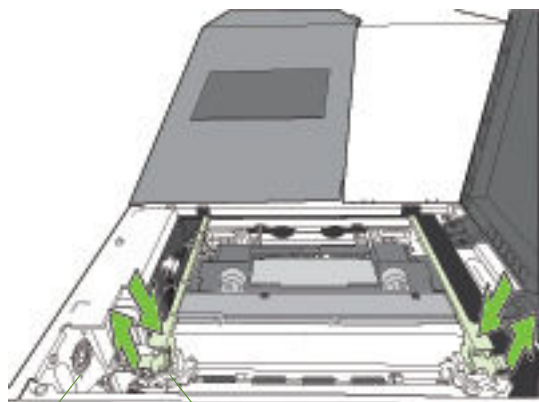


**Keep all foam and cardboard packing materials!**

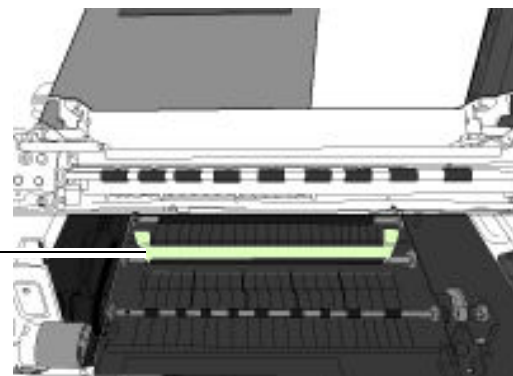
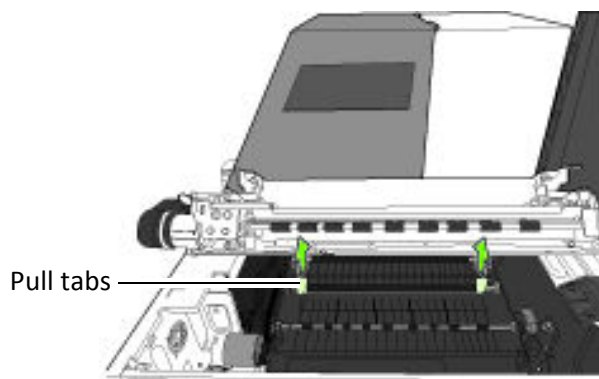
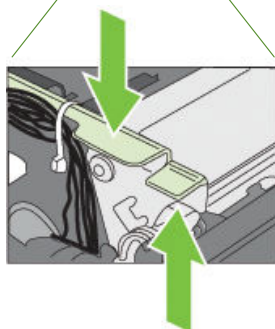
**b** Remove tapes and foam from inside the printer.



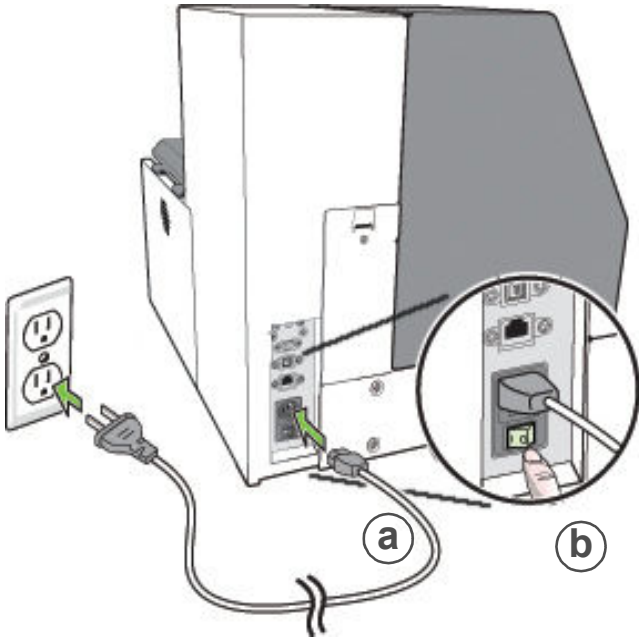
**c** Remove cardboard.



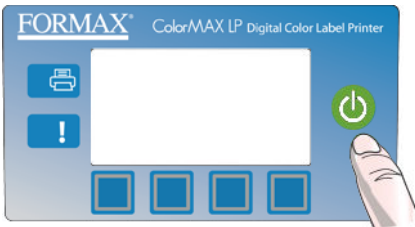
Squeeze latches to open clamshell



## 2 Connect power



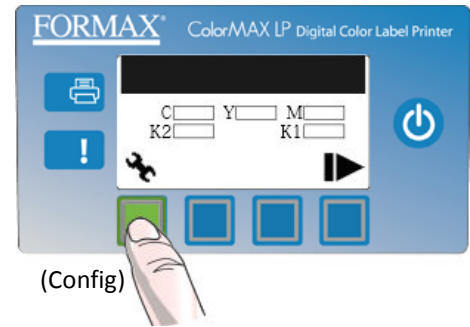
- (a) Plug power cable into printer and outlet
- (b) Turn on power switch
- (c) Press the **Power** button on the control panel



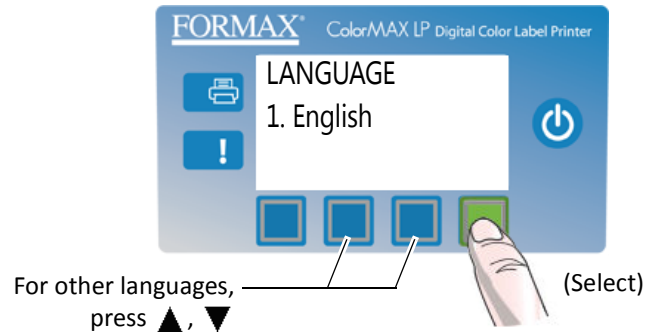
### Choose display language (optional)

After connecting power for the first time, press **Config** to set the display language for the control panel if you want to change from the default setting of English.

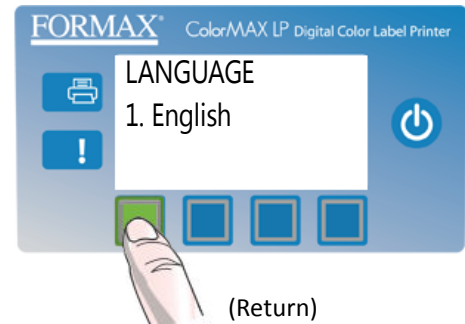
- (d) Press the **Config** button



- (e) Press the **Select** button when the correct language is displayed

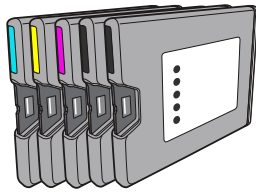


- (f) Press the **Return** button

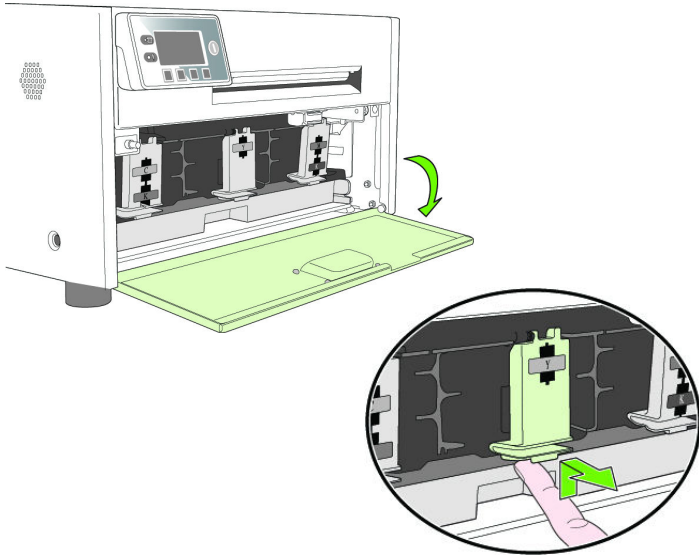




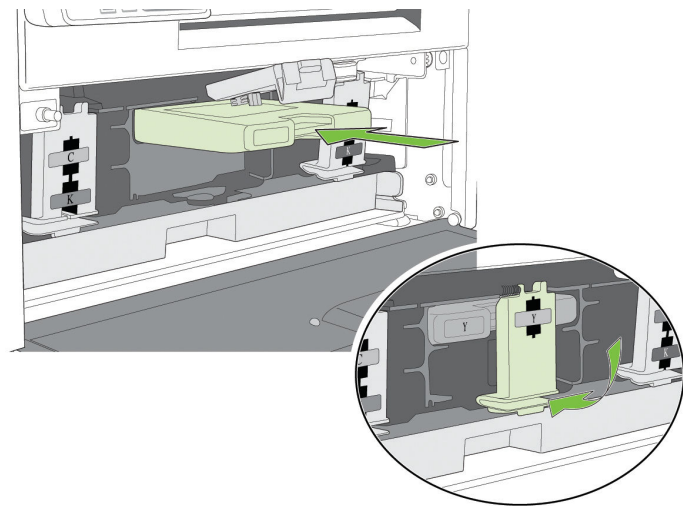
### 3 Install ink cartridges



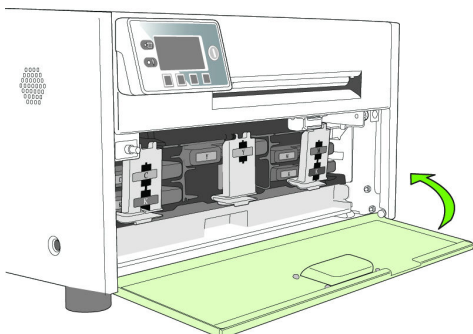
- a** Open front of printer and release cartridge latch



- b** Insert ink cartridge and close cartridge latch

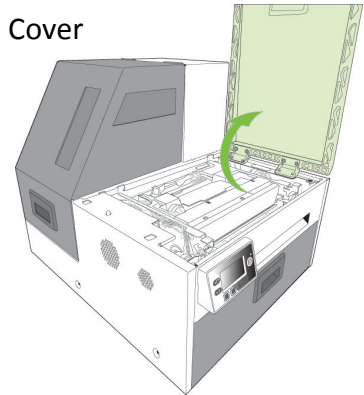


- c** Close front of printer



### 4 Install printhead

- a** Open Top Cover

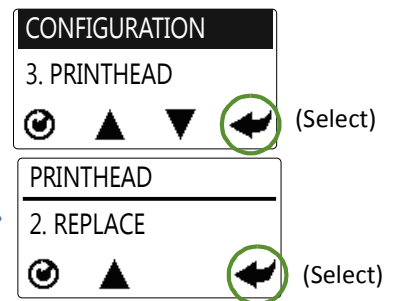


- b** Press the **Config** button



Press ▼ until display reads **Printhead**, then press **Select**

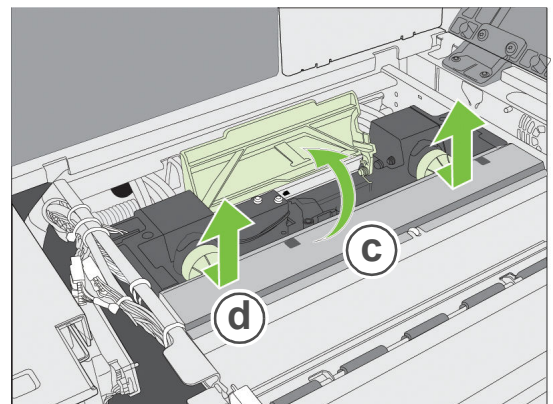
Press ▼ until display reads **Replace**, then press **Select**



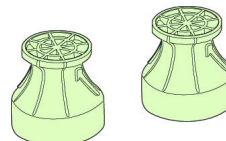
Wait for printhead latch to be released.

**! Do not open latch before it is released!**

- c** Open printhead latch fully.




- d** Remove nozzle caps.

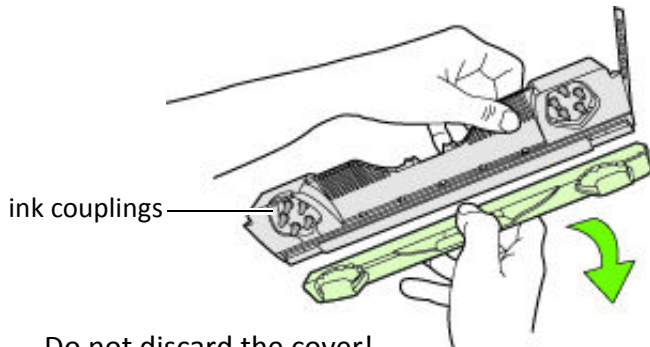


Do not discard the caps! They should be replaced if the printhead is removed from the printer.

**e** Remove printhead from packaging.

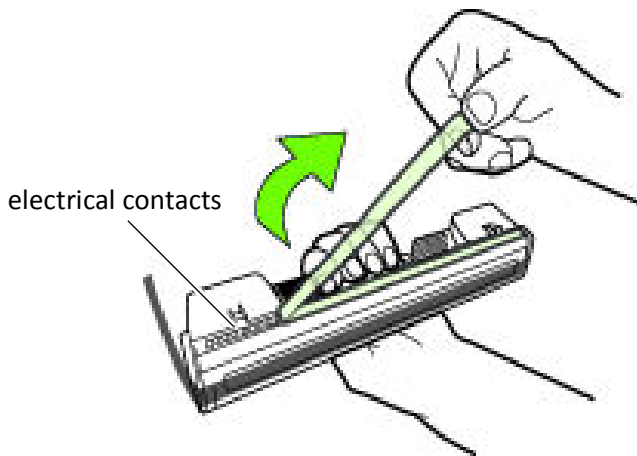
 Do not touch the ink couplings, electrical contacts, or nozzles.

Remove cover from ink couplings

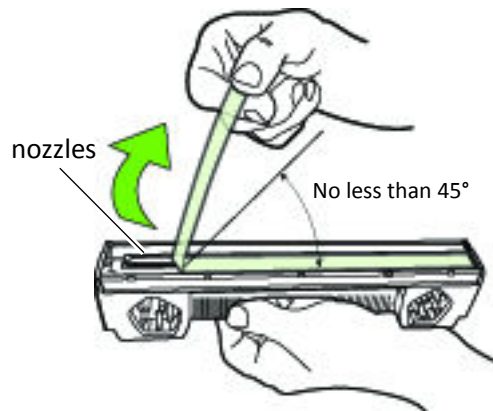


Do not discard the cover!  
It should be replaced if the printhead is removed from the printer.

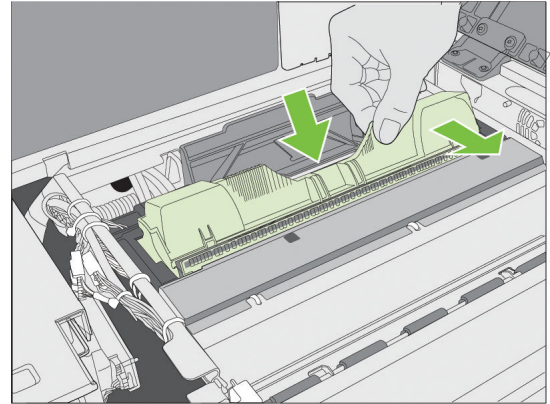
Slowly remove tape from electrical contacts



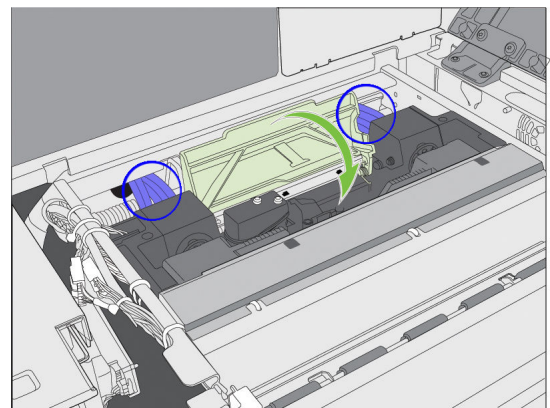
Slowly remove tape from nozzles



**f** Insert printhead

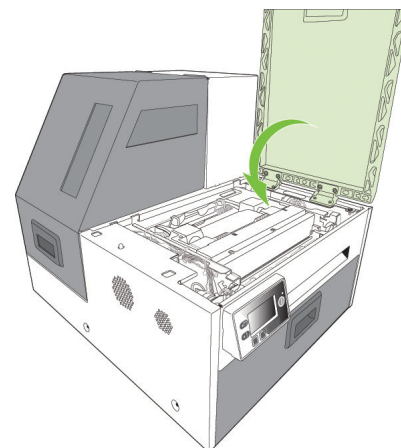


**g** Close printhead latch



Check that ink is flowing through the tubes on both sides of the printhead (circled above).

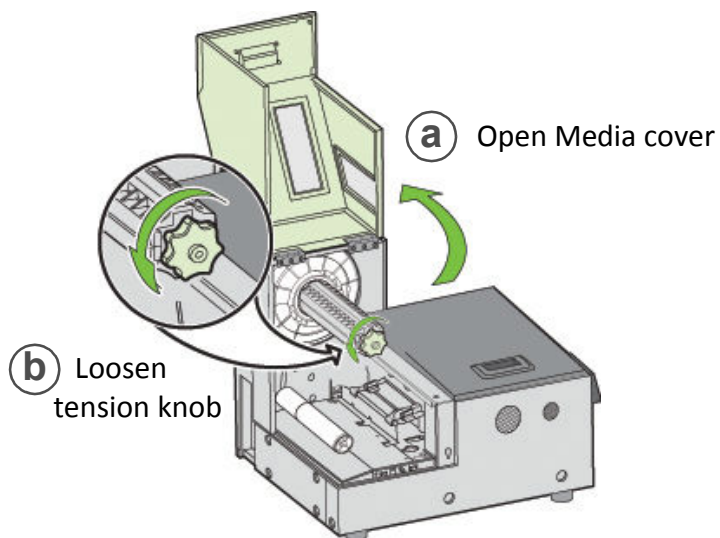
**h** Close printer cover



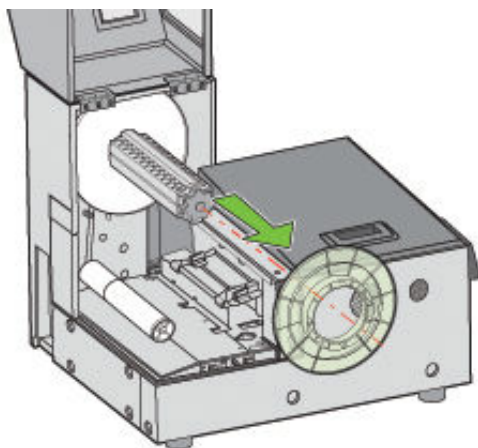
Initialization may take several minutes.  
The control panel will display **Printer Online** when initialization is complete.



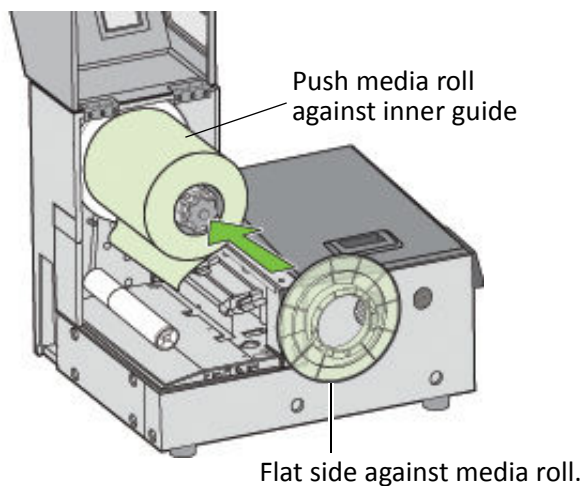
## 5 Load sample media



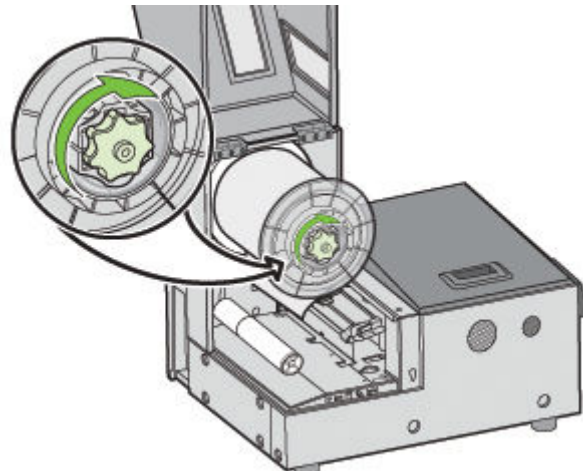
**c** Remove Media stop



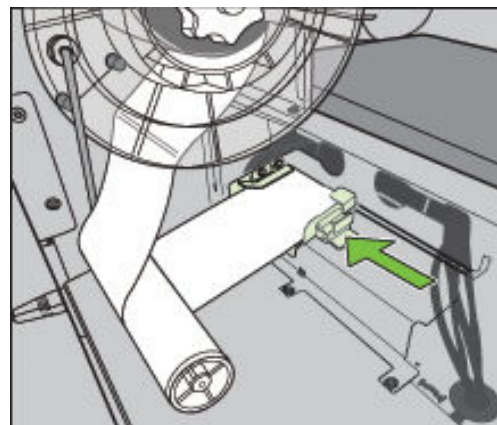
**d** Install Media roll



**e** Tighten knob fully

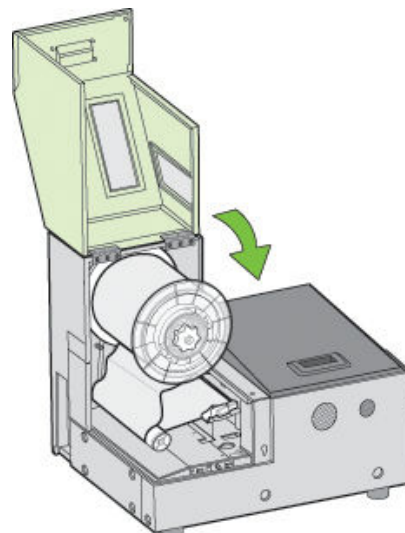


**f** Thread media around dancer and into printer



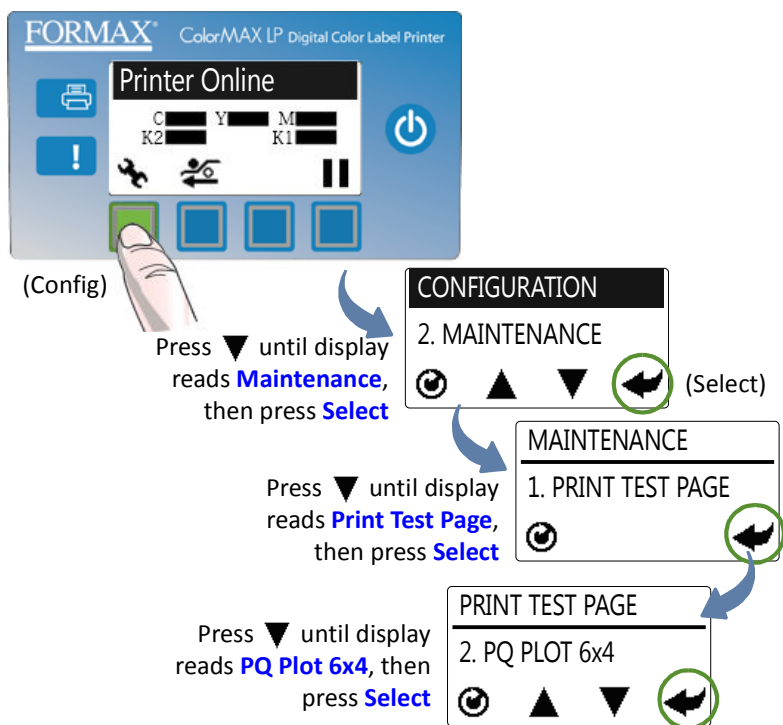
Insert media until it stops.  
Slide label guide to edge of label.  
Wait for printer to load media.

**g** Close Media cover

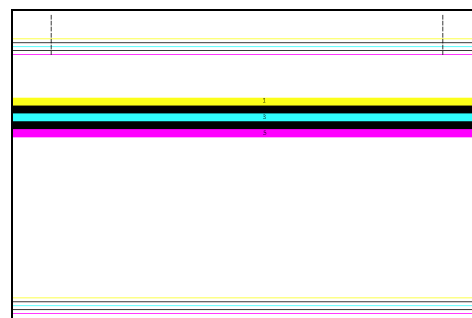


## 6 Print test label

Requires 6" x 4" or 4" x 6" labels with inter-label gap.



Sample PQ Plot 6x4



### Top Section:

- Lines are defined with no missing nozzles
- Lines are printed in order: Yellow, Black, Cyan, Black, Magenta
- Vertical dashed lines are straight

### Middle Section:

- All yellow, black, cyan, black, magenta lines are printed
- No color mixing on the color bars
- Numbers 1, 3, 5 are visible

### Bottom Section:

- Lines are defined with no missing nozzles
- Lines are printed in order: Yellow, Black, Cyan, Black, Magenta

### Overall:

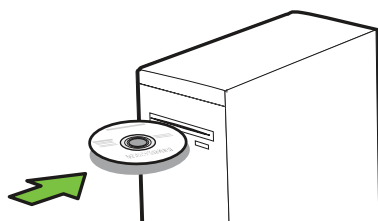
- No streaking or smearing

## 7 Install printer driver

Before installing printer driver, ensure that computer meets minimum system requirements (see [System Requirements](#) on page 72).

### To connect printer to computer using USB

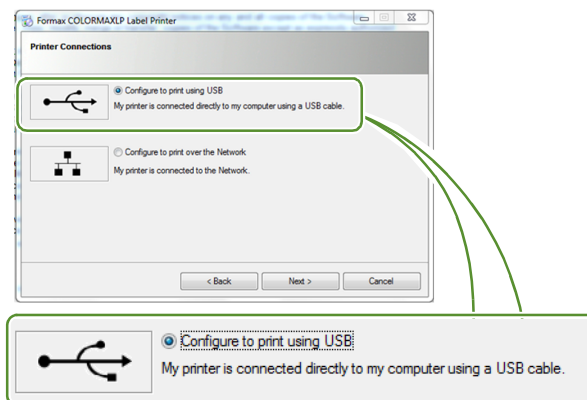
- a** Insert Installation disc into computer



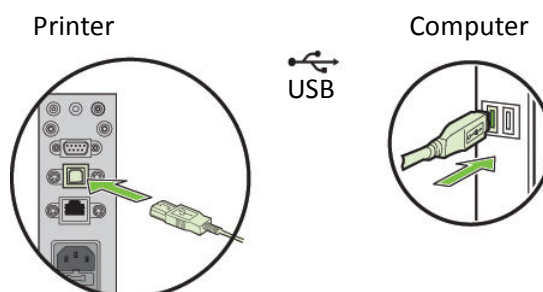
- b** Select **Install Driver** from the Installation window



- c** Select **Configure to print using USB** and click **Next**

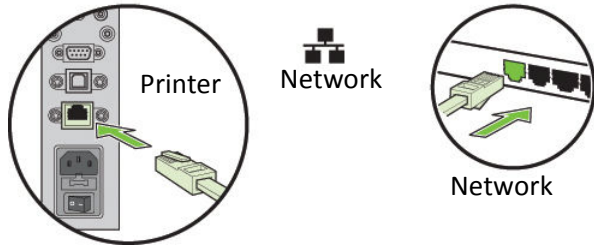


- d** Connect USB cable when prompted.



## To connect printer to network

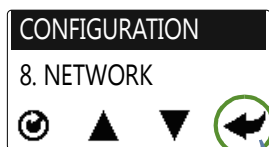
- a** Connect printer to network using Ethernet



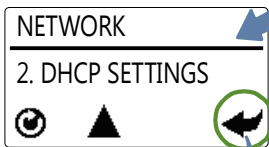
- b** If you will be using DHCP to set the IP Address, skip to step **h**.

To assign the printer a Static IP address, the Security Level must be set to 2. Please see [Selecting the Security Level](#) on page 12.

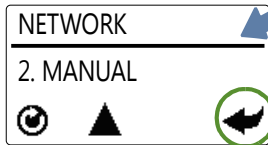
- c** Set DHCP Settings to Manual



Press ▼ until display reads **Network**, then press **Select**

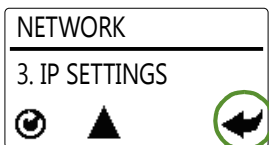


Press ▼ until display reads **DHCP Settings**, then press **Select**.

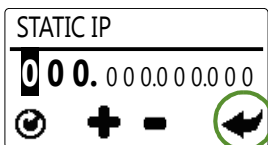


Press ▼ until display reads **Manual**, then press **Select**. Press **Return** to go back to the Network menu

- d** Set the Static IP Address



Press ▼ until display reads **IP Settings**, then press **Select** three times



Enter the first Static IP digit using the **+** or **-** button, then press **Select**. Repeat for next eleven digits. Press **Return** once when complete

- e** Press ▼ until display reads **Subnet Mask**, then press **Select** two times.

Enter the **Subnet Mask** using the same steps as when setting the Static IP address

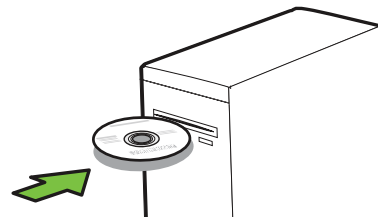
- f** Press ▼ until display reads **Default Gateway**, then press **Select** two times.

Enter the **Default Gateway** using the same steps as when setting the Static IP address

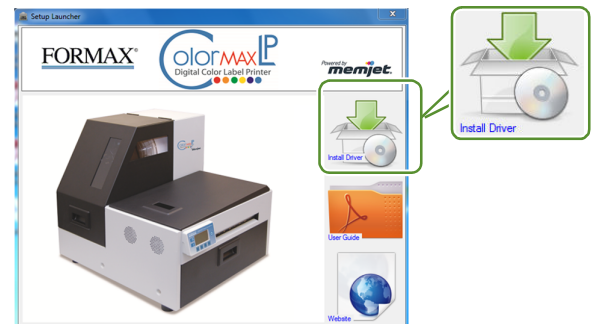
- g** Press ▼ until display reads **Wins Server**, then press **Select** two times.

Enter the **Wins Server** using the same steps as when setting the Static IP address

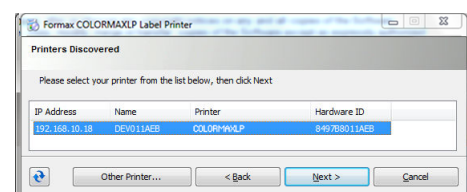
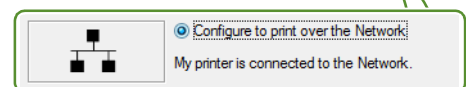
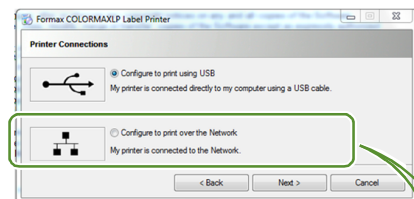
- h** Insert Installation disc into computer



- i** Select **Install Driver** from the Installation window




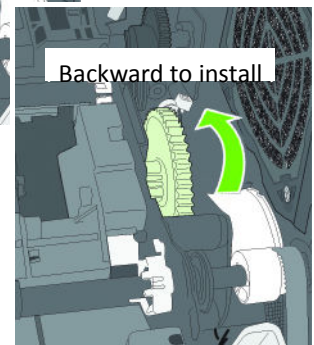
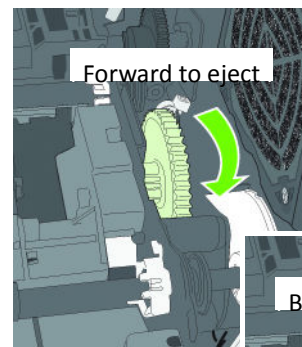
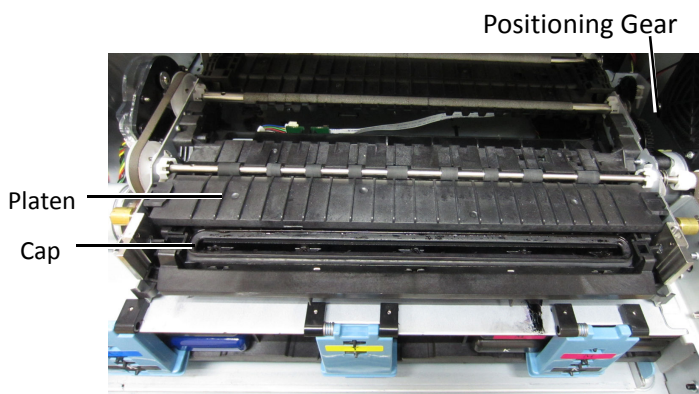
- j** Select **Configure to print over the Network** and click **Next**



## Troubleshooting Printer Setup

If **Mech Error 2** or **Mech Error 3** appears on the control panel during installation, check the following.

Possible Cause	Solution
Service station is jammed.	Ensure that the cardboard is removed from inside the printer.
Service station was tilted during shipment.	<ol style="list-style-type: none"> <li>1. Manually <b>open the clamshell</b> to its highest position.</li> <li>2. On the control panel, select  (Config) &gt; Service Station &gt; Eject. Wait for the printer to eject the service station.</li> <li>3. Turn off the printer, beginning with the power button on the control panel. When the display turns off, turn off the power switch on the back of the printer.</li> <li>4. Verify that the Service Station is free and can be manually pulled forward to the front bracket. If yes, proceed to Step 5. If not, contact Technical Support.</li> <li>5. Align the service station with the guide rails and slide it back into the printer.</li> <li>6. Check the alignment: the cap on the service station must be parallel to the edge of the platen.</li> <li>7. Continue pushing the service station while you manually rotate the positioning gear backwards to move the station all the way into the print engine.</li> <li>8. Close the clamshell.</li> <li>9. Turn on the printer.</li> </ol>



## Change Security Passwords (Administrator)

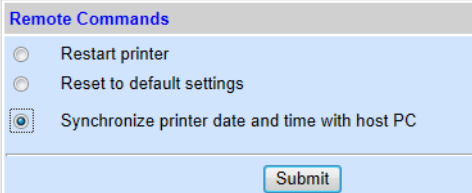
Once the printer has been set up, an administrator should change the security passwords using the Embedded Web Server (EWS).

1. On the Windows **Start** menu, select **7** > **7** # **U** **On Label Printer** > **Toolbox**.
2. Click **7** # **U** **On Label Printer** to launch the default web browser and open the EWS for your printer.
3. Click **Login** and log in with the default password **123**.
4. Click **Security Setup** to change the password for the EWS as well as the passwords for the control panel (default password **123**).

See [EWS Security Setup](#) on page 38 for more information about security on this printer and [Embedded Web Server \(EWS\)](#) on page 36 on the EWS.

### Set Date and Time

Also from the EWS, set the date and time on the printer by synchronizing with the host computer. This option can be found in **Advanced Settings**.



The screenshot shows a web interface titled "Remote Commands" with a light blue background. It contains three radio button options: "Restart printer", "Reset to default settings", and "Synchronize printer date and time with host PC". The third option is selected, indicated by a blue dot. A "Submit" button is located at the bottom right of the form.



## Chapter 2

# Using the Printer

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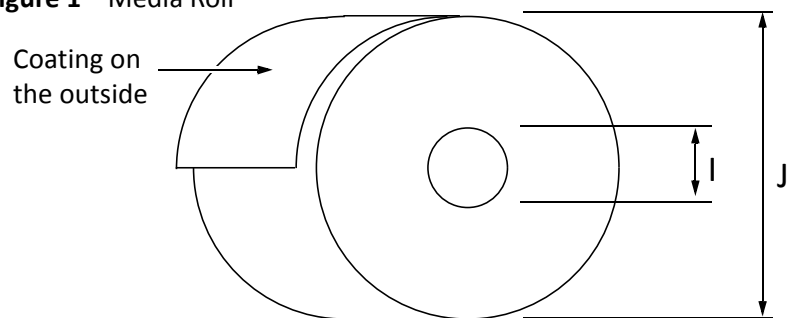
## Choosing Label Media

Ensure that the label media meets the requirements for the printer ([Table 1](#)).

**Table 1** Media specifications

Media Type and Dimensions	
Media type	Gloss, semi-gloss, and matte.
Label width	2.0" to 8.5" (50.8 mm to 215.9 mm)
Label length	Maximum 40" (1.016 m) Minimum 2" (50.8mm)
Label thickness	Maximum 0.01" (0.3 mm, including liner) Minimum 0.005" (0.13 mm)
Core size	Requires 3" (76.2 mm)
Roll diameter	Maximum 8" (203.2 mm)
Media Handling	
Print mode	<ul style="list-style-type: none"> <li>• Roll to cut</li> <li>• Print and present (non-peel)</li> <li>• Roll to roll</li> </ul>
Detection	<ul style="list-style-type: none"> <li>• Gap</li> <li>• Continuous</li> <li>• Black mark (3mm wide, 25.4mm long on left)</li> </ul>

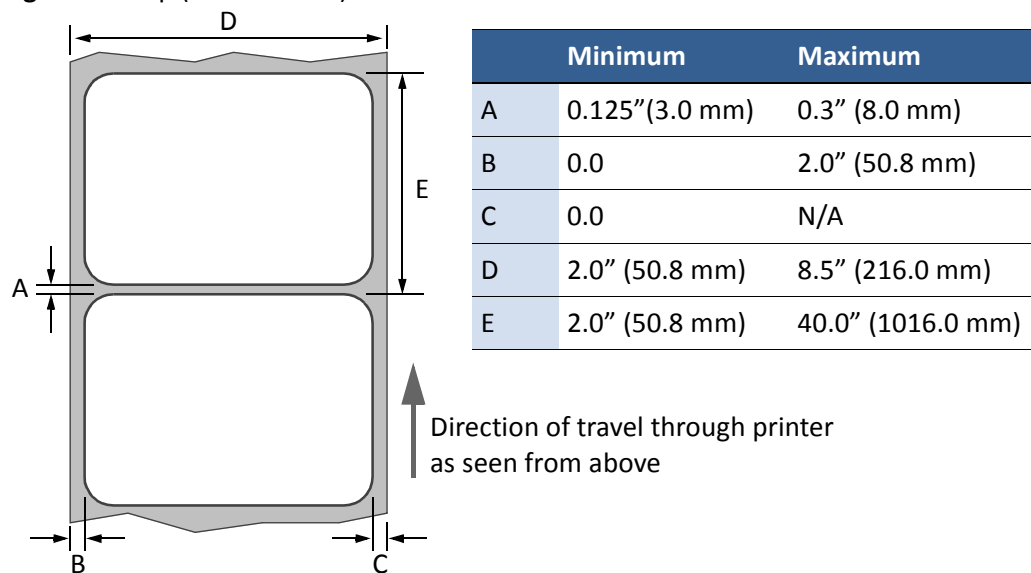
**Figure 1** Media Roll



	Minimum	Maximum
I	3.0" (76.0 mm) cardboard core	3.0" (76.0 mm) cardboard core
J	N/A	Up to 8.0" (203.0 mm)

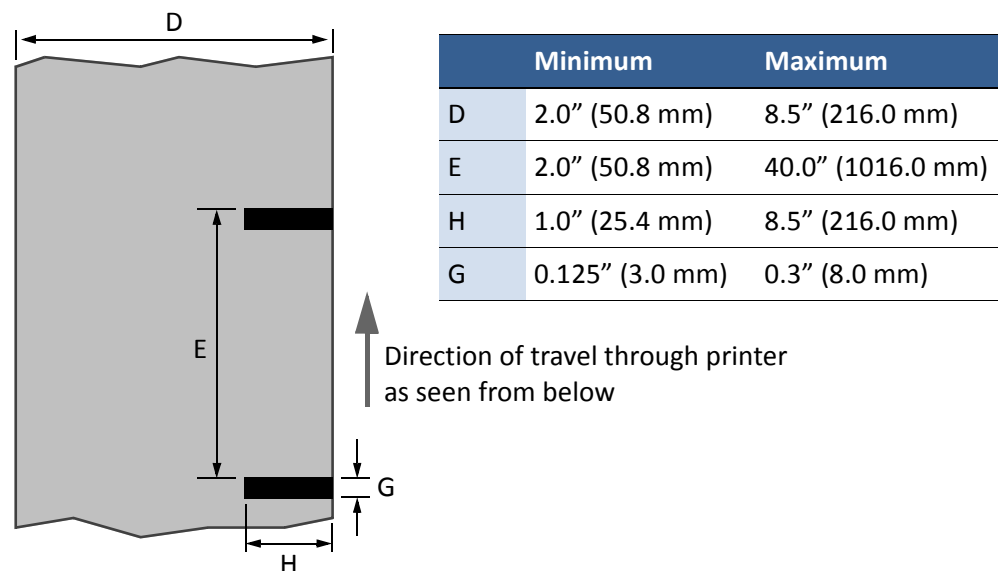


**Figure 2** Gap (Transmissive) Media




**Figure 3** Black Mark (Reflective) Media

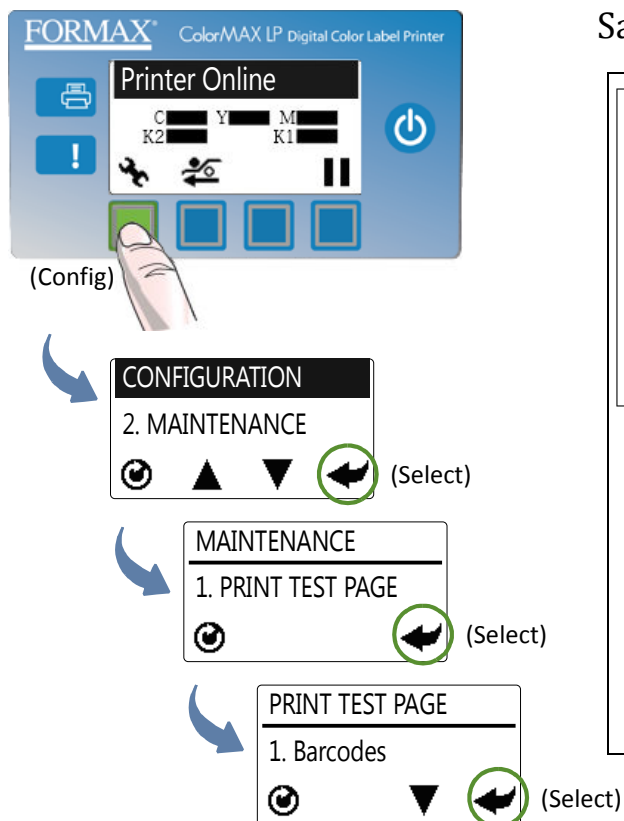
Reverse side of tag stock



## Print Test Page

The Barcodes test page is formatted for 4" x 6" labels (with inter-label gap). Larger labels may be used.

On the control panel, select  (Config) > MAINTENANCE > PRINT TEST PAGE > Barcodes.



## Sample Barcodes Test Page



A successful test print includes:

- Barcodes are readable
- Letters and numbers are readable
- No ink smearing, color mixing, or streaks
- Label is printed in black with no other color visible

# Printing Labels

The printer is ready to print when the control panel displays Printer Online.

1. Select the **Print** command from your application.
2. Select the printer and click the **Setup, Properties** or similar button.

The print settings displayed are the defaults that were set in the printer driver.

3. Change the print settings if needed.

**NOTE:** Ensure the media settings (e.g. label size) match the media loaded in the printer.

---

4. Print the document.

Any changes to the settings only apply to the current print job. Once you exit the application, the changes are lost. Make the changes in the printer driver if you wish to keep the settings as the default for all print jobs.

## Change Default Settings in Printer Driver

To select the default print settings that will be used for all print jobs:

1. From the Windows **Start** menu, select **Devices and Printers\***.
2. Right-click the printer, and select **Printing preferences**.

The printing preferences contain three tabs as shown in [Figure 4](#).

3. Make the changes and click **OK** to save.

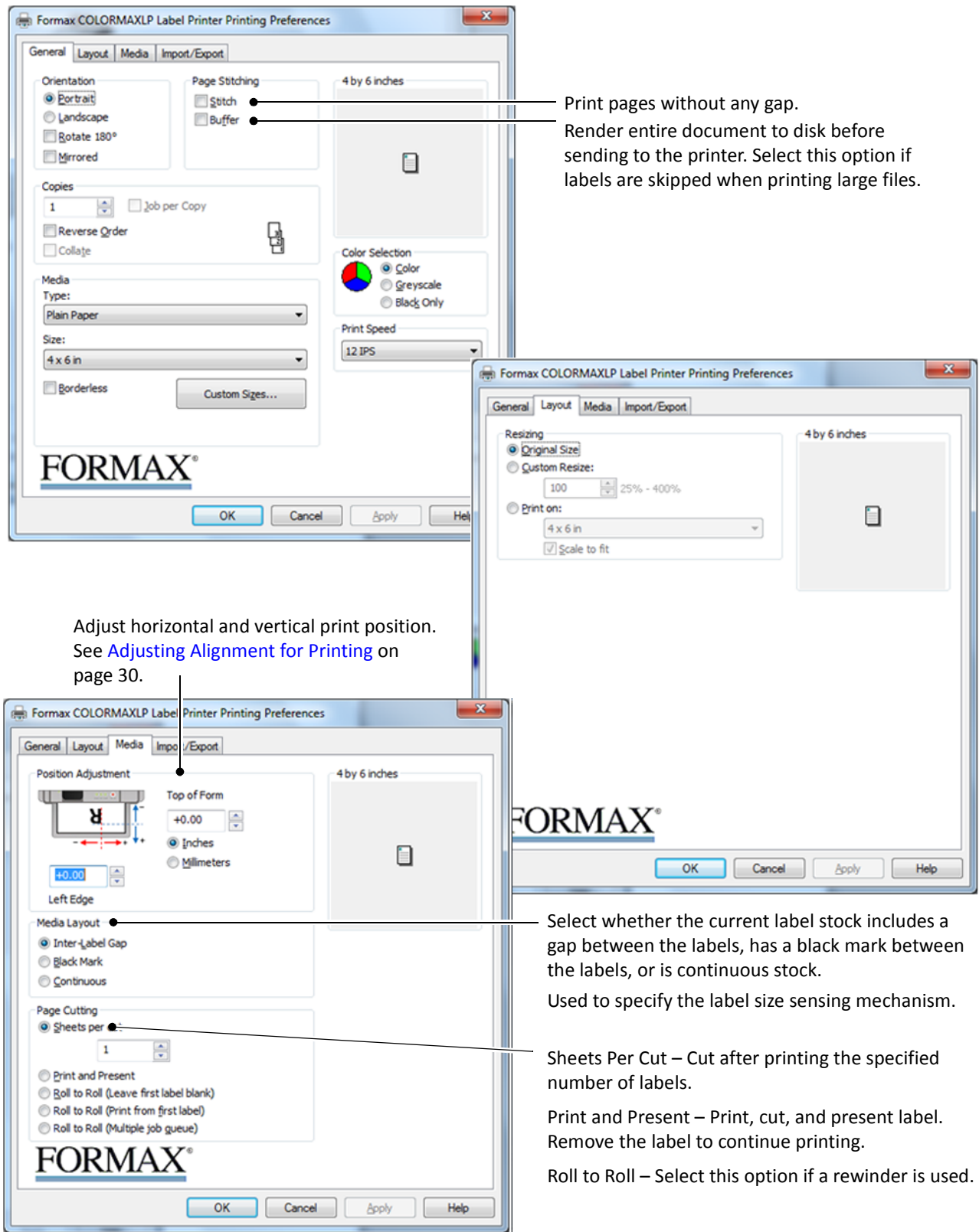


It is recommended that any adjustments needed for individual print jobs should be performed using the drivers.

---

\* For Windows 7. The steps may differ for other Windows versions.

**Figure 4** Printing Preferences



## Selecting the Media Type

Selecting the media type that matches the media you are printing on will usually give the best print results.

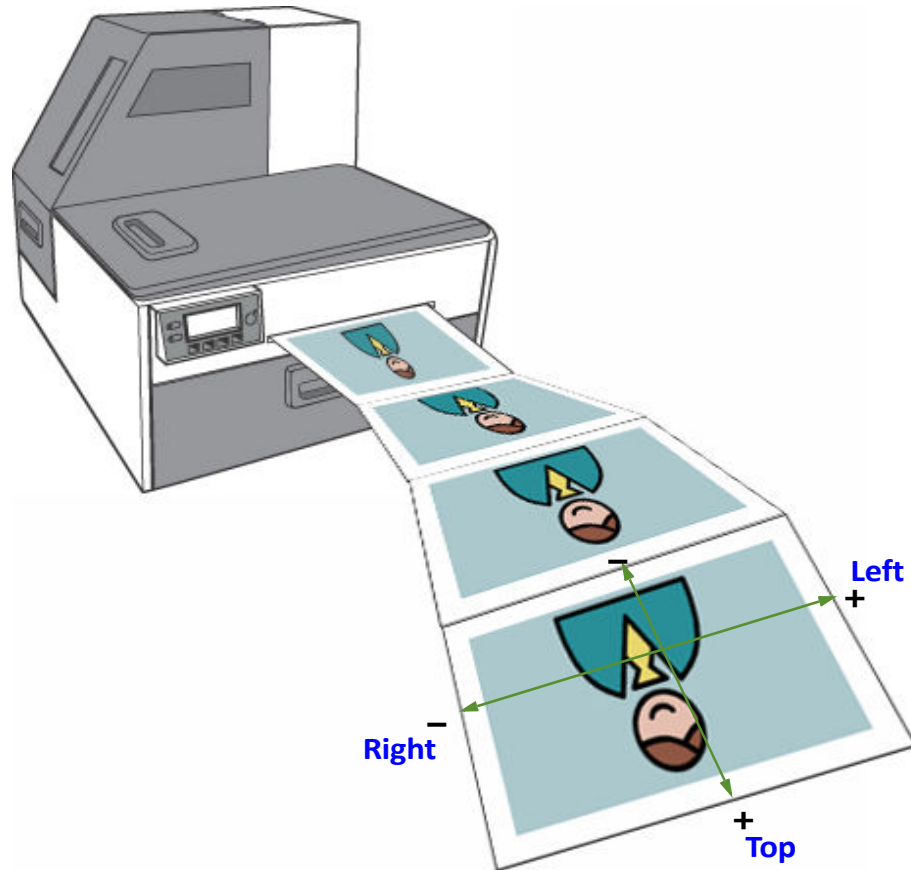
Select this Media Type:	When you are printing on:
Plain Paper	Plain (uncoated) paper and labels.
Matte Coated Label	Matte coated labels.
Matte Coated Paper	Matte coated paper.
Glossy Label	Glossy labels. This option optimizes print quality and dry time.
Premium Gloss Label	Glossy labels. This option uses more ink for better color.

# Adjusting Alignment for Printing

Always print a few test labels to check the alignment of the image. If the image is not centered, adjust the Top of Form and/or Left Edge offsets.

A positive value for **Top of Form** adjusts the image towards the top of the label.

A positive value for **Left Edge** adjusts the image towards the left of the label.



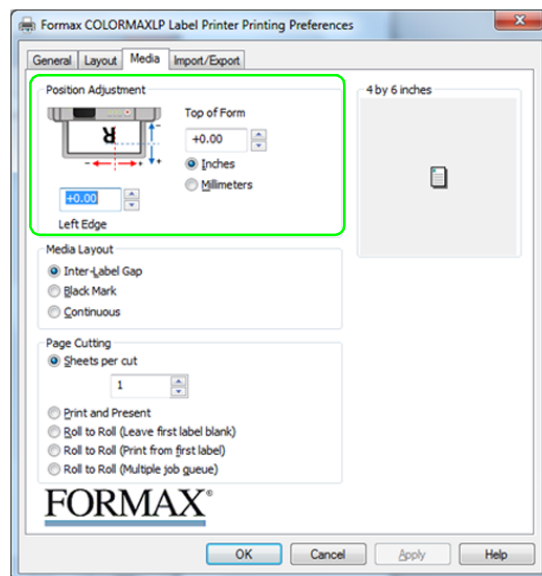
**NOTE:** Adjustment values entered in the driver and using the control panel are cumulative. The corresponding values are added together. If you have already made the correct adjustments in one location, you do not need to enter them in the other.

---

## Adjust Alignment from Printer Driver

The offset settings are found on the **Media** tab, in the **Position Adjustment** section.



Use the controls to enter in the adjustments necessary to center the printed image on the label.

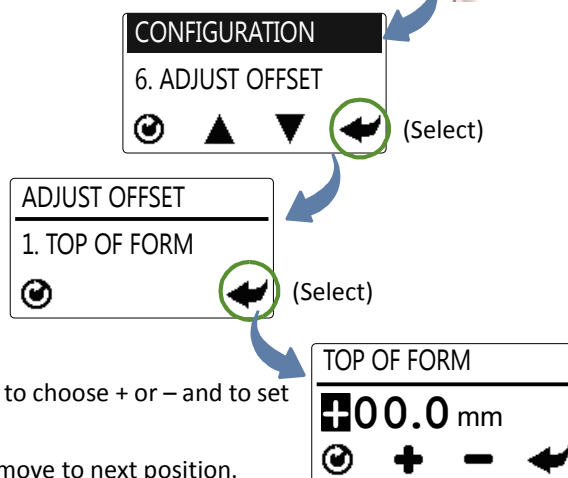
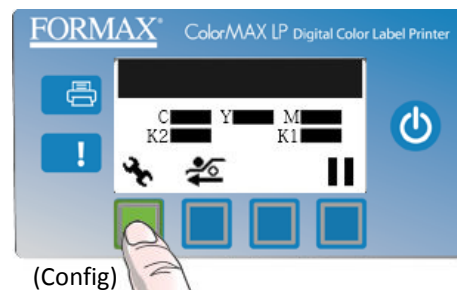


## Adjust Alignment from Control Panel



This setting requires security Level 1 (supervisor) or higher. Select the security level before you proceed (see [Selecting the Security Level](#) on page 12).

1. On the control panel, select  (Config) > ADJUST OFFSET > TOP OF FORM or LEFT EDGE.
2. Set the offset value.
3. Press  to return to the main menu.



# Printing Borderless (Full-Bleed) Labels

As the **Borderless** setting in the Print Drivers can change the scale of the image to print without retaining the same height-to-width proportions, it is not recommended that you use that setting. Instead, follow the procedure below.

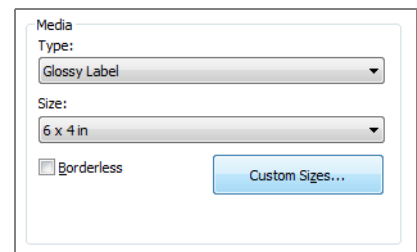
There are a few considerations before printing borderless:

- Fine tuning of the print position is required. The smaller the label gap, the more difficult this tuning will be.
- This method requires oversizing the image to be printed. Your image cannot exceed the maximum label width of 8.5”.
- Printing at 12 IPS may result in skipped labels due to the decrease in the label gap. Printing must be done at 6 IPS.

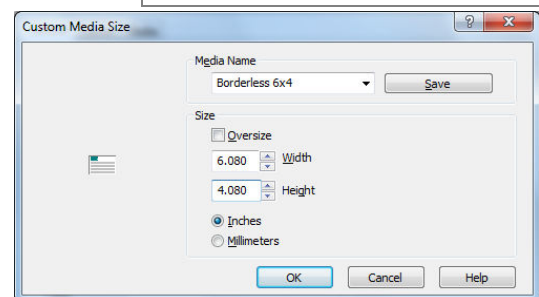
## Adjustments for Borderless Printing

Prepare an image larger than the label size. For example, to print borderless on a 6” x 4” label, create an image of 6.08” x 4.08”, giving an allowance of 0.08”.

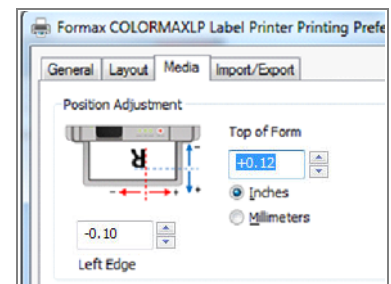
1. On the **General** tab of the printer drivers, select **Print Speed** of **6 IPS**.
2. Click the **Custom Sizes** button to create the new label size.



3. Name the custom size and set the media size to that of the image (6.08” x 4.08” in this example). Click the **OK** button to save the custom size.



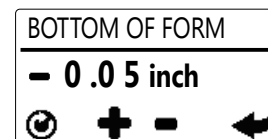
4. On the **Media** tab, set the **Top of Form** to a value equal to or greater than the allowance from the oversizing of the image (for this example, a value equal to or greater than 0.08”).  
Verify the units are set to the correct selection (in this example, **Inches** should be selected).
5. Also ensure that **Inter-Label Gap** or **Black Mark** is selected as the media layout on the **Media** tab.





6. Print a few labels to check the print position. If the image does not print to the edge or prints over the edge, adjust the **Top of Form** and **Left Edge** offsets from either the print drivers or the control panel (🔧 (Config) > [ADJUST OFFSET](#)). See [Adjusting Alignment for Printing](#) on page 30.
7. Print a few more labels to verify the changes to the offsets are placing the label in the correct position. Adjust again if necessary.

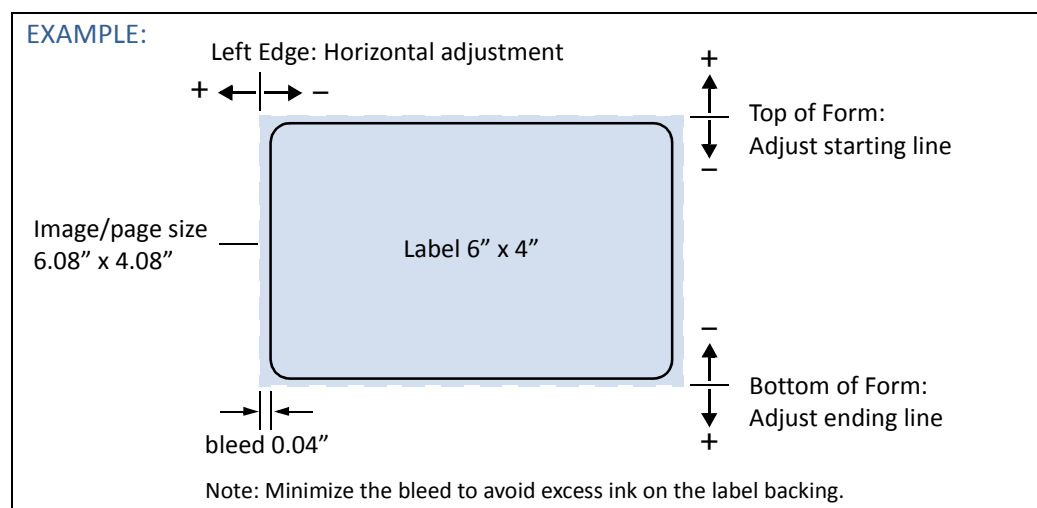
8. Adjust the **Bottom of Form** offset from the control panel (🔧 (Config) > [ADJUST OFFSET](#) > [BOTTOM OF FORM](#)) to eliminate under-printing or over-printing. This offset is only accessible using the control panel.



The **Bottom of Form** offset does not change the position of the image on the label. Instead, it changes the amount that is clipped from the bottom of the image.

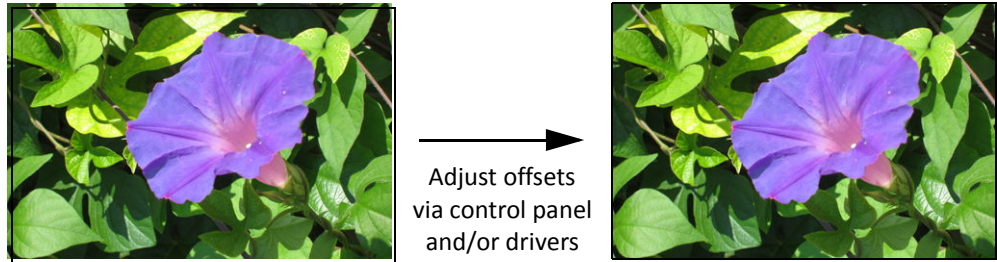
A negative value will clip less of the oversized image when printed, increasing the printed height of the image. Negative adjustments should be made if there is white space at the bottom of the label.

A positive value will clip more of the image, decreasing the printed height of the image. Positive adjustments should be made if the image is over-printing past the bottom of the label.



9. The **Cutter Offset** may need to be adjusted as well from the control panel (🔧 (Config) > [ADJUST OFFSET](#) > [CUTTER OFFSET](#)), as the Bottom of Form adjustment may change where the cuts occur. See [Cutter Offset](#) on page 76.

10. Reprint and adjust again if needed. When correctly adjusted, the image should fill the entire label with a minimum of over-printing.



**It is recommended that the offsets be changed back to their original values when the borderless printing has been completed.**


Use the same method for reversing the adjustments as was used to originally make the adjustments. Changes made using the control panel should be reversed on the control panel, and changes made using the print drivers should be reversed in the print drivers.

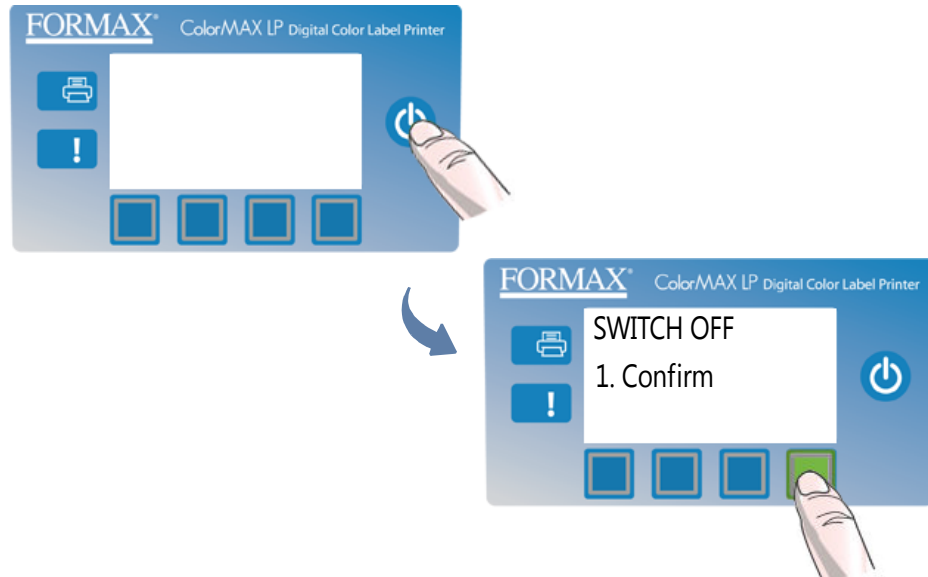
# Turning Off the Printer

Always use the Power button to turn off the printer.



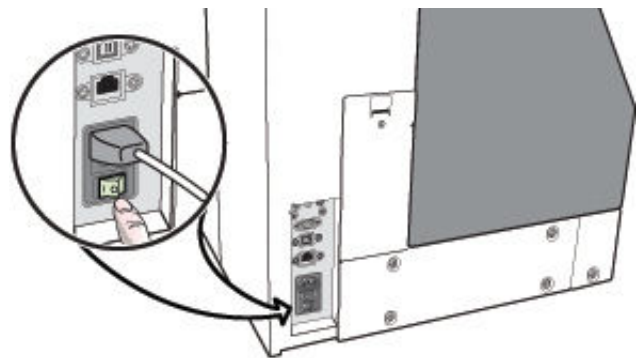
**CAUTION:** Removing power to the printer in any other manner may damage the printer.

1. Press the Power button on the control panel, then press  (Select) to confirm.



2. Wait for the LCD display on the control panel to turn off, then turn off the Power switch at the back of the printer.

During a normal shutdown, the printer will service the printhead and save data to the memory before turning off.



## If the Printer Will Not Switch Off

If the printer does not respond when you press the Power button, press and hold the power button for 5 seconds. The printer should switch off. However, it will not be able to perform the normal shutdown processes. Do not use this option unless it is absolutely necessary.

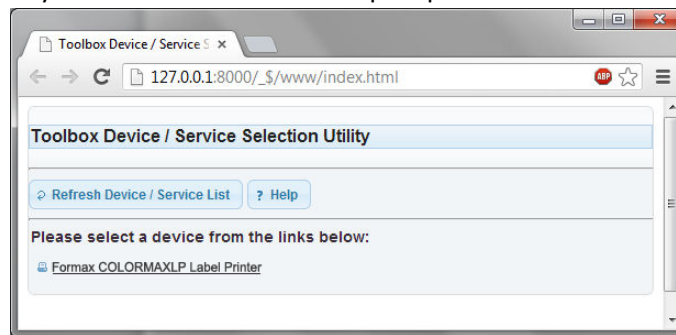
## Software Tools

- [Embedded Web Server \(EWS\)](#)
- [EWS Security Setup](#)
- [Support Tools](#)

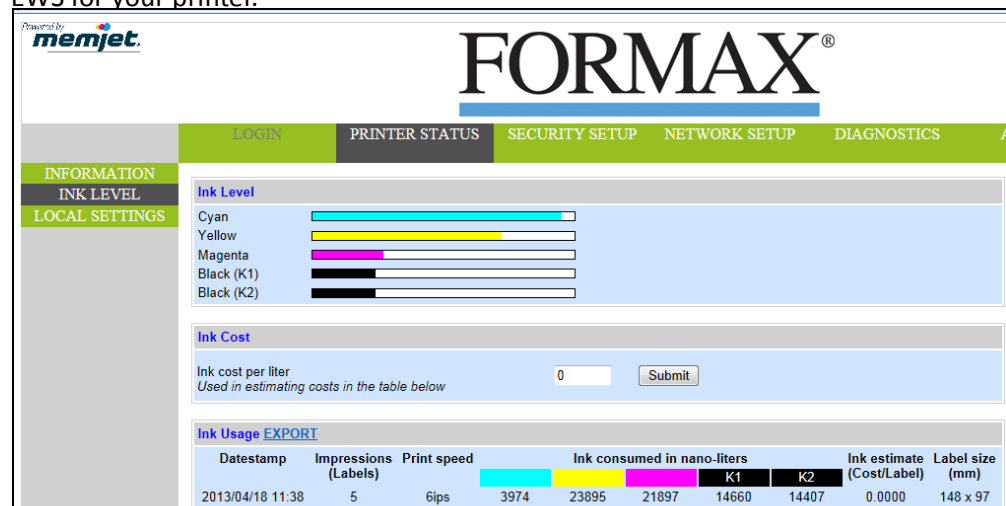
### Embedded Web Server (EWS)

The Embedded Web Server (EWS)\* provides remote access to the printer. You can monitor the printer status and check usage metrics. The administrator can also log in to view additional information and change various settings.

1. On the Windows **Start** menu, select **7 > 7 # U On Label Printer > Toolbox**. If the printer is installed on the network, enter the IP address in a web browser\* on any PC on the network and skip step 2.



2. Click **7 # U On Label Printer** to launch the default web browser\* and open the EWS for your printer.



The EWS displays printer information and usage metrics on the **Printer Status** page. Click **Login** to log in for full access to all the EWS pages (described in [Table 2](#)).

- \* Recommended: Internet Explorer 8/Firefox 15 or later, at 1280 x 700 or higher resolution.  
**Requires Java plug-in enabled in browser.**

**Table 2** EWS pages

EWS Page	Description
<b>Printer Status</b>	Access to printer information, ink levels, and usage metrics. Also shows the current printer settings.
<b>Security Setup</b>	(See <a href="#">EWS Security Setup</a> on page 38.)
Change Password	Set the passwords for accessing the following: <ul style="list-style-type: none"> <li>• Embedded Web Server (EWS). The EWS password can have 3 to 12 alphanumeric characters. Special characters are not allowed.</li> <li>• Level 1 (Supervisor) security on control panel.</li> <li>• Level 2 (Administrator) security on control panel.</li> </ul> The control panel password must contain 3 digits.
Printer Settings	Set the minimum security level allowed to access the following protected settings: <ul style="list-style-type: none"> <li>• Language</li> <li>• LCD Brightness/Contrast</li> <li>• Sensor Sensitivity</li> </ul>
<b>Network Setup</b>	Network settings for the printer.
<b>Diagnostics</b>	Print test labels. Be sure to load the correct size labels (with inter-label gap) before printing.
<b>Advanced Settings</b>	
Remote commands	<ul style="list-style-type: none"> <li>• Restart printer Turn the printer off and on.</li> <li>• Reset to default settings Reset settings to the factory defaults.</li> <li>• Synchronize printer date and time with host PC Set the printer date and time by synchronizing with the host PC.</li> </ul> Click <b>Submit</b> to send the selected command to the printer.
Mid Job Servicing Interval	<b>Applies to roll-to-roll printing only.</b> Choose from the three options to determine how frequently the printer will perform a servicing routine during printing. Printing will pause, the servicing will occur, then printing resumes.
Other settings	<ul style="list-style-type: none"> <li>• Retract media when printer is idle for 10 minutes When media remains in the printer for some time, it may become deformed and printing is affected. To avoid this problem, select this option to automatically retract the media.</li> </ul>

## EWS Printer Status

There are three pages on the Printer Status section, Information, Ink Level, and Local Settings.

### Information

The Information page will provide the Model, Print Engine ID, Firmware Version, Printer Status, and Printed Length. In addition, the Total Labels Printed and Total Cuts Made are listed. You can reset these last two counters independently by selecting the one to be reset from the drop-down list and clicking the **Reset** button.

### Ink Level

The Ink Level page will show you the amount of ink remaining in each cartridge.

In addition, the Ink Cost can be specified, which will then be used to determine the Ink Estimate in the Ink Usage section below when the **Submit** button is clicked. The usage can be exported to a file in .csv format.

### Local Settings

The Local Settings page will give you the current settings for the Print by External Trigger (On/Off), Unit (inch/mm), the four offsets, the LCD Contrast and Brightness, the Label Gap Sensor Sensitivity, and the Black Mark Sensor Sensitivity.

These settings can only be viewed in the EWS. Any changes to these settings must be performed on the control panel or drivers.

## EWS Security Setup

The ColorMaxLP printer has three levels of security. See [Selecting the Security Level](#) on page 12 for the list of security restrictions.

Security Level	Description
Level 0 (operator)	The printer powers up in level 0 by default, which allows users to access all the functions needed to print, but not to change printer parameters via the control panel.
Level 1 (supervisor)	The user can access certain printer parameters. A password is required to access this level.
Level 2 (administrator)	All parameters are enabled. A password is required to access this level.

The administrator can change the passwords through the Embedded Web Server (EWS). It is recommended that the administrator change the passwords once the printer has been set up. The default password is **123** for the EWS and the printer control panel.

## Change Passwords

1. Log in to the EWS.
  - a On the Windows **Start** menu, select **7** > **7** # **U** **On Label Printer** > **Toolbox**.
  - b Click **7** # **U** **On Label Printer** to launch the default web browser and open the EWS for your printer.
  - c Click **Login** to log in with your admin password.
2. Select **Security Setup**, then select **Printer Password**.

The screenshot shows the FORMAX web interface. At the top is the 'FORMAX' logo. Below it is a navigation bar with tabs: LOGIN, PRINTER STATUS, SECURITY SETUP, NETWORK SETUP, DIAGNOSTICS, and ADVANCED SETTINGS. The 'SECURITY SETUP' tab is selected. On the left side, there is a sidebar with 'PRINTER PASSWORD' and 'PRINTER SECURITY' options. The main content area has two sections: 'Change EWS Security Password' and 'Change Front Panel Security Password'. The 'Change EWS Security Password' section has fields for 'User' (set to 'admin'), 'New password', and 'Confirm password', with a 'Submit' button. The 'Change Front Panel Security Password' section has a 'Security level' dropdown (set to 'Level 2 - Admin'), 'New password', 'Confirm password', and a 'Submit' button.

3. Set the password and click **Submit**.
  - The EWS password can have 3 to 12 alphanumeric characters. Special characters are not allowed.
  - The control panel password must contain 3 digits.

## Change Security Level for Printer Settings

The administrator can change the security level for the following protected printer settings, which are enabled at Level 1 by default.

1. Log in to the EWS.
2. Select **Security Setup** followed by **Printer Security**.

The screenshot shows the FORMAX web interface. At the top is the 'FORMAX' logo. Below it is a navigation bar with tabs: LOGIN, PRINTER STATUS, SECURITY SETUP, NETWORK SETUP, DIAGNOSTICS, and ADVANCED SETTINGS. The 'SECURITY SETUP' tab is selected. On the left side, there is a sidebar with 'PRINTER PASSWORD' and 'PRINTER SECURITY' options. The main content area has a section titled 'Printer Features'. It has a table with two columns: 'Feature' and 'Minimum security level to configure'. The table has three rows: 'Language setting', 'LCD brightness/contrast', and 'Sensor sensitivity'. Each row has a dropdown menu set to 'Level 1 - Supervisor'. There is a 'Submit' button at the bottom of the section.

3. From the dropdown list, select the minimum security level allowed to access each setting.

For example, if you set **Language** to **Level 0 - Operator**, then all security levels will have access to this setting.
4. Click **Submit**.

## EWS Network Setup

The Network Setup page can be used to change the IP information. The same settings can also be changed from the control panel.

## EWS Diagnostics

The Diagnostics page can be used to send test prints to the printer. These are the same test prints available in the control panel.

## EWS Advanced Settings

The Advanced Settings page can be used to send Remote Commands to the printer, set the Mid Job Servicing Interval, and set the printer to Retract media when the printer is idle for 10 minutes.

The **Remote Commands** include [Restart Printer](#), [Reset to Default Settings](#), and [Synchronize Printer Date and Time with Host PC](#). Select the command to send and click the **Submit** button.

The **Mid Job Servicing Interval** is used for Roll-to-Roll printing only to be sure the nozzles are kept healthy. The three options are as follows:

**Minimum:** The Mid Job Servicing occurs every 2475" (62865 mm) or 9 minutes, whichever comes first.

**Normal** (Default): The servicing occurs every 1650" (41910 mm) or 6 minutes, whichever comes first.

**Maximum:** Servicing occurs every 550" (13970 mm) or 2 minutes, whichever comes first.

If white streaking appears on the labels during Roll-to-Roll printing, **increase** the Mid Job Servicing interval from the current setting.

If color mixing is observed on the labels during Roll-to-Roll printing, **decrease** the Mid Job Servicing interval from the current setting.

This setting should only be changed if necessary.

**NOTE:** Mid Job Servicing will not resolve print issues such as white streaks due to paper dust or debris accumulation in the print zone.

---

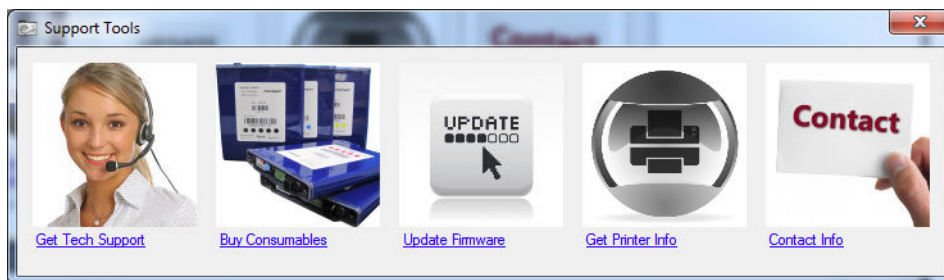
The [Retract media when the printer is idle for 10 minutes](#) option will unload the media by rolling it backwards if the printer has not been used for 10 minutes. This is done to keep the labels from curling inside the printer, which may cause the label media to rub against the printhead when printing resumes. This setting is checked by default.

The media will need to be reloaded after it has been retracted in order to print.



## Support Tools

On the Windows **Start** menu, select **7** > **7** # **U** **On Label Printer > Support Tools.**



The Support Tools consist of the following:

- **Get Tech Support:** Opens the ColorMaxLP Label Printer Technical Support web page.
- **Buy Consumables:** Opens the consumables web page for you to purchase ink supplies online.
- **Update Firmware:** Used to select the update file for the printer firmware. Consult Technical Support before performing a firmware update.
- **Get Printer Info:** Displays a log of printer activity and errors. This may be required when you contact Technical Support.
- **Contact Info:** Allows you to save your contact information, which will be included in the Printer Info log.



## Chapter 3

# Printer Maintenance

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# Guidelines for Preventive Maintenance

Recommended maintenance depends on the print mode that is most frequently used. If you mostly print Roll to Roll ( $\geq 80\%$ ), refer to [Table 3](#). Otherwise, see [Table 4](#). **Inspect** means to check the condition and replace if necessary.

Note that these are general guidelines for preventive maintenance. As operating conditions for your printer may differ, adjust your maintenance schedule accordingly.

Maintenance items not on the tables below should be performed on an as-needed basis. These maintenance items will be covered before the scheduled maintenance.

**Table 3** Maintenance Schedule: For  $\geq 80\%$  Roll to Roll Operation

Part	Part Number	Every 1M inches (25,400 m)	Every 2.5M inches (63,500 m)	Every 5M inches (122,500 m)
Sensors	—	Clean	—	—
Media Guide	—	Clean	—	—
Service Station	22929	Inspect	Replace	—
Aerosol Fan Guard	22943	—	Replace	—
Waste Ink Absorber	22926	—	—	Inspect <sup>1</sup>

1. Inspection should occur every 20 cartridges or 6 months, whichever comes first.

**Table 4** Maintenance Schedule: For  $\geq 80\%$  Roll to Cut/Print and Cut/Print Operation

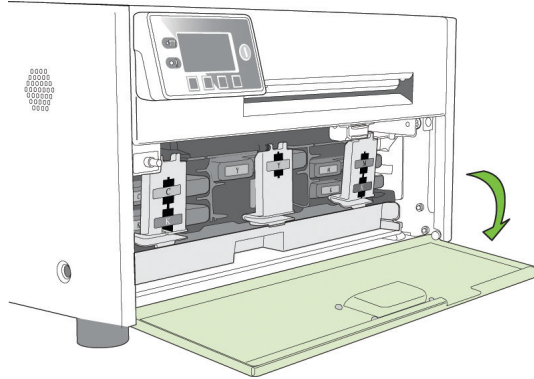
Part	Part Number	Every 1M inches (25,400 m)	Every 2.5M inches (63,500 m)	Every 5M inches (122,500 m)
Sensors	—	Clean	—	—
Media Guide	—	Clean	—	—
Service Station	22929	Replace	—	—
Aerosol Fan Guard	22934	—	Replace	—
Waste Ink Absorber	22926	—	—	Inspect <sup>1</sup>

1. Inspection should occur every 20 cartridges or 6 months, whichever comes first.

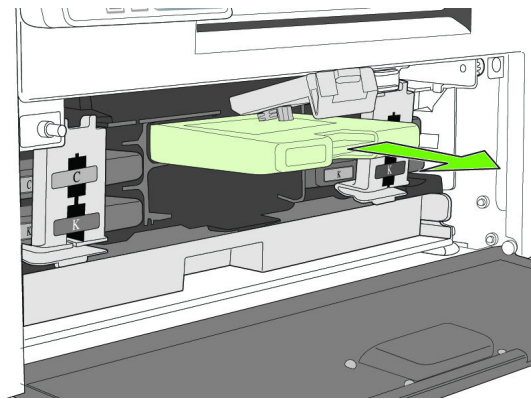
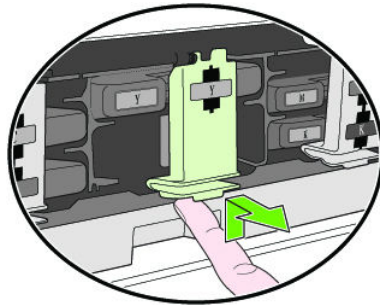
**NOTE:** When using the cutting feature and continuous media or die-cut media with the outer matrix left in place, the print zone and cutting zone should be inspected for dust and debris **every 3 rolls** and cleaned as needed.

# Replacing an Ink Cartridge

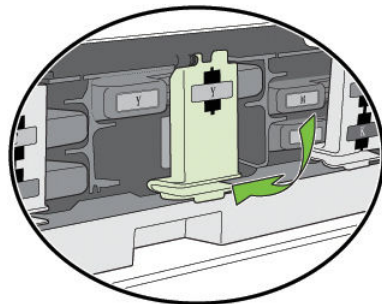
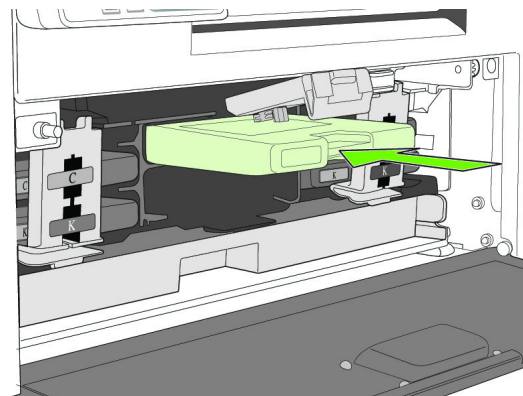
1. Open the front cover of the printer.



2. Open the latch and remove the empty ink cartridge.



3. Insert the new cartridge and close the latch.




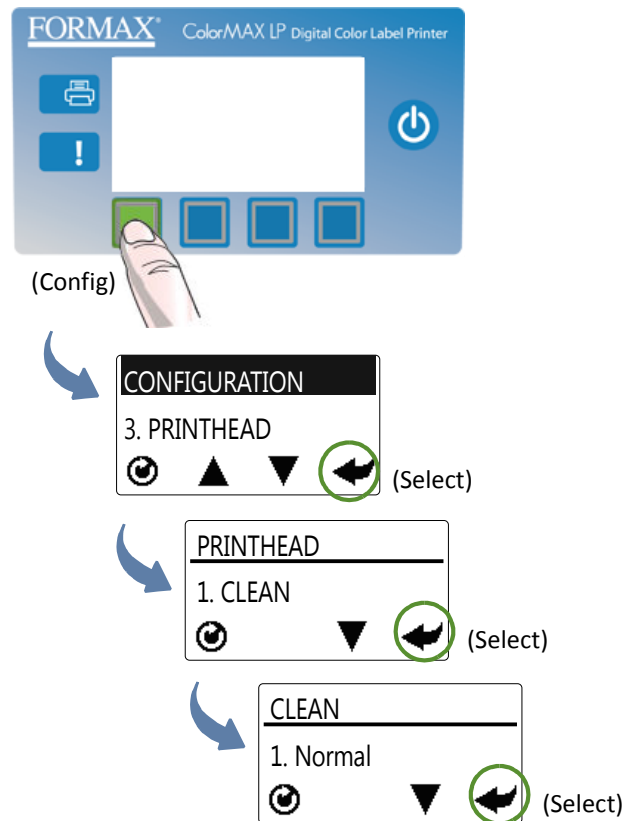
4. Close the front cover.

**NOTE:** Dispose of the empty ink cartridge according to local regulations.

# Cleaning the Printhead

The printer provides three automated cleaning cycles for the printhead: Normal, Extended, and Extreme. Always start with the Normal cleaning cycle and proceed to the next level only if print quality does not improve.

1. On the control panel, select  (Config) > Printhead > Clean > Normal.




2. After the cleaning is completed, try printing again.
3. If issues persist, perform again selecting the Extended cleaning cycle. After cleaning is complete, try printing again.
4. If issues still persist, perform an Extreme cleaning.

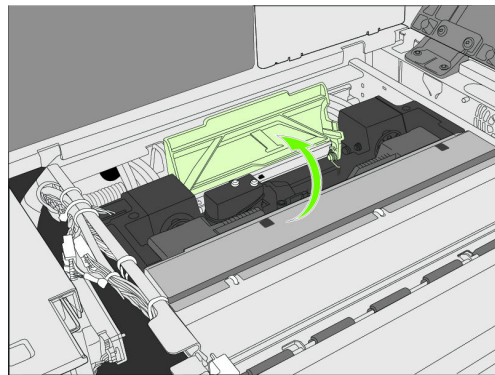
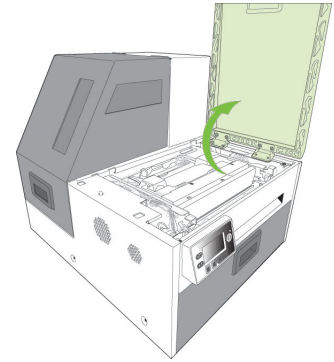


**NOTE:** Extreme cleaning should not be performed unless absolutely necessary, as it may shorten the life of the printhead.

5. If issues still persist, the printhead should be replaced.

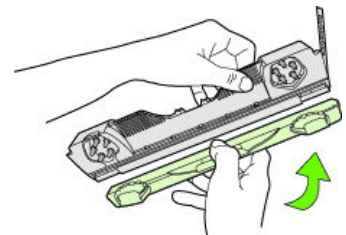
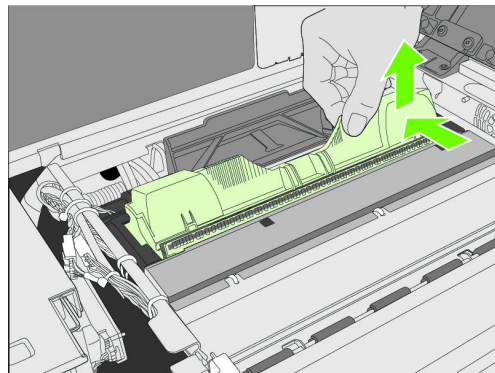
# Replacing the Printhead

1. Open the printer top cover.
2. On the control panel, select  (Config) > Printhead > Replace. Wait for the printhead latch to be released, then open the latch fully.



**Do not open latch before it is released!**

3. Hold the printhead by the handle and push it toward the printhead latch. Once the printhead is released, lift it out of the printer.



Replace the Nozzle Cover onto the removed printhead.

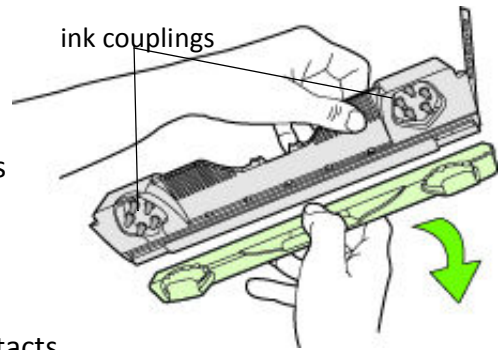
**NOTE:** Dispose of the old printhead according to local regulations.

4. Remove the new printhead from its packaging.

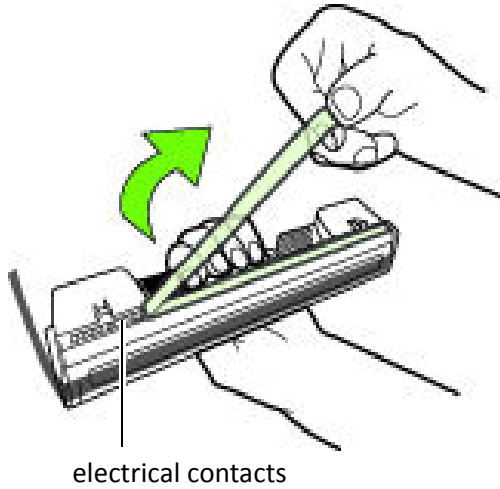


Do not touch the ink couplings, electrical contacts, or nozzles.

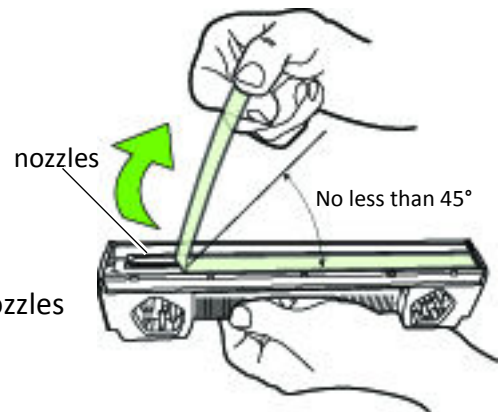
Do not discard the cover!  
It should be replaced if the printhead is removed from the printer.



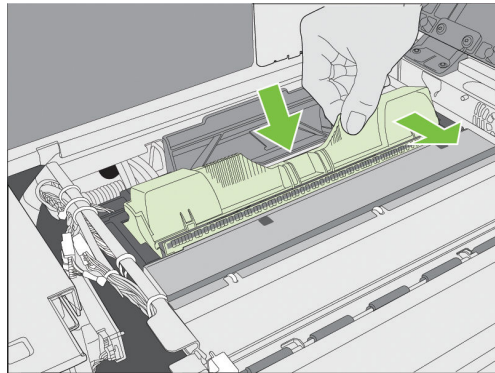
Slowly remove tape from electrical contacts



Slowly remove tape from nozzles

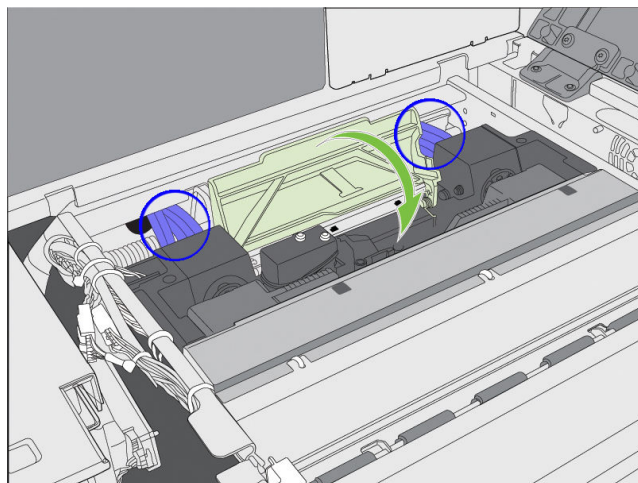


5. Slide the printhead into the slot. Push it toward the front of the printer. It should snap into place.

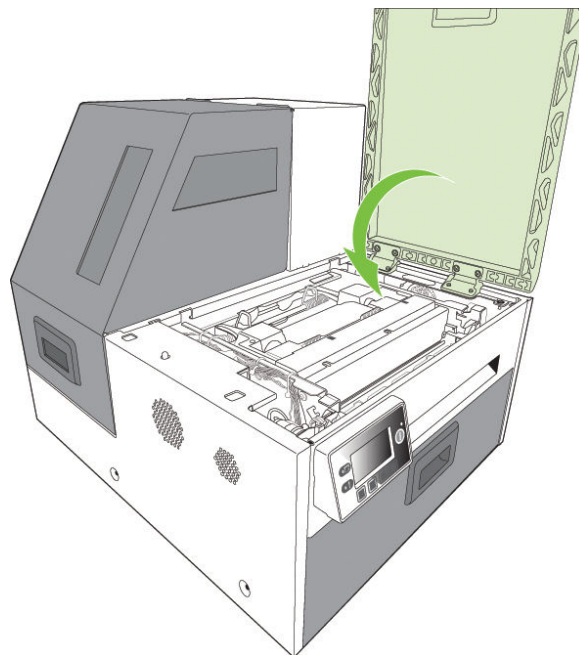




6. Close the printhead latch.  
Check that ink is flowing  
through the tubes on both  
sides of the printhead  
(circled above).



7. Close the top cover.

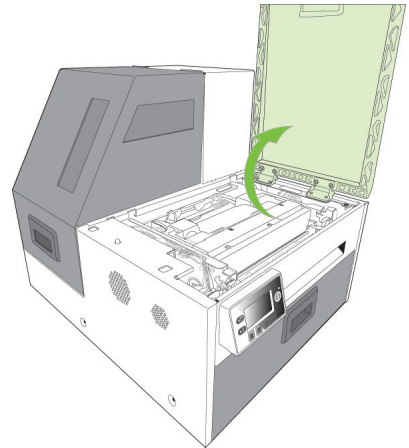


# Opening/Closing the Clamshell

In the following procedures you may need to open the clamshell in order to access the areas inside the printer.



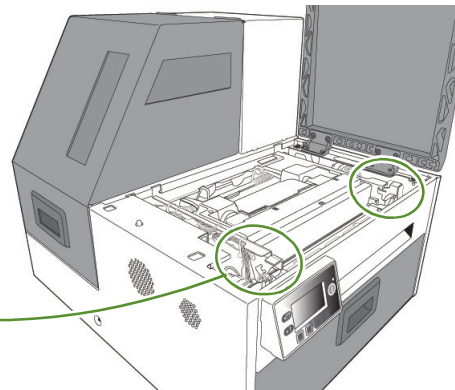
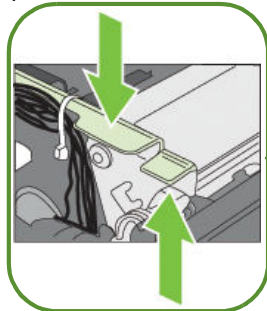
**NOTE:** If you will have the clamshell open for more than 5-10 minutes, remove the printhead to ensure the printhead remains healthy. See [Replacing the Printhead](#) on page 47.



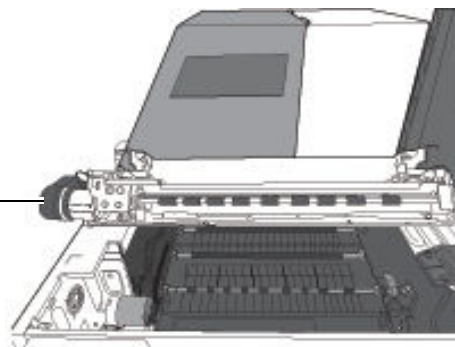
## Opening the Clamshell

1. Open the top cover.
2. Squeeze the latches on either side of the clamshell and open the clamshell to its highest position.

squeeze clamshell latches



Clamshell open



## Closing the Clamshell

Squeeze and hold the clamshell latches while you gently lower the clamshell back into place.

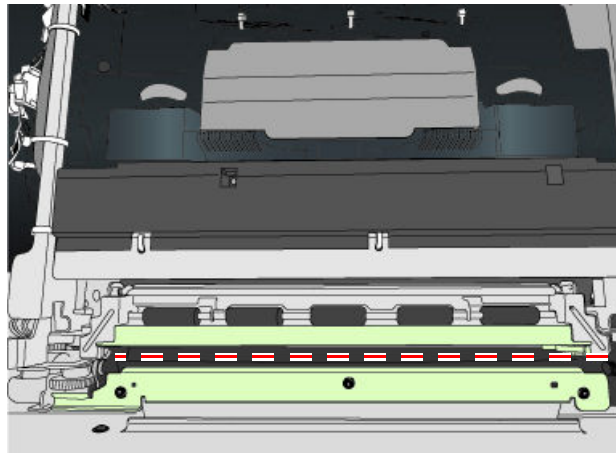
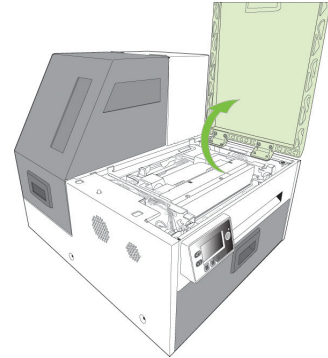


**Do not allow the clamshell to drop when closing it.**

# Cleaning Debris from the Cutting Zone

Clear all debris from the cutting zone to avoid contaminating the print zone, especially fine dust particles.

1. Turn off power to the printer. See [Turning Off the Printer](#) on page 35.
2. Open the top cover.
3. Vacuum any debris from the cutting zone (shown below in green).



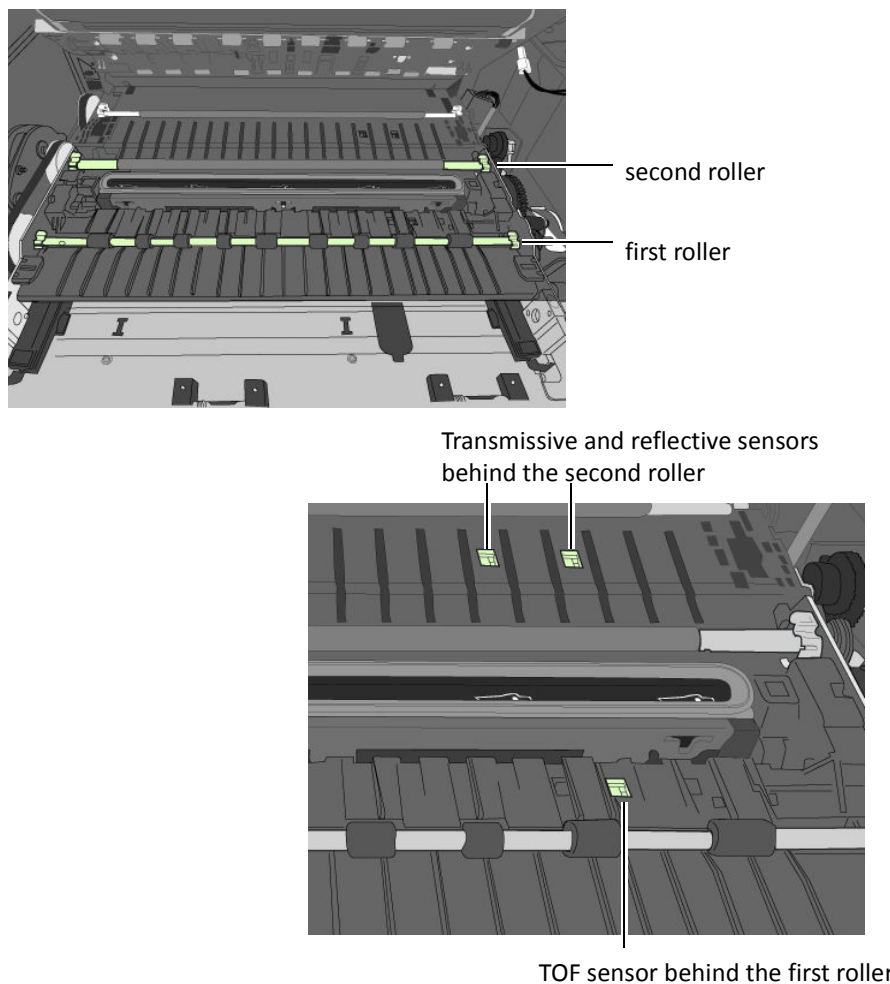
4. [Open the clamshell](#) and also check below the cutting zone, at the bottom of the printer and in front of the ink cartridges.
5. [Close the clamshell](#) and top cover.
6. Open the front cover and remove any cutting debris.

# Cleaning the Sensors

Always keep the media path clean as accumulated dust can affect printing.

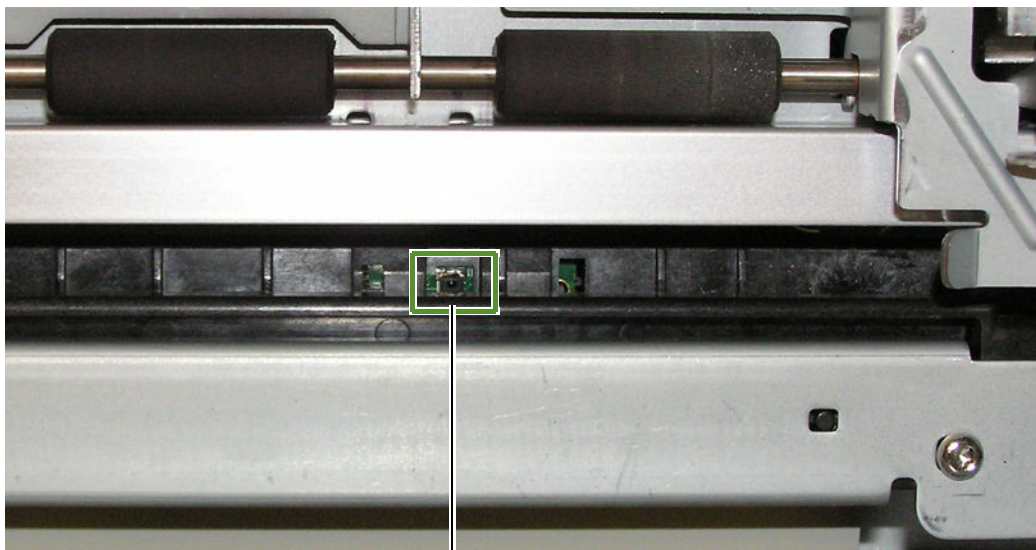
1. [Open the clamshell](#) to its highest position.
2. Turn off power to the printer. See [Turning Off the Printer](#) on page 35.
3. Vacuum any dust or debris from the sensors.  
Use the rollers to help you locate the sensors as shown in [Figure 5](#).
4. Clean ink from the TOF sensor if the sensor appears dull
  - a Fold a lint-free cloth to form a tip and lightly moisten with de-ionized water. Insert it in the opening to clean the TOF sensor.
  - b Repeat with a clean part of the cloth if necessary.
  - c Let the sensor dry before continuing.
5. Vacuum any paper dust or debris from the print zone.

**Figure 5** Location of sensors



6. [Close the Clamshell](#).

7. Clean any debris from the Exit Sensor, which is located near the front right side of the top of the clamshell.



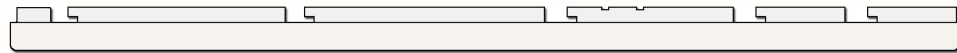
Exit sensor on top of clamshell

8. Close the top cover. Turn the printer back on.

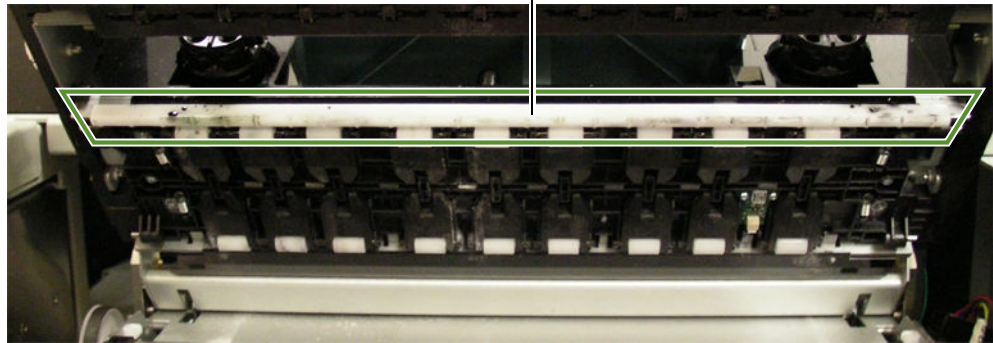
# Cleaning the Media Guide

Excess ink on the Media Guide can affect print quality.

1. Remove the printhead. See [Replacing the Printhead](#) on page 47.
2. [Open the clamshell](#) to its highest position.
3. Slide the white plastic Media Guide to the right. When it will not move further, gently pull down on the guide.



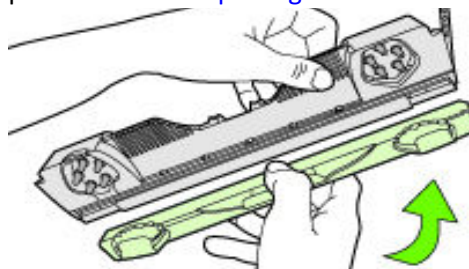
Media Guide



4. Clean any ink residue from the Media Guide by rinsing with water and drying thoroughly.
5. Line the Media Guide slots up with the metal tabs on the bottom of the clamshell and push the guide back on. Slide guide to the left until it stops.
6. [Close the Clamshell](#).
7. Reinstall the printhead and close the top cover.


# Replacing the Service Station

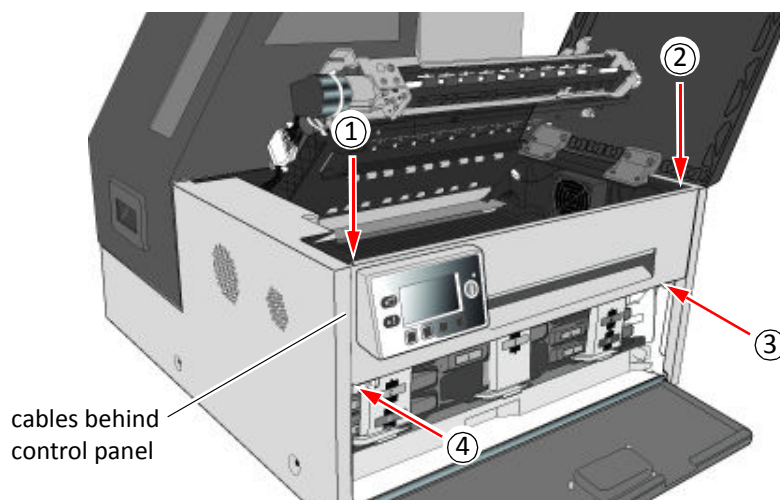
**NOTE:** Before you begin, remove the printhead and cap it with the orange protective cover, but do not close the latch after removing the printhead. See [Replacing the Printhead](#) on page 47.



- Tools**
- Nitrile powder-free gloves
  - T20 Torx driver
  - Disposable towels

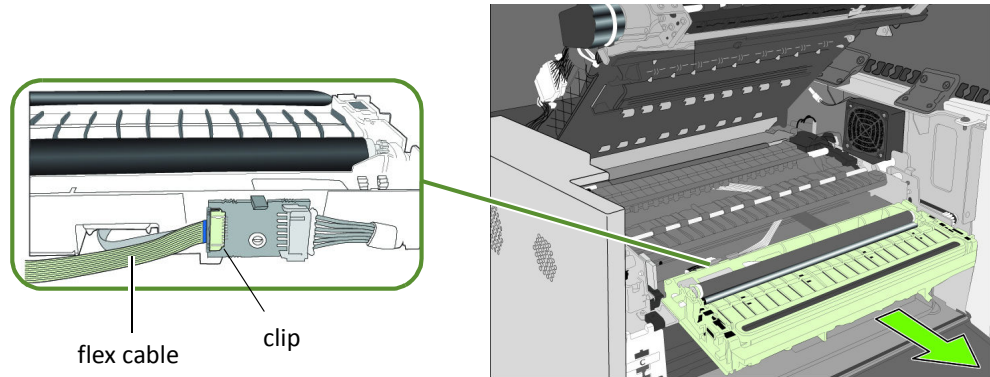
## Removal

1. Manually [Open the clamshell](#) to its highest position.
2. On the control panel, select  (Config) > Service Station > Eject. Wait for the printer to eject the service station.
3. Move service station towards front of printer.
4. Press the Power button on the control panel to turn off the printer. See [Turning Off the Printer](#) on page 35.
5. Turn off the Power switch at the back of the printer and unplug the power cord.
6. Remove the front panel:
  - a Use a T20 Torx driver to remove the four screws (labeled 1 to 4) securing the front panel.
  - b Release the front panel and disconnect the two cables behind the control panel.





7. Pull the service station forward until you can disconnect the flex cable to the wiper motor. Loosen the clip on the connector (Figure 6) to release the flex cable.



Ensure that the flex cable does not come into contact with any metallic surface. If it is touching metal and the printer is accidentally turned on, it will short the controller circuit and damage the printer.

Take care when handling the service station. Ink may spill when you tilt the service station.



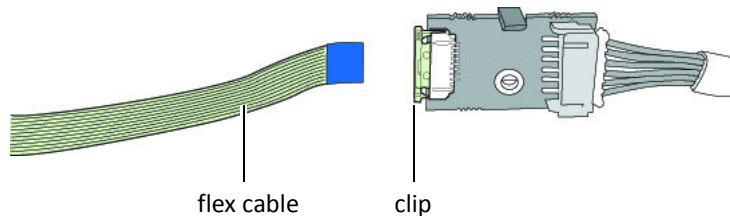
**Never turn on the Printer with the Service Station disconnected!!!**

**NOTE:** Dispose of the old service station according to local regulations.

## Installation

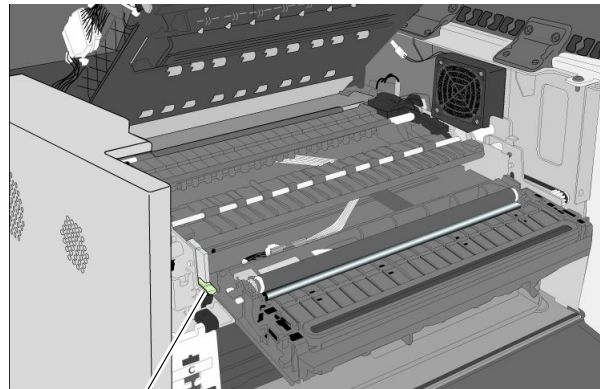
8. Insert the flex cable into the connector on the new service station and push in the clip to secure it.

**Figure 6** Flex cable to connector on service station





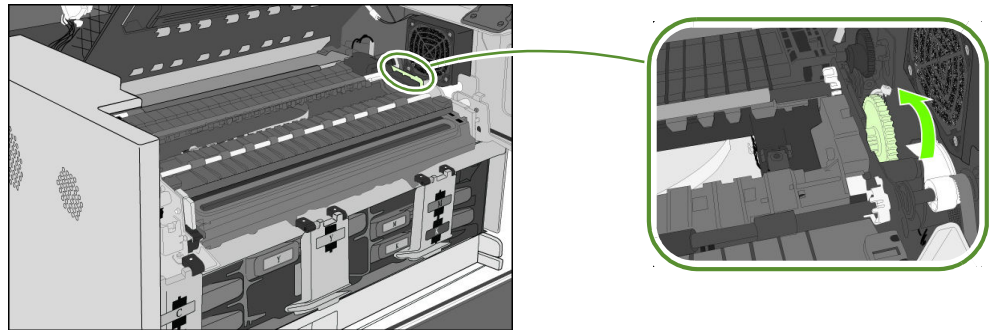
9. Carefully align the service station with the guide rails and slide it into the print engine.



guide rail

10. Manually rotate the positioning gear backwards while uniformly pushing the service station to move the service station into the print engine.

**Figure 7** Positioning gear for service station



11. Reinstall the front panel: Reconnect the two cables to the front panel and replace the screws.
12. [Close the clamshell](#)
13. Install the printhead, close the blue latch, and close the covers.
14. Plug the power cord back in and turn the printer on.

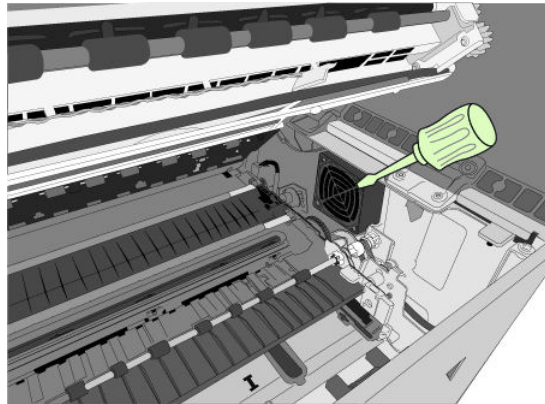
**Never turn on the Printer with the Service Station disconnected!!!**

# Replacing the Aerosol Fan Filter

As a general guideline, replace the aerosol fan filter every six months.

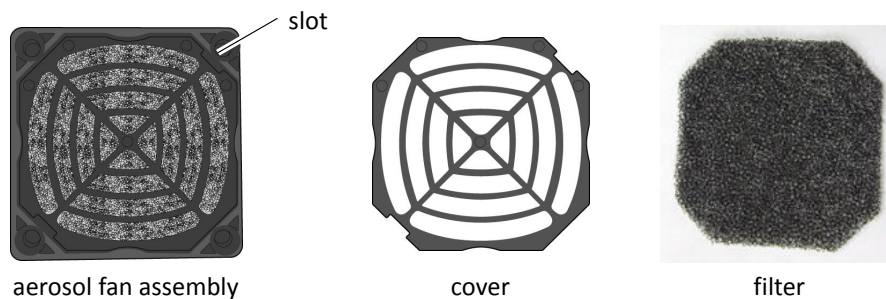
- Tools**
- Nitrile powder-free gloves
  - Flat-headed screwdriver

1. Turn off power to the printer. See [Turning Off the Printer](#) on page 35.
2. [Open the clamshell](#) to its highest position.
3. Insert the tip of a flat-blade screwdriver into the slot at the corner of the aerosol fan assembly, and pry the cover off.



4. Remove the filter ([Figure 8](#)) and replace it with a new one.
5. Snap the cover back into place on the aerosol fan assembly.
6. [Close the clamshell](#) and top cover. Turn the printer back on.

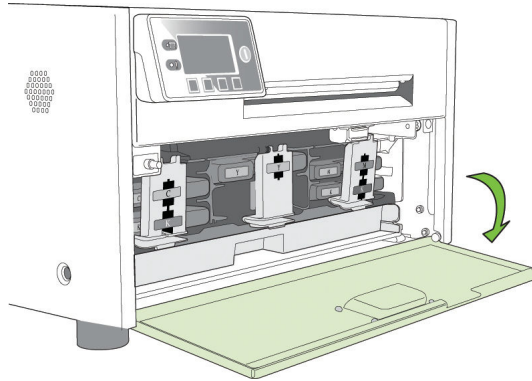
**Figure 8** Fan assembly



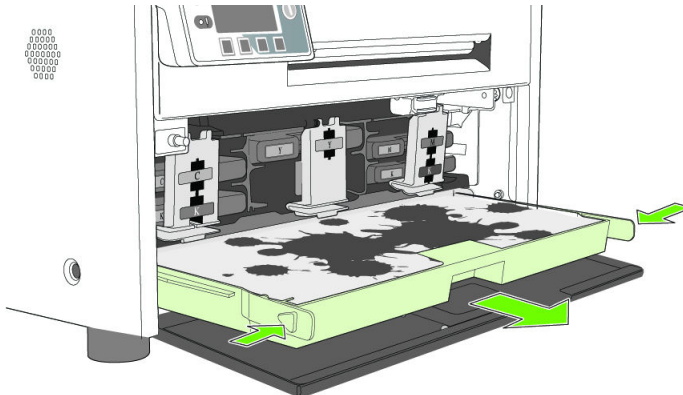
# Replacing the Waste Ink Absorber

**Tools** • Nitrile powder-free gloves

1. Open the front cover of the printer.



2. Squeeze the latches on both sides of the waste ink absorber and pull it out.



3. Remove the waste ink absorber.
4. Slide the new waste ink absorber into the printer. Push it in until it clicks into place.
5. Close the front cover.

**NOTE:** Take care when replacing the waste ink absorber to avoid staining hands and clothing. Dispose of the used waste ink absorber according to local regulations.

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## Chapter 4

# Troubleshooting

If Error Messages Appear	62
Poor Print Quality or Incorrect Printout	64
Other Printing Problems	66
Clearing a Media Jam	67
Clearing Clogged Ink Nozzles	67
Adjusting Sensor Sensitivity	70

## If Error Messages Appear

If error messages are displayed on the printer control panel, check the following table for the solution.

Error Message	Possible Cause	Solution
Clamshell Open	The clamshell is open.	Close the clamshell.
End of Roll	End of roll is detected.	Load a new roll of labels.
Front Cover Open	The front cover is open.	Close the front cover.
Jammed Cutter	Debris in the cutting zone.	<ol style="list-style-type: none"> <li>1. Turn off the printer and unplug the power cable.</li> <li>2. Clean any debris from the cutting zone.</li> </ol> See <a href="#">Cleaning Debris from the Cutting Zone</a> on page 51 for details.
Jammed Media	The labels are jammed or cannot feed into the printer.	<ol style="list-style-type: none"> <li>1. Open the media cover.</li> <li>2. Cut off the jammed media from the media roll.</li> <li>3. <a href="#">Open the clamshell</a> to its highest position.</li> <li>4. Remove the jammed media from inside the printer.</li> <li>5. <a href="#">Close the clamshell</a> and top cover.</li> <li>6. Reload the media.</li> </ol>
	Media used exceeds the maximum thickness of 0.01" (0.3 mm).	Clear the jam and replace the media. See <a href="#">Choosing Label Media</a> on page 24.
Low Ink	An ink cartridge is low.	Replace the ink cartridge. Check the ink status icons on the Control Panel for the color that is low.
Mech Error [code]	Printer mechanical fault.	Note the error code and contact Technical Support. If <b>Mech Error 2</b> or <b>3</b> appears during installation, see <a href="#">Troubleshooting Printer Setup</a> on page 20.
Media Cover Open	The media cover is open.	Close media cover.
Missing Ink Tank	The ink cartridge is not installed or not a genuine Formax ink cartridge.	Remove and reseal cartridge or install an Formax ink cartridge. If the problem persists, contact Technical Support.
Missing Printhead	The printhead is not installed or not a genuine 7      printhead.	Remove and reseal printhead or install an 7      rinthead. If the problem persists, contact Technical Support.

Error Message	Possible Cause	Solution
No Media	No media is detected.	Load a new roll of labels.
Wrong Media	Problems with the media.	See <a href="#">Printer feeds media without printing</a> on page 66.
Out of Ink	An ink cartridge is out of ink.	Replace the ink cartridge. Check the ink status icons for the color that is empty.
Top Cover Open	The printer top cover is open.	Close the top cover.

## Poor Print Quality or Incorrect Printout

Problem	Possible Cause	Solution
Long stripes of missing print on several labels	Ink nozzles are blocked.	See <a href="#">Clearing Clogged Ink Nozzles</a> on page 67.
Ink is smudged on the labels	The media is not suitable for use in this printer.	Replace the media. See <a href="#">Choosing Label Media</a> on page 24.
	The printhead is dirty.	Run Normal printhead cleaning from the control panel.
	The media is curled and touching the printhead.	1. Replace the media. See <a href="#">Choosing Label Media</a> on page 24. 2. If the problem persists, contact Technical Support.
	The media is curled by the unwinder when the printer is idle for a period of time.	1. On the <b>EWS Advanced Settings</b> page, set the printer to retract the media when it is idle for more than 10 minutes. 2. If the problem persists, contact Technical Support.
	The service station needs to be replaced.	See <a href="#">Replacing the Service Station</a> on page 55.
Significant misting on labels	Aerosol is not removed because the fan filter is dirty.	Replace the fan filter. See <a href="#">Replacing the Aerosol Fan Filter</a> on page 58.
	Media used exceeds the maximum thickness of 0.01" (0.3 mm).	Replace the media. See <a href="#">Choosing Label Media</a> on page 24. If the problem persists, contact Technical Support.
Printed barcode cannot be scanned	The media is not suitable for use in this printer.	Replace the media. See <a href="#">Choosing Label Media</a> on page 24.
	The barcode is too small.	Adjust the size of the barcode.
	Ink nozzles are clogged and the barcode did not print properly.	See <a href="#">Clearing Clogged Ink Nozzles</a> on page 67.
Mixed or Muddy colors (Color Mixing)	The printhead is dirty	See <a href="#">Color Mixing Recovery</a> on page 69.



Problem	Possible Cause	Solution
Position of printed image drifts vertically	Top of Form position needs adjustment.	Adjust the Top of Form offset from the control panel or printer driver. See <a href="#">Adjusting Alignment for Printing</a> on page 30.
	The media is not loaded properly.	Reload the media. See <a href="#">Loading Media</a> on page 17.
	The media is not suitable for use in this printer.	Replace the media. See <a href="#">Choosing Label Media</a> on page 24.
	The printer is unable to correctly detect the inter-label gap or black mark.	Adjust the sensitivity of the sensors. See <a href="#">Adjusting Sensor Sensitivity</a> on page 70.
Mis-registration or labels are skipped	Media settings do not match the media loaded in the printer.	Make sure the settings are correct for the media (e.g. media size and orientation).
	The media does not meet the specifications.	See <a href="#">Choosing Label Media</a> on page 24 for the media specifications.
	The printer is unable to correctly detect the inter-label gap or black mark.	<ol style="list-style-type: none"> <li>1. Clean the sensors. See <a href="#">Cleaning the Sensors</a> on page 52.</li> <li>2. If the problem persists, adjust the sensitivity of the sensors. See <a href="#">Adjusting Sensor Sensitivity</a> on page 70.</li> </ol>
Labels are skipped when printing roll to roll on media with black mark	The printer is unable to correctly detect the inter-label black mark.	Adjust the media size in the printer driver: reduce the height by 0.1" (3 mm).

## Other Printing Problems

Problem	Possible Cause	Solution
Printer feeds media without printing and then displays <b>No Media</b> or <b>Wrong media</b> on the LCD.	Media settings do not match the media loaded in the printer.	Make sure the Media Layout setting (gap, black mark, or continuous) in the printer driver matches the media used. See <a href="#">Change Default Settings in Printer Driver</a> on page 27
	The media does not meet the specifications.	See <a href="#">Choosing Label Media</a> on page 24 for the media specifications.
	The printer is unable to correctly detect the inter-label gap or black mark.	1. Clean the sensors. See <a href="#">Cleaning the Sensors</a> on page 52. 2. If the problem persists, adjust the sensitivity of the sensors. See <a href="#">Adjusting Sensor Sensitivity</a> on page 70.
Changes made using the control panel did not take effect.	The changes were not saved properly due to user or hardware error.	1. Try changing the parameter again. 2. If the problem persists, reset the printer. <sup>1</sup> Try changing the parameter again. 3. If the problem persists, contact Technical Support.
Labels are not cut	The exit sensor needs cleaning	Clean the exit sensor. See <a href="#">Cleaning the Sensors</a> on page 52.
Label not held in Print and Present mode		
Label pulls back into printer in Roll to Cut mode		
The LCD is missing characters or parts of characters	The LCD may be damaged.	The LCD may need to be replaced. Contact Technical Support.
Nothing is displayed on the LCD and the printer freezes.	Internal electronic or firmware failure.	Contact Technical Support.

1. Requires security Level 2 (administrator).

## Clearing a Media Jam

1. Open the media cover.
2. Cut off the jammed media from the media roll.
3. [Open the clamshell](#) to its highest position.
4. Remove the jammed media from inside the printer.
5. Clean any label debris from the sensors and print zone. See [Cleaning the Sensors](#) on page 52.
6. [Close the clamshell](#) and top cover.
7. Reload the media.

## Clearing Clogged Ink Nozzles

Long stripes of missing print or vertical light streaks on several labels may be an indication of clogged ink nozzles. Follow the procedure below to clear the ink nozzles.

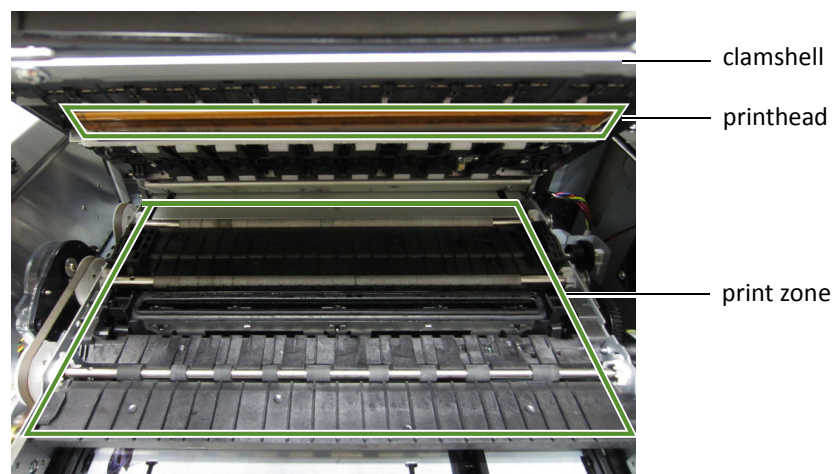
After each step, print and check the print quality. Proceed to the next step only if the problem persists.


1. [Open the clamshell](#) and inspect the print zone (the area below the clamshell as shown in [Figure 9](#)). Vacuum any dust or debris from the area.

**NOTE:** Do **NOT** clean the printhead at this point.

---

**Figure 9** Print zone



2. From the control panel, run Normal printhead cleaning.  
( (Config) > MAINTENANCE > CLEAN > Normal)
  - If print quality shows some improvement, repeat Normal cleaning until the print quality is satisfactory.
  - If print quality does not improve, continue with [step 3](#).
3. Run the Extended cleaning cycle from the control panel.
  - If print quality shows some improvement, repeat Extended cleaning until the print quality is satisfactory.
  - If print quality does not improve, continue with [step 4](#).
4. Run the Extreme cleaning cycle from the control panel.
  - If print quality shows some improvement, repeat Extended cleaning until the print quality is satisfactory.
  - If print quality does not improve, continue with [step 5](#).
5. [Open the clamshell](#) and inspect the printhead. Lightly moisten a lint-free cloth with de-ionized water and gently blot off any ink. Do not wipe side-to-side, as this may mix colors from one nozzle into others. If no ink is visible, gently wipe the ink nozzles from one side to the other.
6. Change the printhead.

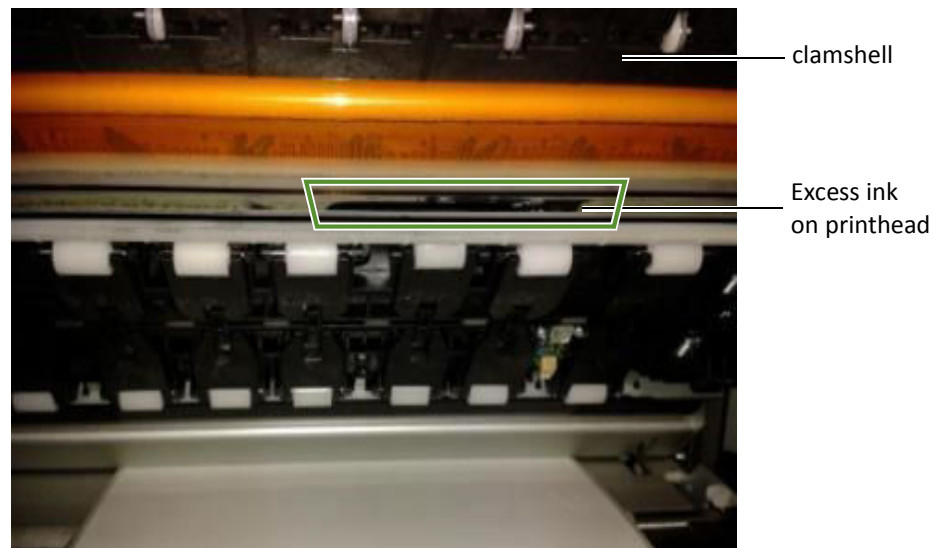
Contact Technical Support if the issues persist.

# Color Mixing Recovery

If the colors appear muddy or dull, excess ink may be building up on the printhead. If this occurs, perform the following steps.

1. Run the Extended cleaning cycle one time, then print several labels. If the print quality shows improvement, repeat until color quality has recovered
2. If the print quality doesn't improve, [open the clamshell](#) and inspect the printhead for excessive ink (the area below the clamshell as shown in [Figure 10](#)).
3. If you see excess ink on the printhead, gently tap the affected area of the printhead with a lint-free cloth, taking care to only touch the area with excess ink. Do not rub the printhead.
4. Close the clamshell and top cover, then re-check the print quality. Run an Extended cleaning cycle again; if print quality improves, repeat the cleaning until color quality has recovered.
5. If the print quality is not improving, contact Technical Support.

**Figure 10** Excess ink on Printhead



**NOTE:** If color mixing occurs only on the label immediately after servicing occurs when printing Roll-to-Roll, increasing the **Mid Job Servicing Interval** may resolve the problem. See [EWS Advanced Settings](#) on page 40.


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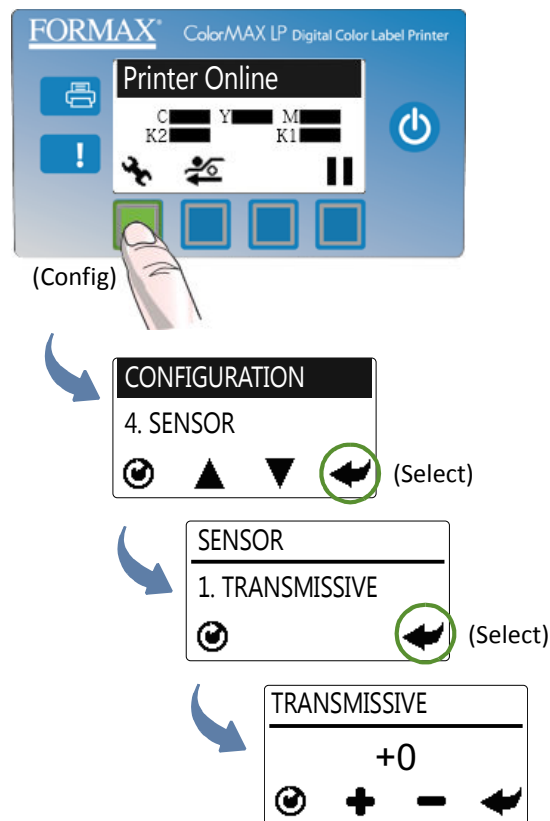
# Adjusting Sensor Sensitivity


Adjust the sensor sensitivity if you encounter the following problems:

- The printer keeps feeding media and does not print. This may be because the printer is unable to detect the gap or black mark between labels and the sensor sensitivity needs to be increased.
- The printer does not position the media correctly for printing because it detects a “false” gap or mark. In this case the sensor sensitivity needs to be decreased.

The sensor settings require security Level 1 (supervisor) or higher. Select the security level before you proceed (see [Selecting the Security Level](#) on page 12).

1. On the control panel, select  (Config) > SENSOR > TRANSMISSIVE (for inter-label gap) or REFLECTIVE (for black mark).
2. Set the sensitivity level.



3. Press  to return to the main menu.

Try printing again. If the problem persists after repeated adjustments, the media is not compatible with the printer.

# Appendix

System Requirements	<a href="#">72</a>
Config Options on the Control Panel	<a href="#">73</a>
Printer Interface (GPIO) Specifications	<a href="#">77</a>
Regulatory Information	<a href="#">79</a>


# System Requirements

The computer used to print must meet the minimum requirements listed below.

Specifications	
Processor	Intel® Core™2 and above
Operating system	Supported operating systems with the latest updates: <ul style="list-style-type: none"><li>• Windows 7 (32- and 64-bit) with Service Pack 1</li><li>• Windows Vista (32- and 64-bit) with Service Pack 2</li><li>• Windows XP (32- and 64-bit) with Service Pack 3</li></ul>
Software	<ul style="list-style-type: none"><li>• .NET Framework 3.5</li><li>• Java 1.6 or later (included with printer installation)</li></ul>
Memory	<ul style="list-style-type: none"><li>• Minimum: 1 GB for Windows XP</li><li>• Minimum: 2 GB for Windows Vista and later operating systems</li><li>• Recommended: 4 GB or more</li></ul>
Available disk space	Minimum: 1 GB



# Config Options on the Control Panel

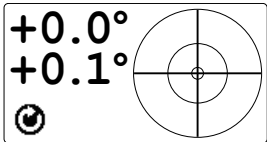
On the control panel, press  (Config) to access the following menus and options.

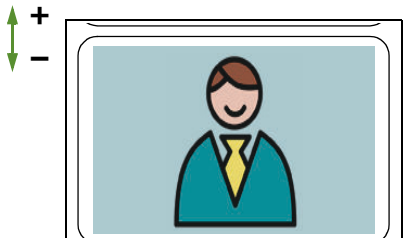
- |                                 |                                  |
|---------------------------------|----------------------------------|
| 1. Setup                        | 5. <b>Sensor</b>                 |
| <b>1. Language</b>              | <b>1. Transmissive</b>           |
| <b>2. <i>Reset Settings</i></b> | <b>2. Reflective</b>             |
| 3. List Setup                   | <b>3. Level</b>                  |
| 4. Security                     | 6. <b>Ext Signal Print</b>       |
| 1. Level 0                      | <b>1. By I/O</b>                 |
| 2. Level 1                      | <b>1. Yes</b>                    |
| 3. Level 2                      | <b>2. No</b>                     |
| <b>5. LCD Contrast</b>          | 7. <b>Adjust Offset</b>          |
| <b>6. LCD Brightness</b>        | <b>1. Top of Form</b>            |
| <b>7. <i>Date/Time</i></b>      | <b>2. Bottom of Form</b>         |
| <b>8. Unit</b>                  | <b>3. Left Edge</b>              |
| 2. Maintenance                  | <b>4. Cutter Offset</b>          |
| 1. Print Test Page              | 8. <b>Network</b>                |
| 1. Barcodes                     | 1. List                          |
| 2. PQ Plot 6x4                  | <b>2. <i>DHCP Settings</i></b>   |
| 3. PQ Plot 4x6                  | <b>1. <i>Automatic</i></b>       |
| 3. Printhead                    | <b>2. <i>Manual</i></b>          |
| 1. Clean                        | <b>3. <i>IP Settings</i></b>     |
| 1. Normal                       | <b>1. <i>Static IP</i></b>       |
| 2. Extended                     | <b>2. <i>Subnet Mask</i></b>     |
| 3. Extreme                      | <b>3. <i>Default Gateway</i></b> |
| 2. Replace                      | <b>4. <i>Wins Server</i></b>     |
| 4. <b>Service Station</b>       |                                  |
| <b>1. Cap Printhead</b>         |                                  |
| <b>2. Eject</b>                 |                                  |

Menu items in **Bold** text require the Control Panel Security Level setting of 1 or 2

Menu items in ***Bold Italic*** text require the Control Panel Security Level setting of 2

Menu/Option	Description
<b>Setup</b>	
Language <sup>1</sup>	Select the display language for the printer control panel. Supported languages are: English, French, German, Spanish, Italian, Traditional Chinese, Simplified Chinese, and Japanese.
Reset <sup>2</sup>	Restore the default factory settings.
List Setup	Print the key parameters of the printer in a 4" x 6" label format.
Security	Display the current security level: <ul style="list-style-type: none"> <li>• Level 0 (operator) – The user can access all the functions needed to print, but cannot change printer parameters via the control panel.</li> <li>• Level 1 (supervisor) – The user can access certain printer parameters. A password is required to access this level.</li> <li>• Level 2 (administrator) – All parameters are enabled. A password is required to access this level.</li> </ul> Passwords are set using the EWS (see <a href="#">Embedded Web Server (EWS)</a> on page 36).
LCD Contrast <sup>1</sup>	Adjust the contrast of the text against the background (–3 to 3). Use <b>+</b> and <b>–</b> to increase or decrease the value.
LCD Brightness <sup>1</sup>	Adjust the brightness of the back light (–3 to 3). Use <b>+</b> and <b>–</b> to increase or decrease the value.
Date/Time <sup>2</sup>	Set the printer clock (YYYY/MM/DD HH:MM:SS). <ol style="list-style-type: none"> <li>1. Press <b>+</b> and <b>–</b> to set each digit (0 to 9).</li> <li>2. Press <b>↩</b> to move to the next digit.</li> </ol>
Unit <sup>1</sup>	Unit used for Adjust Offset, either inch or mm. Applies to both Control Panel and EWS units.
<b>Maintenance</b>	
Print Test Page	Print a test page. <ul style="list-style-type: none"> <li>• Barcodes: Print barcode test page in 4" x 6" label format.</li> <li>• PQ Plot 6x4: Print diagnostics test page in 6" x 4" label format.</li> <li>• PQ Plot 4x6: Print diagnostics test page in 4" x 6" label format.</li> </ul>

Menu/Option	Description
<b>Printhead</b>	
Clean	<p>Clean the printhead. Always start with the Normal cleaning cycle and proceed to the next level only when print quality does not improve.</p> <ul style="list-style-type: none"> <li>• Normal</li> <li>• Extended</li> <li>• Extreme</li> </ul>
Replace	Depriime the printhead and release the printhead latch, allowing the user to change the printhead.
<b>Service Station<sup>1</sup></b>	
Cap Printhead	Cap the printhead.
Eject	Eject the service station.
<b>Sensor<sup>1</sup></b>	
Transmissive	Adjust the sensitivity of the transmissive gap sensor (–5 to 5). This sensor detects the inter-label gap or notch.
Reflective	Adjust the sensitivity of the reflective gap sensor (–5 to 5). This sensor detects the inter-label black mark.
Level	<p>Detect and display the tilt angle of the printer.</p> <p>The print engine needs to be kept within two degrees from the horizontal plane in both the X and Y axes, otherwise ink flow to the printhead will be disrupted. Use this option to help you adjust the printer’s tilt angle within <math>\pm 2</math> degrees from horizontal.</p> <div data-bbox="579 1222 844 1362">  </div>
<b>Ext Signal Print<sup>1</sup></b>	
By I/O	<p>When this option is selected, the printer receives the print job but will not print until it receives a signal from an external device.</p> <p>See <a href="#">Printer Interface (GPIO) Specifications</a> on page 77.</p>

Menu/Option	Description
<b>Adjust Offset<sup>1</sup></b>	(Offset range: ±0.5" or ±12.7 mm.)
Top of Form	Adjust the print position vertically on the label. A positive value adjusts the image toward the top of the label while a negative value moves it down.
Bottom of Form (Used only for Borderless Printing)	Adjust the bottom edge of the label for printing by clipping the amount entered from the bottom of the image. Does not change the position of the image on the label. A positive value clips more from the bottom of the image while a negative value clips less (image must be larger than label size for negative value to change print appearance). Changing the BOF may make adjustments to the Cutter Offset necessary.
Left Edge	Adjust the print position horizontally on the label. A positive value adjusts the image toward the left of the label while a negative value moves it to the right.
Cutter Offset	Adjust the position of the cutter. A positive value adjusts the cut away from the top of the label while a negative value moves it nearer.
	

Network	
List Network	Print the network setup parameters in a 4" x 6" label format.
DHCP Setting <sup>2</sup>	Set the IP settings on the printer. <ul style="list-style-type: none"> <li>• Automatic: Set DHCP server to automatic.</li> <li>• Manual: Disable DHCP server or allow user to set a static IP.</li> </ul>
IP Settings <sup>2</sup>	Enter the static IP settings for the printer. <ul style="list-style-type: none"> <li>• Static IP</li> <li>• Subnet Mask</li> <li>• Gateway</li> <li>• WINS Server</li> </ul> <ol style="list-style-type: none"> <li>1. Press <b>+</b> and <b>-</b> to set each digit (0 to 9).</li> <li>2. Press <b>→</b> to move to the next digit.</li> </ol>

1. Requires security Level 1 (supervisor) or higher.

2. Requires security Level 2 (administrator).

# Printer Interface (GPIO) Specifications

The Printer Electrical Signal Interface and Protocol is developed to coordinate the printing of labels with an external process in a production workflow. Using this protocol, the printer (Device A) receives a print job but will not print until it receives a signal from an external device (Device B).

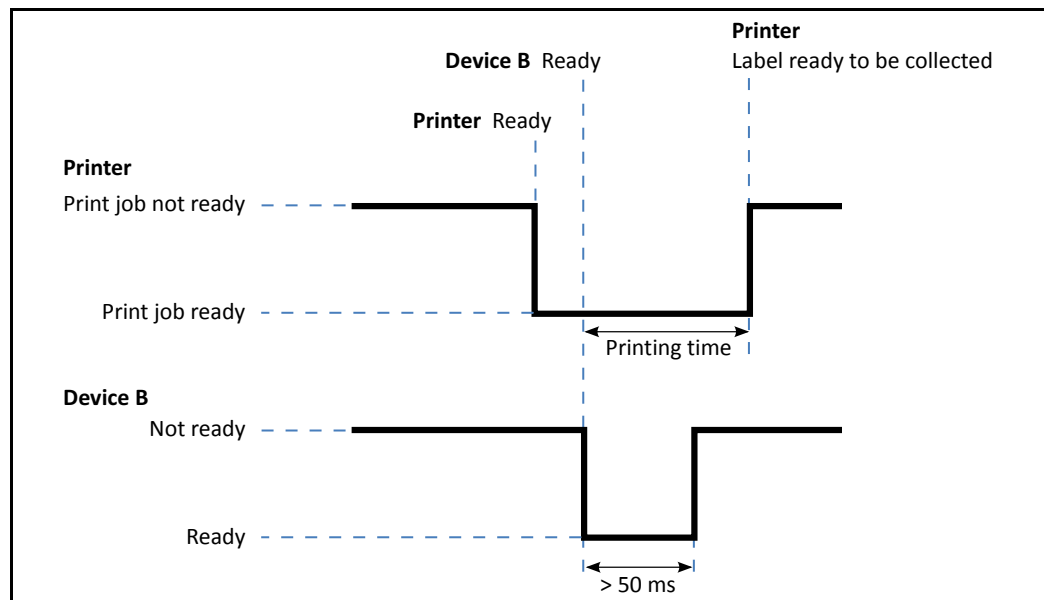
The following scenario illustrates how this could be used:

1. A box on a conveyor arrives at a workstation. A barcode is read and triggers a message to a computer.
2. The computer sends a print job (probably with some variable data) to the printer.
3. The box reaches the next station on the conveyor and triggers a signal (e.g. by a footswitch or automatically by a sensor). The printer starts printing when the signal is received.

The electrical signal to initiate printing is received at the printer's GPIO port. The handshaking protocol is as follows:

- The printer signals it is ready to print by pulling down the Print Job Ready signal from high to low.
- Device B signals it is ready by pulling down the Ready signal. This must remain low for at least 50 ms before returning to high.
- The printer prints and pulls up the signal when printing is completed.

**Figure 11** Timing Diagram



**Table 5** GPIO Pin Assignment (D-sub 9-pin Connector)

Pin	Signal Description
1	HIGH (3.3 V)
2	ADC 5
3	Print job ready (output) (GPIO A25)
4	External device ready (input) (GPIO D04)
5	Printer error (output) (GPIO D08)
6	LOW (0 V)
7	NC
8	NC
9	NC

# Regulatory Information

## FCC Statement



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.

Any changes or modifications to this equipment which are not expressly approved by the manufacturer could void the user's authority to operate this equipment.

## CE Conformity

For customers in Europe



The CE mark indicates that this product complies with the European requirements for safety, health, environment and customer protection.

This product complies with following European directives: Low Voltage Directive 2006/95/EC, EMC Directive 2004/108/EC, WEEE Directive 2002/96/EC and RoHS Directive 2011/65/EU.

## Waste Electrical and Electronic Equipment Directive

For customers in Europe



This symbol on the product or on its packaging indicates that this product should be separately disposed of, and not together with other unsorted municipal household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment.

The separate collection and recycling of waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment, through controlled treatment of possible hazardous substances that may exist. For more information about where you can drop off equipment for recycling, please contact your local city office, your household waste disposal service or the dealer where you purchased the product.