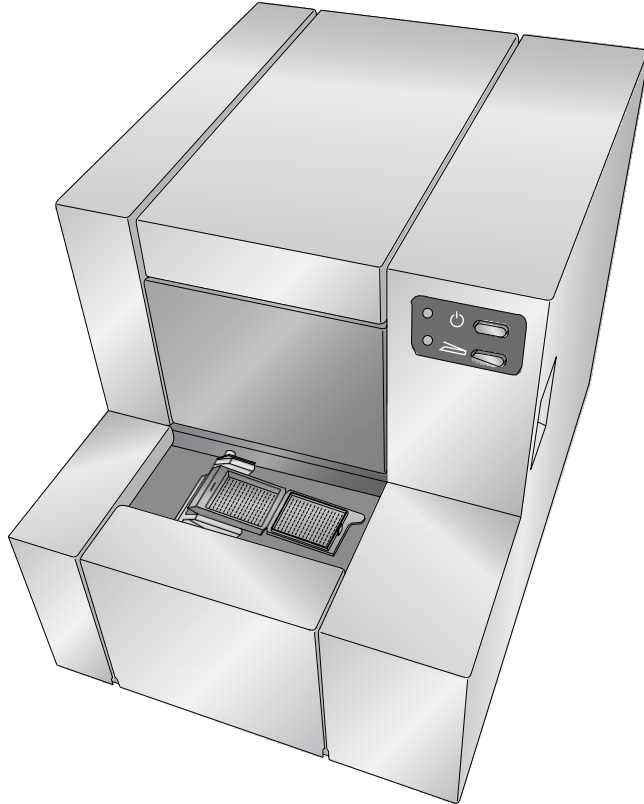


012122-511381

SignatureEVO

CASSETTE PRINTER



User's Manual

PRIMERA

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For the most recent version of the manual visit

<https://www.primera.com/evocassettedownloads>

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Printing History

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

For Users in the United States: This product is intended to be supplied by a UL listed Direct Plug-In Power Supply marked "Class 2" or a UL listed ITE Power Supply marked "LPS" with output rated 12VDC, 4.5A or higher. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help. Use of shielded cables is required to comply with the Class B limits of Part 15 of the FCC Rules. You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate and/or obtain warranty service for this equipment.

For Users in Canada: This digital apparatus does not exceed the Class B limits for radio noise for digital apparatus set out on the Radio Interference Regulations of the Canadian Department of Communications. Le présent appareil numérique n'émet pas de bruits radio électriques dépassant les limites applicables aux appareils numériques de la class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

CAUTION!

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE. TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE EXTERIOR PANELS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. OPERATE THE UNIT WITH ONLY THE PROPER ELECTRICAL SPECIFICATIONS AS LABELED ON THE PRINTER AND AC ADAPTER.

CAUTION!

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION.

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Section 1: Getting Started

THANK YOU...

...for purchasing a Signature EVO Cassette Printer. The Signature Cassette Printer can significantly increase the efficiency of your lab while helping to reduce the risk of misidentification of specimens. It prints directly onto cassettes, eliminating handwriting. With impressive 300 dpi print resolution, you can print text, graphics and logos along with high-resolution linear and 2D bar codes on every cassette you process.

To begin using your Signature, please read this manual carefully. This Operator's Manual is a guide to the Signature Cassette Printer only. There are other accessories and software that work with the Signature Printers. Those items are purchased separately and include their own user's manual.

NOTE ON TERMS AND CONVENTIONS

From this point forward, the following terms and conventions will apply:

The Signature Cassette Printer will be referred to simply as the Printer.

A. CHOOSING A GOOD LOCATION

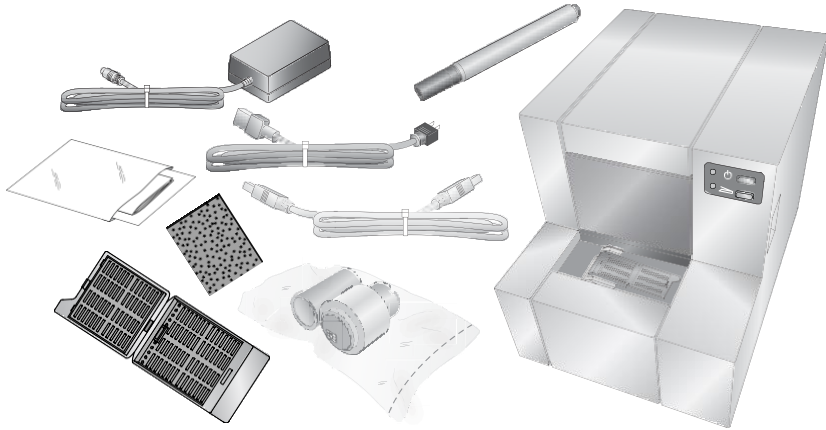
- Place the Printer in a location with adequate air circulation to prevent internal heat build-up. You will need at least 16" (41 cm) of overhead space to allow the top cover to open freely.
- Do not place the Printer near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

B. UNPACKING AND INSPECTION

While unpacking your Printer, inspect the carton to ensure that no damage has occurred during shipping. Make sure that all supplied accessories are included with your unit.

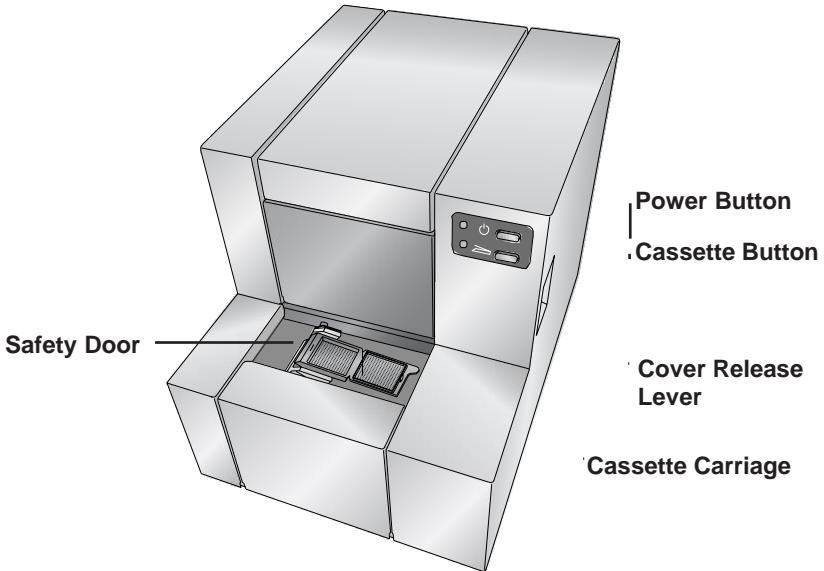
The following items should be included:

- Signature Cassette Printer
- Power cord
- Power converter
- USB cable
- One package of cassettes
- One black ribbon
- Print head cleaning pen
- Print head Polishing paper



C. IDENTIFYING THE PARTS

The following illustrations show the various parts of the printer. These parts will be referred to throughout this manual so return here if you ever encounter a term that is unfamiliar to you.



The **Cover Release Lever** is a mechanical lever that releases the spring-loaded mechanism on the cover. Pull it toward the front of the printer to release the cover latch.

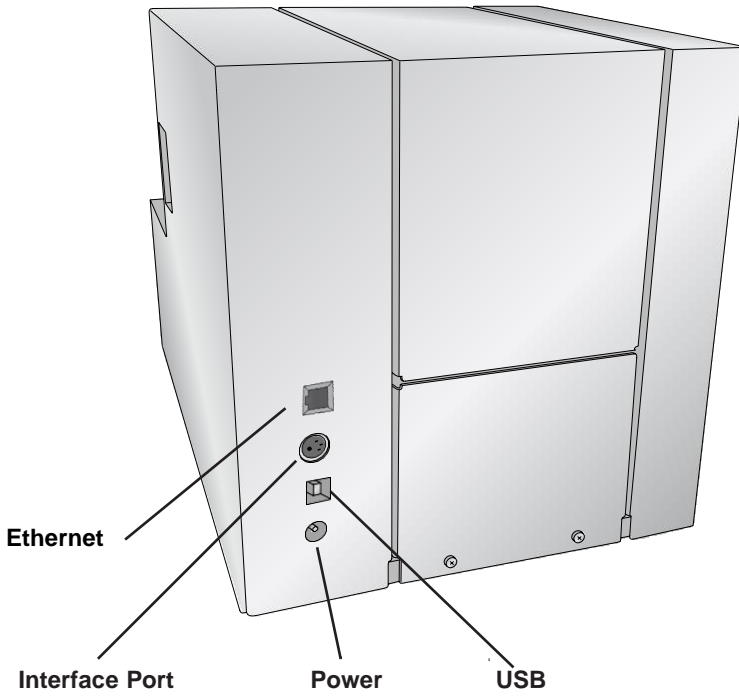
The **Power Button** turns off the printer when the cover is closed. When the cover is open, press and hold the Power button to move the Cassette Carriage forward.

The **Cassette Button** will cause the printer to start printing to a cassette in manual print mode. When the cover is open, press and hold the Cassette button to move the Cassette Carriage backward.

The **Cassette Carriage** holds and moves the cassette during printing.

Safety Door. The safety door closes any time the cassette carriage is in motion. Otherwise, it is left open.

Rear View



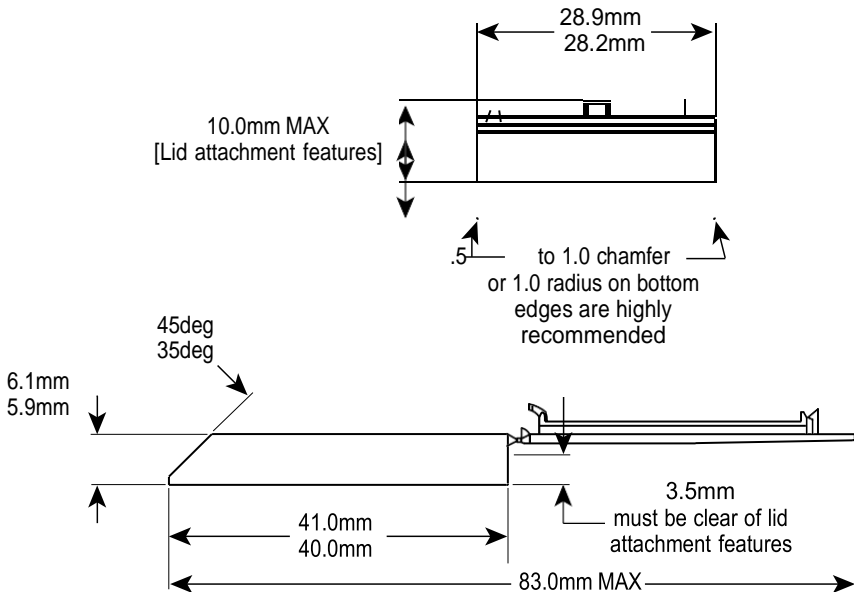
D. CASSETTE SPECIFICATIONS

The Signature Cassette Printer can print on cassettes with printable face angles between 35 and 45 degrees and cassettes that meet the size specifications shown below. The Signature Cassette Printer uses thermal transfer print technology. This print technology requires stricter standards on the surface finish and cleanliness of the cassette's printable area compared to cassettes that are used with ink jet technology printers.

If a mold release is used when injection molding the cassettes, any residuals (silicone, etc.) may need to be cleaned off the cassette to make it suitable for printing. Primera recommends using Acetal tissue cassettes.

1. Cassette Dimensions

Maximum and minimum sizes for each dimension are shown in the diagram below:

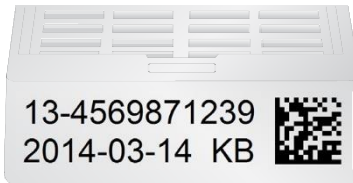


Note 1: Cassettes may have lids attached in the open position as shown, lids may be removed or lids may be in a closed position as long as they do not project over the printable face.

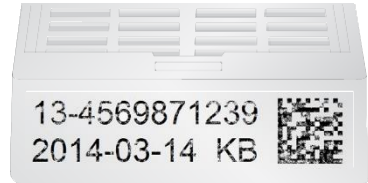
2. Printable Surface Quality

The printable area of the tissue cassette must have a relatively flat and smooth surface.

- **Roughness.** The recommended surface roughness is approximately 30 microinches. Slightly rougher print surfaces will also work, but there may be incomplete transfer of ink to low spots within the surface texture.
- **Flatness.** The printable surface must be as flat as possible; the recommended flatness of the entire printable area should be within .001". Cassettes that have printable areas with gradual bowing of the printable face that result in a flatness measurement of larger than .001" may work, but need to be tested on a case by case basis. Rapid transitions in the printable surface due to sink or flaws in the mold will likely result in poor print transfer in the affected areas.



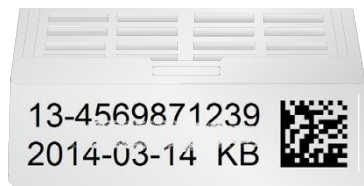
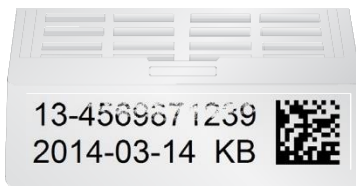
Flat Surface Print



Rough Surface Print

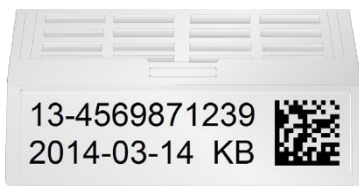
3. Printable Surface Support

The printable area must be supported by the structure of the cassette in such a way that the printable area does not deflect under pressure. Use of ribs and surrounding walls should be considered to maximize the consistency of the printable area. Ribs that are too thick can cause sink which can leave voids in the print. Mold design can also cause sink in certain areas of the printable face. These low areas will not have complete transfer of ink. Examples of an unsupported upper edge (left) and low spot in the middle of the face (right) are shown below.



4. Raised Printable Surface Area

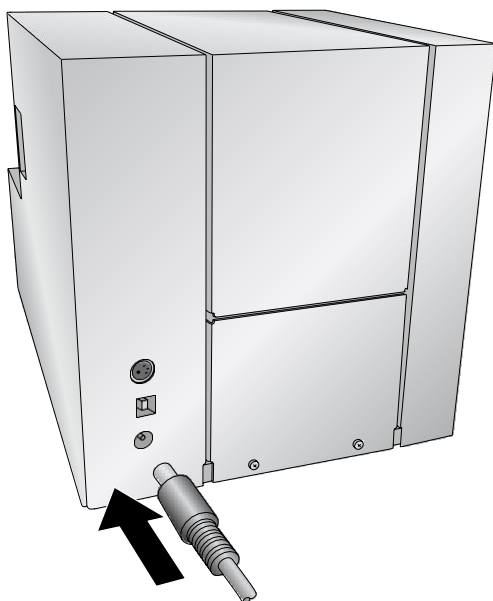
The printable area can be a pad that is slightly raised from the rest of the printable face or it can be a perfectly flat face; however, the printable area cannot be recessed within the printable face. Any raised edges around the printing area will prevent clean transfer of ink to the printable area. An example of a cassette with a raised pad is shown below.



Note: Printing offsets may need to be adjusted in the PTLab software so that the print starts on the raised printing area. Starting the print too early causes the print head to get stuck on the transition to the raised area.

E. CONNECT POWER

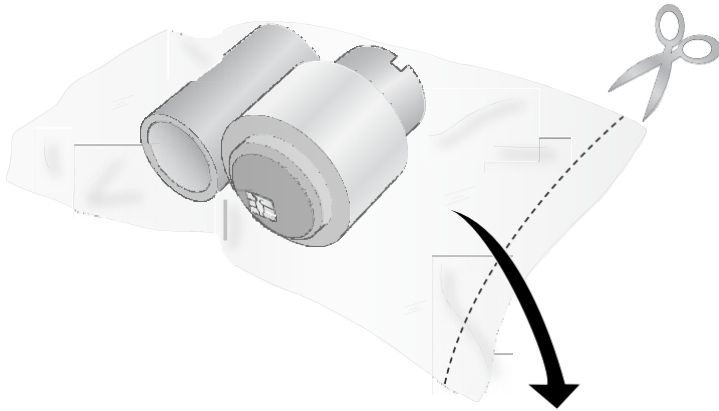
Attach the power cord to the Power brick. Plug the power cord into a grounded outlet and the 5mm barrel connector to the back of the printer. The power converter is a universal 100v-240v input and a 12v output.



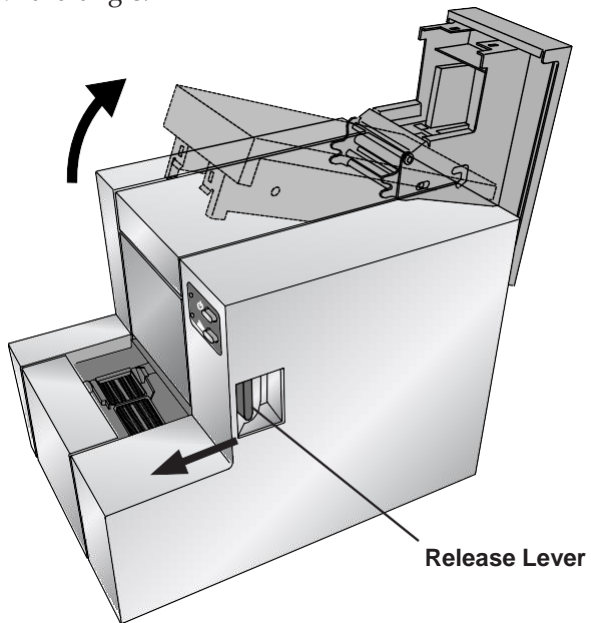
F. LOAD A RIBBON

You must use Primera ribbons to print with the Printer.

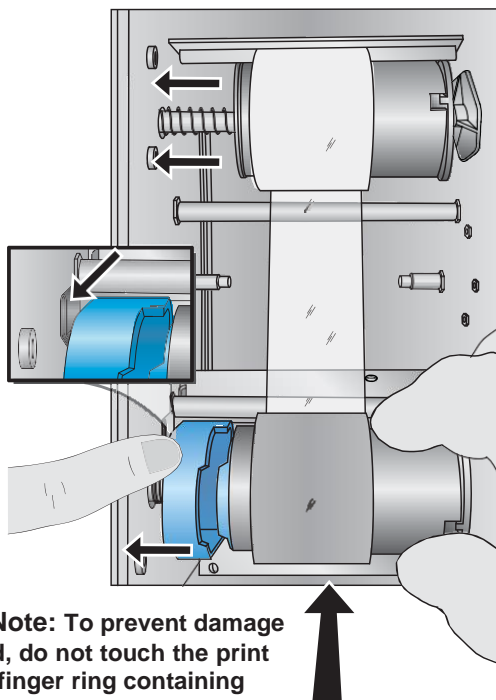
1. Remove a ribbon from its packaging. Detach the take up ribbon from the supply ribbon by gently pulling them apart.



2. Open the top cover by pulling the release button on the right side of the printer. Lift the cover until it rests at a slight backward angle.



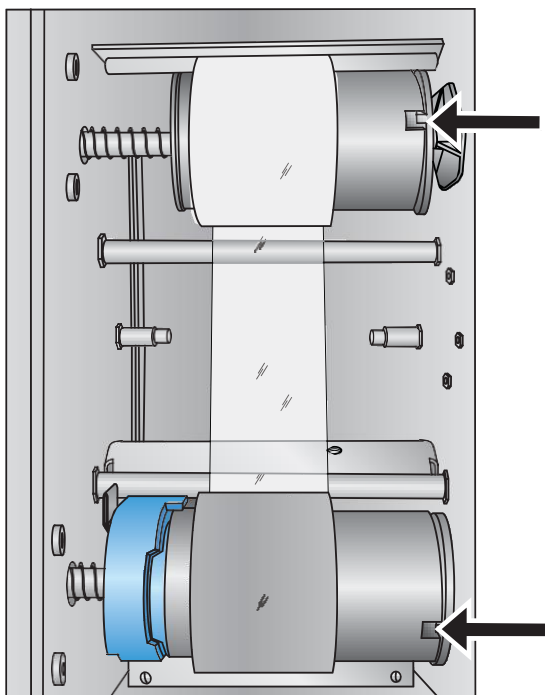
3. Remove the ribbon from its shrink wrapped packaging. Hold the take up (back) ribbon core with your left hand. Hold the supply (front) ribbon with your right hand. Install the take up ribbon by depressing the spring loaded hub inside the printer. Snap the take up ribbon core into place.



Important Note: To prevent damage to print head, do not touch the print head with a finger ring containing diamond or metal.

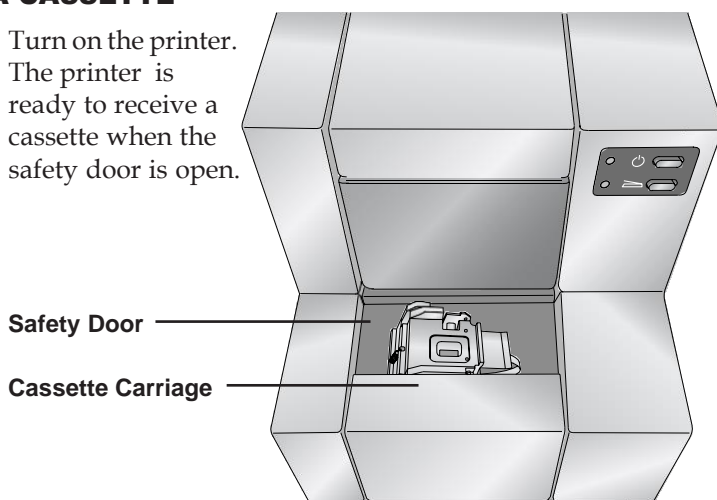
4. Push the blue spring loaded hub by depressing the tab with your left pointer finger. Insert the supply ribbon straight down. Match the blue shape on the ribbon to the corresponding depression on the hub. (You may need to rotate the blue shape on the ribbon.)

5. Rotate the hubs until the tabs on the right side hubs match the notches on the ribbon. Manually turn the take up core until the ribbon is taut.

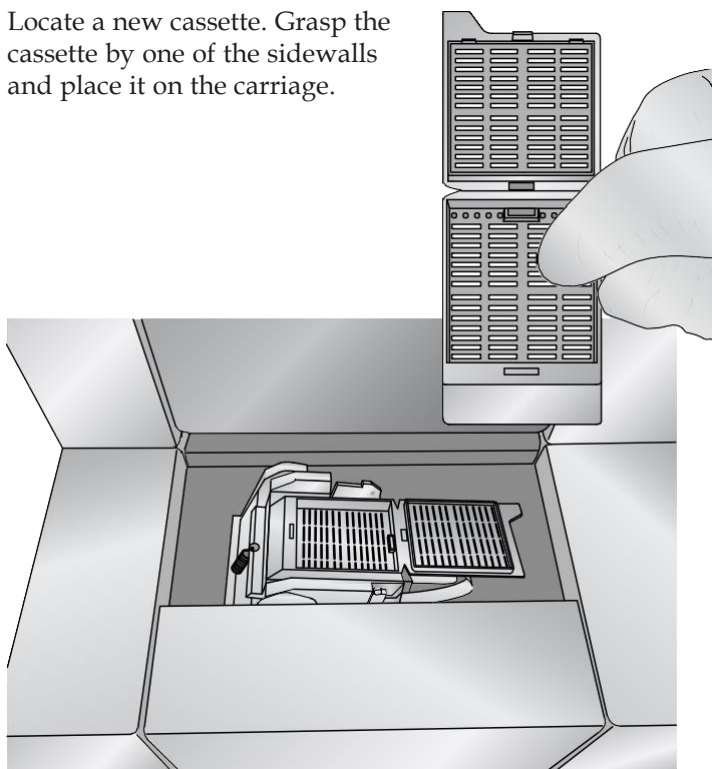


G. LOAD A CASSETTE

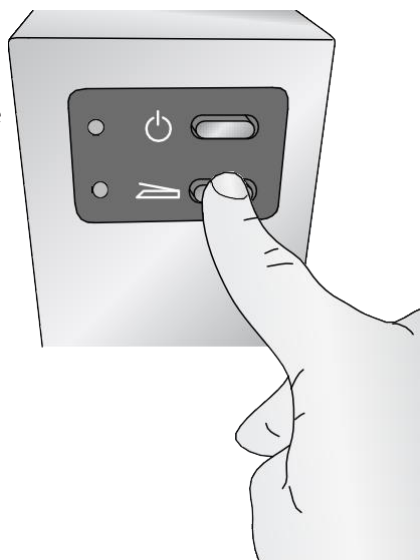
1. Turn on the printer. The printer is ready to receive a cassette when the safety door is open.



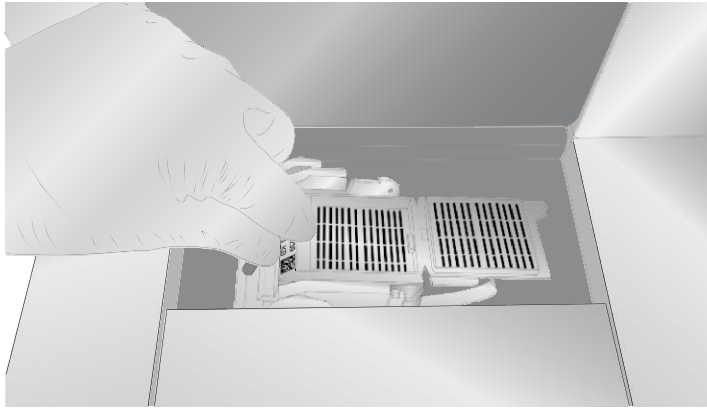
2. Locate a new cassette. Grasp the cassette by one of the sidewalls and place it on the carriage.



3. Depending on the mode that is set in the PTLab software, the printer will print on the cassette as soon as it detects its presence or wait for the user to press the Cassette (bottom) button next to the flashing LED light (default setting).

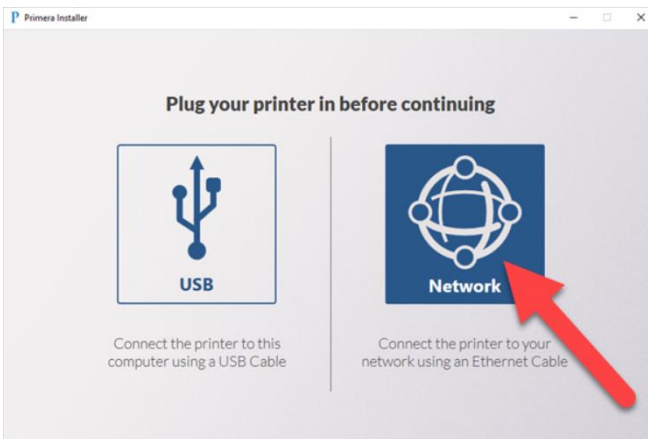


4. Remove the printed cassette by grasping it on the front printed edge.



H. ETHERNET VS USB CONNECTION

During the initial software set up you may choose to connect via USB or Ethernet. Depending on what you choose different options will appear in the setup application. Follow the prompts and explanation in the installer.



You will be prompted to plug in the Ethernet cable or USB cable during the installation. If you want to change you connection type or change Ethernet connection settings, run the installer again and change the settings. To find the installer visit www.primera.com/EVOCassettedownloads.

Note: If you have both USB and Ethernet connected USB will be the default communication channel. To use Ethernet, you must disconnect the USB cable.

It is possible to install both a USB driver and Ethernet driver so you may print using whatever method is connected.

- The USB driver name: **Cassette Printer**.
- Ethernet driver name: **Cassette Printer (PTI-[Unique ID])**.

If connected via Ethernet, you may type in the printer IP address to display information about the printer. To find the IP address open PTLab.

Section 2: Printing Cassettes

If you have purchased the Primera PTLAB software, you can use it to print to the Signature Cassette Printer. The PTLab software has its own manual. Please refer to it for detailed capabilities.

A. PRINTING FROM OTHER PROGRAMS

Printing to the Cassette Printer from other software can be accomplished by using the included Windows driver installed in the previous section. Four different document sizes are available depending on the type of cassette you have. The image file should correspond to one of the sizes below.

- Size 1 for standard 45° angle cassette - .236" x 1.01" (default)
- Size 2 for rounded edge 45° angle cassettes - .236" x .880"
- Size 3 for 35° angle cassettes - .293" x 1.01"
- Size 4 for rounded edge 35° angle cassettes - .293" x .880"

You may also set the driver to a custom size with a maximum size of .29" x 1.01"

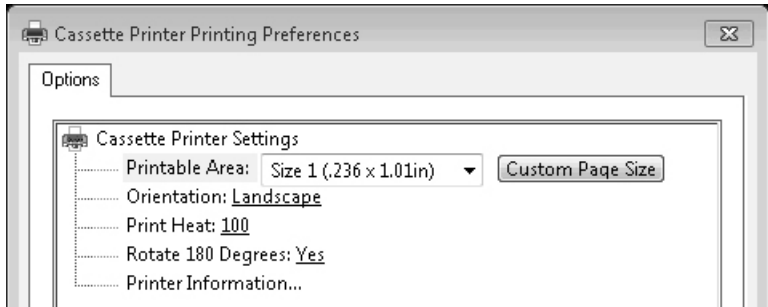
The image file should have 100% saturated black text or graphics

1. To print, simply go the applications print function. Choose the "Cassette Printer" as the printer. Click OK to print.
2. If the cassette is not loaded, the internal blue LED will start to blink.
3. If the cassette is loaded and the printer is ready to print, the cassette LED will start to blink. Press the Cassette (bottom) button to print.

Note: *If you print from PTLab you may set the printer to "Automatic Mode". In this mode, after a short delay, the printer will start to print as soon as it detects a cassette is present in the cassette carriage.*

B. PRINTER DRIVER SETTINGS

Click the Start button, search for "Printers". Select Printers and Scanners. Select the Cassette Printer. Choose Manage. Select Printing Preferences.



Paper Size: Four different document sizes are available depending on the type of cassette you have.

- Size 1 for standard 45° angle cassette - .236" x 1.01" (default)
- Size 2 for rounded edge 45° angle cassettes - .236" x .880"
- Size 3 for 35° angle cassettes - .293" x 1.01"
- Size 4 for rounded edge 35° angle cassettes - .293" x .880"

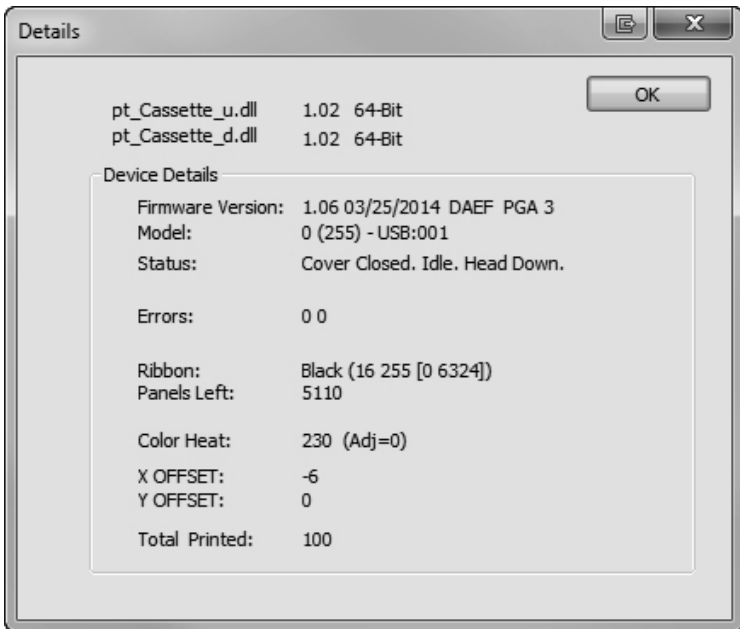
You may also set the driver to a custom size with a maximum size of .29" x 1.01"

Orientation: Change the orientation to Portrait or Landscape.

Print Heat: Increase or decrease the Print Heat from 1-255. Increase to print heat to improve print quality. 100 is the default value. Sustained use of a high print heat values will decrease the life of the print head and potentially break the ribbon. Different manufacturers of cassettes may require more or less heat. The minimum heat settings possible that result in a good print should be used.

Rotate 180 Degrees: Flips the image up-side down . Default setting is Yes.

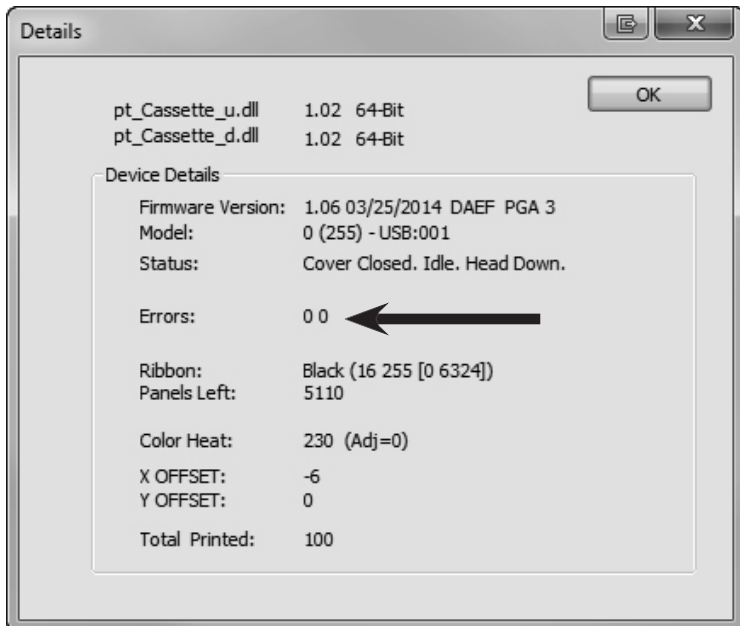
Printer Information... Click here to display, printer driver versions, firmware versions, total prints, current status, remaining cassettes, remaining prints and offset values.



Section 3: Maintenance and Troubleshooting

A. INDICATOR LIGHTS AND ERROR CODES

| | |
|--|---|
| Power Light On Cassette Light Off | Ready for Printing. |
| Power Light and Cassette Light Alternating | Print in queue, waiting for Cassette to be loaded. |
| Power Light On Cassette Light Blinking | Print in queue, Cassette loaded, press Cassette button to start printing. |
| Power Light On Internal Blue Light Flashing | Cassette is printed and is waiting for pickup. |
| Power Light Blinking Cassette Light Off | Internal Printer Failure - see error codes in details screen of printer driver. |

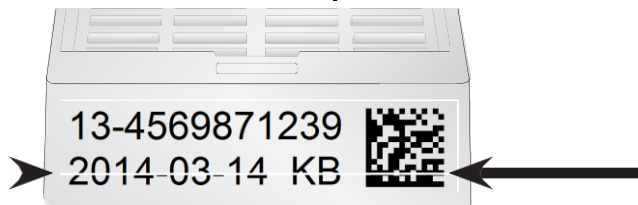
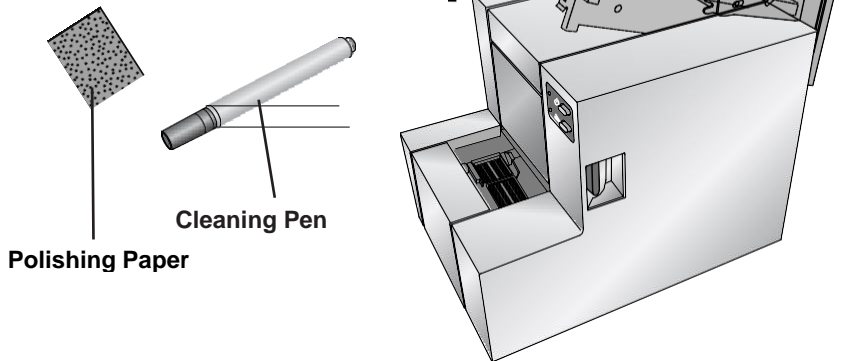


| | |
|-------------------------|-------|
| Ribbon PWM | 40 0 |
| Head Load | 20 0 |
| Input Empty | 10 0 |
| Input Jam | 08 0 |
| Ribbon Advance Error | 04 0 |
| Ribbon Invalid | 02 0 |
| Lifter Not Functioning | 01 0 |
| Ribbon Out | 00 01 |
| Ribbon Break | 00 02 |
| Ribbon Connection Error | 00 20 |
| Ribbon Jam Error | 00 40 |

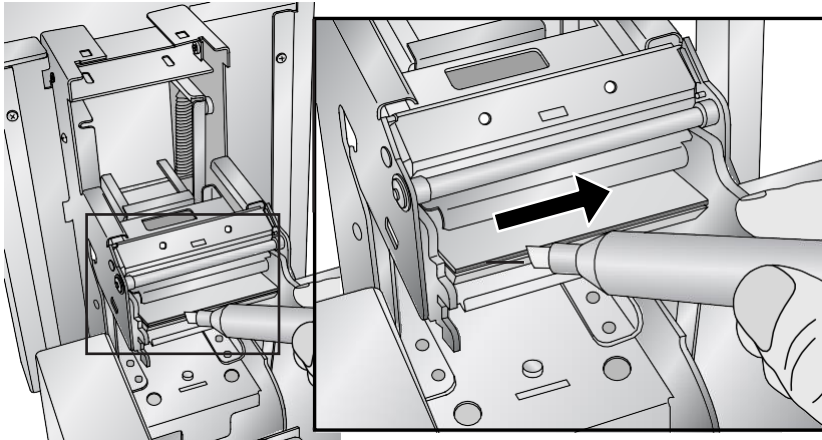
B. CLEANING THE PRINT HEAD

A print head cleaning pen and polishing paper are included with the printer. Clean the print head after every ribbon change or if you notice quality problems such as horizontal line through the entire print.

1. Unplug Power.
2. Open the printer cover.



3. Locate the Print head mounted to the underside of the cover.



Important Note: To prevent damage to print head, do not touch the burn line with a finger ring containing diamond or metal.

4. Clean the print head using the print head pen or polishing paper. Swipe the tip or rub the paper across the burn line 1 or 2 times. If you notice the pen tip getting dirty, clean it by wiping it across a clean paper surface.

C. REPLACING THE PRINT HEAD

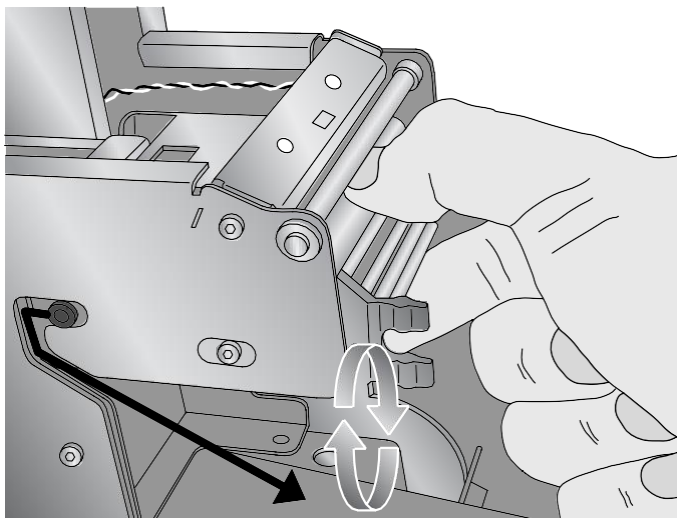
If cleaning the print head (Section 3B) does not resolve a quality problem such as a horizontal line through the entire print, it may be time to replace the print head. Print heads are designed to last tens of thousands of prints. However, it is possible a premature failure could occur if high heat settings were continuously used, it is used in a particularly hot environment or if cassettes not recommended for the printer are used.

Print Head Part Number : 78260

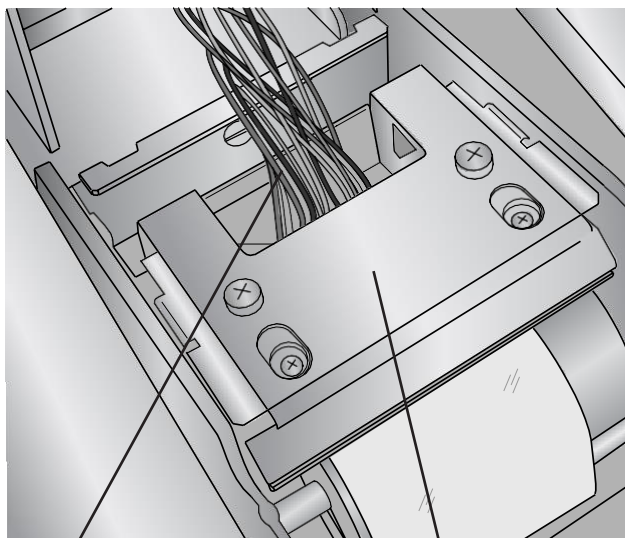
1. Unplug Power.
2. Open the printer cover.
3. Locate the Print head mounted to the underside of the cover.

4. Push back, then down and then flip it 180 degrees to reveal the cable connector. Watch the pin on the side of the print head mechanism to guide the print head out of the metal housing.

Pin



5. Disconnect the cable from the connector. Pull on the cables to remove the connector.

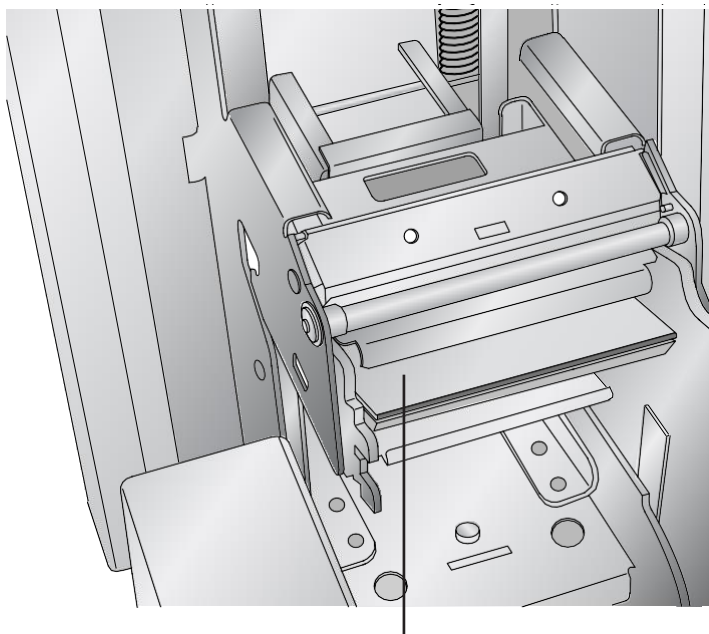


Disconnect this Cable

Print Head Flipped 180 Degrees

6. Connect the new print head.
7. Rotate the print head 180 degrees and push it back into the metal housing.
8. **IMPORTANT!** Find the Resistance value printed on the print head.

Example: R= 3180



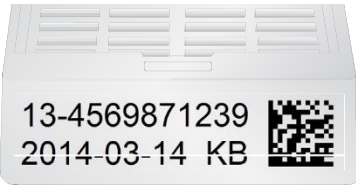
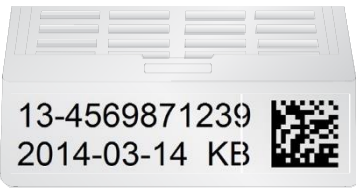
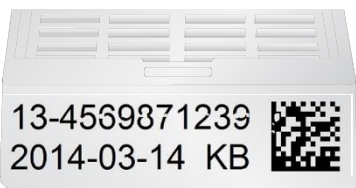
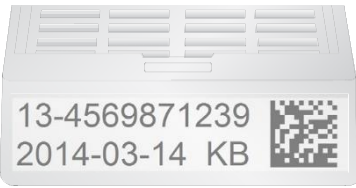
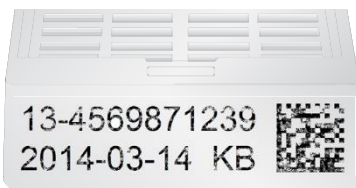
Resistance Value Printed Here

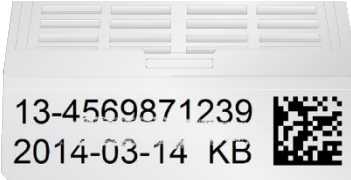
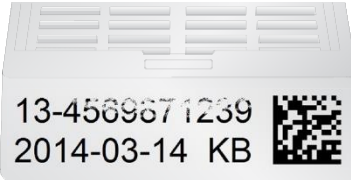
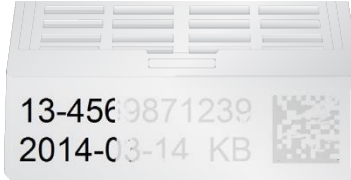
Before printing, enter this value in the advanced settings area of the PTLab software.

Click the settings icon in the upper right corner of PTLab. To enable the advanced area of settings hold SHIFT + A. Now click on Advanced Settings. Enter the Head Resistance. Click Set.

D. TROUBLESHOOTING PRINT QUALITY

Print Quality problems are usually caused by debris or flaws on the printable surface of the cassette. Use the chart below to diagnose quality problems.

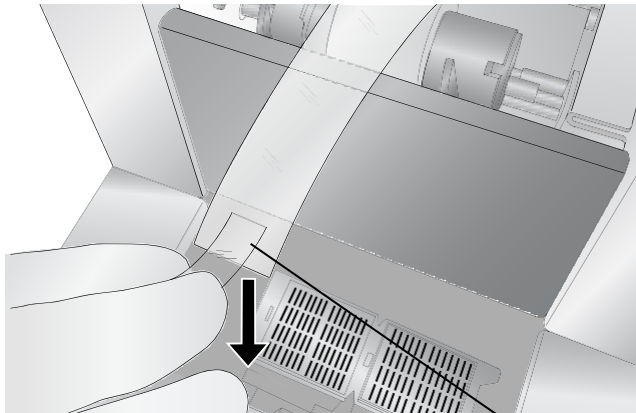
| | |
|--|---|
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Horizontal Line. A horizontal line through the entire print is caused by dust or debris on the print head burn line or blown pixel on the print head. See Section 3B for cleaning instructions and 3C for print head replacement instructions.</p> |
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Vertical Line. A vertical line through print is caused by a small bump on the cassette. This causes the entire print head to lift at this point so the effect of the bump is extended to the left and right of the bump. Low quality or defective cassettes may be the cause.</p> |
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Group of Spots. This may be caused by dust particles on the cassette. Keep the cassette clean. Store them in their original box. Avoid handling the cassettes.</p> |
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Light Printing. Light printing is caused by insufficient heat or cassettes that are not thermal printable (inkjet). You may be able to improve quality by increasing the heat setting in the Printer Preferences or the PTLab software. Different manufacturers of cassettes may require more or less heat. The minimum heat settings possible that result in a good print should be used. (Section 2B)</p> |
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Rough Printable Area. The printable area must be smooth and flat.</p> |

| | |
|--|---|
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Unsupported Middle Print Area. The printable area must be supported by the structure of the cassette in such a way that the printable area does not deflect under pressure.</p> |
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Unsupported Top Print Area. The printable area must be supported by the structure of the cassette in such a way that the printable area does not deflect under pressure.</p> |
|  <p>13-4569871239 2014-03-14 KB</p> | <p>Partial Print. If part of the cassette is printed perfectly but the rest is very light or missing entirely, your ribbon may have a tear. Reduce the heat setting to prevent this problem.</p> |

E. REPAIRING/PREVENTING RIBBON BREAKS

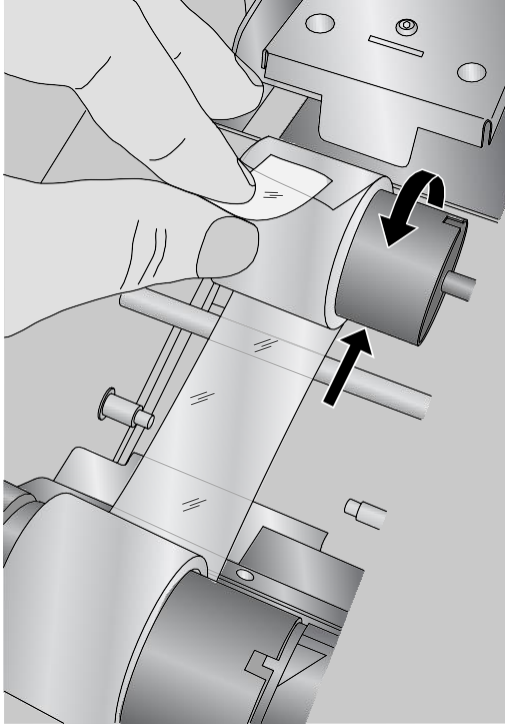
Ribbon breaks can occur if the heat setting is too high. To repair a ribbon break follow this procedure:

1. Open the cover.
2. Locate the supply roll ribbon. Place it on the top of the printer as shown below. Attach a piece of tape.



Tape Sticky Side Down

3. Feed the supply side of the ribbon under the take up roll. Tape the supply ribbon to the take-up roll.

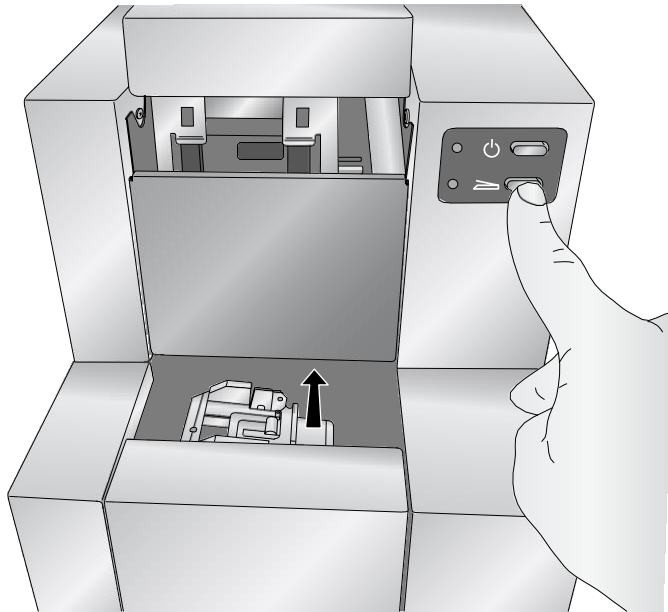


4. Manually turn the take-up roll several complete rotations to prevent the tape from coming loose.
5. Close the Cover.

F. RETRIEVING A FALLEN CASSETTE

If a cassette is dropped inside the printer, use the Power and Cassette buttons to move the carriage forward and back to a point where it can be removed. Follow this procedure:

1. Open the top cover.
2. Press the Cassette button to move the carriage back to access the cassette.

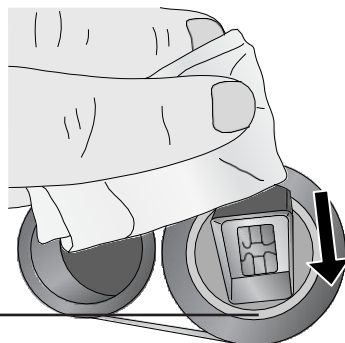


G. RIBBON RECOGNITION PROBLEMS

If your ribbon is installed but the software says no ribbon is installed, you may need to clean the copper chip on the ribbon.

Use Isopropyl Alcohol and a soft cloth to wipe the copper chip on the ribbon.

Copper Chip



H. TECHNICAL SUPPORT

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

| Source | Location |
|----------------|---|
| Knowledge Base | https://customercare.primera.com/portal/en/home |
| Email Support | https://www.primera.com/customer-support/ |
| Phone Support | 763-475-6979 (Mon - Fri 8 a.m. - 5 p.m CST) |

Section 4. Technical Specifications

| | |
|-----------------------|---|
| Printing technology: | Thermal transfer |
| Print speed: | Up to 9 cassettes/minute (monochrome) |
| Print resolution: | 300 dpi |
| Ink type: | Resin thermal transfer |
| Ribbon types: | Black - 4300 prints |
| Cassette types: | Prints on standard smooth-faced cassettes with 35° or 45° angles with either lid on or lid off, no adjustments needed |
| Output tray capacity: | 1 cassette |
| Construction: | Steel frame with powder-coated steel covers |
| Cabinet color: | Medical white |
| Data interface: | USB 2.0 Compatible (Less than 2.5 meter (8 feet) cable required) |
| Printer drivers: | Windows 7/8/10/11 |
| Height: | 9.6" |
| Width: | 8.8" |
| Depth: | 12.4" |
| Weight: | 20 lbs. |
| Power requirements: | 100-240 VAC, 50/60 Hz (12 VDC, 60 watts output) |
| Warranty: | One year parts and labor |

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