

Digital Color Label Printer

Operation & Setup Guide

Part Number 22834667-EN-E

Revision 1.0

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Firmware V 2.3

Specifications are subject to change without notice

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Ownership Information

Congratulations and thank you for your business. Your purchase of a quality QuickLabel product is an investment in the finest of state-of-the-art printing and labeling technology. Please use the spaces below to list the model name/number and serial number of your product.

Model Name/Number: _____

Serial Number: _____

FCC Compliance Statement

This equipment has been tested and found to comply with the limits of 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 residential environment. This equipment generates, uses, and radiates radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference. However, there is no guarantee that interference will not occur. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from which the receiver is connected.
- Consult QuickLabel Technical Support.

Warning: Modifications not expressly approved by Quick Label could void user authority to operate the equipment.

Canadian Compliance Statement

This Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique respecte les exigences du Règlement sur le matériel brouilleur du Canada.

ETL Certification

This product has met the United States of America and Canada electrical product safety requirements and has earned the ETL Listed Mark.

RoHS Compliance

We declare that the QLS-4100 Xe complies with The European RoHS Directive 2002/95/EC (Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment), as of 6/6/2007.

This declaration is based on information provided by suppliers based on reasonable inquiry. This declaration is rendered invalid if the product is altered by someone other than AstroNova, Inc.

Declaration of Conformity Declaration de Conformité Übereinstimmungserklärung Dichiarazione di Conformità	
ID	DoC-22834486
Manufacturer's name and address Nom et adresse du fabricant Hersteller Nome del costruttore	AstroNova, Inc. 600 East Greenwich Avenue West Warwick, RI 02893 USA
Model No. Modele No. Model Nr. Modello No.	QLS-4100 Xe
Standards to which conformity is declared Standards auquel la conformité appartient Normen für welche Übereinstimmung erklärt wird Norme per le quali si dichiara la conformità	Safety: UL 60950-1 CSA C22.2 No. 60950-1, Second Edition EMC: CISPR 22 Ed. 6.0 2008 CISPR 24 Ed. 2.0 2010 IEC 61000-3-2 ed3.2 (2009-04) IEC 61000-3-3 ed2.0 (2008-06) IEC 61000-4-2:2008 IEC 61000-4-3:2006+ A1:2007+ A2:2010 IEC 61000-4-4:2004 IEC 61000-4-5:2005 IEC 61000-4-6:2003 IEC 61000-4-8:1993 IEC 61000-4-11:2000
Application of Council Directives Application des Decisions du Conseil Anwendbar für die Richtlinien Applicazione delle Direttive del Comitato	2004/108/EC 2006/95/EC
I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive and Standard. Je, Soussigné, déclare que l'équipement spécifié ci-dessus est en conformité avec la directive et le standard ci-dessus. Ich, der unterzeichnende erkläre hiermit, daß das oben beschriebene Gerät den vorgenannten Richtlinien und Normen entspricht. Il sottoscritto dichiara che l'apparecchio sopra specificato è conforme alle Direttive e Norme sopra specificate.	
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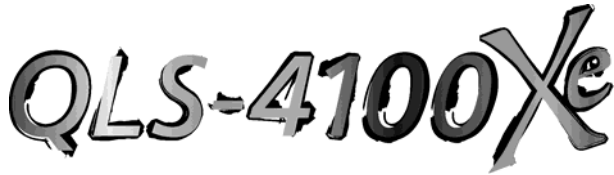
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Chapter 1: Quick Start

Congratulations ! You have purchased QuickLabel's best digital color label printer - ever. The QLS-4100 Xe represents years of careful research and development to perfect digital color label printing technology.

The QLS-4100 Xe represents . . .

QuickLabel's Best Image Quality - Ever The all-new print station design maintains a high degree of color registration - down to $\pm 1/2$ dot throughout an entire print run.

QuickLabel's Enhanced RibbonRation™ system which further economizes the use of ribbons making it even more cost-effective for long and short label runs.

QuickLabel's Easiest Printer to Use featuring a virtually adjustment free platform that ensures consistent, smooth operation and repeatable print quality, day after day.

QuickLabel's Most Reliable Printer featuring industrial-grade, all-metal construction, large rollers, long-life bearings, and highly accurate media sensing just to name a few enhancements resulting in trouble-free operation.

This Operation and Setup Guide provides all the information you will need to operate and maintain the QLS-4100 Xe. This Quick Start chapter provides a step-by-step guide for experienced or trained users to quickly get up and running.

QuickLabel media

Your QLS-4100 Xe has been designed to provide optimal print quality only when used with Genuine QuickLabel Labels, Tags and Thermal Transfer Ribbon. QuickLabel Thermal Transfer Ribbon is formulated to provide the most vibrant and durable image while helping to maintain long printhead life.

QuickLabel offers a unique media purchase program called a **Media Requirements Contract (MRC)**. With an MRC, your media costs will be tailored to annual usage, not individually-purchased quantity. The benefit to you is fixed low pricing for the products you plan to purchase anyway. The benefit to us is the ability to plan our production more efficiently. You will also receive free printhead replacement for the duration of the contract.

Some benefits of an MRC include:

Flexible Ordering - Order what you need, when you need it. An MRC never locks you into purchasing media you don't want. There is no minimum spending requirement, no frequency requirement, no advance payment, and you may add new items at any time.

Freeze Your Costs - Your one-year commitment to purchase your ribbons and labels commits us to sell you media only at the contracted price. And, with an MRC your costs will remain fixed, so you can safely budget expenses as far as a year in advance.

Free Printhead Replacement - As an added incentive, QuickLabel guarantees you free and unlimited replacement of all printheads worn by normal use during the life of your contract. You can be confident that your printhead wear will be "normal" because you will be using only the ribbons and labels for which your printer was designed.

Fast Delivery - Your MRC is designed to let you place your label and ribbon orders as you need them, anywhere from a week to a year in advance of shipping. You decide the products you need and leave the rest to us. Your ribbon and labels will arrive on schedule so you never experience production downtime.

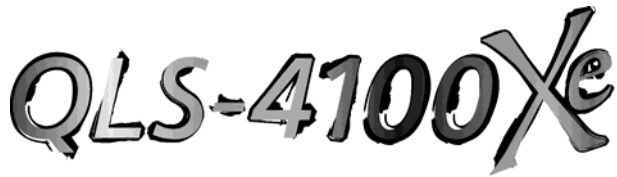
Contact your QuickLabel Media Sales Specialist for more information or to enroll in the MRC program.

Quick Start Guide

If you are an experienced user of a QuickLabel Digital Color Printer or you have attended QuickLabel College training, use this Quick Start Guide as a reference to begin producing beautiful color labels immediately.

In general, these operations should be performed in the sequence listed below, skipping over any items that may have been previously completed.

Page 2-2	Unpack the printer
Page 2-7	Install the media unwind mandrel
Page 2-8	Connect the AC power cord
Page 2-9	Connect the host computer interface
Page 2-14	Connect the compressed air source
Page 3-2	Load thermal transfer ribbon
Page 3-4	Load label or tag media
Page 3-7	Adjust the media sensor
Page 3-8	Calibrate the printer to the appropriate media type
Setup software parameters	
Appendix D	Printing from Custom QuickLabel
Appendix E	Printing from a Windows application with the QuickLabel Windows Printer Driver



Chapter 2: Physical Setup

This chapter will help you to familiarize yourself with the orientation and components of the QLS-4100 Xe. This chapter also covers the various connections that need to be made to the printer before it can be operated.

This chapter provides the following information:

- Instructions on unpacking and orienting the printer
- An overview of the features and components of the printer
- Instructions for connecting power and communication cables to the printer
- Instructions for connecting compressed air to the printer

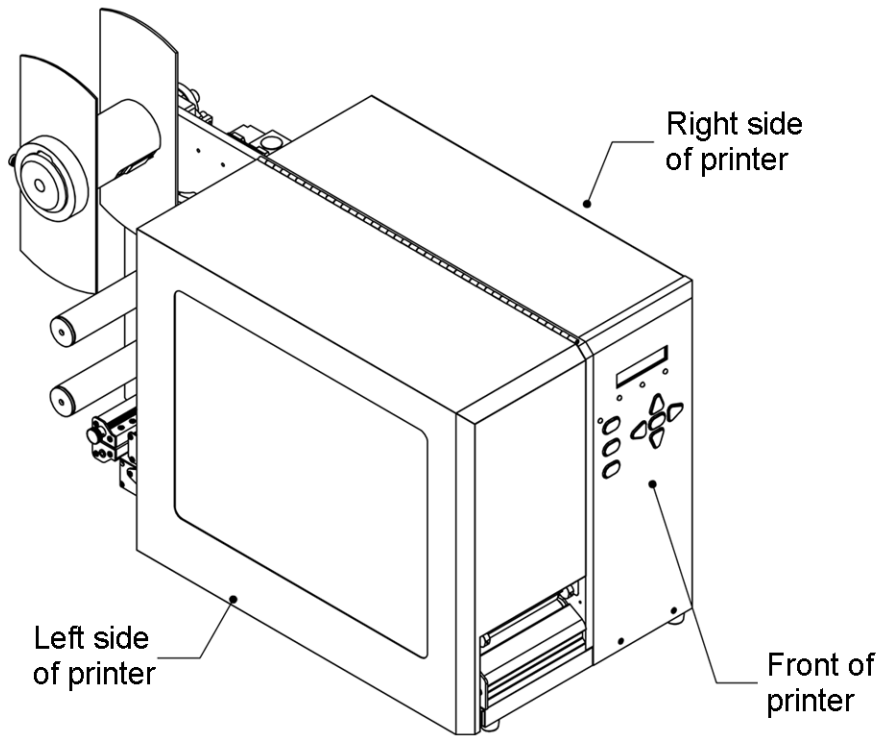
Unpacking the Printer

- 1 Remove the printer from the packing carton.
- 2 Ensure that the printer has suffered no visible signs of damage during shipment.
- 3 Verify that the following items have been included in the packing carton:
 - AC Power Cord
 - Media Retainer
 - Memory Card
 - Warranty Registration Card
 - Operation & Setup Guide
 - Windows Printer Driver CD

Note: Retain all packaging should the printer need to be transported at a later time.

Printer Orientation

The illustration below is provided to orient you to the QLS-4100 Xe printer. The keypad and display is the printer's user interface.



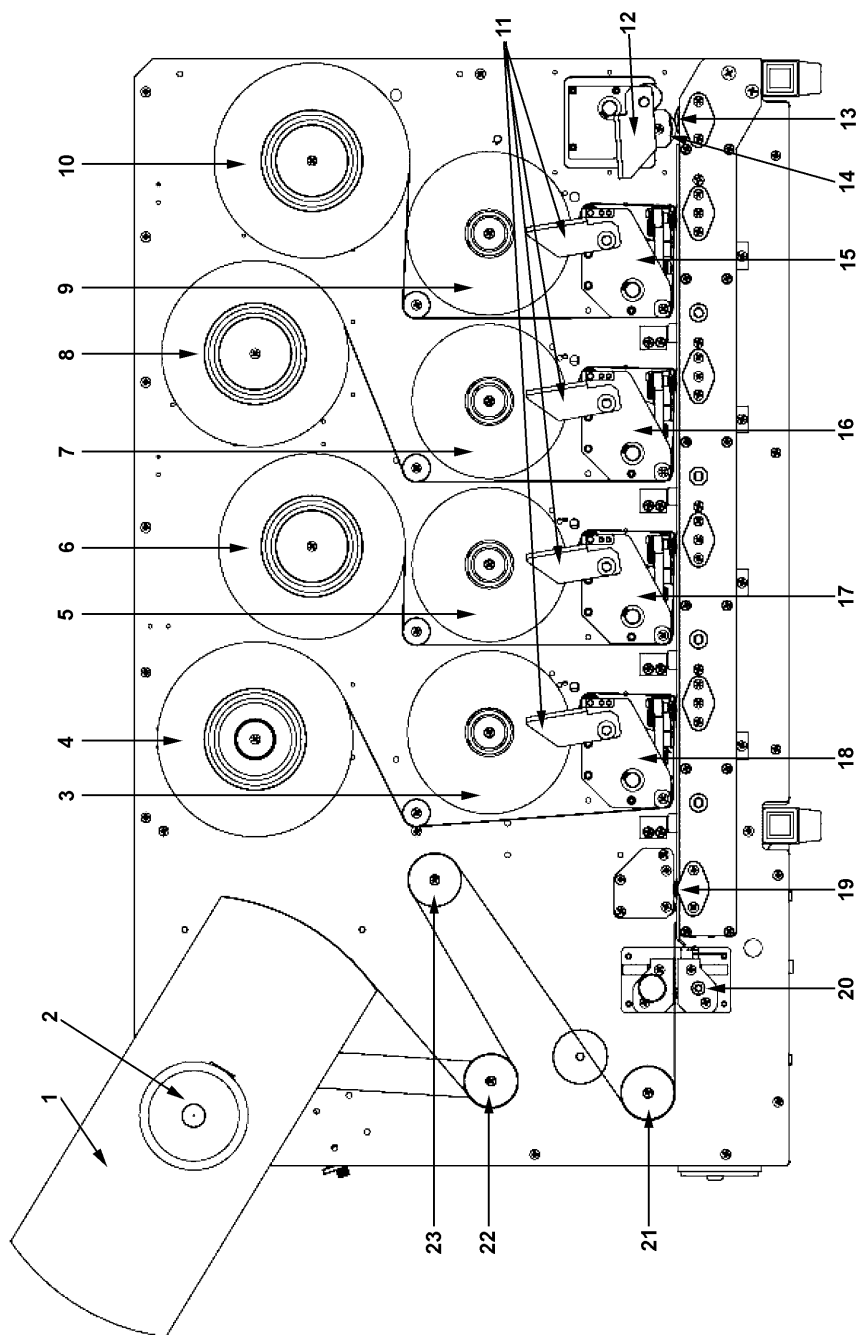
Features of the QLS-4100 Xe

Facing the left side of the QLS-4100 Xe with its cover lifted, you can view the media unwind, print stations, and related mechanical parts.

The items below identify the QLS-4100 Xe components as shown in the side-view illustration on the following page:

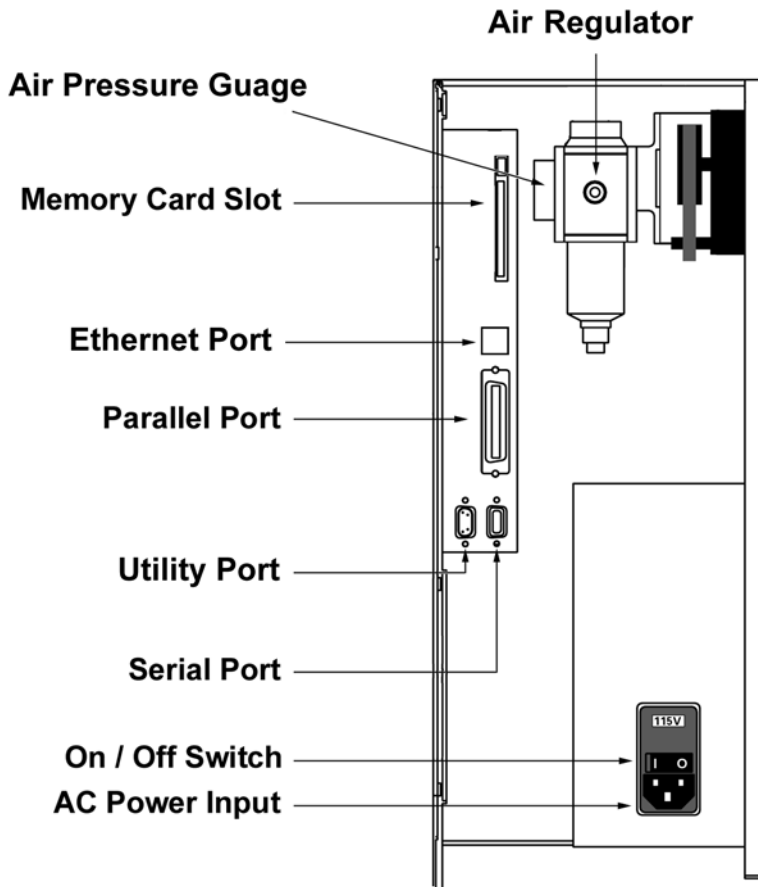
- 1 Media Retainer
- 2 Media Supply Mandrel
- 3 Thermal Transfer Ribbon Rewind - print station # 4
- 4 Thermal Transfer Ribbon Supply - print station # 4
- 5 Thermal Transfer Ribbon Rewind - print station # 3
- 6 Thermal Transfer Ribbon Supply - print station # 3
- 7 Thermal Transfer Ribbon Rewind - print station # 2
- 8 Thermal Transfer Ribbon Supply - print station # 2
- 9 Thermal Transfer Ribbon Rewind - print station # 1
- 10 Thermal Transfer Ribbon Supply - print station # 1
- 11 Print Station Lift Lever
- 12 Drive Roller Lift Lever
- 13 Drive Roller
- 14 Pinch Roller
- 15 Print Station # 1
- 16 Print Station # 2
- 17 Print Station # 3
- 18 Print Station # 4
- 19 Media Speed Roller
- 20 Media Sensor Assembly - Gap and Reflective
- 21 Lower Media Guide Roller
- 22 Media Dancer Arm
- 23 Upper Media Guide Roller

Side view



Rear Panel View

Facing the rear panel of the printer, you will observe the air intake regulator, power connection, and other interface connections as shown in the illustration below.



Note: Interface options vary based on printer model.

Installing the Media Unwind Mandrel

Your QLS-4100 Xe was shipped with the media unwind mandrel uninstalled to protect it from damage during transit. The mandrel is easily installed by following the procedure outlined below.

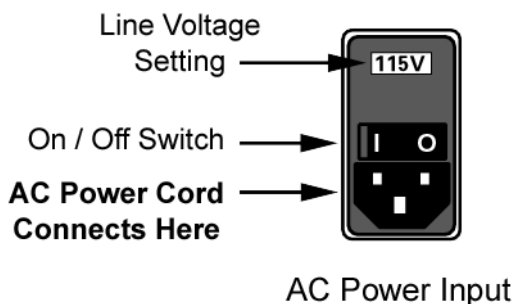
Tools Needed:

1/8" Allen Wrench

- 1 Slide the media unwind mandrel onto the shaft until the back plate flange is seated firmly against the collar located on the inside of the shaft. The outside of the shaft should be flush with the surface of the mandrel.
- 2 Firmly tighten the supplied Allen set screw against the shaft.

Power Connection

- 1 Locate the AC Power Input at the bottom of the rear panel.
- 2 Plug the power cord into the printer. Be sure to use only the AC Power Cord supplied with the printer. Ensure that the power switch is in the OFF position before proceeding to the next step.
- 3 Connect the opposite end of the AC Power Cord into an earth grounded AC receptacle. Do not power the printer on until you have finished making the remaining connections described in this chapter.



Warning: Do not use any type of receptacle adapter or AC Power Cord that has not been supplied with the unit. Doing so can result in damage to the printer.

Note: The printer has been set at the factory for the correct line voltage for your country. The voltage setting can be viewed in a window at the top of the AC Power Input. If this setting needs to be changed, refer to the procedure in Chapter 7 of this manual.

Note: It is recommended that an AC line conditioner / surge suppressor is used. Select a unit that is capable of handling the power requirements of the printer and protecting from surges and spikes. A VA rating of at least 1350 VA is required.

Computer Connections

The parallel or Ethernet interfaces are the primary methods of sending data from the host computer to the printer.

Note: Interface options vary based on printer model.

The RS-232 Serial Port is a secondary method of sending data to the printer. Data transmission via the serial port is much slower and not recommended.

An Ethernet connection provides a high-speed, bi-directional connection to the printer in networked environments.

Centronics Parallel Port

- 1 Using the parallel cable supplied with the printer, connect the larger connector to the parallel port on the printer.

Note: Only the supplied parallel or high-speed IEEE-1284 parallel cable should be used to ensure reliable performance. This cable should be stamped with an “IEEE-1284” marking to indicate that it is a high-speed parallel cable.

- 2 Lock the two metal rings on the parallel port into the connector to secure it to the printer.
- 3 Connect the opposite end of the parallel cable to the host computer. Be sure to note which port (LPT1, LPT2, etc.) you have connected the printer to as this will later be needed for driver or software setup.

Note: The maximum recommended parallel cable length is 10 feet (3 m).

RS-232 Serial Port

- 1 Using a standard (straight through connection) RS-232 serial cable, connect the appropriate mating end of the cable into the printer.
- 2 Tighten the cable securing screws into the serial port to secure the cable to the printer.
- 3 Connect the opposite end of the serial cable to the host computer. Be sure to note which port (COM1, COM2, etc.) you have connected the printer to as this will later be needed for software setup.

Pin Assignments

Pin	Signal
1	N/C
2	TXD
3	RXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	N/C



Note: The maximum RS-232 serial cable length is dependent on the communication parameters being used. For best performance and reliability, only serial cables supplied by QuickLabel should be used.

Ethernet Port and TCP/IP Communication

The QLS-4100 Xe is a 10Base-T device that provides a 10Mbps ethernet connection. Using hubs and routers, the printer can be connected directly into a network using standard Category 5 (CAT5) cable or similar with a RJ-45 connector.

TCP/IP (Transmission Control Protocol/Internet Protocol) communication provides a direct link to the QLS-4100 Xe printer via the ethernet port. Using standard twisted-pair wiring, the printer can be connected to your existing network and shared by all network users.

This method of communication provides a fast, bi-directional, real-time link to the printer. However, it does not provide print server functionality. If you require print server functionality and protocols other than TCP/IP, refer to the following section for print server information.

Every ethernet device on the network contains a unique ethernet address known as the MAC address. This address is programmed at the factory and cannot be modified. Additionally, each device contains a TCP/IP layer identified by a configurable IP address. Every TCP/IP device on the network contains a unique IP address.

Your network administrator must assign IP addresses for your QLS-4100 Xe printers. This is a common task performed on computers, printers, fax machines, etc. to identify the devices by their unique IP addresses. The QLS-4100 Xe printer does not support Dynamic Host Configuration Protocol (DHCP), which automatically assigns an IP address to each device on the network.

For simple printer/computer networks, you can assign IP addresses and subnet masks manually and ensure that all devices are identified by unique addresses. The default gateway address can remain at the default factory setting of 0.0.0.0.

For detailed information on the topic of networking, refer to documentation applicable to your network environment and/or contact your network administrator.

Print Servers

The QLS-4100 Xe can be connected to a Local Area Network (LAN) using an appropriate external print server.

The print server must be capable of passing ASCII data to the printer without corrupting or modifying the data stream. Any printer language emulations such as PostScript™ or PCL™ should be disabled.

QuickLabel can supply a compatible print server to be used in PC-based or midrange/mainframe-based host environments. Please contact QuickLabel for additional information.



QuickLabel PS-ENET Print Server for Windows Networks.



QuickLabel Print Server for AS/400 Networks.

Utility Port Connection

On the rear panel of the printer, the Utility Port permits connection to external devices such as the optional QuickLabel Cutter and Cutter/Stacker or a label applicator system. The assignment of pin functions on the utility port depends on the mode of operation. For information regarding applicator mode operation, please contact QuickLabel.

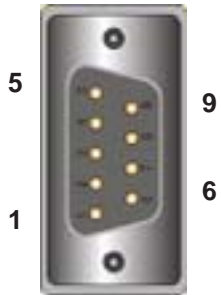
Warning: Exceeding the limits of the utility port signals can result in damage to the printer.

Standard Mode

Pin	Signal	Notes
1	N/C	
2	Ground	
3	Cutter On/Off	Output (1=on 0=off)
4	5 VDC	1A max
5	Cutter	Error Input (1=error 0=no error)
6	Cutter Pulse	4-6 ms pulse output
7	N/C	
8	Pause	Input (1=print 0=pause)
9	Error	

Applicator Mode

Pin	Signal	Notes
1	N/C	
2	Ground	
3	Printing	Output (1=printing)
4	N/C	
5	N/C	
6	N/C	
7	N/C	
8	Go	Input (1=initiate print)
9	Skip/Apply	Output (1=apply 0=skip)



Notes: If you are using a cutter or cutter/stacker, refer to the unit's setup and operation manual for information on setting up the unit with your printer.

Functionality may be modified via host commands. For information, see the QuickLabel Programmer's Reference (PN 22834615-EN-E).

Compressed Air Connection

Preparing the Air Regulator

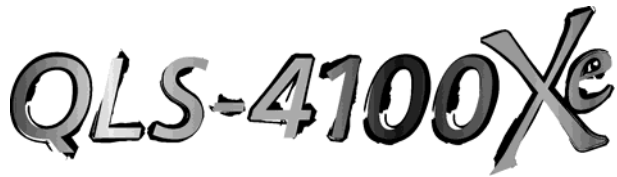
When you receive the QLS-4100 Xe Printer, the Air Regulator is ready for operation. The air pressure regulator has been set at the factory for the proper air pressure. You only need to connect your in-house air supply to the printer.

QuickLabel can supply you with a portable, quiet air compressor suitable for office use should you not have a source of compressed air.

Connecting the Air Supply

- 1 Obtain a suitable source of in-house air. This air should be dry, clean, and oil-free. Be sure to turn off the supply of air to this connection before making any connections.
- 2 Attach an appropriate threaded fitting to the Air Intake Regulator using Teflon tape on the threads to seal the fitting.
- 3 Attach your in-house air source to the Air Intake Regulator.
- 4 Turn on the supply of air to this connection.
- 5 Check the indicator dial to ensure that the regulator is set to 70 PSI.
- 6 If adjustment is required, pull down on the regulator knob to unlock it and turn the knob until the desired pressure level is reached:
 - Turn the knob clockwise to increase air pressure
 - Turn the knob counterclockwise to decrease air pressure
- 7 When finished adjusting the pressure, push the regulator knob upwards to lock it into place.

Note: The QLS-4100 Xe can be used without compressed air, but the RibbonRation system cannot be used. Refer to Chapter 5 for information on how to disable the RibbonRation system.



Chapter 3:

Loading Media and Calibration

Now that your QLS-4100 Xe is unpacked and all connections have been made to the printer, you are ready to load label or tag stock, thermal transfer ribbon, and calibrate the printer in preparation for printing.

This chapter provides the following information:

- Instructions on loading thermal transfer ribbon
- Instructions on loading label or tag stock
- Instructions on calibrating the printer for the installed media

Loading Thermal Transfer Ribbon

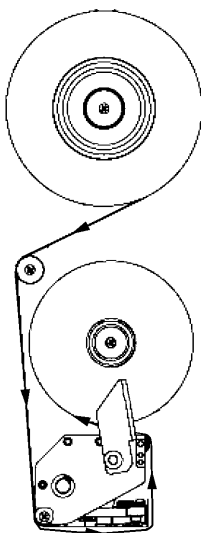
The QLS-4100 Xe is capable of printing using *Spot Color* or *Process Color* thermal transfer ribbons.

When using *Spot Color* ribbons, each of the four stations prints a fully saturated color. Any color can be installed on any print station and the location of each color is defined in Custom QuickLabel software or the QuickLabel Windows Printer Driver.

When using *Process Color* ribbons, each of the print stations prints a dot pattern of a primary color (Cyan, Magenta, Yellow, or Black). These primary colors overlap each other on the label to produce a wide range of colors. *Process Color* ribbon must be installed on specific print stations as defined below. CMYK printing is commonly used while some specific applications may call for KCMY printing where the black ribbon is printed last.

	CMYK	KCMY
Print Station 1	Cyan	Black
Print Station 2	Magenta	Cyan
Print Station 3	Yellow	Magenta
Print Station 4	Black	Yellow

As an aid, a threading diagram displaying the thermal transfer ribbon path is printed on the center plate of the printer.



To load thermal transfer ribbon on each print station:

- 1 Fully seat a roll of coated-side-in ribbon on the print station's Supply Mandrel. You will feel resistance as the spring clip on the mandrel secures the roll. Ensure that the ribbon unwinds to the right and under the roll.
- 2 Fully seat an empty cardboard takeup core on the associated Rewind Mandrel.
- 3 Flip the Print Station Lift Lever counterclockwise to open the printhead.
- 4 Thread the ribbon over the ribbon guide roller located closest to the Rewind Mandrel, then downward towards the print station.
- 5 Thread the ribbon around the lower print station ribbon guide roller and under the print station.
- 6 Continue to thread the ribbon up around the front edge of the printhead then between the ribbon guide roller at the front of the print station and the anti-static brush support shaft.
- 7 Finally, wrap the ribbon up and over the empty takeup core. Secure the end of the ribbon with a small piece of adhesive tape.
- 8 Turn the ribbon rewind knob clockwise to take up any slack in the ribbon.
- 9 Flip the Print Station Lift Lever clockwise to close the printhead.
- 10 Repeat this process to install ribbon on each of the print stations.

Loading Label or Tag Media

The QLS-4100 Xe is capable of printing on a wide variety of media types and sizes and is designed to accept media up to a 12" OD (outside diameter) roll capacity on a 3" ID (inside diameter) core.

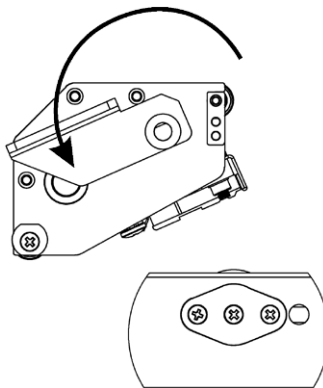
The QLS-4100 Xe positions the printed image correctly by utilizing either a transmissive or reflective sensor to detect the beginning of a label or tag. In some applications, a continuous media without notches or reflective marks can be used, and the length of the printed image is dictated by software.

When using the transmissive method of sensing, the media should have at least a 0.125" (3 mm) gap or notch. When using a reflective sensing method, the media should have a 0.078" (2 mm) solid black reflective mark on the back that extends a minimum of 0.5" (12 mm) from the inside edge of the media.

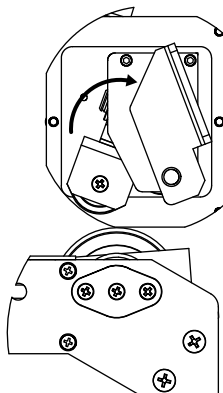
As an aid, a threading diagram showing the media path is printed on the center plate of the printer.

To load label or tag media:

- 1 Lift the printer's cover.
- 2 Flip each Print Station Lift Lever counterclockwise to open the printheads.



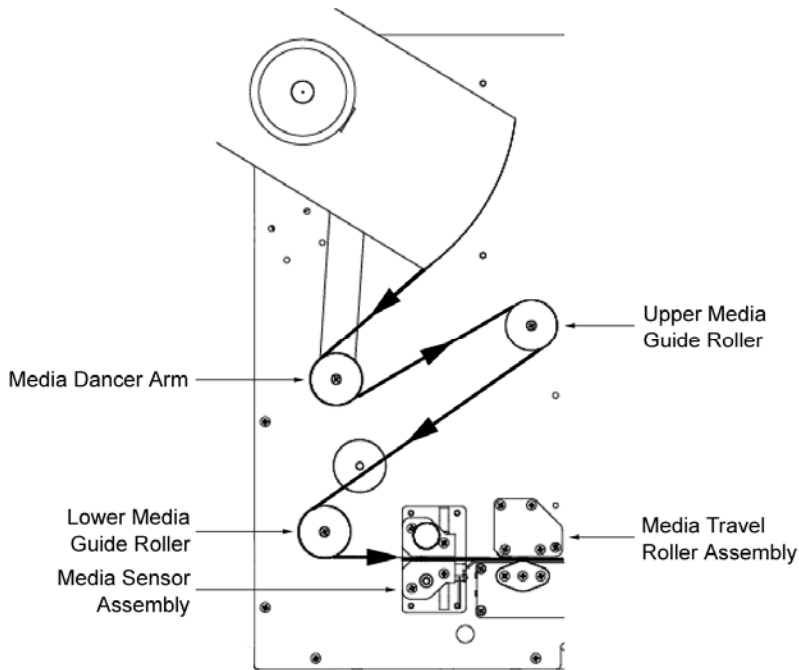
- 3 Flip the Drive Roller Lift Lever clockwise to open the drive roller.



- 4 Remove the Media Retainer from the media supply mandrel by first loosening the small nylon retaining screw then sliding the Media Retainer away from the printer and off the mandrel.
- 5 Orient the roll so that the labels are coming off the top and to the right. Using the media retainer to push the roll, slide the roll onto the mandrel until it is firmly seated against the back plate. You will feel resistance as the spring clip on the mandrel secures the roll.

Note: If the media is not fully seated against the back plate, an unprinted vertical area or void will appear on the printed label.

- 6 Ensure that the Media Retainer is firmly against the media roll and hand-tighten the nylon retaining screw to secure the Media Retainer to the mandrel.
- 7 Lift the Media Dancer Arm to the right and upwards to relieve back-tension on the media supply roll. Unroll approximately a 3-foot length of media.
- 8 Thread the media down and to the left, then around the Media Dancer Arm.
- 9 Remove the Media Guide Collar from the lower Media Guide Roller.
- 10 Continue to thread the media over and around the Upper Media Guide Roller then under and around the Lower Media Guide Roller.
- 11 Thread the media through the Media Sensor Assembly and then through the Media Travel Roller assembly.



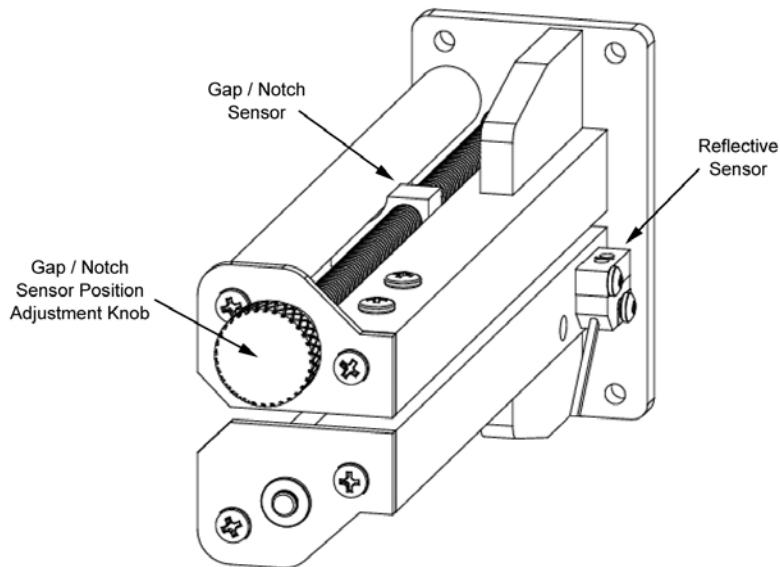
- 12 Continue to thread the media through each of the print stations over the platen rollers.
- 13 Finally, thread the media between the drive roller and pinch roller so that it exits from the front of the printer.
- 14 Ensure that the media rests against each of the four Media Guide Rollers located just behind the print stations on center plate.
- 15 Flip each Print Station Lift Lever clockwise to close the printheads.
- 16 Flip the Drive Roller Lift Lever counterclockwise to close the drive roller.
- 17 Reinstall the Media Guide Collar until it just rests against the outer edge of the media.

Adjusting the Media Sensor

The QLS-4100 Xe is equipped with two intelligent media sensors. One sensor is used for gap, or notched media types, and the other is used for reflective media types. Under normal operation, the sensor has to be calibrated to the media type being used only once. When changing from gap to reflective media types or vice-versa, a re-calibration is required.

The Gap/Notch Sensor is positioned *above* the media on a movable shaft which can be adjusted out up to 2.5" (64 mm) from the inside edge of the media. The Reflective Sensor is positioned *below* the media in a position fixed at 6 mm from the inside edge of the media.

Before calibrating the printer for gap or notched media, you must adjust the position of the sensor so that it clearly "sees" the gap or notch. The illustration below shows how to adjust the sensor.



To adjust the media sensor:

- 1 Turn the knob **clockwise** to move the sensor toward the outside edge.
- 2 Turn the knob **counterclockwise** to move the sensor toward the inside edge.

Calibrating for Media Types

Calibrating the printer for the type of media being used is essential and is the first procedure that must be performed prior to printing and whenever the media type is changed. If the printer is not properly calibrated, any of the following may occur:

- Printer will not initiate printing
- Media advances but no image is printed
- Printer will report a Media Out error
- Image placement is incorrect or the printed image is clipped
- Custom QuickLabel software reports an error

The calibration process automatically senses any gap, notch, or index mark on the media. This allows the printer to position widely varying types of media automatically and correctly. The printer stores the last calibration in non-volatile memory.

The printer's internal label queue is reset during the calibration process. Any labels pending in the queue are terminated. Use the procedures on the following pages to perform a media calibration.

Note: Calibration need not be performed frequently if you use the same type of label or tag material, regardless of size.

Calibrating Gap Media

- 1 Lift each of the printheads for this calibration routine in order to conserve ribbon. Leave the drive roller engaged.
- 2 Remove a label from the liner between the Media Dancer Arm and the Upper Media Guide Roller (*skip this step if using notched or hole-punched media*).
- 3 Press the PRINT/PAUSE key until the printer is in a paused state.
- 4 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed, then press the SELECT key.

Pause: Cal & Setup
Press SELECT

- 5 Press the NEXT or PREVIOUS key until the Calibrate menu is displayed.

- 6 Press the + or - key until Gap is displayed.

Calibrate
Gap

- 7 Press the SELECT key. The display will show the following prompt:

Place Liner @ Sensor
Then Press Select

- 8 Press and *hold* the FORM FEED/ADVANCE key until the liner is inside the sensor bracket. On notched media, temporarily slide the media out so that it is completely clear of the sensor assembly.

- 9 Press the SELECT key. The display will show the following prompt:

Place Media @ Sensor
Then Press Select

- 10 Press and *hold* the FORM FEED/ADVANCE key until the next label is inside the Gap sensor.

- 11 Press the SELECT key. The display will show the following prompt:

Place Gap @ Arrow
Then Press Select

- 12 Press and hold the FORM FEED/ADVANCE key until the next gap is positioned behind the Media Sensor Assembly and in close proximity to the guide arrow indicated on the center plate.

- 13 Press the SELECT key. The following message will be displayed:

Gap
Calibration OK

If calibration was unsuccessful, the following message will be displayed:

Gap Calibration Bad

The user must re-initiate the calibration procedure.

- 14 After successful calibration, press the PRINT/PAUSE key to return the printer to a Ready state.

Note: The QLS-4100 Xe is capable of sensing media with a maximum gap or notch size of 50 mm.

Calibrating Reflective Media

- 1 Lift each of the printheads for this calibration routine in order to conserve ribbon. Disengage the drive roller by turning the Drive Roll Lift Lever clockwise.
- 2 Position the reflective mark so that the red light from the reflective sensor passes through the mark. The light will typically pass through most media allowing you to view the mark from above. On more opaque media, you may have to view the mark from the bottom.
- 3 Engage the drive roller by turning the Drive Roll Lift Lever counterclockwise.
- 4 Press the PRINT/PAUSE key until the printer is in a paused state.
- 5 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed, then press the SELECT key.

Pause: Cal & Setup
Press SELECT

- 6 Press the NEXT or PREVIOUS key until the Calibrate menu is displayed.
- 7 Press the + or - key until Reflective is displayed.

Calibrate
Reflective

- 8 Press the SELECT key. The display will show the following prompt:

Place Mark @ Sensor
Then Press Select

- 9 Press the SELECT key again. The display will show the following prompt:

Place Media @ Sensor
Then Press Select

- 10 Reposition the media by pressing and holding the FORM FEED/ADVANCE key until the red light no longer shines through the mark but through the media.
- 11 Press the SELECT key. The display will show the following prompt:

**Place Mark @ Arrow
Then Press Select**

- 12 Press and *hold* the FORM FEED/ADVANCE key until the reflective mark is positioned behind the Media Sensor Assembly and in close proximity to the guide arrow indicated on the center plate.
- 13 Press the SELECT key. If calibration was successful, the following message will be displayed:

**Reflective
Calibration OK**

If calibration was unsuccessful, the following message will be displayed:

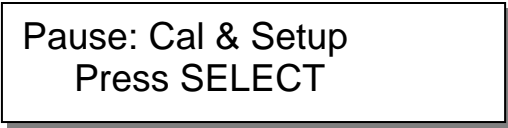
**Reflective
Calibration Bad**

The user must re-initiate the calibration procedure.

- 14 After successful calibration, press the PRINT/PAUSE key to return the printer to a Ready state.


Calibrating Continuous Media

- 1 Press the PRINT/PAUSE key until the printer is in a paused state.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed, then press the SELECT key.



Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Calibrate menu is displayed.
- 4 Press the + or - key until Continuous is displayed.



Calibrate
Continuous

- 5 Press the SELECT key. The printer will feed a short length of media and will then be calibrated for continuous media. The display will show the following prompt:



Continuous
Media Calibrated

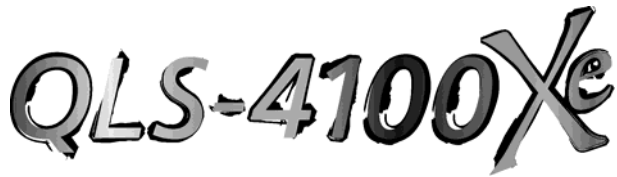
- 6 Press the PRINT/PAUSE key to return the printer to a Ready state.

Calibrating Inverted Gap Media

Some examples of inverted gap media include clear labels with an opaque liner, a material which has sensing marks on the label itself, or a material on which you must sense on a preprinted image.

When using media of this type, the printer is calibrated using the Gap Calibration method outlined previously in this chapter.

The only difference in the procedure is that you would align the sensing mark when the printer prompts for placement of the liner or gap.



Chapter 4:

Keypad Controls and Menus

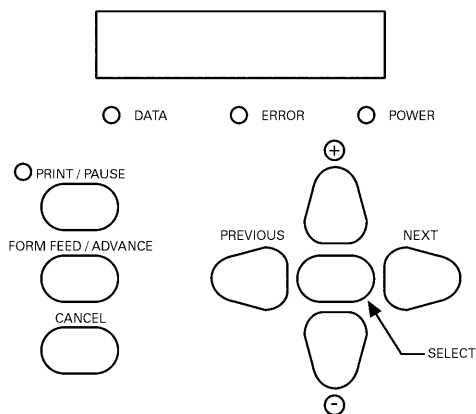
The QLS-4100 Xe features an intuitive control panel consisting of a backlit LCD display, status LED indicators, and a multi-function keypad. The control panel permits the user to change settings and make adjustments on-the-fly without the need for a host computer.

This chapter provides the following information:

- Information on the layout and function of the keypad
- An overview of menu functions and range of settings
- Detailed descriptions for each menu function

Keypad Layout and Functions

The keypad buttons perform the following general functions.



PRINT/PAUSE

Toggles the printer between Ready and Pause states

Pauses or resumes printing

If viewing a sub-menu, returns you to main Pause menu

FORM FEED/ADVANCE

When the printer is in a Pause state, feeds the media by one calibrated label length each time the key is pressed, or continually advances the media when the key is held

CANCEL

Cancels the current label(s) or test pattern

PREVIOUS/NEXT

Cycles the display though menu choices

Displays current settings for various printer parameters

+

Increases values within menus

-

Decreases values within menus

SELECT

Accepts the displayed setting

Pressing select twice returns user to top-level menu

Print/Pause

When the printer is idle (i.e. not printing labels), the PRINT/PAUSE key will toggle the printer between a Ready state and a Pause state as indicated on the display. While the printer is printing labels, pressing the PRINT/PAUSE key will put the printer in a Pause state and label printing will halt until the PRINT/PAUSE key is pressed again.

Ready state:



Ready

Pause state:



Pause

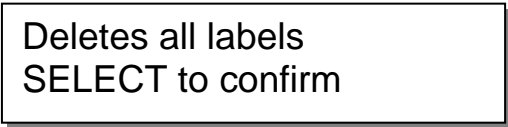
Certain function menus are only available when the printer is in the Pause state, as described in the following sections.

Form Feed/Advance

The FORM FEED/ADVANCE key serves two functions. If the key is pressed momentarily and released, the printer will advance the media by one calibrated media length. If the key is pressed and held, the printer will advance media until the key is released.

Cancel

While a batch of labels or the test pattern is being printed, pressing the CANCEL key will display the following message:



**Deletes all labels
SELECT to confirm**

Pressing SELECT will immediately cease printing, canceling any pending batches from memory and will return the printer to a Ready state.

Menu Overview

The following list outlines all of the menus that are accessible via the user interface. Some menus, as noted, are only accessible when the printer has been paused using the PRINT/PAUSE key. Some menus, like the Cutter menu, are only available when a specific option is enabled or in use.

The menus are organized in two levels. Top-level menus include Adjust, Cal & Setup, Operation, Ribbon, Communications, System, and Options. By choosing a top-level menu and pressing the SELECT key, you can scroll through functions related to the top-level menu. Pressing the SELECT key twice returns you to the top-level menu.

Note: For a detailed illustration of the printer menu structure, refer to *Appendix G: Menu structure*.

Ready State & Adjust Menu	Options are available in a Ready or Pause state.
Intensity	Adjusts the printhead intensity. Possible values range from 1 – 32.
Speed	Adjusts the print speed. Possible values range from 2 – 7 inches per second.
Print Line Adj	Adjusts the print line for printheads 1 - 3. Possible values range from -240 to +240.
Cross Web Adj	Adjusts the cross web for printheads 1 – 4. Possible values range from <-16 to -> 16 dots.
Vertical Offset	Adjusts the print registration vertically. Possible values range from -1200 to +1200 dots.
Horizontal Offset	Adjusts the print registration horizontally. Possible values range from <-1200 to -> 1200 dots.
Display Cntrs	Adjusts the display of the label counter. Possible values are Off, Batch, or Total.
Cut Offset	Available if cutter is enabled. Adjusts the position of the cut line. Possible values range from -1200 to +1200 dots.

Label Reprint	Reprints up to 999 copies of the last label printed, if using the Windows print driver. (Available only from Ready state)
Form Stop Adjust	This option is available only in Print & Peel single label mode. See <i>Chapter 8: Print & Peel</i> for more information.
Peel Delay	This option is available only in Print & Peel modes. See <i>Chapter 8: Print & Peel</i> for more information.

Cal & Setup Menu	Options are available in a Pause state only.
Calibrate	Calibrates the printer to media type. Possible values are Gap, Reflective, or Continuous.
Test Print	Prints test patterns. Possible values are: Test Pattern 1", 2", 3", 4", 5" Block Pattern (All) Proc. Block (CMYK) Proc. Block (KCMY) Horiz. Line Pattern Large Blocks 1", 2", 3", 4", 5"
Vertical Baseline	Synchronizes the vertical registration across multiple QLS-4100 Xe printers. Possible values range from -120 to +120 dots.
Horizontal Baseline	Synchronizes the horizontal registration across multiple QLS-4100 Xe printers. Possible values range from <-120 to -> 120 dots.
Printer Settings	Prints all of the current settings for the printer.
Maximum Gap	Sets the maximum gap between labels to a value between 1-200mm.
Cutter Baseline	Applicable if cutter is enabled. Adjusts the position of the cut line with respect to Cut Offset. Possible values range from -120 to +120 dots.

Operation Menu	Options are available in a Pause state only.
Pull Back	Requires special hardware. Contact QuickLabel for more information on this function.
Label Reprint	Reprints up to 999 copies of the last label printed, if using the Windows print driver.
Synchronize Labels	Synchronizes labels when using printer/applicator or Print & Peel.

Ribbon Menu	Options are available in a Pause state only.
Ribbon Type	Selects printhead intensity tailored to a specific media type. Possible values are Standard and Resin/Synthetic.
Drop/Lift Adjust	Adjust the drop and lift point for printheads 1 – 4. Possible values are 0 to +40 mm.
Ribbon Sensor	Used by QuickLabel technicians when performing factory diagnostics. Possible values are Enabled and Disabled, but in general use, the sensor should always be enabled.

Communications Menu	Options are available in a Pause state only.
Data Port	Selects the data input interface used by the printer. Possible values are Parallel, Serial, or Ethernet.
Parallel Mode	Specifies the mode of connection for the parallel port. Possible values are Auto or Standard.
RS232 Baud Rate	Specifies a baud rate for the RS232 serial port. Possible values are 4800, 9600, 19200, or 38400.
RS232 Handshaking	Specifies a handshaking method for the RS 232 serial port. Possible values are Hardware or XON/XOFF.
TCP/IP Address	Specifies the IP address of the printer for ethernet purposes.

TCP/IP Subnet Mask	Specifies the subnet mask.
TCP/IP Gateway	Specifies the default gateway.
TCP/IP Connections	Specifies whether the TCP/IP status socket is enabled. Possible values are One (disabled) and Two (enabled).

System Menu	Options are available in a Pause state only.
Display Cntr	Adjusts the display of the label counter. Possible values are Off, Batch, or Total.
Memory Card	Selects whether to write-protect the memory card. Possible values are Write Protect ON or Write Protect OFF.
Format Memory Card	Formats the memory card.
Front Panel Lock/Unlock	Locks/Unlocks the front panel with a password.
Time	Sets up the time on the built-in, real-time clock.
Date	Sets up the date on the built-in, real-time clock.
Factory Reset	Returns the printer settings to the factory defaults.

Options Menu	Options are available in a Pause state only.
Mirror Mode	Activates mirror mode. Possible values are ON or OFF.
Cutter	Activates the cutter accessory. Possible values are Enabled or Disabled.
Cut Flag	Activates the cut flag. Possible values are ON or OFF. This option is available only if the cutter is enabled.
Pull Back	Enables/disables the pull back function. Possible values are Disabled, Enabled (Manual), or Enabled (Auto). This option requires special hardware. Contact QuickLabel for more information.

Applicator	Activates the label applicator mode. Possible values are Enabled 1, Enabled 2, or Disabled.
Ignore Host Commands	Ignores all Speed, Intensity, Vertical Offset, and Horizontal Offset commands issued by the host computer.
“No Air” Warning	Enables/disables the “No Air” warning that appears at startup if air is not connected to the printer.
Image Normalization	Prevents variations in print intensity that occur with some labels.
System Configuration	Enables/disables custom operating modes.
Print & Peel Mode	Enables/disables Print & Peel mode and corresponding menu items. Possible values are Off, Multiple Label, and Single Label. <i>See Chapter 8: Print & Peel for more information.</i>

Ready State & Adjust Menu

Options in this category are accessed in two ways. You can access these options by pressing the NEXT or PREVIOUS keys while the printer is in a Ready state, or you can pause the printer and access them via the Adjust menu. The following sections detail each of the features within this menu category.

Print Intensity

The printhead intensity determines the temperature of the printhead heating elements. The amount of heat applied to the thermal transfer ribbon determines the darkness of the print. The amount of heat that is actually applied to the film by the printhead is determined by two factors:

- Length of time that power is applied to the printhead
- Rate at which the media is traveling under the printhead

The print intensity setting determines the first factor and the second is controlled by the print speed. The printer has 32 discrete heat settings. A setting of 1 is the coolest setting, resulting in the lightest print. A setting of 32 is the hottest setting, resulting in the darkest print. The appropriate heat setting will vary depending on the media and ribbons being used as well as the print speed setting. As a general guideline, the ribbon types listed below will function best in the following print intensity ranges:

Ribbon Type	Range
Wax	1 - 12
Wax / Resin	10 - 20
Resin	16 - 32

In general, lower-quality media that requires more heat to produce a satisfactory image is less advantageous in terms of speed and performance than higher-quality media that images easily and quickly at lower temperatures. If you use media that requires more heat, it is recommended that you set the print speed to a slower rate.

Note: Some thermal transfer ribbon (typically, Resin type) reacts differently, actually printing lighter if too much heat is applied. This is a result of over-burning the ink. If this occurs, decreasing the heat will darken the printed image.

To set printhead intensity via the front panel:

- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.

Pause: Adjust
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Intensity menu for the print station you want to adjust is displayed.

Intensity
Head 1 = 16

Note: Head 1 is the station closest to the media exit. Heads 2, 3, and 4 are positioned sequentially behind head 1.

- 3 With the desired print station appearing on the display, press the + or – key until the print intensity setting you want is displayed. Intensity settings range from 1 to 32.

Note: In most cases, higher intensities result in darker prints. Similarly, lower intensities generally result in lighter prints.

- 4 Press the SELECT key to confirm your choice.

Print Speed

This function allows you to choose the printing speed. The printer is capable of printing at speeds of 2 – 7 in/s (inches per second) in 1 in/s increments.

To set the print speed via the front panel:

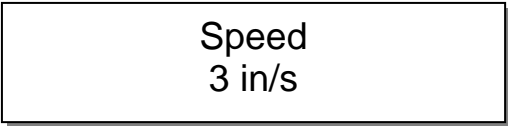
- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.



Pause: Adjust
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Speed menu is displayed.



Speed
3 in/s

- 3 Press the + or – key until the desired print speed is displayed. Available print speeds are 2, 3, 4, 5, 6, or 7 inches per second.
- 4 Press the SELECT key to confirm your choice.

Note: Setting the print speed via software will always override this setting. You can set the print speed via Custom QuickLabel or the QuickLabel Windows Printer Driver.

Note: The printer's maximum speed will depend on the content of the format. For example, formats with incrementing or database fields may have to be printed at slower speeds.

Print Line Adjustment

Print line adjustments allow you to align the printing of each of the four print stations to obtain accurate color registration in the media travel direction.

These adjustments are made for print stations 1, 2, and 3 using print station 4 as a stationary reference. As such, there is no print line adjustment available for print station 4.

Print line adjustments are used to compensate for minor variations in printhead or media positions, and may be needed when media is changed or a printhead is replaced.

Once this procedure has been performed, it rarely needs to be repeated during normal operation. Print line adjustments are best performed dynamically while the QLS-4100 Xe is printing a block test pattern.

To perform a print line adjustment:

- 1 Select the slowest print speed for the adjustment process to conserve media and ribbon. For more information on changing print speed, refer to the print adjustment menu functions described in this chapter.
- 2 Print the Proc. Block Pattern (CMYK) test pattern. For more information on printing the test pattern, refer to the cal & setup menu functions described in this chapter.

Printing will continue throughout the adjustment process until the printer is paused or the operating state of the printer is changed. The pattern on the test labels will show each of the current print stations providing a visual indication of how much adjustment each print station location needs.

- 3 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.

Pause: Adjust
Press SELECT

- 4 Press the NEXT or PREVIOUS key until the Print Line Adj menu for the printhead you want to adjust is displayed.

Print Line Adj
Head 1 = +0

- 5 Press the + or – key to shift the selected print position in the desired direction. Increasingly positive values will move the print position up on the label. Increasingly negative values will move the print position down on the label.
- 6 When you are satisfied with the position, press the SELECT key to confirm your choice.
- 7 Repeat steps 4 – 6 until each of the printed bars for stations 1, 2, and 3 are properly aligned with the bars for station 4.

Note: An efficient way to shift the print line for a given print station is to measure the variation from the reference bar in the test pattern.

Recall that print stations 1, 2, and 3 are adjusted while referencing print station 4. For example, if the bar printed on station 1 is measured to be misaligned with the reference bar printed on station 4 by 2 millimeters, you know that you need to shift station 1 by 24 pixels.

The direction of misalignment will dictate whether you move the print line +24 or -24. Negative values adjust the line on the label away from the printer; positive values adjust the line toward the printer.

Cross Web Adjustment

Cross Web Adjustments allow you to align the printing of each of the four print stations to obtain accurate color registration across the width of the label. These adjustments can be made for print stations 1, 2, 3 and 4. One print station is typically used as a reference and left unchanged while the other three stations are adjusted relative to the reference station.

Cross web adjustments are used to compensate for minor variations in printhead position, and may be needed when a printhead is replaced.

This procedure is typically performed in conjunction with a Print Line Adjustment. Once this procedure has been performed, it rarely needs to be repeated during normal operation. Cross web adjustments are best performed dynamically while the QLS-4100 Xe is printing a block test pattern.

To perform a cross web adjustment:

- 1 Select the slowest print speed for the adjustment process to conserve media and ribbon. For more information on changing print speed, refer to the print adjustment menu functions described in this chapter.
- 2 Print the Proc. Block Pattern (CMYK). For more information on printing the test pattern, refer to the calibration & setup menu functions described in this chapter.

Printing will continue throughout the adjustment process until the printer is paused or the operating state of the printer is changed. The pattern on the test labels will show each of the current print stations providing a visual indication of how much adjustment each print station location needs.

- 3 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.

Pause: Adjust
Press SELECT

- 4 Press the NEXT or PREVIOUS key until the Cross Web Adj menu for the printhead you want to adjust is displayed.

Cross Web Adj
Head 1 = <-2

- 5 Press the + or – key to shift the selected print position in the desired direction.

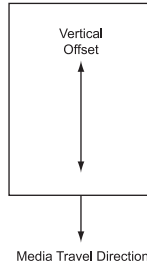
The value range is <16 to 16>. The direction of the arrow indicates the position of the print relative to the center of the printhead. The total range is 32 dots with 16 dots to the left and right of the printhead center.

- 6 When you are satisfied with the position, press the SELECT key to confirm your choice.
- 7 Continue making adjustments until you observe that the blocks in the test pattern are horizontally aligned.

When all the blocks are aligned in the media travel and the cross web directions, and the black block prints without any color shadows, the color alignment is optimal.

Vertical Offset

By default, when printing on media with registration marks (gaps, reflective marks, etc.), the printer will place the label image area between the registration marks. You can vertically adjust the print registration in fine increments to move the printed image relative to the sensor mark.



Adjusting the vertical offset affects each of the four print stations at the same time. To adjust the print stations individually, refer to the section on print line adjustments.

To set the vertical offset via the front panel:

- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.

Pause: Adjust
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Vertical Offset menu is displayed.

Vertical
Offset = + 16

- 3 Press the + or – key until the desired vertical offset setting is displayed.

Offset settings range from – 1200 to + 1200 pixels (or dots). On the QLS-4100 Xe, there are 12 pixels per millimeter.

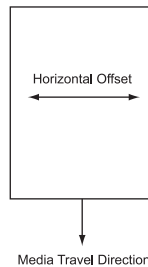
Negative values move the image down on the label (out away from the printer). Positive values move the image up the label (in toward the printer).

- 4 Press the SELECT key to confirm your choice.

Note: Setting the offset via software will always override this setting. You can set the offset via Custom QuickLabel or the QuickLabel Windows Printer driver.

Horizontal Offset

You can horizontally adjust the print registration in fine increments to move the printed image.



Adjusting the horizontal offset affects each of the four print stations at the same time. To adjust the print stations individually, refer to the section on cross web adjustments.

To set the horizontal offset via the front panel:

- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.

Pause: Adjust
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Horizontal Offset menu is displayed.

Horizontal
Offset = < 16

- 3 Press the + or – key until the desired horizontal offset setting is displayed.

Offset settings range from <- 1200 to -> 1200 pixels (or dots). On the QLS-4100 Xe, there are 12 pixels per millimeter. The final image position will be constrained by the label width.

- 4 Press the SELECT key to confirm your choice.

Partially printed labels under the printheads will finish printing using the previous offset to ensure color alignment. During this time, you cannot adjust the cross web or horizontal offset values. The new horizontal adjustment will affect subsequent labels.

Note: Setting the offset via software will always override this setting. You can set the offset via Custom QuickLabel.

Display Counter

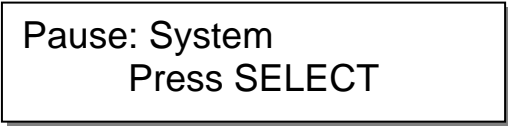
The printer can dynamically display either the ongoing total number of labels that have been printed since the printer was last powered up or the number of labels that have been printed within any specific batch or print job. The printer's label counting feature can also be turned off.

Note: The counter will disappear while menus are being navigated during printing. The counter will be displayed and updated when the QLS-4100 Xe resumes printing labels.

To set up the counter:

- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.

A rectangular box with a double border containing the text "Pause: System" on the top line and "Press SELECT" on the bottom line.

Pause: System
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Display Cntrs menu is displayed.

A rectangular box with a double border containing the text "Display Cntr" on the top line and "Off" on the bottom line.

Display Cntr
Off

- 3 Press the + or – key until the desired counter setting is displayed. The following options are available.

Off – No counter is displayed.

Total – Count of labels printed since last power on is displayed

Batch – Count of labels printed in current batch is displayed

The selected counter mode will now appear on the display while printing.

Cut Offset

When printing on media with registration marks (gaps, reflective marks, etc.), the printer will place the label image area between the registration marks. If necessary, you can adjust the location of the cut line relative to the printed image. The cut offset can be used to move the cut line forward or backward with respect to the top of the label.

To adjust the cut position:

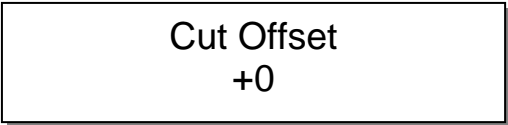
- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.



Pause: Adjust
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Cut Offset menu is displayed.



Cut Offset
+0

- 3 Press the + or – key until the desired cut offset setting is displayed.

Cut offset settings are –1200 through +1200 dots. Negative values move the cut line toward the bottom of the tag. Positive values move the cut line toward the top of the tag.

- 4 Press the SELECT key to confirm your choice.

Note: Setting the cut offset via software will always override this setting. You can set the cut offset via Custom QuickLabel or the QuickLabel Windows Printer driver.

Note: The vertical offset will affect the cut offset. As a rule, the vertical offset should be set first.

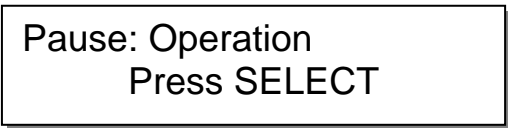
Label Reprint

When using the QuickLabel Printer Driver for Windows to print to the QLS-4100 Xe, data is transmitted from the PC software application to the printer as a bitmapped image. You can use the Reprint option to quickly print any quantity of the last label printed.

To reprint labels:

- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Operation menu is displayed. Then press the SELECT key.

A rectangular box with a double border containing the text "Pause: Operation" on the first line and "Press SELECT" on the second line.

Pause: Operation
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Label Reprint menu is displayed.

A rectangular box with a double border containing the text "Label Reprint" on the first line and "Copies = 1" on the second line.

Label Reprint
Copies = 1

- 3 Press the + or – key to specify the number of the last labels you wish to reprint. You can reprint up to 999 copies.
- 4 Press the SELECT key. The quantity you specified will be printed.

Form Stop Adjust

When labels are printed, they are advanced from the front of the printer for removal. In Print & Peel single label mode, you can increase/decrease the distance labels are advanced after printing.

Note: This option is available only in Print & Peel single label mode. For more information about Print & Peel, refer to *Chapter 8: Print & Peel*.

Peel Delay

When labels are printed, they are advanced from the front of the printer for removal. After you remove a label, the printer will wait for a specified amount of time before performing the next action (pulling media back, advancing another label, etc.). You can adjust this time if necessary.

Note: This option is available only in Print & Peel modes. For more information about Print & Peel, refer to *Chapter 8: Print & Peel*.

Cal & Setup Menu

Calibration & setup options are accessed via the Cal & Setup menu. The following sections detail each of the features within this menu category.

Calibrate

Calibrating the printer for the type of media being used is essential and is the first procedure that must be performed prior to printing and whenever the media type is changed. If the printer is not properly calibrated, any of the following may occur:

- Printer will not initiate printing
- Media advances but no image is printed
- Printer will report a Media Out error
- Image placement is incorrect or the printed image is clipped
- Custom QuickLabel software reports an error

The calibration process automatically senses any gap, notch or index mark on the media. This allows the printer to position widely varying types of media automatically and correctly. The printer stores the last calibration in non-volatile memory. The printer's internal label queue is reset during the calibration process. Any labels pending in the queue are terminated.

Refer to the calibration procedures outlined in Chapter 3 for detailed information about calibrating the printer.

Test Print

The QLS-4100 Xe is equipped with a number of built-in test patterns used for checking color alignment, print quality, and printhead integrity.

To perform a test print:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.



Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Test Print menu is displayed.



Test Print
Test Pattern = 1 in.

- 4 Press the + or – key until the test pattern is displayed. The following test patterns are available.

Test Pattern 1" to 5" – Prints a crosshatch pattern to check print quality.

Block Pattern (All) – Prints a spot color block pattern used for color alignment.

Proc. Block (CMYK) – Prints a process block pattern used for color alignment.

Proc. Block (KCMY) – Prints a process block pattern used for color alignment.

Horiz. Line Pattern – Used to check printhead angularity.

Large Blocks 1" to 5" – Prints a solid block of each color.

- 5 Press the SELECT key to confirm your choice.

The printer will immediately begin to print labels showing the selected test pattern. Printing will continue until the printer is paused or the CANCEL key is pressed.

Vertical Baseline

This function is used to synchronize printing when using multiple QLS-4100 Xe printers. If you are sending the same image file to two or more printers and notice that the image prints in different vertical locations, you can use this function to move the vertical baseline of a printer.

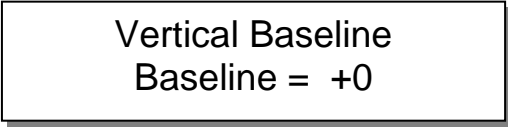
To adjust the vertical baseline:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.



Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Vertical Baseline menu is displayed.



Vertical Baseline
Baseline = +0

- 4 Press the + or – key until the desired baseline setting is displayed. Baseline settings range from -120 through +120 dots.
- 5 Press the SELECT key to confirm the baseline.
- 6 Repeat this process on each printer requiring a baseline adjustment.

Horizontal Baseline

This function is used to synchronize printing when using multiple QLS-4100 Xe printers. If you are sending the same image file to two or more printers and notice that the image prints in different horizontal locations, you can use this function to move the horizontal baseline of a printer.

To adjust the horizontal baseline:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.

Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Horizontal Baseline menu is displayed.

Horizontal Baseline
Baseline = 0

- 4 Press the + or – key until the desired baseline setting is displayed. Baseline settings range from <-120 through -> 120 dots.
- 5 Press the SELECT key to confirm the baseline.
- 6 Repeat this process on each printer requiring a baseline adjustment.

Printer Settings

This function prints all of the current settings of the printer using the printhead of your choice.

To print current printer settings:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.

Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Printer Settings menu is displayed.

Printer Settings
Print With Head 1

- 4 Press the + or – key to specify the printhead that will be used to print the settings.
- 5 Press the SELECT key to print out a listing of current settings for the QLS-4100 Xe.

The sample report shown below indicates the type of information that will be printed.

QLS-4100 Xe Settings:

SPEED = 2 INCHES/SEC
INTENSITY (1, 2, 3, 4): 15, 15, 15, 15
OFFSET: V = 0 (0), H = 0 (0), C = 0
PRINT LINE ADJ (1, 2, 3): -23, -9, -8
CROSS WEB ADJ (1, 2, 3, 4): 0, 0, < 7, <8
DROP/LIFT (1, 2, 3, 4): 12, 12, 12, 12
CONTINUOUS MEDIA 100 mm (1200 pixels)
CALIBRATION: YES (gap = 38 pixels)
COMPACT FLASH: NO
v01.4 (0x00:00:00:1D) (fmt err = 0)
MEDIA USE: (101) 198 meters
FILM 1 USE: (56) 56 meters
FILM 2 USE: (167) 167 meters
FILM 3 USE: (146) 146 meters
FILM 4 USE: (80) 80 meters
HEAD 1 USE: (31) 31 times
HEAD 2 USE: (54) 54 times
HEAD 3 USE: (42) 42 times
HEAD 4 USE: (20) 20 times

Notes: The OFFSET line displays the vertical offset, vertical baseline (in parentheses), horizontal offset, horizontal baseline (in parentheses), and the cut offset.

The “fmt err” value reports the last format error generated. This value will be 0 if no format errors have occurred since power-up.

Variable Maximum Gap

This function allows you to set the maximum gap between labels to a value between 1-200mm. This feature is useful when using small labels (< 50mm long) and can be used to ensure that a missing label on the roll will not go undetected.

To adjust the maximum gap:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.

Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Maximum Gap menu is displayed.

Maximum Gap (mm)
Max Gap = 200

- 4 Press the + or – key to set the maximum gap from 1-200mm.
- 5 Press the SELECT key to confirm.

Cutter Baseline

This function is used to synchronize printing when using multiple cutters. If you are sending the same image file to two or more printers/cutters and notice that the cutter cuts in different vertical locations, you can use this function to move the vertical baseline of a cutter.

Cutter baseline adjusts the position of the cut line with respect to Cut Offset. Possible values range from -120 to +120 dots.

To adjust the cutter baseline:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.

Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Cutter Baseline menu is displayed.

Cutter Baseline
Baseline = 0

- 4 Press the + or – key until the desired baseline setting is displayed. Baseline settings range from -120 through +120 dots. Negative values move the cut line toward the bottom of the tag. Positive values move the cut line toward the top of the tag.
- 5 Press the SELECT key to confirm the baseline.

Operation Menu

Operation options are accessed via the Operation menu. The following sections detail each of the features within this menu category.

Pull Back

When the QLS-4100 Xe stops printing, a section of blank media will extend from the printhead near the rear of the printer (print station #4) to the front of the printer. When you start printing again, this section of blank media will be advanced out of the QLS-4100 Xe as printing begins.

The pull back function allows you to pull back the blank media section. When the next print job begins, the section will be used for printing. This feature requires a compressed air connection and special hardware. It should only be used in applications that have been pre-qualified by QuickLabel.

Contact QuickLabel for more information on the pull back function.

The pull back function provides two modes:

Pull Back (Manual) - In Manual mode, there are two ways to activate a media pull back. One method involves selecting it from the Operation menu. Alternately, the FORM FEED button can be used to quickly activate the media pull back function.

Pull Back (Auto) - In Automatic mode, the printer automatically performs the pull back operation after a queue is finished printing.

Note: The pull back feature must be enabled before use. The Pull Back Enable/Disable function is available from the Options menu.

To activate manual media pull back with the Operation menu:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Operation menu is displayed. Then press the SELECT key.

Pause: Operation
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Pull Back menu is displayed.

Pull Back
Press SELECT

- 4 Press the SELECT key. A message will be displayed to confirm Pull Back operation.

Pull Back
SELECT to confirm

- 5 Press the SELECT key.

The printer will begin rewinding media until the last unprinted label is positioned just behind the media sensor.

If a Pull Back operation has been requested and a print batch has not been sent to the printer or the media has been moved in any way (i.e. Form Feed, Calibrate, Test Print, etc.) the following error message will be displayed.

Pull Back Off
Media Moved / No Batch

To activate manual media pull back with the FORM FEED button:

- 1 While the printer is in a Ready state, press the FORM FEED key.

The printer will begin rewinding media until the last unprinted label is positioned just behind the media sensor.

If a Pull Back operation has been requested and a print batch has not been sent to the printer or the media has been moved in any way (i.e. Form Feed, Calibrate, Test Print, etc.) the following error message will be displayed.

Pull Back Off
Media Moved / No Batch

Note: The FORM FEED key will activate the pull back feature only when the printer is in the Ready state. If the printer is paused, the FORM FEED key will operate normally, advancing the media when pressed.

To activate automatic media pull back:

In Automatic mode, the printer automatically performs the pull back operation after a queue is finished printing. No manual intervention is necessary.

Label Reprint

When using the QuickLabel Printer Driver for Windows to print to the QLS-4100 Xe, data is transmitted from the PC software application to the printer as a bitmapped image. You can use the Reprint option to quickly print any quantity of the last label printed.

To reprint labels:

- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Operation menu is displayed. Then press the SELECT key.



Pause: Operation
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Label Reprint menu is displayed.



Label Reprint
Copies = 1

- 3 Press the + or – key to specify the number of the last labels you wish to reprint. You can reprint up to 999 copies.
- 4 Press the SELECT key. The quantity you specified will be printed.

Synchronize Labels

This function applies **only** to users integrating the printer with a label applicator or Print & Peel (Multiple Label mode) system. The synchronize labels function synchronizes the printing of labels with the label applicator or Print & Peel base. This process is an initialization of the printer and media. A synchronization must be performed after the following conditions:

- Power up
- Media out, after the media has been replaced
- Thermal Transfer Ribbon out, after the ribbon has been replaced
- After running the test pattern
- After performing a media calibration
- After performing a form feed
- After performing a media advance

Note: You should never perform calibration, form feed, media advance, or test pattern functions while labels are printing. Any of these operations will clear all label formats from the internal queue and require synchronization.

To synchronize labels:

- 1 When the printer is in the “Applicator Paused” or “Print & Peel Paused” state, press the NEXT or PREVIOUS key until the Operation menu is displayed. Then press the SELECT key.

Pause: Operation
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Synchronize Labels menu is displayed.

Synchronize Labels
Press SELECT

- 3 Press the SELECT key. The printer will feed one or two labels and then be ready for applicator mode or Print & Peel Multiple Label mode operation. If no labels feed, the printer did not require synchronization.
- If the following message appears, the front panel pause is enabled and the synchronize function will not operate. The printer must be in the “Applicator Paused” or “Print & Peel Paused” state to perform the synchronize function.

**Cannot Synchronize
Printer Is Paused**

- If the following message appears, the printer is calibrated for continuous media. Continuous media cannot be used with a label applicator system.

**Cannot Synchronize
Continuous Media Cal**

Ribbon Menu

Ribbon options are accessed via the Ribbon menu. The following sections detail each of the features within this menu category.

Ribbon Type

Selecting a ribbon type allows you to select a printhead heat and history profile that has been tailored to a specific media and ribbon combination. This feature enables the QLS-4100 Xe to print on an even wider range of specialty materials.

To change the ribbon type:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Ribbon menu is displayed. Then press the SELECT key.

A rectangular box with a double border containing the text "Pause: Ribbon" on the top line and "Press SELECT" on the bottom line.

Pause: Ribbon
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Ribbon Type menu is displayed.

A rectangular box with a double border containing the text "Ribbon Type" on the top line and "Standard" on the bottom line.

Ribbon Type
Standard

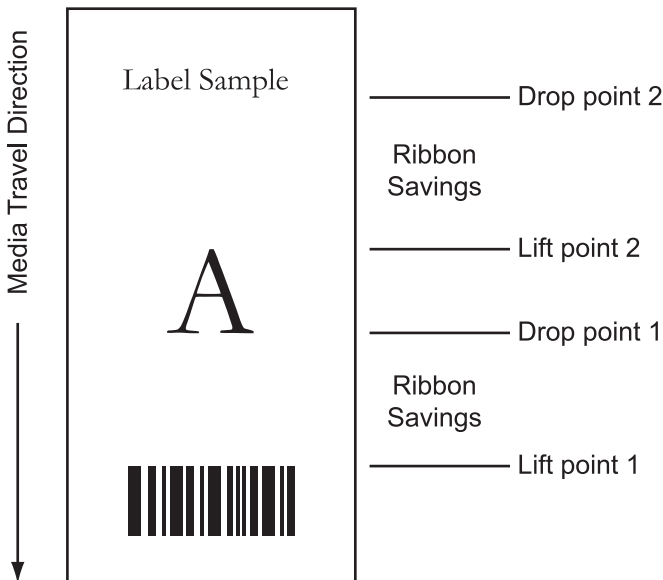
- 4 Press the + or – key until the desired ribbon type is displayed. You can choose from standard or resin/synthetic ribbon.
- 5 Press the SELECT key to confirm your ribbon choice.

Note: The standard profile should be selected for most applications unless otherwise specified by QuickLabel.

Drop/Lift Adjust

The QLS-4100 Xe is equipped with QuickLabel's patented RibbonRation™ technology. This feature automatically determines when to enable or disable each of the four print stations, thus consuming thermal transfer ribbon only when a particular color is needed.

In some cases, multiple drop/lift points will be used on individual labels. The number of drops and lifts depends on the size of the label. The following diagram illustrates sample drop/lift points, and the resulting ribbon savings, for a particular print station.



The Drop/Lift Adjust function enables you to fine tune the point at which a printhead will drop for printing of a subsequent color. In some applications, dropping the printhead earlier results in smoother color application and reduces the tendency for film wrinkle.

Note: In most cases, the default drop values will be optimal. However, if film wrinkling seems excessive, use the following procedure to change the drop point of the corresponding print station.

To use the Drop/Lift Adjust function:

- 1** If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2** Press the NEXT or PREVIOUS key until the Ribbon menu is displayed. Then press the SELECT key.

Pause: Ribbon
Press SELECT

- 3** Press the NEXT or PREVIOUS key until the Drop/Lift Adjust menu for the desired printhead is displayed.

Drop/Lift Adjust
Head 3 = 6

- 4** Press the + or – key until the desired drop setting is displayed. Drop settings range from 0 to 40 mm. The default value is 6. Increasing this value will cause the printhead to drop sooner, and decreasing the value will cause the printhead to drop later.
- 5** Press the SELECT key to confirm your choice.

Any changes will take effect only after a new label is sent.

Ribbon Sensor

This function is for use by QuickLabel technicians when performing diagnostics at the factory. In general use, the Ribbon Sensor should always be enabled.

To adjust the ribbon sensor:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Ribbon menu is displayed. Then press the SELECT key.

A rectangular box with a double border containing the text "Pause: Ribbon" on the first line and "Press SELECT" on the second line.

Pause: Ribbon
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Ribbon Sensor menu is displayed.

A rectangular box with a double border containing the text "Ribbon Sensor" on the first line and "Enabled" on the second line.

Ribbon Sensor
Enabled

- 4 Press the + or – key until the desired sensor setting is displayed. Available options are Enabled or Disabled. Under normal operating conditions, the sensor should be enabled.
- 5 Press the SELECT key to confirm your choice.

Caution: This capability is intended for factory diagnostics only. Do not disable the sensor. Use of the printer with the ribbon sensor disabled could result in damage to the printhead (due to overheating) and/or poor print quality.

Communications Menu

Communications options are accessed via the Communications menu. The following sections detail each of the features within this menu category.

Data Port

The host computer transfers label formats, images, and fonts to the printer via a designated data port. The host computer transfers information about the printer's status via a status port.

Either the parallel port, serial port, or Ethernet connection can be used as the data port. Only one of these communication channels be used as the data port; the others are used as status ports. However, a data port can also be used as a status port if the channel is bi-directional, which means it can transmit and receive data.

You can change the data port using the Data Port menu option.

Note: If data port-specific commands are received via the status port, an error will occur.

**Data Port Error
Check Comm Setup**

To select a data port:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

**Pause: Communications
Press SELECT**

- 3 Press the NEXT or PREVIOUS key until the Data Port menu is displayed.

**Data Port
Parallel**

- 4 Press the + or – key until the desired data port is displayed. Available options are Parallel, Serial, or Ethernet.
- 5 Press the SELECT key to confirm your choice.

Parallel Mode

If you are using the parallel port to connect the printer to a host computer, you can select a parallel port mode. The parallel port mode determines the method of communication used between the host and the printer.

Note: This option is only available on printers with a parallel port.

The default setting is Auto mode. Auto mode attempts to communicate via an ECP (Extended Capabilities Port) connection. If it cannot communicate via this method, it will automatically switch to standard mode, which uses a common Centronics method of communication.

The supplied parallel or high-speed IEEE-1284 parallel cable should be used to ensure reliable performance.

To select a parallel mode:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

Pause: Communications
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Data Port menu is displayed.

Parallel Mode
Auto

- 4 Press the + or – key until the desired parallel mode is displayed. Available options are Auto, or Standard.
- 5 Press the SELECT key to confirm your choice.

RS232 Baud Rate

If you are using the RS232 serial port connection, you can configure the printer to use one of four specific baud rates.

To select a baud rate:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

Pause: Communications
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the RS232 Baud Rate menu is displayed.

RS232 Baud Rate
19200

- 4 Press the + or – key until the desired baud rate is displayed. Available options are 4800, 9600, 19200, or 38400.
- 5 Press the SELECT key to confirm your baud rate choice.

RS232 Handshaking

If you are using the RS232 serial port connection, you can configure the printer handshaking method.

To select a handshaking method:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

Pause: Communications
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the RS232 Handshaking menu is displayed.

RS232 Handshaking
Hardware

- 4 Press the + or – key until the desired handshaking method is displayed. Available options are Hardware or XON/XOFF.
- 5 Press the SELECT key to confirm your handshaking choice.

TCP/IP: IP Address

A TCP/IP address uniquely identifies each device connected to your network. If you are using ethernet to connect your printer to a network, you will need to assign a TCP/IP address to your QLS-4100 Xe printer.

The default TCP/IP address is 192.168.255.1.

Note: For more detailed information on the topic of networking, refer to the documentation applicable to your network environment and/or contact your network administrator.

To set the TCP/IP address:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

Pause: Communications
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the TCP/IP Address menu is displayed.

TCP/IP Address
192.168.255.1

- 4 Press the + or – key to increase or decrease the first number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the second number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the third number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the fourth number in the address, then press the SELECT key.

- 5 Press the SELECT key to confirm the TCP/IP address.

TCP/IP Subnet Mask

You will use the TCP/IP Subnet Mask option in the Communications menu to set a subnet mask for the QLS-4100 Xe printer.

The default subnet mask is 255.255.255.1.

Note: For more detailed information on the topic of networking, refer to the documentation applicable to your network environment and/or contact your network administrator.

To set the TCP/IP subnet mask:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

Pause: Communications
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the TCP/IP Subnet Mask menu is displayed.

TCP/IP Subnet Mask
255.255.255.1

- 4 Press the + or – key to increase or decrease the first number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the second number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the third number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the fourth number in the address, then press the SELECT key.

- 5 Press the SELECT key to confirm the TCP/IP subnet mask.

TCP/IP Gateway

You will use the TCP/IP Gateway option in the Communications menu to set a subnet mask for the QLS-4100 Xe printer.

The default gateway is 0.0.0.0.

Note: For more detailed information on the topic of networking, refer to the documentation applicable to your network environment and/or contact your network administrator.

To set the TCP/IP gateway:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

Pause: Communications
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the TCP/IP Gateway menu is displayed.

TCP/IP Gateway
0.0.0.0

- 4 Press the + or – key to increase or decrease the first number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the second number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the third number in the address, then press the SELECT key.

Press the + or – key to increase or decrease the fourth number in the address, then press the SELECT key.

- 5 Press the SELECT key to confirm the TCP/IP gateway.

TCP/IP Connections

You will use the TCP/IP Connections option in the Communications menu to select whether the TCP/IP status socket is enabled. By default, the status socket is enabled.

Note: If you are using Custom QuickLabel in bidirectional communication mode, the TCP/IP status socket must be enabled.

For more detailed information on the topic of networking, refer to the documentation applicable to your network environment and/or contact your network administrator.

To set the TCP/IP connections option:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Communications menu is displayed. Then press the SELECT key.

Pause: Communications
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the TCP/IP Connections menu is displayed.

TCP/IP Connections
Two

- 4 Press the + or – key to change the value.
 - **One** - If you select this option, the TCP/IP status socket will be disabled.
 - **Two** - If you select this option, the TCP/IP status socket will be enabled.

Note: On some printer models, the port number selection is indicated in parentheses (2864 or 9100).

- 5 Press the SELECT key to confirm the TCP/IP connection option.

System Menu

System options are accessed via the System menu. The following sections detail each of the features within this menu category.

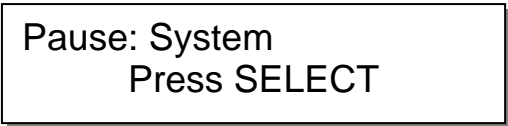
Display Counter

The printer can dynamically display either the ongoing total number of labels that have been printed since the printer was last powered up or the number of labels that have been printed within any specific batch or print job. The printer's label counting feature can also be turned off.

To set up the counter:


- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.



Pause: System
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Display Cntrs menu is displayed.



Display Cntr
Off

- 3 Press the + or – key until the desired counter setting is displayed. The following options are available.

Off – No counter is displayed.

Total – Count of labels printed since last power on is displayed

Batch – Count of labels printed in current batch is displayed

The selected counter mode will now appear on the display while printing.

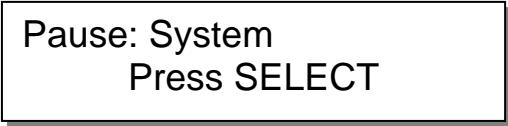
Memory Card - Write Protection

Memory cards allow you to save fonts, bitmap images, and other configuration information in a portable format. Memory cards use non-volatile memory, so the contents of the card remain intact even after the printer is powered off.

You can write protect memory cards to prevent contents from being accidentally erased while using the printer. However, write protection will not protect the memory card data if the card is used with a PC reader.

To write protect the memory card:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.



Pause: System
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Memory Card menu is displayed.



Memory Card
Write Protect ON

- 4 Press the + or – key until the desired memory card protection setting is displayed. Possible settings are On or Off.
- 5 Press the SELECT key to confirm your choice.

Front Panel Lock/Unlock

The Front Panel Lock/Unlock feature allows you to lock the menu, preventing unauthorized users from modifying printer settings. The front panel is locked and unlocked with a user-defined four-digit password.

When the front panel is locked, users can scroll through the menus, but cannot make any changes. The only available features are PRINT/PAUSE, FORM FEED/ADVANCE, Printer Settings, and Front Panel Unlock.

An “X” character will appear on the Ready and Pause displays to indicate the front panel is locked.

Ready	X
-------	---

Pause	X
-------	---

To lock the front panel:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.

Pause: System Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Front Panel Lock menu is displayed.

Front Panel Lock 0000

- 4 Press the + or – key to increase or decrease the first number in the password, then press the SELECT key.

Press the + or – key to increase or decrease the second number in the password, then press the SELECT key.

Press the + or – key to increase or decrease the third number in the password, then press the SELECT key.

Press the + or – key to increase or decrease the fourth number in the password, then press the SELECT key.

- 5 Press the SELECT key to lock the front panel using the specified password.

To unlock the front panel:

- 1 If the locked printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.



Pause: System
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Front Panel Unlock menu is displayed.



Front Panel Unlock
0000

- 4 Press the + or – key to increase or decrease the first number in the password, then press the SELECT key.

Press the + or – key to increase or decrease the second number in the password, then press the SELECT key.

Press the + or – key to increase or decrease the third number in the password, then press the SELECT key.

Press the + or – key to increase or decrease the fourth number in the password, then press the SELECT key.

- 5 Press the SELECT key to unlock the front panel using the appropriate password.

Memory Card - Formatting

Memory cards must be formatted before they can be used. If you have a memory card inserted in the memory card slot, which is located on the rear panel, use the following instructions to format the card. The memory card write protection setting must be off to allow memory card formatting.

Note: Use caution when formatting memory cards. Formatting a memory card permanently erases all data on the card.

To format the memory card:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.

Pause: System
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Format Memory Card menu is displayed.

Format Memory Card
Press SELECT

- 4 Press the SELECT key. A confirmation message will be displayed before the memory card is formatted.

Volume: QLSXE_00
SELECT to Confirm

- 5 To confirm the formatting, press the SELECT key. To cancel formatting and return to the main Pause menu, press the PRINT/PAUSE key. When you confirm formatting, a status message will display.

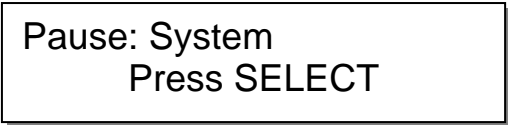
Format Complete

Time

The QLS-4100 Xe provides a built-in, real-time clock that is used for displaying the time and date. It is also used to provide a time/date stamp for fonts and images. You will use the Time menu option to set the time for the clock.

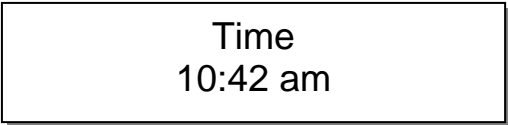
To set the time:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.



Pause: System
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Time menu is displayed.



Time
10:42 am

- 4 Press the + or – key until the desired hour setting is displayed, then press the SELECT key.

Press the + or – key until the desired minute setting is displayed, then press the SELECT Key.

Press the + or – key until the desired am/pm setting is displayed, then press the SELECT Key.

- 5 Press the SELECT key to confirm the time. At this point, the time is stored with seconds set to zero.

Date

The QLS-4100 Xe provides a built-in, real-time clock that is used for displaying the time and date. It is also used to provide a time/date stamp for fonts and images. You will use the Date menu option to set the date.

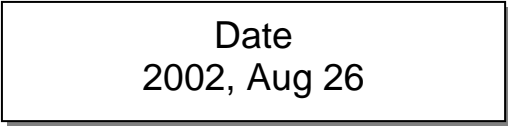
To set the date:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.



Pause: System
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Date menu is displayed.



Date
2002, Aug 26

- 4 Press the + or – key until the desired year setting is displayed, then press the SELECT key.

Press the + or – key until the desired month setting is displayed, then press the SELECT Key.

Press the + or – key until the desired day setting is displayed, then press the SELECT Key.

- 5 Press the SELECT key to confirm the date.

Factory Reset

The factory reset feature of the QLS-4100 Xe returns all parameters available through the printer's front panel to their factory default values. Use the procedure in this section to perform a factory reset to return the printer to the default values listed below.

Factory default values

TCP/IP address	192.168.255.1
TCP/IP mask	255.255.255.1
TCP/IP gateway	0.0.0.0
Data port	Parallel*
Parallel mode	Auto
Baud rate	19200
RS232 handshaking	DTR/DSR
Calibrate	Continuous
Speed	3 in/sec
Intensity (heads 1-4)	16
Vertical offset	0
Horizontal offset	0
Counter	Off
Mirror mode	Off
Cut flag	Off
Cut offset	0
Print line adj. (heads 1-3)	0
Cross web adj. (heads 1-4)	0
Vertical baseline	0
Horizontal baseline	0
Drop/Lift Adjust	6
Cutter	Disabled
Ribbon sensor	Enabled
Ribbon type	Standard
Pull back	Disabled
Applicator	Disabled
Memory card write protect	Off
Form stop adjust	0
Peel delay	.5 sec
Print & Peel mode	Off

*On printer models with a parallel port

To perform a factory reset:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the System menu is displayed. Then press the SELECT key.

Pause: System
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Factory Reset menu is displayed.

Factory Reset
Press SELECT

- 4 Press the SELECT key to reset parameters to the factory default values.

Note: It is recommended that you print the printer settings before performing a factory reset to aid in restoring color alignment at a later time.

Options Menu

Other options are accessed via the Options menu. The following sections detail each of the features within this menu category.

Mirror Mode

The QLS-4100 Xe has the ability to print labels in a mirror image format. This format is useful when printing on transparent media to be applied to a transparent surface such as glass. This mode mirrors the printed image horizontally.

To enable or disable mirror mode:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.



Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Mirror Mode menu is displayed.



Mirror Mode
Off

- 4 Press the + or – key until the desired setting is displayed. Available options are On or Off.
- 5 Press the SELECT key to confirm your choice.

Cutter

If using an optional cutter or cutter/stacker accessory, you can enable it using the Cutter menu option.

To enable or disable the cutter:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

A rectangular box with a thin black border containing the text "Pause: Options" on the first line and "Press SELECT" on the second line.

Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Cutter menu is displayed.

A rectangular box with a thin black border containing the text "Cutter" on the first line and "Enabled" on the second line.

Cutter
Enabled

- 4 Press the + or – key until the desired setting is displayed. Available options are Enabled or Disabled.
- 5 Press the SELECT key to confirm your choice.

Cut Flag

When using an optional cutter or cutter/stacker accessory, it is possible to enable or disable the insertion of extra blank tags to demarcate or flag the end of a batch.

When enabled, the printer will automatically insert one long and one short blank tag between batches. The longer tag is approximately 10 mm longer than the printed tag length. This extra length will allow you to quickly identify separate batches. With the flag enabled, the minimum tag length is **38 mm**.

To enable or disable the cut flag:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

A rectangular box with a thin black border containing the text "Pause: Options" on the top line and "Press SELECT" on the bottom line.

Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Cut Flag menu is displayed.

A rectangular box with a thin black border containing the text "Cut Flag" on the top line and "Off" on the bottom line.

Cut Flag
Off

- 4 Press the + or – key until the desired setting is displayed. Available options are On or Off.
- 5 Press the SELECT key to confirm your choice.

Note: Do not select Append Flag or Set as Flag in Custom QuickLabel if the flag is enabled via the front panel.

Note: The flag is counted as a batch of two tags (the long and the short tag). If the batch counter is enabled, the flag will appear as a batch of two labels printing; if the total counter is enabled, the flag is counted as two additional tags.

Note: The Cutter Flag option is not available when using the QLS Windows Printer Driver. Since batches cannot be queued when using the driver, there will always be a leader of media cut between batches.

Pull Back - Enable/Disable

You can enable/disable the pull back function using the Pull Back option under the Options menu. The pull back function provides two modes:

Pull Back (Manual) - In Manual mode, there are two ways to activate a media pull back. One method involves selecting it from the Operation menu. Alternately, the FORM FEED button can be used to quickly activate the media pull back function.

Pull Back (Auto) - In Automatic mode, the printer automatically performs the pull back operation after a queue is finished printing.

This option requires a compressed air connection and special hardware. Contact QuickLabel for more information about the pull back function.

Note: The printer must be equipped with the media Pull Back option. Otherwise, the printer will return an error message if Pull Back is activated but the option is not present.

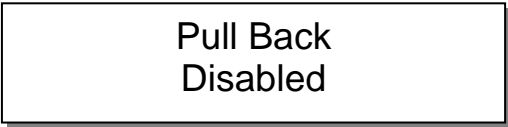
To enable media pull back:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

A rectangular box with a double border containing the text "Pause: Options" on the first line and "Press SELECT" on the second line.

Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Pull Back menu is displayed.

A rectangular box with a double border containing the text "Pull Back" on the first line and "Disabled" on the second line.

Pull Back
Disabled

- 4 Press the + or – key to choose the type of pull back mode to enable.
Available options are Disabled, Enabled (Manual), and Enabled (Auto).
- 5 Press the SELECT key to confirm your choice.

Note: Media pull back can also be activated via host command. Consult the QuickLabel Host Protocol documentation for details on this command.

Applicator

You will use the Applicator option to enable or disable applicator mode. This option applies only to users integrating the printer with a label applicator or Print & Peel system.

To enable or disable the applicator:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

A rectangular box with a double border containing the text "Pause: Options" on the first line and "Press SELECT" on the second line.

Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Applicator menu is displayed.

A rectangular box with a double border containing the text "Applicator" on the first line and "Enabled 1" on the second line.

Applicator
Enabled 1

- 4 Press the + or – key until the desired setting is displayed. The following options are available.
 - **Enabled 1** - Select this option to enable applicator mode #1. In this mode, if RibbonRation is enabled, printheads will be lifted after each label is delivered.
 - **Enabled 2** - Select this option to enable applicator mode #2. In this mode, if RibbonRation is enabled, printheads will remain in their current state after each label is delivered. This mode improves color registration.
 - **Disabled** - Select this option to disable applicator mode.
- 5 Press the SELECT key to confirm your choice.

Note: Before printing labels in applicator mode, use the Synchronize Labels command from the Operation menu to synchronize the printer with the label applicator or Print & Peel system.

The following message will appear if you attempt to print without synchronizing.

Synch Required

Image Normalization

Image normalization is used to prevent unwanted variations in print intensity along the length of the label, which occur in certain label formats. The default setting is off, since most users are unaffected by these variations.

To enable or disable image normalization:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

**Pause: Options
Press SELECT**

- 3 Press the NEXT or PREVIOUS key until the Image Normalization menu is displayed.

**Image Normalization
Enabled**

- 4 Press the + or – key until the desired setting is displayed. Available options are Enabled or Disabled.
- 5 Press the SELECT key to confirm your choice.

“No Air” Warning

This option enables/disables the “No Air” warning that appears at startup if the printer is not connected to a compressed air supply. When enabled, this warning requires the user to press the SELECT key before startup can continue.

If the printer is not going to be connected to an air supply, and may be frequently restarted, disabling the “No Air” warning will speed up the startup process.

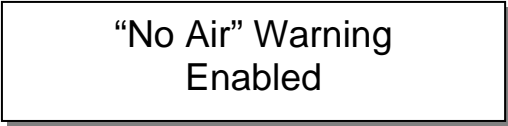
To enable or disable the “No Air” warning :

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

A rectangular box with a thin black border containing the text "Pause: Options" on the first line and "Press SELECT" on the second line, both centered.

Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Ignore Host Commands menu is displayed.

A rectangular box with a thin black border containing the text “No Air” Warning on the first line and Enabled on the second line, both centered.

“No Air” Warning
Enabled

- 4 Press the + or – key until the desired setting is displayed. Available options are Enabled or Disabled.
- 5 Press the SELECT key to confirm your choice.

Ignore Host Commands

This option causes the printer to disregard the Speed, Intensity, Vertical Offset, and Horizontal Offset commands issued by the host computer.

To enable or disable these host commands:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

A rectangular screen with a black border displaying the text "Pause: Options" on the first line and "Press SELECT" on the second line.

Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Ignore Host Commands menu is displayed.

A rectangular screen with a black border displaying the text "Ignore Host Commands" on the first line and "Enabled" on the second line.

Ignore Host Commands
Enabled

- 4 Press the + or – key until the desired setting is displayed. Available options are Enabled or Disabled.
- 5 Press the SELECT key to confirm your choice.

System Configuration

This option enables/disables special custom operating modes. There are three system configuration options.

Standard - In Standard mode, the printer will operate normally.

Custom 1 - In Custom 1 mode, if you enabled Applicator Mode and are printing via the QuickLabel Windows Printer Driver, you can send an additional print job if a job is currently being printed.

When this occurs, the job that is currently printing will be cancelled and the new job that was sent will start.

Additionally when a job finishes normally, you can send the applicator Go signal and blanks will be advanced to allow the partially printed labels under the heads to be completed and advanced past the drive roller.

Custom 2 - In Custom 2 mode, the maximum print speed will change from 7 inches per second to 7.5 inches per second. The display will be updated to indicate when this speed is selected.

When Custom QuickLabel or the QuickLabel Windows Printer Driver are used with this option, select 7 inches per second as the print speed in Custom QuickLabel or the driver. This will result in an actual print speed of 7.5 inches per second.

To select a system configuration:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

Pause: Options
Press SELECT

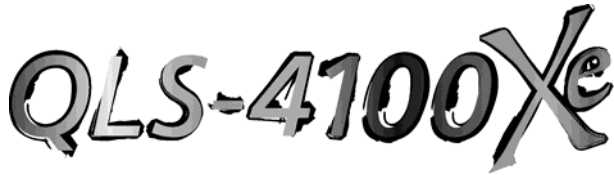
- 3 Press the NEXT or PREVIOUS key until the System Configuration menu is displayed.

System Configuration Standard

- 4 Press the + or – key to choose the system configuration to enable. Available options are Standard, Custom 1, and Custom 2.
- 5 Press the SELECT key to confirm your choice.

Print & Peel

You will use the Print & Peel option to enable or disable Print & Peel mode. This option applies only to users integrating the printer with the Print & Peel system. For more information, refer to *Chapter 8: Print & Peel*.



Chapter 5:

Operation

To prepare the QLS-4100 Xe for printing, make sure that:

- Power connection has been made
- Communication connections have been made between host and printer
- Compressed air is supplied to the printer if RibbonRation™ will be used
- Media and Thermal Transfer Ribbon has been loaded into the printer
- You have installed a software application from which you will print
- You have installed the QLS Windows Printer Driver (as needed)

Once you have completed and verified the above, you are ready to begin printing with your QLS-4100 Xe.

This chapter provides the following information:

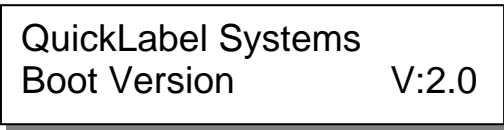
- Information on printing with the QLS-4100 Xe
- Descriptions of print indicators
- Descriptions of error messages
- Information on color alignment and adjustments
- Information on evaluating print quality
- Instructions for enabling/disabling RibbonRation™
- Instructions for printing labels

Printing with the QLS-4100 Xe

Powering the Printer On

When you turn on your printer, it will execute an initialization procedure and self-test. During this process, the display will indicate the model number, firmware version, and memory check status of the printer.

The first display will show the version number of boot software.

A rectangular display screen with a black border. The text is white and arranged in two lines. The first line reads "QuickLabel Systems" and the second line reads "Boot Version V:2.0".

QuickLabel Systems
Boot Version V:2.0

The printer will initialize, perform a self-test, and load the system firmware.

A rectangular display screen with a black border. The text is white and arranged in two lines. The first line reads "QuickLabel Systems" and the second line reads "Loading Program . . .".

QuickLabel Systems
Loading Program . . .

The next display will show the printer model, QLS-4100 Xe, followed by the system firmware version number. Periodically, QuickLabel may provide upgraded firmware to add functionality to the printer. You may visit the QuickLabel website to check for updated firmware.

A rectangular display screen with a black border. The text is white and arranged in two lines. The first line reads "QLS-4100Xe V:1.4" and the second line reads "Selftest Complete".

QLS-4100Xe V:1.4
Selftest Complete

Under normal conditions, the printer will display a Ready message at the end of the power-up sequence, indicating that the printer is ready to accept and print labels. When the printer is in a Ready state, the green Print/Pause LED will be off. When the printer is in a Pause state, this LED will be on.

When you download a label to a printer, the printer will begin printing the label as long as the printer is in the Ready state. You will note that Custom QuickLabel software will temporarily put the printer in a Pause state while it is downloading your label. This is done to ensure all data from multiple batches is downloaded and processed before the printer begins printing.

Operating Without Compressed Air

The QLS-4100 Xe RibbonRation ribbon conservation system has been designed so that the printer can operate normally without compressed air, but without the advantage of ribbon savings.

If sufficient compressed air is not available during the power up self-test, the printer will detect this condition and display the following message:

RUN with NO AIR?
Press: Select

Pressing the SELECT key will disable the RibbonRation system until the power to the unit is cycled and sufficient compressed air is available to the printer. If this message appears and you do have compressed air connected to the printer, check the pressure level on the air regulator to ensure that it meets the minimum **70 psi** requirement. Once sufficient air pressure is available to the printer, this message will disappear and the printer will go to a Ready state.

Memory Card Detection

The status of the memory card is checked during the power-up sequence. If the card is working properly, or if no card is inserted, the power-up sequence will proceed normally. If a problem with the memory card is detected, you will be given the option to perform a corrective action, which requires the memory card write protection setting to be off, or remove the card.

If an unformatted memory card is detected, you can format or remove the card. Refer to the System Menu section of Chapter 4 for more information.

**Remove Flash Card or
SELECT to Format it**

If the card is missing any required folders, you can press SELECT to add them, or remove the card. The message “Folders Complete” will appear when folders are successfully added.

**Remove Flash Card or
SELECT to Add Folder**

If the card is defective, you will be prompted to remove the card.

Printer Indicators

When power is on, the printer has four indicator lights that provide a visual cue to the printer's current state.

Indicator	Function
POWER	When the green POWER indicator light is illuminated, the printer is ready to operate. Assuming the printer is properly set up and a label has been downloaded or a test pattern has been selected pressing the PRINT/PAUSE key will cause printing to begin.
PRINT/PAUSE	If the PRINT/PAUSE key is pressed to pause the printer, the green indicator light adjacent to the key will illuminate. It will remain illuminated to remind you that the printer is in the PAUSE state, until you either resume printing, cancel the print request, or power off the printer. This light will also illuminate when the printer pauses due to an error, such as a media or ribbon out condition.
DATA	The amber DATA indicator light flashes whenever the printer is receiving data from the host computer.
ERROR	The red ERROR indicator light illuminates whenever an error condition has occurred. An additional message may be displayed on the LCD display to indicate the nature of the error.

The alphanumeric LCD display provides detailed information about the operational status of the printer, menu functions, or specific information about error conditions.

Error Messages

The following pages show a number of possible error messages that may be encountered during operation. Instructions are provided on how to clear the condition that caused the error message to be displayed.

ERROR: Media out or sensor is off media

- The label or tag media has been consumed. Reload a new roll of media.
- The printer has not been properly calibrated. Recalibrate for the proper media.
- The sensor has been repositioned off of the gap or notch. Ensure that the sensor position is correct and recalibrate if necessary.
- The printer requires media recalibration.

ERROR: Media out or Motor Stall

- The label or tag media has been consumed. Reload a new roll of media.
- The media is not making positive contact with the Media Travel Roller or the media travel roller is not turning freely. Ensure that the roller spins freely and that the media is making contact with the roller causing it to turn at a regular rate.

Ribbon Out!!! Ribbon 1

- The printer is out of ribbon on one or more print stations. Reload a new roll of ribbon on the indicated print station(s).
- The ribbon unwind is not turning at a steady rate. Ensure that the ribbon has been loaded correctly and that the ribbon unwind tension has not been set too high.

After reloading media or ribbon, the printer will reprint any label formats that were partially under the print stations when the error occurred.

Note: Media Out or Film Out errors can occur if either the media or film is not feeding, winding or unwinding properly. A physical adjustment to the media path or film tension usually corrects this condition. In order to resume printing, you must raise and lower at least one printhead to clear the internal error.

Warning: Whenever you are not using the printer, leave the drive roll in the open position. This will prevent flat areas from developing which could result in print quality or media slip issues.

Drive Roll Up/No Air

- Indicates that the drive roller is in the up position or the air was shut off/disconnected. The printer cannot resume printing until the drive roller is lowered or the air turned back on/re-connected.

Drive Roll Up

- Indicates that the drive roller is in the up position. The printer cannot resume printing until the drive roller is lowered.

Format Error label name: error

- Indicates that the printer received incorrect or corrupted commands from the host software. If this error occurs when printing from Custom QuickLabel software, cycle the power on the printer and attempt to reprint the same format or a new label format.

Note: For information on the specific error number, refer to Appendix F: Format error codes.

Data Port Error Check Comm Setup

- Indicates that data port-specific commands were received via the status port, causing a communications error. Ensure that the data port is set up correctly.

Head x up SELECT to disable

- Displayed when a printhead x is lifted after the printer has been powered on. Pressing select will disable this head until the printer power has been cycled. The following message is displayed after a printhead is disabled:

Head x Disabled

Printheads Disabled Hd1 Hd2 Hd3 Hd4

- Displayed after the self-test when the printer is powered on with one or more of the heads already lifted. The printer indicates which heads have been disabled upon power up.

**Deletes all labels
SELECT to confirm**

- Displayed when the CANCEL key is pressed while a batch is being printed. Pressing the SELECT key will cancel all pending labels in the batch.

**NVRAM Test Failed
Please reset printer**

- Displayed during the printer power-up sequence if the non-volatile RAM test fails. Powering off the printer, and then powering it back on may resolve the issue. If this does not resolve the issue, contact QuickLabel Technical Support.

**Excessive Heat
Detected on Head x**

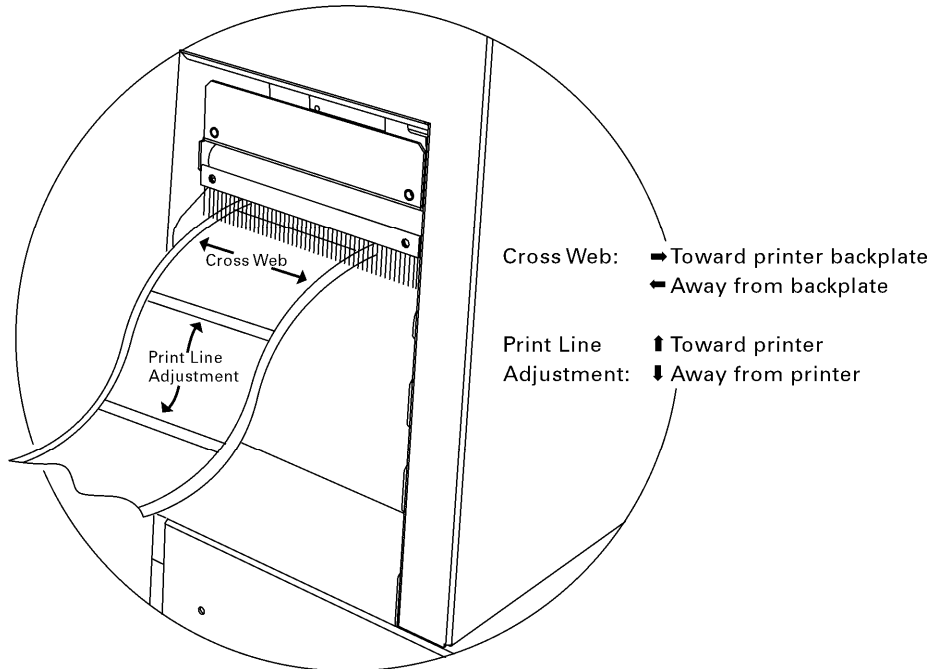
- Displayed if the printhead exceeds a safe operating temperature. The printer will automatically pause to prevent damage to the printhead. Allow the printhead to cool for a period of time. Then press the PRINT/PAUSE key to resume printing.

Color Alignment

Color alignment refers to the alignment of each color with respect to the other colors:

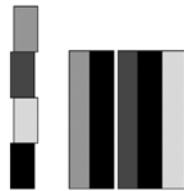
Print Line adjustment refers to the vertical adjustment of a color's print position on the media.

Cross-Web adjustment refers to the horizontal adjustment of a color's print position on the media.

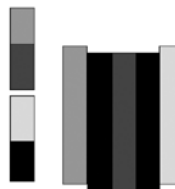
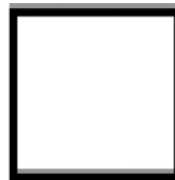


To examine the color alignment, you can print the process **Proc. Block** test pattern. The process black box on this test pattern should appear black, without any other color along an edge. If a color shadow appears along an edge, that color's print station is in need of alignment.

You will also examine the block patterns to observe both the horizontal and vertical alignment. If any color appears horizontally misaligned, the cross web values require adjustment; if any color appears vertically misaligned, the print line adjustment values require adjustment.

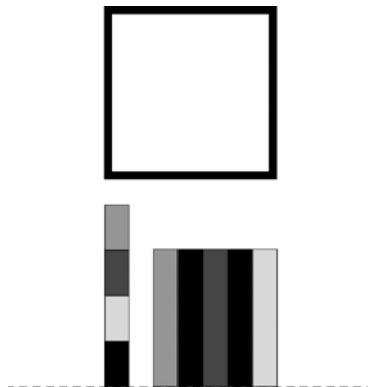


**horizontal misalignment
requires cross web
adjustment**



**vertical misalignment
requires print line
adjustment**

When the black box prints without any color shadows and the block pattern appears correctly aligned, the color alignment is optimal.



Common Adjustments and Tasks

Test Patterns

The QLS-4100 Xe is equipped with a number of built-in test patterns used for checking color alignment, print quality, and printhead integrity.

Refer to the **Cal & Setup Menu** section of Chapter 4 for more information on test prints.

Print Line Adjustment

Print line adjustments allow you to align the printing of each of the four print stations to obtain accurate color registration in the media travel direction.

Refer to the **Ready State & Adjust Menu** section of Chapter 4 for more information on print line adjustments.

Cross Web Adjustment

Cross web adjustments allow you to align the printing of each of the four print stations to obtain accurate color registration across the width of the label.

Refer to the **Ready State & Adjust Menu** section of Chapter 4 for more information on print line adjustments.

Advancing the Media

The FORM FEED/ADVANCE key serves two functions. If the key is pressed momentarily and released, the printer will advance the media by one calibrated media length. If the key is pressed and held, the printer will advance media until the key is released.

The FORM FEED/ADVANCE function will act as an ADVANCE function if the printer has not been calibrated for the media.

Print Speed

This function allows you to choose the printing speed. The printer is capable of printing at speeds of 2 – 7 in/s (inches per second) in 1 in/s increments.

Refer to the **Ready State & Adjust Menu** section of Chapter 4 for more information on print speed adjustments.

Evaluating Print Quality

- 1 Press the PRINT / PAUSE key to put the printer into the pause mode.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed.

Pause: Cal & Setup
Press SELECT

- 3 Press SELECT. Then press the NEXT or PREVIOUS key until the Test Print menu is displayed.

Test Print
Test Pattern: = 1 in

- 4 Press the + or - key to scroll through the test patterns and select Test Pattern: x in. at a width that is appropriate for the width of your media. Print widths for the Test Pattern are 1, 2, 3, 4, or 5 inches.
- 5 Press the SELECT key again to start the printing of the line test pattern.
- 6 Evaluate the test pattern to determine if printing is uniformly solid and crisp. Press the PRINT / PAUSE key at any time to stop printing.

- 7 If print quality is not satisfactory, allow the test pattern to continue to print and press the NEXT or PREVIOUS key to access any of the parameters that can be adjusted while operating in the test print mode.

The print adjustment parameters that can be changed are:

- Intensity for each printhead
 - Speed
 - Print line adjustment
 - Cross web adjustment
 - Vertical offset
 - Horizontal offset
- 8 As each parameter is displayed, press the + or - key to adjust the selected setting.
 - 9 As you change the parameter settings, examine the test pattern to ensure that the changes you are making are improving print quality.
 - 10 Continue to adjust the parameter settings until you are satisfied that print quality has been optimized.

Enabling and Disabling RibbonRation™

The QLS-4100 Xe RibbonRation™ feature can be enabled or disabled via the user control panel of the printer as well as Custom QuickLabel software or the QuickLabel Windows Printer Driver. The software will always override any setting that has been made on the front panel of the printer.

To enable/disable RibbonRation™ from the printer control panel:

- 1 Power off the printer if it is on.
- 2 Disconnect the source of compressed air if it is connected.
- 3 Power the printer on. The display will show the following prompt:



RUN with NO AIR ?
Press: Select

- 4 Press the SELECT key. RibbonRation™ is now disabled.

To enable/disable RibbonRation™ from Custom QuickLabel:

- 1 Open Custom QuickLabel Create or Print application.
- 2 Choose the File >> Print Setup or File >> Printer Settings... menu.
- 3 To Enable, Check the Save Ribbon option. To Disable, Uncheck the Save Ribbon option.

To enable/disable RibbonRation™ from the Windows Printer Driver:

- 1 In Windows, choose Start >> Settings >> Printers, and then right-click on the QLS-4100 Xe driver.
- 2 Choose Properties and click on the Device Options tab.
- 3 To enable, check the Enable Ribbon Ration option. To disable, uncheck the Enable Ribbon Ration option.

Printing Labels

To print labels, you need to send a label from QuickLabel Custom QuickLabel software program, or from a 3rd party application via the QuickLabel Windows Printer Driver. Refer to the Appendix D and E of this manual for basic instructions in setting up the software.

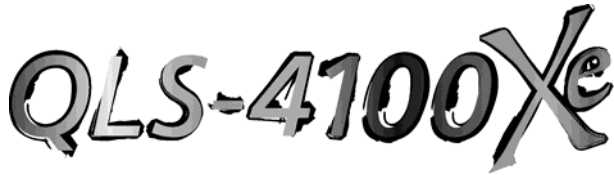
Before sending a label to the QLS-4100 Xe:

- 1 Make sure that the QLS-4100 Xe is in a Ready state. Press the PRINT/PAUSE pushbutton if necessary until Ready is displayed.
- 2 Specify the label quantity from within your software application.
- 3 Send the label you wish to print from your software application. The QLS-4100 Xe will begin printing the label.
- 4 Use the printer menus to change any parameters may need adjustment.

Note: It is recommended that settings be changed in Custom QuickLabel software or the QLS Windows Printer Driver as these would override any settings made through the printer control panel.

- 5 Press the PRINT/PAUSE key as necessary to pause or resume printing. The printer will continue to print until the specified number of labels have been printed.

Note: When the QLS-4100 Xe is paused during the course of printing a batch of labels, a small white horizontal line will appear across the labels in the location of the printheads. This is a normal result of interrupting the print operation. It is recommended that you limit the use of the Pause function while printing.



Chapter 6:

Advanced Adjustments

Your QLS-4100 Xe has been carefully set at the factory to print optimally using your specific type of media and ribbon. This chapter describes how to perform advanced adjustments that may be needed when specialized media is used in the printer.

This chapter explains how to:

- Adjust the printhead alignment relative to the platen roll to optimize ribbon transfer for different material types or thicknesses.
- Adjust the angularity of the printheads with respect to each other so that color alignment is consistent across the width of the media.
- Adjust the thermal transfer ribbon tension to alleviate wrinkling or smudging.
- Adjust the Printhead Lift and Drive Station Lift Screws to redistribute downward pressure when using narrow media.
- Set the Vertical and Horizontal Baselines so that print jobs sent to multiple printers result in identical image positioning on the label.

Printhead Tangency Alignment

The proper alignment of the printhead over the platen roller produces optimum transfer of ribbon to the media. Although this mechanical adjustment is a factory setting, there are situations where a slight repositioning of the platen support strut will optimize print quality on different media types and thicknesses.

Tools Needed:

7" long, #2 Phillips Screwdriver

3/16" Open End Wrench or Adjustable Wrench

- 1 Loosen the two outside screws on either side of the platen shaft end plate.
- 2 Insert the #2 screwdriver through the hole in the frame plate just to the right of the endplate.
- 3 Loosen the screw on the main plate located inline with the hole.
- 4 Print a block image the width of the label with a saturated color fill of the print station to be adjusted (i.e. pure Cyan, Magenta, Yellow, Black, or Spot Color).

Print several labels and rotate the shaft protruding out of the frame plate just under the station printing the image. Turn the knob with the 3/16" wrench until the printed blocks appear fully saturated with no lines, breakup, or white pinholes throughout the fill.

- 5 Press the PRINT/PAUSE key to pause printing.
- 6 Tighten the three screws at the main plate and at the platen shaft end plate.
- 7 Press the PRINT/PAUSE key to resume printing a few more labels to verify that the alignment has been optimized.

Printhead Angularity Adjustment

The color registration is monitored on the right side of the label as it exits the printer. The Test Print (Proc. Block CMYK) on the display provides a test pattern for adjusting the Print Line and Cross Web values. There is a mechanical adjustment for aligning the color registration on the left side of the label which positions all printheads precisely parallel to each other. The following procedure is referred to as the color angularity adjustment.

Tools Needed:

1/4" Drive Ratchet

3/8" Socket

7/64" Allen Wrench

- 1 Print a test pattern (Proc. Block CMYK) to ensure color alignment on the right side of the label.
- 2 Scroll to Horizontal Line Pattern and print the process color lines across the label.
- 3 Closely inspect the lines on the left side. If any colors are above or below the lines then the printstation for that color requires an angle adjustment.
- 4 A 1/4" drive ratchet and 3/8" socket are required to loosen two nuts on the printhead bracket. Access to these nuts is through the large 3/4" holes in the black cover brackets over each printstation. Do not remove these two nuts. Simply turn them counterclockwise 1/2 revolution.
- 5 Lift the printhead up by the handle. Locate the spring-loaded cap screw behind the black ribbon guide roller at the rear of the printstation. The screw faces the rear on the outside end of the printhead bracket. With a 7/64" Allen wrench turn the cap screw clockwise to shift the printed line toward the front of the printer.
- 6 Lower the printhead and print the Horizontal lines. Note the physical change in the printed line of the affected printstation. Repeat step 5 until the printed line is directly over the other colors.
- 7 Tighten the two nuts on the printhead bracket. Care should be taken not to over-tighten this hardware or damage to the printhead or print station may result. When all printstations are aligned, all colors will be perfectly superimposed on the process black line at the top of the test pattern.

Ribbon Wrinkling Adjustments

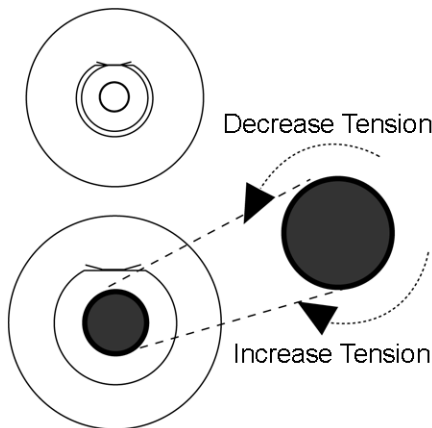
The QLS-4100 Xe features an automatic ribbon tensioning mechanism to ensure consistent tension from a full to empty ribbon supply roll.

The ribbon width should be matched to the label or tag width. Make sure that the ribbon is not more than ¼ inch wider than the label because it may cause the ribbon to wrinkle.

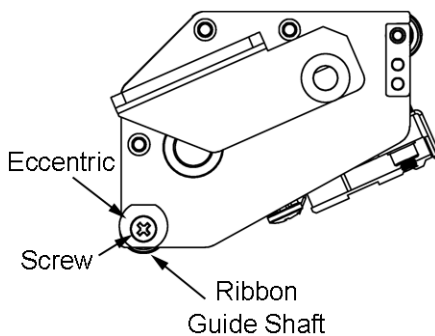
The ribbon should also not be narrower than the label or tag because it may cause unnecessary wear to the printhead.

Normally, a manual ribbon tension adjustment is not required. However, if you notice film wrinkling or one of the colors smudging, you can adjust the tension to alleviate these conditions.

- If film is *wrinkling* on a station, turn the knob on the ribbon supply mandrel **clockwise** to increase the tension.
- If ink is *smudging* at a station, turn the knob on the ribbon supply mandrel **counterclockwise** to decrease the tension.



Ribbon wrinkling may also be alleviated by adjusting the eccentric at the end of the ribbon guide shaft located at the lower, rear section of the print station. Loosen the screw securing the shaft and using a wrench, turn the eccentric until wrinkles have been eliminated then retighten the screw to secure the shaft.



Printhead & Drive Station Lift

Your QLS-4100 Xe printhead and drive station are mounted to a center-pivoting shaft. This permits even pressure to be applied across the width of the media. When using narrow media, the Printhead and Drive Station Lift Screws allow you to relieve unnecessary pressure against the platen roller and drive roller. This will prolong the life of the printhead and platen while providing a more even application of downward pressure onto the media where it is needed.

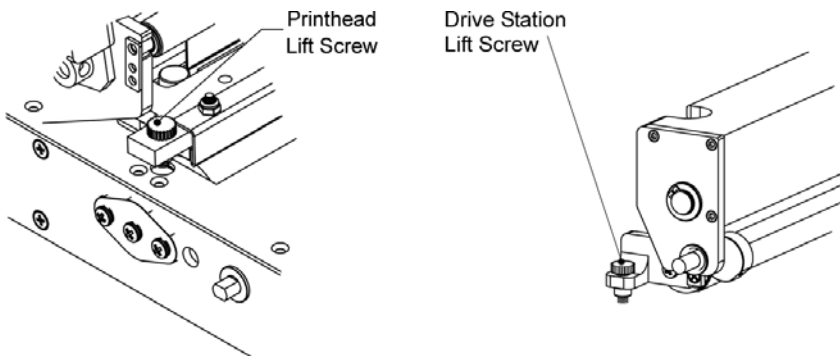
Tools Needed:

Slip Joint Pliers

Using a pair of slip-joint pliers grip the Printhead Lift Screw or the Drive Station Lift Screw

- Turn the screw **clockwise** to lift the head or station and relieve pressure.
- Turn the screw **counterclockwise** to lower the head or station and apply pressure

This adjustment is best performed while the printer is printing so that you can evaluate print quality as adjustments are made.



Vertical Baseline

This function is used to synchronize printing when using multiple QLS-4100 Xe printers. If you are sending the same image file to two or more printers and notice that the image prints in different vertical locations, you can use this function to move the vertical baseline of a printer.

To adjust the vertical baseline:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.



Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Vertical Baseline menu is displayed.



Vertical Baseline
Baseline = +0

- 4 Press the + or – key until the desired baseline setting is displayed. Baseline settings range from -120 through +120 dots.
- 5 Press the SELECT key to confirm the baseline.
- 6 Repeat this process on each printer requiring a baseline adjustment.

Horizontal Baseline

This function is used to synchronize printing when using multiple QLS-4100 Xe printers. If you are sending the same image file to two or more printers and notice that the image prints in different horizontal locations, you can use this function to move the horizontal baseline of a printer.

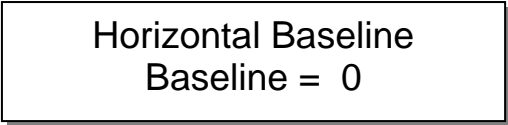
To adjust the horizontal baseline:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Cal & Setup menu is displayed. Then press the SELECT key.



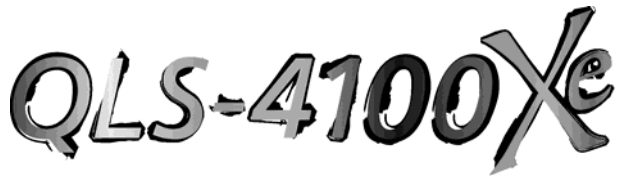
Pause: Cal & Setup
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Horizontal Baseline menu is displayed.



Horizontal Baseline
Baseline = 0

- 4 Press the + or – key until the desired baseline setting is displayed. Baseline settings range from <-120 through -> 120 dots.
- 5 Press the SELECT key to confirm the baseline.
- 6 Repeat this process on each printer requiring a baseline adjustment.



Chapter 7: Maintenance and Repair

Your QLS-4100 Xe is designed for long-life and trouble-free operation. In order to keep your printer operating at optimal performance, some periodic maintenance is required.

This chapter provides the following information:

- List of recommended tools for performing maintenance and repairs.
- Procedure for cleaning the print stations.
- Procedure for replacement of a printhead.
- Drive roller, pinch roller, and platen roller replacement.
- Changing the fuse or line voltage.
- Performing a firmware upgrade.

Recommended Tool List

The following is a list of recommended tools for maintenance and repair of the QLS-4100 Xe.

3/16" X 4" long Slotted Screwdriver

3/32" X 4" long Slotted Screwdriver

#2 1/4" X 15/16" Phillips Screwdriver

#2 1/4" X 8" Phillips Screwdriver

#1 3/16" X 3" Phillips Screwdriver

Nut Driver Set containing 1/4", 3/16", 5/16", 3/8", and 11/32"

Ball End Allen Wrench Set containing .050", 1/16", 3/32", 5/64", and 7/64"

Open End Wrenches containing 1/4", 3/8", 5/16", and 7/16"

1/4" Drive Ratchet and Socket Set containing 3/8" and 7/16" sockets

Flat Nose Pliers

Slip Joint Pliers

Snap Ring Pliers

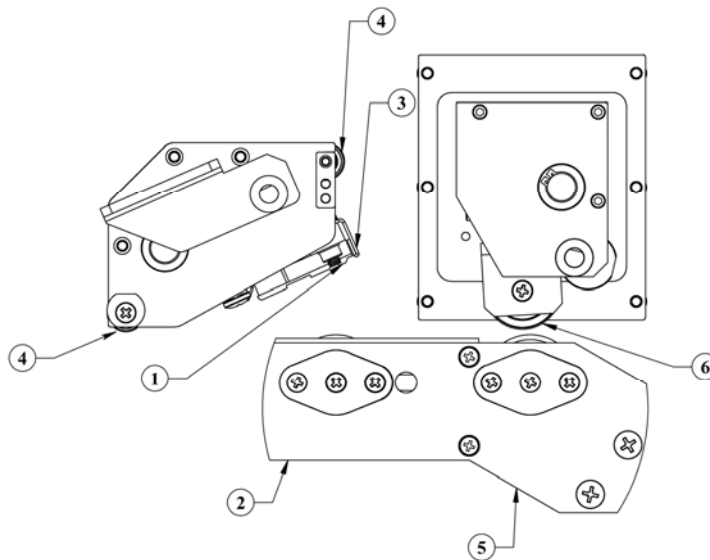
Volt-Ohm Meter

Millimeter Scale

Routine Cleaning

The parts of each print station, especially those that come in direct contact with the ribbon, will accumulate residue. To maintain clear and crisp printing, these parts should be cleaned frequently. The printheads in particular require regular cleaning. QuickLabel recommend that these surfaces be cleaned when changing a roll of media or ribbon.

The illustration below indicates the locations for regular cleaning. It is recommended that these surfaces be cleaned with a soft cloth or lint-free wipe soaked with Isopropyl Alcohol. Harsh chemicals and solvents should be avoided as damage to the printhead could occur.



- | | | | |
|---|---------------|---|----------------------|
| 1 | Print Line | 4 | Ribbon Guide Rollers |
| 2 | Platen Roller | 5 | Drive Roller |
| 3 | Peel Edge | 6 | Pinch Roller |

To clean printheads:

- 1 While the printer is on, lift the printhead that will be cleaned. The following message will display.

Head x up
SELECT to disable

Press the SELECT button. The indicated print station will be disabled and the following message will display.

Head x Disabled

- 2 Turn the printer off and unplug the AC power cord.

Caution: Always power off and unplug the printer before cleaning the printheads.

- 3 Clean the printhead with a soft cloth or lint-free wipe soaked with Isopropyl Alcohol. Harsh chemicals and solvents should be avoided as damage to the printhead could occur.

Caution: Never use a hard object of any sort to clean the printheads. Damage will result if the edge of any hard object is used to scrape away accumulated printing residue from the printhead.

Printhead Replacement

After normal use or as a result of a failure, the printheads will eventually need to be replaced.

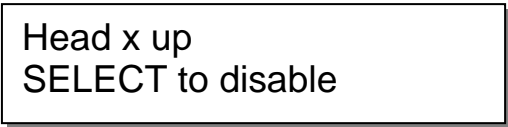
Some symptoms of printhead failure include:

- Significant reduction in printed image darkness that cannot be corrected by using an increased print intensity.
- Vertical line(s) of missing print running through the entire length of the label.
- A wide vertical area of missing print indicating physical wear to the printhead or an electrical failure.

The following procedure explains how to remove and replace a printhead.

Caution: Printheads can be damaged by static electricity. Always use standard anti-static procedures when replacing printheads.

- 1 While the printer is on, lift the printhead that will be changed. The following message will display.



Head x up
SELECT to disable

Press the SELECT button. The indicated print station will be disabled and the following message will display.



Head x Disabled

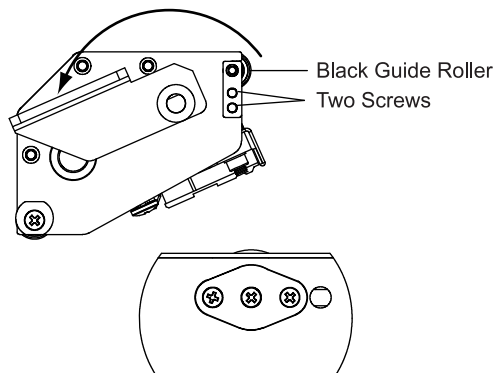
- 2 Turn the printer off and unplug the AC power cord.
- 3 Remove the black guide roller under the static brush for easier access to the printhead mounting screw. There are three inline screws on the outer plate at the end of the guide roller. Remove the two lower screws and pull on the tab to slide the center shaft out, releasing the guide roller to drop down.

- 4 Remove the platen roller if you are changing the printhead on print station #1.
- 5 Use a Phillips screwdriver to loosen the captive printhead mounting screw over the top of the printhead.
- 6 Raise the printhead assembly by the handle to allow the printhead to drop down away from the bracket.
- 7 Gently pull the printhead out to the side until the three connectors on the top of the head are exposed. These connectors are a press fit. Pull up on each harness to disengage them from the rear of the printhead.
- 8 Reconnect the three harness connectors to the replacement printhead and push the head back under the bracket. There are locating pins under the bracket. Position the printhead over these pins until the printhead seats flat against the bracket.
- 9 Tighten the captive mounting screw 1/4 turn to secure the printhead to the bracket.

Caution: Do not over-tighten the captive mounting screw. Damage or warpage to the printhead could occur. The screw should only be ¼ turn beyond hand tight.

Ensure the harness is routed straight through the hole in the main plate.

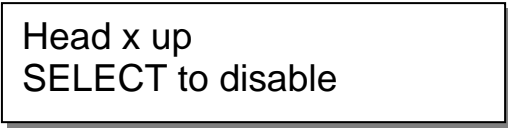
- 10 Reinstall the platen roller on print station #1 if it was removed.
- 11 Reposition the black guide roller and secure it with the two screws.



Platen Replacement

Platen rollers are like tires on a car, in that they wear with use. After continued normal use, it may be necessary to replace the printhead platen rollers. After prolonged use, one or more rollers may develop flat areas which will affect print quality. The following procedures explain how to remove and replace the platen rollers.

- 1 While the printer is on, lift the printhead above the platen roller that will be replaced. The following message will display.



Head x up
SELECT to disable

Press the SELECT button. The indicated print station will be disabled and the following message will display.



Head x Disabled

- 2 Turn the printer off and unplug the AC power cord. Lift the printer's side cover.
- 3 Remove any label stock that may be positioned over the platen roller.
- 4 Remove the two outside screws from the shaft end plate at the outer end of the platen shaft on the frame plate.
- 5 Reach under the printer to loosen the collar on the outside end of the platen roller by turning the black lever counterclockwise.

- 6 Slide the plate and shaft assembly away from the frame plate. The collar and roller will drop down as this assembly is pulled away from the frame plate.
- 7 Reinsert the small plate and shaft assembly into the hole in the side plate. Add the collar over the shaft behind the side plate.
- 8 Line up the new roller under the printer with the shaft. Be sure the roller end with the 1/8" bearing surface is against the main plate on the inside of the printer.
- 9 Insert the shaft end plate assembly all the way through the roller. Secure the shaft end plate with the two outside screws.
- 10 Push the collar against the platen roller to reduce the side play and tighten the lever by turning it clockwise.

Drive and Pinch Roller Replacement

After prolonged use, the drive roller or pinch roller may develop flat areas, which will impede consistent media travel. When this occurs, the roller will require replacement. The following procedures explain how to remove and replace the drive roller and pinch roller.

Tools Needed:

#1 Phillips Screwdriver

3/32" Allen Wrench

1/8" Allen Wrench

Drive roll replacement

- 1 Turn the printer off and unplug the AC power cord. Lift the printer's side cover.
- 2 Remove any media that may be exiting over the drive roller.
- 3 Flip the drive roll cam up to relieve pressure on the roller.
- 4 Remove the two outside screws from the shaft end plate at the end of the drive roll shaft.
- 5 Slide this end plate and shaft assembly away from the frame plate. A 3/4" cup washer will drop down as this assembly is pulled away from the side plate.
- 6 Turn the drive roller until the cap screw located on the inside of the roller close to the main plate is visible from the front of the printer. Loosen but do not remove the set screw with a 3/32" Allen wrench. Turn the roller to loosen the second set screw in the same location.
- 7 Slide the drive roll away from the main plate until it drops down.
- 8 Insert the new drive roll so the set screw is over the flat of the coupling shaft. Tighten the set screw lightly.
- 9 Re-install the shaft end plate and shaft assembly back through the frame plate and into the bearing of the drive roll. Slip the cup washer over the plate shaft just before inserting it into the drive roll bearing. The cup must face away from the bearing surface as illustrated.
- 10 Secure the shaft end plate with the two mounting screws.

- 11 Loosen the set screw on the inner side of the drive roll and pull the roller to the outside against the frame plate. This will reduce the side play on the roller. Tighten both set screws on the inner drive roll side.

Pinch Roller Replacement

- 1 Turn the printer off and unplug the AC power cord. Lift the printer's side cover.
- 2 Remove the right side cover and control panel of the printer.
- 3 Remove any media that may be exiting over the drive roll.
- 4 Flip the drive roll cam up to relieve pressure on the roll.
- 5 Before removing the pinch roller assembly, the pressure must be taken off of this location. There are two screws along the bottom and two screws at the main plate. Dislodge the drive station gas spring. Grip a pair of adjustable pliers onto the top of the gas spring. Push down and away from the main plate to separate it from the ball joint on the main plate.
- 6 Remove the collar directly above the pinch roller with a 1/8" Allen wrench.
- 7 Slide the pinch roller assembly off of the middle shaft.
- 8 Remove the two Phillips screws on each end of the roller. The roller will drop down.
- 9 Position the new roller in place. Add a cup washer between roller ends and bracket. The cups of the washers must face away from the bearings on each roller end. Secure the roller using the two Phillips screws.
- 10 Slide the roller assembly back over the middle shaft. The ball end of the set screws must face toward the front of the printer.
- 11 Lock the collar against the roller assembly.
- 12 Press the top of the gas spring back over the ball joint on the main plate.
- 13 Reinstall the control panel and rear cover of the printer.

Changing the Fuse or Line Voltage

Your QLS-4100 Xe has been configured for your line voltage at the factory. Should you need to replace the fuse(s) or reconfigure the printer for a different line voltage, follow the procedure outlined below.

Tools Needed:

Small, flat-blade screwdriver

- 1 Turn the printer off and unplug the AC power cord.
- 2 Insert a small, flat-blade screwdriver into the slot at the top of the AC Power Input.
- 3 Gently twist the screwdriver to pry open the plastic door. The door will swing down when fully opened.
- 4 Insert the screwdriver between the AC Power Input and the red Fuse Holder module.
- 5 Gently twist the screwdriver until the Fuse Holder begins to slide out. Grasp the Fuse holder and slide it completely out of the AC Power Input.
- 6 Install the appropriate fuse(s) as follows:

110 VAC Operation	1 each - 6.3A fuse	(P/N 24034-002)
Install the metal shorting clip on fuse holder.		
220 VAC Operation	2 each - 4.0A fuse	(P/N 24034-004)
Remove the metal shorting clip on fuse holder.		
- 7 Orient the Fuse Holder such that the desired line voltage is near the top of the Fuse Holder.
- 8 Slide the Fuse Holder into the AC Power Input until it is fully seated.
- 9 Swing the plastic door up and push firmly until a snap is heard indicating that the door is fully closed.
- 10 Reconnect the AC Power Cord.

Firmware Upgrades

Firmware is the internal operating system of the QLS-4100 Xe. Periodically, firmware upgrades are made available to add new features or change operational characteristics of the QLS-4100 Xe. A firmware upgrade should only be performed when available new functionality is needed or when a firmware upgrade is required for compatibility with QuickLabel software.

Note: It is good operating procedure to first test the printer after installing new firmware as some adjustments may be required. This will minimize the impact on label production within your application.

Before beginning the upgrade process, please verify the following:

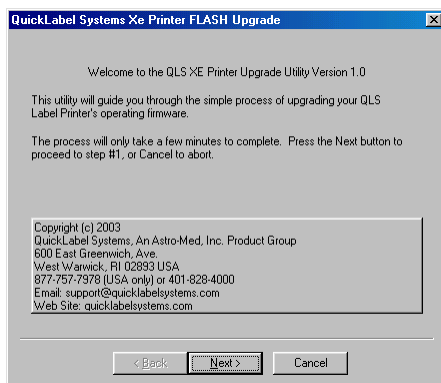
- The printer is powered on and is displaying "Ready"
- A CompactFlash card is installed in the printer
- The CompactFlash card has at least 4M of free space
- The Write Protect setting is OFF in the printer's System menu

Obtain the firmware upgrade software using one of the following methods:

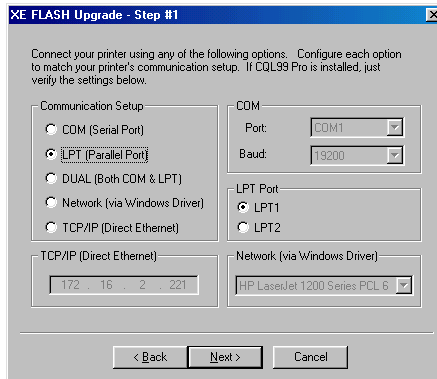
- You can obtain an upgrade CD from QuickLabel. If you use this method, follow the instructions provided on the CD label.
- You can download the firmware upgrade from our website, www.quicklabel.com. If you use this method, ensure that all upgrade files are located in the same directory (System.mot, l11config.bld, Ocr_a.bin, xeflash.exe, etc.).

To upgrade the printer:

- 1 Launch the "XeFlash.exe" file. The following screen will appear.



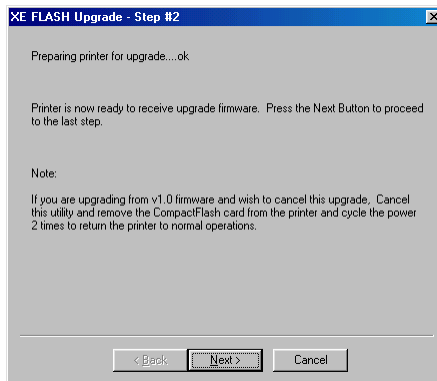
- 2 Choose the Next button. The following screen will appear.



- 3 Set up communications to your printer by selecting the appropriate connection options.

If Custom QuickLabel is installed, these settings will reflect the last settings used in Custom QuickLabel. If necessary, change the setup as required. Remember to also configure the printer, if necessary.

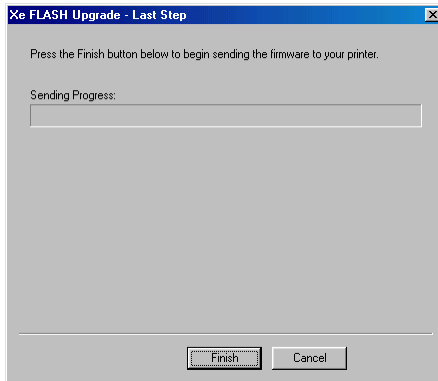
- 4 Choose the Next button. The following screen will appear.



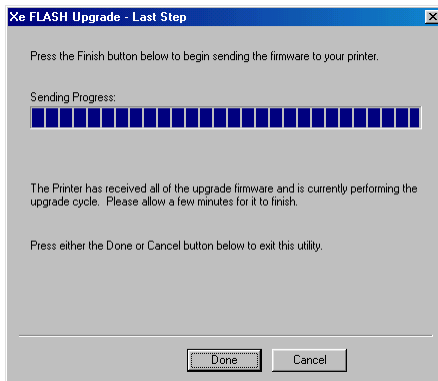
The flash utility will query the printer to determine if the upgrade can continue. When complete, the menu will indicate that you may either continue with the upgrade or that an error occurred.

If an error occurs, follow the message instructions to correct the problem on the printer if necessary and press the Retry button.

- 5 When no error is indicated, press the Next button to proceed to the final screen.



This last screen begins the actual upgrade process. Press the Finish button to begin the file transfer. All of the necessary files will be transmitted to the printer.



- 6 When the file transfer is complete, choose the Done or Cancel button on the display to exit the upgrade utility.

Upon receiving the last upgrade file, the printer will reset and display the following messages as it is performing the upgrade process:

Reading New Files
Erasing Flash
Programming Flash
OCR_A.BIN
etc . . .

When the upgrade is complete, the printer will reset again. Please verify the version displayed during the power-up sequence. Your printer will be ready to use.

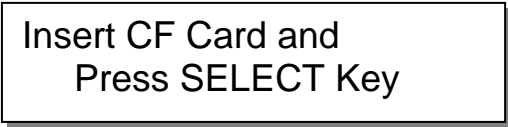
Upgrading additional printers with the CompactFlash card

The CompactFlash card from the upgraded printer can then be used to quickly upgrade other printers. This feature is helpful if you have multiple printers that need to be upgraded.

On the next printer, turn the power on and hold in the SELECT key on the front panel. This sequence will place the printer into a “forced upgrade” mode. The following menus will appear:



Forced Upgrade

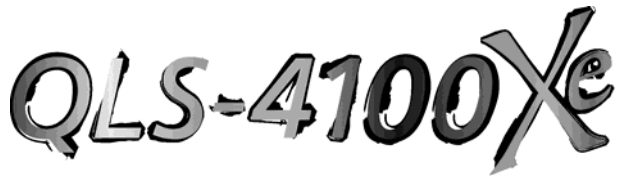


**Insert CF Card and
Press SELECT Key**

Insert the CompactFlash card that contains the upgrade files in the printer. Then press the SELECT key. The printer will reset and display the following messages as it is performing the upgrade process:

Reading New Files
Erasing Flash
Programming Flash
OCR_A.BIN
etc . . .

When the upgrade is complete, the printer will reset again. Please verify the version displayed during the power-up sequence. Your printer will be ready to use.



Chapter 8: Print & Peel

The Print & Peel system is available for peeling labels from the liner and presenting them for removal in special applications.

This chapter provides the following information:

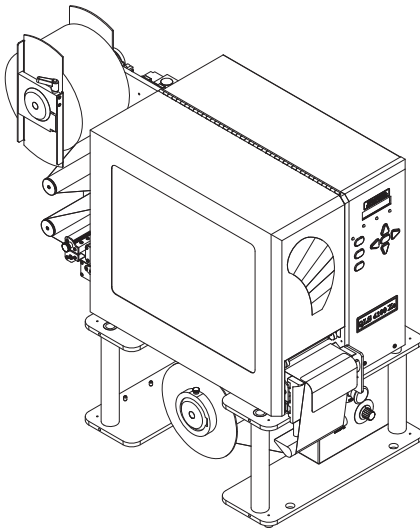
- A general overview of the Print & Peel system.
- Information about media compatibility.
- System setup instructions.
- Printing and peeling instructions.
- Print & Peel adjustment instructions.

Print & Peel System Overview

The Print & Peel system is made up of two components:

- QLS-4100 Xe (with Pull Back option) and hardware modifications
- Print & Peel Base

The Print & Peel system presents one label at a time. As the label exits the printer, it is automatically peeled from the liner and positioned for easy removal. When you remove the label, the next label in the batch is advanced for removal.



A rewinder located in the Print & Peel Base winds the liner onto a core during the printing process and provides the continuous tension required for peeling labels. Torque and liner guide adjustments are available to accommodate varying media widths.

Compatibility Notes

- Print & Peel requires printer firmware version 2.0 or higher.
- Print & Peel is available when using Custom QuickLabel software. It is not available when using the QLS Windows Printer Driver.

Compatible Media

Standard QLS-4100 Xe media types including paper and synthetic may be used. However, some flexible synthetic media types may not peel reliably and it is recommended that any application be qualified by QuickLabel to ensure reliable operation.

Print & Peel is to be used with adhesive backed labels on continuous liner. Card stock or solid media cannot be used. Perforated liner cannot be used.

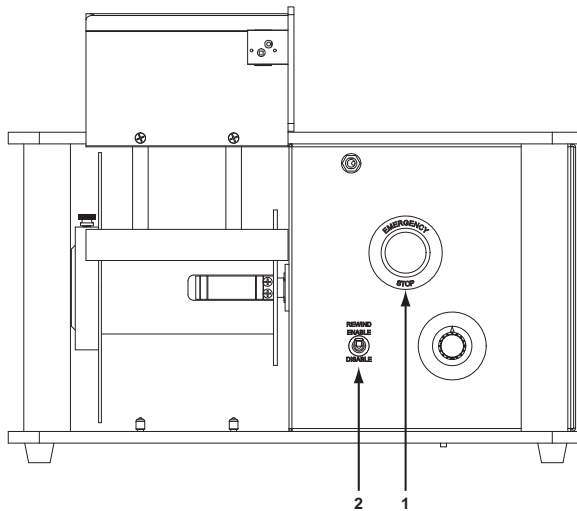
Round, Oval or clear labels will not trigger the peel sensor. In these cases a remote input may be wired to trigger printing of the next label. For remote input or other wiring information, contact QuickLabel Technical Support.

For some small diameter round labels (less than 4 inches) it may be possible to adjust the form stop and still trigger the sensor with the label.

Compatible Media Specifications	
Minimum Media Width	2 inches (51 mm)
Minimum Peel Length	1 inch (25 mm)
Maximum Peel Length	16.0 inches (400 mm)
Maximum Supply Roll Diameter	Up to 12 inches (outside diameter)
Maximum Rewind Capacity	Up to 10 inches (outside diameter) This rewind capacity rewinds all liner from the maximum supply roll.

Important Safety Features

Before using the Print & Peel System, become familiar with the following important safety features.



1. Emergency Stop Button

The emergency stop button can be used to terminate power to both the QLS-4100 Xe and the Print & Peel Base. Using this button shuts down both systems immediately.

2. Rewind Switch

The rewind switch enables/disables the rewind motor in the Print & Peel Base. If the motor is disabled and a print job is inadvertently sent to the printer, the motor will not be turned on. Disable the motor when threading the liner.

Print & Peel Installation

The installation process will vary based on how the system components were obtained.

- **Complete Print & Peel System** - The complete system contains a QLS-4100 Xe printer with factory-installed custom hardware and the Print & Peel base. No modifications to the QLS-4100 Xe are necessary.

Refer to *Installing the Print & Peel System* for installation instructions.

- **Print & Peel Refit** - The Print & Peel Base is available separately for installation on existing QLS-4100 Xe printers (models with Pull Back option only). In this situation, the printer will require modification prior to installing the Print & Peel System.

See *Refitting an Existing QLS-4100 Xe* for QLS-4100 Xe refit instructions.

Then refer to *Installing the Print & Peel System* for installation instructions.

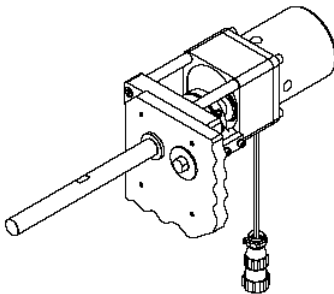
Refitting an Existing QLS-4100 Xe

QLS-4100 Xe printers (models with Pull Back option only) can be refitted for use with the Print & Peel Base.

Note: These instructions apply only when refitting an existing QLS-4100 Xe for use with the Print & Peel Base. Skip this section if you received the Complete Print & Peel System, which contains a QLS-4100 Xe with the required hardware pre-installed.

To refit an existing QLS-4100 Xe:

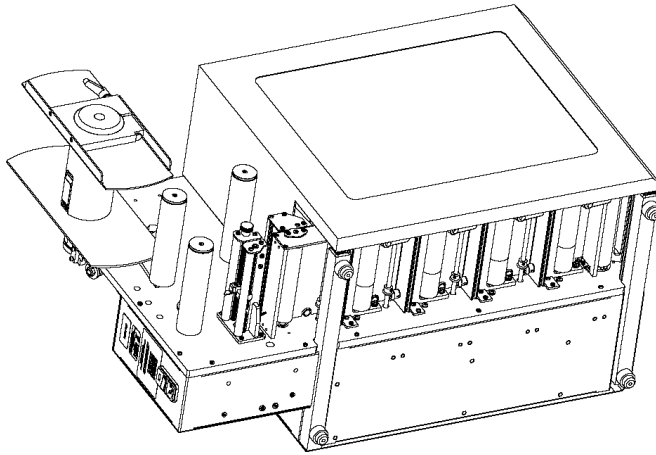
- 1 Turn the printer off and unplug the AC power cord.
- 2 Replace the gear box that corresponds to the media supply mandrel.



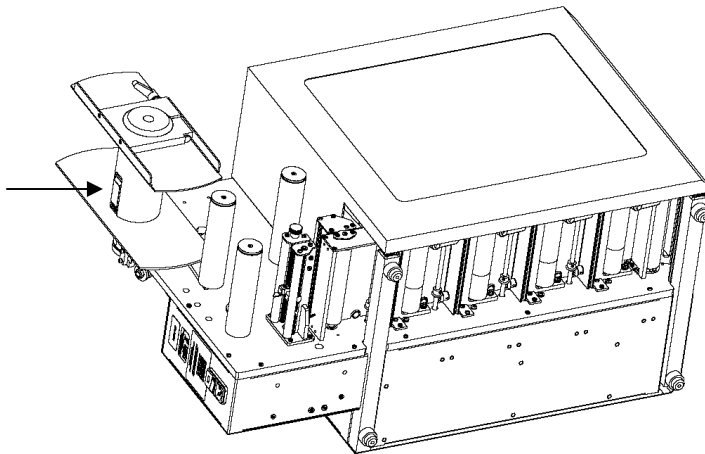
Remove the four soc head cap screws (10630580). Disconnect the pull back wiring harness from the gear box. Replace existing gear box (PT1997) with gear box (PT2001) and replace screws.

Connect the reverser harness (32712011) between the gear box (PT2001) and the pull back wiring harness.

- 3 Position the QLS-4100 Xe as indicated in the following illustration. The printer is heavy and it is suggested that at least two people lift it.



- 4 Remove the two #6 binder head screws (10658610) from the spring clip on the media supply mandrel.



Replace the spring clip (00058-DA) with spring clip (14589000).

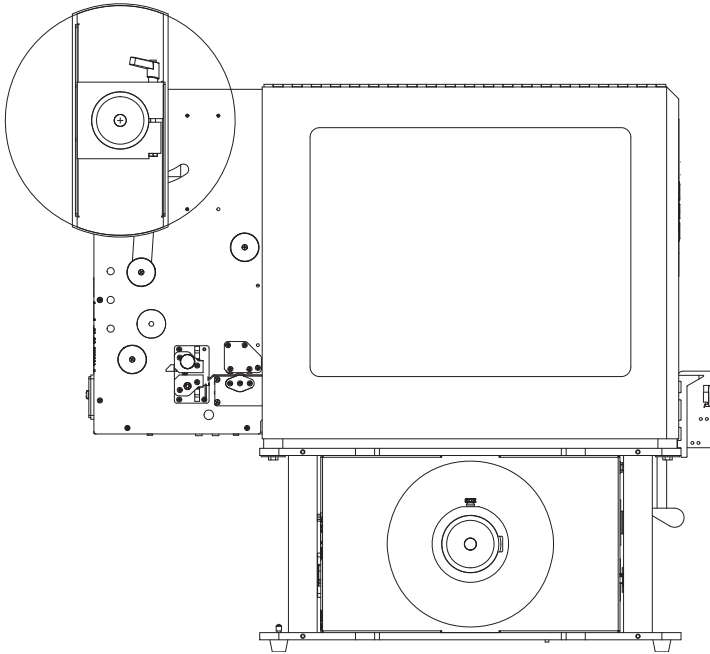
- 5 Remove the four rubber bumper feet (12007001) and hardware. Discard these parts. Hand tighten the four spacer feet (14599350).

Installing the Print & Peel System

Use the following instructions to install the Print & Peel System.

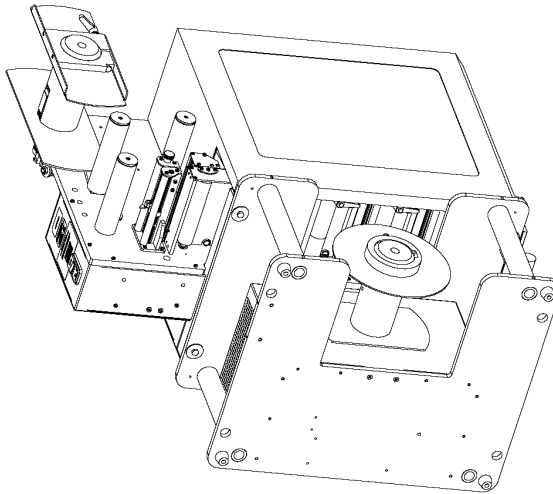
To install the Print & Peel System:

- 1 Ensure the printer and Print & Peel Base are powered off, and the AC power cords are removed from the units.
- 2 Place the Print & Peel Base on a sturdy surface. This surface must be able to support the combined weight of the QLS-4100 Xe and Print & Peel Base (300 lbs).
- 3 Carefully place the QLS-4100 Xe on top of the Print & Peel Base. The printer is heavy and it is suggested that at least two people lift it.



The QLS-4100 Xe spacer feet fit into the holes on the top plate. On some units the leg struts must be adjusted by loosening the screws that locate them. These are inside the unit and require the removal of the right side cover.

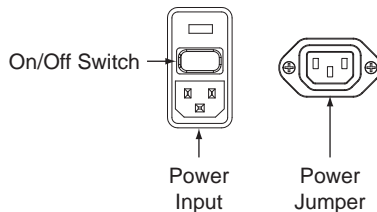
Attach using four flat washers (14606000) and four ¼-20 hex bolts (1117017). These only need to be hand tight. A bottom view is illustrated below.



- 4 Connect the 9-pin cable (24164001) between the QLS-4100 Xe utility port and the 9-pin connector on the Print & Peel Base.

Note: If your QLS-4100 Xe was manufactured prior to October 2008, you will need to install a utility port adapter (26732101) in the QLS-4100 Xe utility port. Install the adapter before connecting the 9-pin cable.

- 5 Connect the jumper cord from the Print & Peel Base power jumper port to the QLS-4100 Xe power input port. Turn the QLS-4100 Xe power switch to the on position.



- 6 Ensure the Print & Peel Base on/off switch is in the off position. Connect the AC power cord to the Print & Peel Base power input. Connect the opposite end of the AC power cord into an earth grounded AC receptacle.

Warning: Do not use any type of receptacle adapter or AC Power Cord that has not been supplied with the unit. Doing so can result in damage to the printer.

Note: It is recommended that an AC line conditioner / surge suppressor is used. Select a unit that is capable of handling the power requirements of the printer and protecting from surges and spikes. A VA rating of at least 1350 VA is required.

Print & Peel Setup

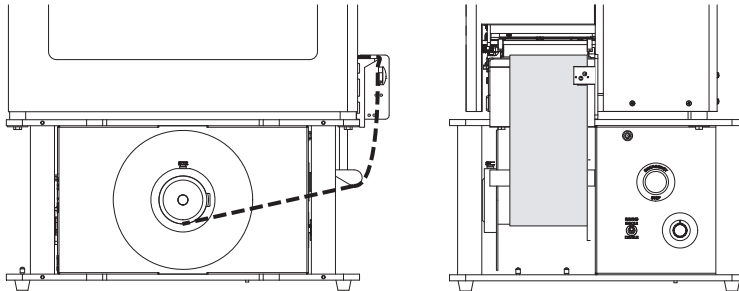
This section describes how to set up Print & Peel.

To set up Print & Peel:

- 1 Ensure the printer power switch is in the On position. Move the Print & Peel Base power switch to the On position. The printer and base will be powered up.

Note: Ensure that compressed air is connected. For more information, refer to *Chapter 2: Physical Setup*.

- 2 Move the Rewind Enable/Disable switch to the down position. This will disable the rewind motor for the setup process.
- 3 Fully seat an empty cardboard takeup core on the rewind mandrel on the Print & Peel Base.
- 4 Press the FORM FEED/ADVANCE key until you have enough media to reach the takeup core on the Print & Peel Base. Remove the labels from this section to expose the liner. Refer to the following illustrations.



Thread the liner as indicated. Ensure the liner passes beneath the sensor on the right side of the liner guide.

Wrap the end of the liner under the takeup core and secure the end with a small piece of adhesive tape.

- 5 Move the Rewind Enable/Disable switch to the up position to enable the rewind motor.
- 6 Enable Print & Peel as described in the *Enabling/Disabling Print & Peel* section later in this chapter.

Note: The Pull Back option should be disabled in both the printer menu and Custom QuickLabel when operating in Print & Peel mode.

Enabling/Disabling Print & Peel

You will use the Print & Peel option to enable or disable Print & Peel mode. Two Print & Peel modes are available.

- **Multiple Label** - In this mode, labels are continuously printed and advanced until the Print & Peel sensor detects that a label is present and ready for removal. When the label is removed, this process repeats.

When the batch of labels has printed, the label media will be pulled back to position the first label for the next print job.

Horizontal artifacts across the label may appear when using this method. These artifacts result from partially printed labels stopping directly under printheads. However, if your labels and media constructions are designed so printheads stop on unprinted areas, or “quiet zones,” no artifacts will occur.

- **Single Label** - In this mode, one label is printed and advanced until the Print & Peel sensor detects that a label is present and ready for removal. When the label is removed, the label media is pulled back and this process repeats.

When the batch of labels has printed, the label media will be pulled back to position the first label for the next print job.

Horizontal artifacts do not appear when using this method, as each label is fully printed without stopping. Additionally, this mode provides better color registration.

To enable/disable Print & Peel:

- 1 If the printer is in a Ready state, press the PRINT/PAUSE key to pause the printer.
- 2 Press the NEXT or PREVIOUS key until the Options menu is displayed. Then press the SELECT key.

Pause: Options
Press SELECT

- 3 Press the NEXT or PREVIOUS key until the Print & Peel Mode menu is displayed.

A rectangular screen with a black border displaying the text "Print & Peel Mode" on the top line and "Off" on the bottom line.

Print & Peel Mode
Off

- 4 Press the + or – key to choose the Print & Peel Mode option. The following options are available.

Off - Print & Peel mode is disabled.

Multiple Label - Enables multiple label mode.

Single Label - Enables single label mode.

- 5 Press the SELECT key to confirm your choice.

Note: Before printing labels in Multiple Label mode, use the Synchronize Labels command from the Operation menu to synchronize the printer with the Print & Peel system. Refer to *Chapter 4: Keypad Controls and Menus*.

If you are using Single Label mode, synchronization is not necessary.

The following message will appear if you attempt to print in Multiple Label mode without synchronizing.

A rectangular screen with a black border displaying the text "Synch Required" in the center.

Synch Required

Printing and Peeling Labels

Use the following instructions to print and peel labels.

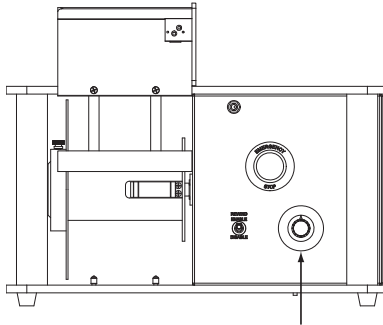
To print and peel labels:

- 1 Make sure that the QLS-4100 Xe is in a Ready state. Press the PRINT/PAUSE pushbutton if necessary until Ready is displayed.
- 2 Specify the label quantity from within your software application.
- 3 Send the label you wish to print from your software application. The QLS-4100 Xe will begin printing the label.

As the label is printed, the liner will rewind onto the core in the Print & Peel Base.

- 4 If necessary, adjust the torque. If the label peels cleanly at the peel edge, skip this step.

When initially setting the torque, turn the torque adjustment knob to 50. This knob is illustrated below.

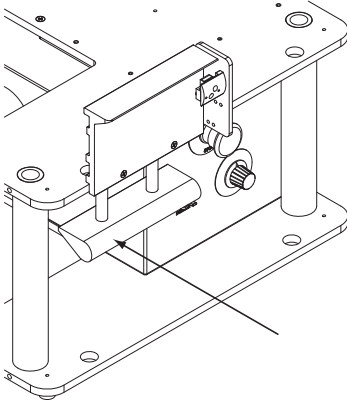


The appropriate torque setting will vary according to the media width. Adjust the torque until the label peels cleanly at the peel edge.

- 5 If the liner does not track in alignment with the core, liner guide adjustments may be necessary. Refer to *Adjusting the Liner Guide* for more information.

Adjusting the Liner Guide

The liner should track in alignment with the core as labels are printed. If the liner drifts inward or outward, you can adjust the liner guide to correct the tracking.



The appropriate liner guide position will vary according to the media width.

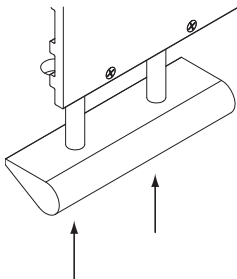
Required Tools:

5/32 Allen wrench

Ensure the media is tracking correctly through the QLS-4100 Xe before adjusting the liner guide.

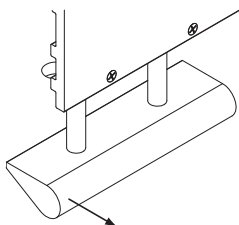
To adjust the liner guide:

- 1 Loosen the two 5/32 set screws located on the underside of the liner guide.



The holes for the set screws are slotted. Push the liner guide all the way toward the rear of the printer. This will be the initial starting position for the liner guide.

- 2 Tighten only the inside (right side) set screw. The outer (left side) set screw will be tightened later.
- 3 Thread the liner over the liner guide and attach it to the rewind core. Set the rewind motor torque to a functional low setting. Press and hold the FORM FEED/ADVANCE key and observe how the media tracks through the printer onto the rewind core.
- 4 If necessary, move the outside (left side) of the liner guide forward.



This adjustment should be made while the liner is feeding so you can see the adjustment result. Once the optimum setting is found tighten the outer (left side) set screw.

- 5 Print a batch of labels in Single Label Mode and observe the liner tracking. Adjustments to the liner guide may be necessary to fine tune the tracking in this mode.
- 6 Adjust printer alignment using the Cross Web Adj and Print Line Adj menu options, if necessary. Refer to *Chapter 4: Keypad Controls and Menus* for more information.

Liner Guide Adjustment Notes

- Narrow media has a tendency to track away from the inside of the printer. Adjusting the outside of the liner guide forward will correct this issue.
- Observe the tension across the liner before it reaches the liner guide. This will indicate how you will adjust the angle of the liner guide.

- In single label mode, when the media is retracting you may notice the liner drift from right to left across the peel edge. This is normal. A 2mm to 5mm drift is expected. The media should correct itself while the next label is being printed. It is more important to observe the media tracking at the print station four (rear-most print station) media guide. The position of the media at this guide will determine if an adjustment is needed or not. If drift is greater than 5mm across the peel edge, image placement will be compromised.
- The media liner may get bent or folded during rewinding and retraction. This is acceptable as long as the liner does not tear completely. For this reason perforated material is not compatible.
- In single label mode, media tracking is the best when the system is set up for one particular width.

Print & Peel Adjustment Options

This section describes menu options associated with Print & Peel adjustment.

Form Stop Adjust

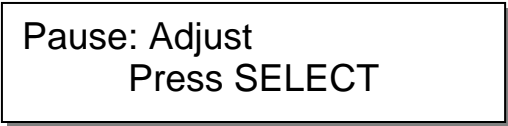
When labels are printed, they are advanced from the front of the printer for removal. In Print & Peel single label mode, you can increase/decrease the distance labels are advanced after printing.

Note: This option is available only in Print & Peel single label mode.

To adjust the form stop position:

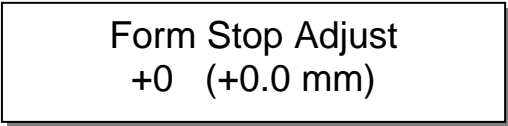
- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.



Pause: Adjust
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Form Stop Adjust menu is displayed.



Form Stop Adjust
+0 (+0.0 mm)

- 3 Press the + or – key until the desired form stop adjust setting is displayed.

Form stop adjust settings range from -300 dots to +14400 dots (-1 inch to +48.0 inches) (-25.4 mm to 1219.2 mm).

- 4 Press the SELECT key to confirm.

Peel Delay

When labels are printed, they are advanced from the front of the printer for removal. After you remove a label, the printer will wait for a specified amount of time before performing the next action (pulling media back, advancing another label, etc.). You can adjust this time if necessary.

Note: This option is available only in Print & Peel modes.

To adjust the peel delay:

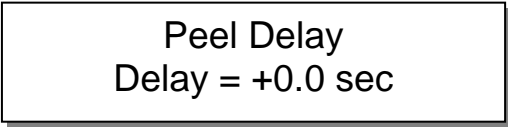
- 1 If the printer is in a Ready state, proceed to the next step.

If the printer is in a Pause state, press the NEXT or PREVIOUS key until the Adjust menu is displayed. Then press the SELECT key.



Pause: Adjust
Press SELECT

- 2 Press the NEXT or PREVIOUS key until the Peel Delay menu is displayed.



Peel Delay
Delay = +0.0 sec

- 3 Press the + or – key until the desired peel delay setting is displayed.

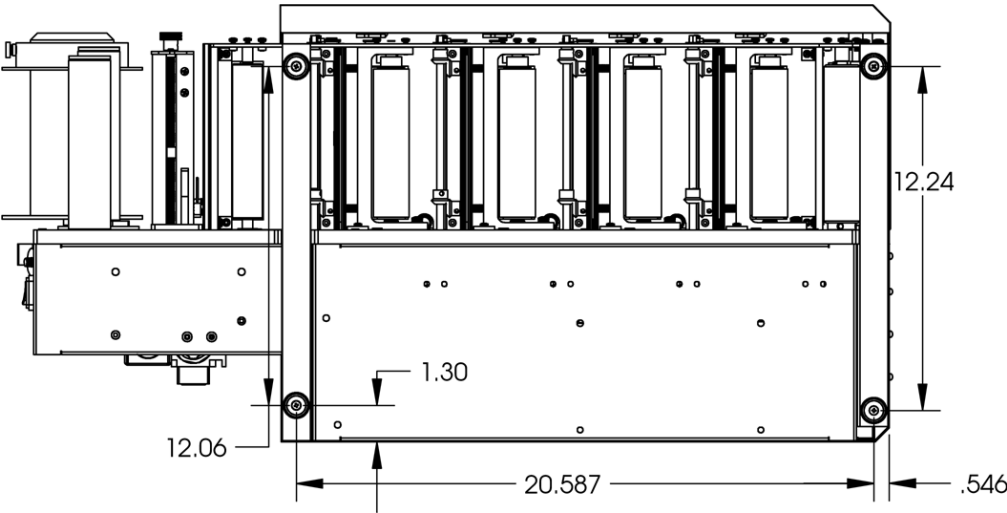
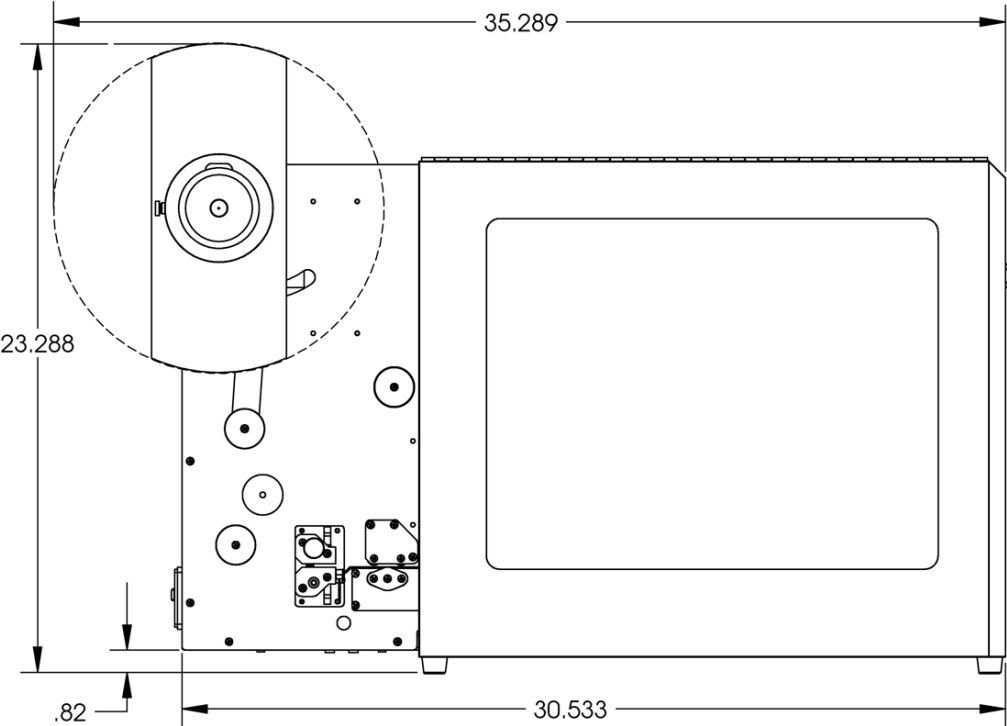
Peel delay settings range from 0.0 seconds to 10.0 seconds.

- 4 Press the SELECT key to confirm.



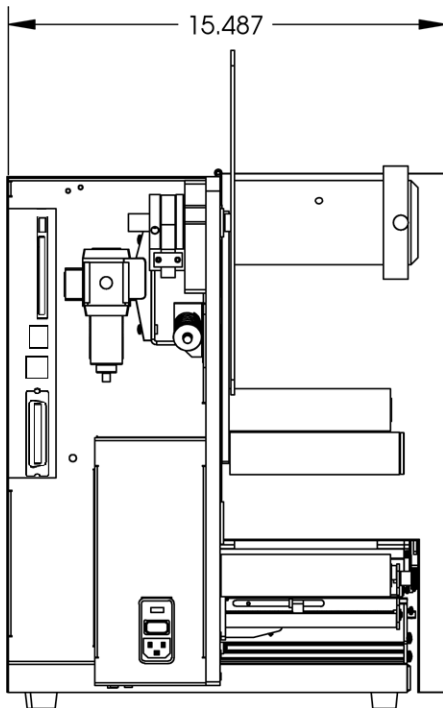
Appendix A: Physical Data

QLS-4100 Xe Dimensions



*all dimensions are in inches

QLS-4100 Xe Dimensions



*all dimensions are in inches

QLS-4100Xe

Appendix B: Specifications

QLS-4100 Xe Specifications

Printing Method	Thermal Transfer, Spot and CMYK Process Color
Print Stations	4 printheads
Registration Accuracy	+/- 0.5 dot typical (0.0015", 40 microns)
Ribbon Management	User selectable, patented RibbonRation™ systems conserves thermal transfer ribbon automatically using air-operated cylinders.
Resolution	300 dpi
Print Speed	2" (50 mm) - 7" (177 mm) per second
Maximum Print Area	Width: 5" (127 mm); Length: 60" (152 cm) with Windows® Driver; 30" (76 cm) with Custom QuickLabel
Fonts	7 TrueType™ fonts resident; other TrueType™ fonts can be downloaded from your PC
Resident Barcodes	All Standard symbologies, including 2-Dimensional
Control Panel	Ergonomic Key Pad for Menu functions, Backlit LCD display
Connectivity	PC, AS/400®. Parallel (IEEE-1284 Centronics), Serial (RS-232), Ethernet
Interface Software	Windows®-based Printer Drivers included; Custom QuickLabel Label Creation Suite (optional)
Color Halftoning	Printer optimized for MicroCell™ dot placement algorithm available in Windows® Driver and Custom QuickLabel software
Memory	4 Mb user-available fonts 4 Mb user-available bitmap images Compact FLASH (Type 1) memory cards

Dimensions	24" H x 15.5" D x 36" L (610mm L x 394 mm D x 914mm L)
Weight	140 lbs. (64 kg) - no media, no ribbons
Power Requirements	20/240 VAC, 50/60 Hz, 6.3/4.0A
Compressed Air	1 cfm @ 70 psi required to operate RibbonRation™ Use Male NPT Plug with 3/8" body size. (not supplied with printer)
Thermal Transfer Ribbon	4 rolls, each 3,281 ft long (1000m); Spot or CMYK rolls
Label / Tag Size	Width: 5.125" Max. (130mm), 2" Min. (51mm); Length: 0.395" Min. (10mm)
Label / Tag Thickness	12 point Max. (0.16", 0.007mm) recommended
Label / Tag Roll Capacity	12" Max. Outside Diameter (305mm)

Print & Peel Specifications

Weight	Weight of rewind base is 60 lbs. Total weight is weight of rewind base plus weight of QLS 4100 Xe plus consumables loaded.
Length	Length (base only): 22.0 inches Length (base + printer): QLS-4100 Xe length + 1.85inches
Width	Width (base only): 18.5 inches Width (base + printer): 18.5 inches. Additional width needed (left side) to open printer door for loading of consumables and access to rewind mandrel for threading of liner.
Height	Height w/feet (base only): 10.630 inches Height w/feet (base + printer): 33.85 inches
Peel Height	14.66 inches from tabletop
Power Requirements	Base only: 120/240 VAC, 50/60 Hz, 0.7A/0.35A Base and Printer: 120/240 VAC, 50/60 Hz, 6.7A/3.35A

QLS-4100Xe

Appendix C: Replacement Parts

Replacement Parts

Part Number	Description
14076-001	Printhead
14039-001	Drive Roll (black polyurethane)
14039-401	Drive Roll (blue silicone)
14041-101	Pinch Roller (aluminum with coating)
14039-101	Platen Roller (black polyurethane, 60 Dur., bearings installed)
14039-501	Platen Roller (blue silicone, 50 Dur., bearings installed)
14058-000	Bearing Block Assembly (drive roll)
14057-201	Lever Printhead Lift (4)
14057-301	Lever Drive Roll Lift
23701-211	Belt Timing 3mm 211T
24034-002	Fuse 6.3 A (110VAC)
24034-004	Fuse 4.0 A (220VAC)
13832-000	Cleaning Pads (case of 50)
14050-400	Platen Shaft (4)
14050-050	Drive Shaft
14050-500	Drive Shaft Stub
RN1716	Drive Snap Ring (2)
14109-020	Collar (9)
14046-200	Shaft End Plate (5)
10609-016	#6 Pan Head Philips
13318-000	Leaf spring bracket for ribbon rewind mandrels
00058DA	Leaf spring bracket for label & ribbon unwind mandrels
25747-000	Motor Assy, Main
23682-114	Pulley, Drive
14099-000	Gas Spring, Drive Station
24878-000	Motor Assy, Thermal Transfer Ribbon (4)

Recommended spare parts are noted in bold.

Parts specifications are subject to change without notice.

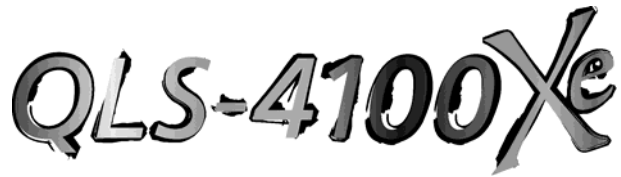
Contact QuickLabel Technical Support to identify the correct parts and obtain current pricing. Please have the serial number of your printer available.

Replacement Parts

Part Number	Description
12361-013	Slip Clutch, Thermal Transfer Ribbon (4)
26599-800	Sensor, Optical Encoder
14039-301	Roller, Optical Encoder
26599-100	Sensor, Thermal Transfer Ribbon / Head Up (9)
26599-600	Thru Sensor Probe
26599-000	Reflective Sensor Probe
26599-200	Sensor Amplifier Assy (2)
26599-700	Pressure Switch Assy
26588-100	Harness, Assy Printhead (4)
26599-300	Harness, Assy Motor
26599-400	Harness, Assy Thermal Transfer Ribbon Sensors
26599-500	Harness, Assy Head Up Sensors
42679-001	Controller, Assy PCB
14166-000	Power Supply, Assy PCB w/ Microstepper, Assy PCB IM483
25995-000	Microstepper, Assy PCB IM483 - only
42455-001	Keypad, Assy PCB
25459-200	Display, LCD w/ harness
14193-032	32 Mb Compact Memory Card
24164-020	Cable, Parallel High-Speed
24164-000	Cable, Serial
10787-001	Cord, Power

Parts specifications are subject to change without notice.

Contact QuickLabel Technical Support to identify the correct parts and obtain current pricing. Please have the serial number of your printer available.



Appendix D: Custom QuickLabel[®] setup

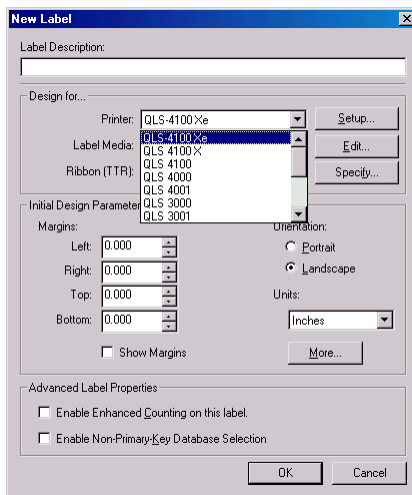
Custom QuickLabel setup

The following guide explains how to configure Custom QuickLabel software for use with the QLS-4100 Xe printer. If you are using an older version of software (i.e. Color QuickLabel), please contact QuickLabel for an upgrade.

To configure Custom QuickLabel from Create and Print:

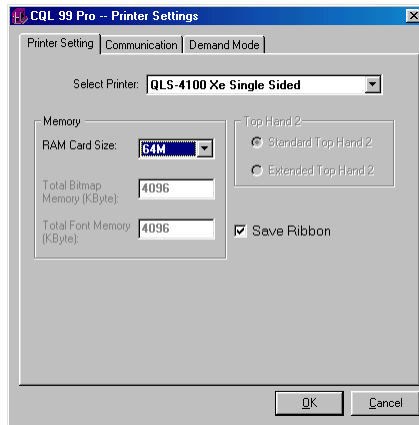
Note: Skip to step 4 if you are configuring the Print application. Steps 1 - 3 are for configuring a new or existing label format in the Create application.

- 1 Open the File >> New Label... or File >> Label Setup... menu. The following screen will appear:



- 2 Select QLS 4100Xe from the Printer pull-down menu list.
- 3 Configure any other options as necessary, then click OK when finished.

- 4 Open the File >> Print Setup menu. The following screen will appear:

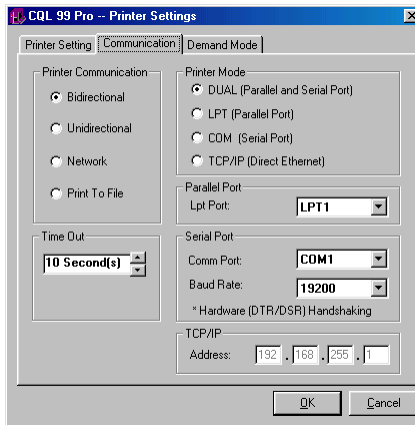


- 5 Choose QLS-4100Xe Single Sided from the Select Printer pull-down list.
- 6 Select the capacity of the memory card being used or none from the RAM Card Size pull-down list. This option is used only when set up for unidirectional communication.

Note: If *none* is selected, all images will be sent to an internal 4 Mb dedicated to images. All fonts will be sent to an internal 4 Mb memory dedicated to fonts. If your images/fonts exceed this capacity, some or all of the images/fonts may not print.

- 7 Place a check mark in the Save Ribbon box if RibbonRation™ will be used.

- 8 Click on the Communications tab. The following screen will appear:



- 9 Select the desired Printer Communication:

Bidirectional (recommended) - This option permits two-way communication with the printer. The printer will report status back to the host computer via the serial port connection. The parallel, serial, or ethernet port is used to transmit data to the printer.

Unidirectional - This option permits one-way communication with the printer. The printer status cannot be transmitted back to the host when using this communication method.

Network - Used to communicate with a printer in a networked environment. This is the optimal setting for a single printer with multiple users requiring queuing via the Windows print spooler. Printer status cannot be transmitted back to the host when using this communication method. The QuickLabel Windows Printer Driver must be installed to use this communication mode.

Print to File - This communication method is used to generate ASCII label format files and binary image/font files. No communications interface connections are required when this option is selected.

- 10 Select the appropriate Printer Mode.

DUAL – Select this option for parallel and serial port connection.

LPT – Select this option for parallel-only connection.

COM – Select this option for serial-only connection.

TCP/IP – Select this option for an ethernet connection.

- 11 Select the appropriate Parallel Port, Serial Port, and TCP/IP settings as necessary.

Note: Custom QuickLabel supports parallel ports LPT1 and LPT2 and serial ports COM1 and COM2. The maximum supported baud rate for the serial port is 38,400 baud. Hardware handshaking (DTR/DSR) is always used by default.

- 12 Click OK when all printer settings have been made.



Appendix E: Windows Printer Driver Setup

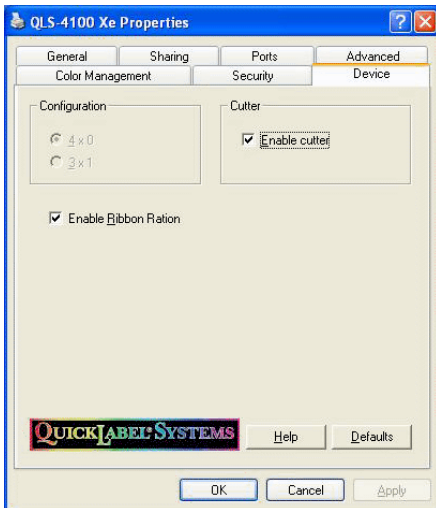
Windows Printer Driver Setup

The following guide explains how to configure the Windows Printer Driver for use with the QLS-4100 Xe printer.

Accessing Device Options

- 1 Open the Printers and Faxes window.
(Start >> Control Panel >> Printers and Faxes)
- 2 Right-click the QLS-4100 Xe printer option and choose Properties. The QLS-4100 Xe Properties window will open.

Device Options



Ribbon Ration - Check this option to enable the automatic ribbon saving feature of the printer.

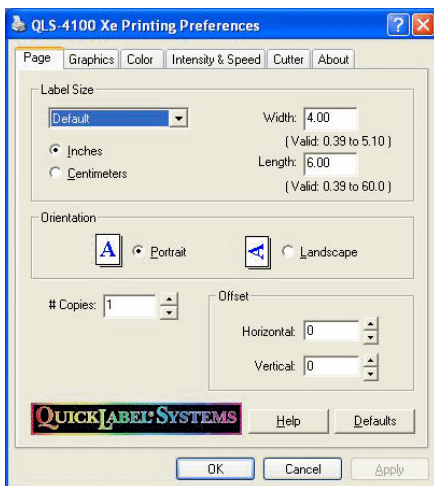
Cutter - Check this option if your printer is connected to a cutter or cutter/stacker accessory. If this option is checked, the Cutter tab will appear in the Printing Preferences window.

Note: If you are not using a cutter or cutter/stacker, ensure this option is not checked or a printer error may result.

Accessing Printing Preferences

- 1 Open the Printers and Faxes window.
(Start >> Control Panel >> Printers and Faxes)
- 2 Right-click the QLS-4100 Xe printer option and choose Printing Preferences. The QLS-4100 Xe Printing Preferences window will open.

Page Options



Label Size - Use this drop-down list to select the label size you are printing. The following options are available:

- **Custom** - Select this option to enter your own custom label size in the Width and Length fields.
- **Diskette** - Select this option to print a label that will fit on a diskette. The appropriate Width and Length values will be entered automatically.
- **Business Card** - Select this option to print a label the size of a business card. The appropriate Width and Length values will be entered automatically.
- **Bumper Sticker** - Select this option to print a label the size of a bumper sticker. The appropriate Width and Length values will be entered automatically.
- **Default** - Select this option to set the Width and Length fields to their default value.

Inches/Centimeters - Select the unit of measure that will be used on the label.

Width - If you are setting up a custom label size, enter the label width. The minimum and maximum label widths are displayed directly below the Width field. If you enter a width larger than the indicated maximum width, the printer will crop the image.

Length - If you are setting up a custom label size, enter the label length. The minimum and maximum label lengths are displayed directly below the Length field. If you enter a length larger than the indicated maximum length, the printer will crop the image.

Orientation - Orientation is often set within the design application. However, if you cannot select an orientation in the design application, choose from the following options:

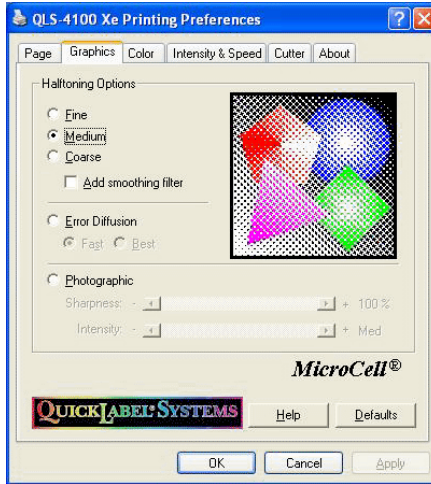
- **Portrait** - Select this option if you want to print the label in a portrait orientation on the label roll.
- **Landscape** - Select this option if you want to print the label in a landscape orientation on the label roll.

Copies - The number of copies of a label to print are specified within the application before printing. You can override that value here, or utilize this setting if the application does not provide a setting.

Offset - If necessary, use the offset options to adjust the printing position of the label image.

- **Horizontal** - You can enter a horizontal offset ranging from -1200 to +1200 dots (-4 inches to +4 inches). Negative values shift the image to the left on the label. Positive values shift the image to the right on the label.
- **Vertical** - You can enter a vertical offset ranging from -1200 to +1200 dots (-4 inches to +4 inches). Negative values shift the image down on the label, away from the printer. Positive values shift the image up on the label, toward the printer.

Graphics Options



Halftoning Options

- **Fine** - Choose Fine for labels containing large areas of light solid colors. This option produces a close pattern that can best represent continuous tone color.
- **Medium** - Choose Medium for best all around halftoning. This is the default setting.
- **Coarse** - Choose Coarse for best color representation, or when certain combinations of ribbon and media types cause excessive dot gain or dot bleed.

You can also apply a smoothing filter to the fine, medium, and coarse halftoning options. Results are best for photographic images or for labels without large solid areas.

Error Diffusion - Choose Error Diffusion for labels containing complex graphics and logos. It can also be used to better represent darker solid color areas. The following error diffusion options are available:

- **Fast** - Choose this option when an error diffusion pattern is desired, especially for lighter solid colored areas, but when the processing time required to produce the best quality error diffusion pattern would be objectionable for larger labels.
- **Best** - Choose this option for labels containing complex graphic images or where the best error diffusion output is desired.

Photographic - Choose Photographic for labels containing photographic quality images and logos. It also allows for photographic control of image sharpness and intensity.

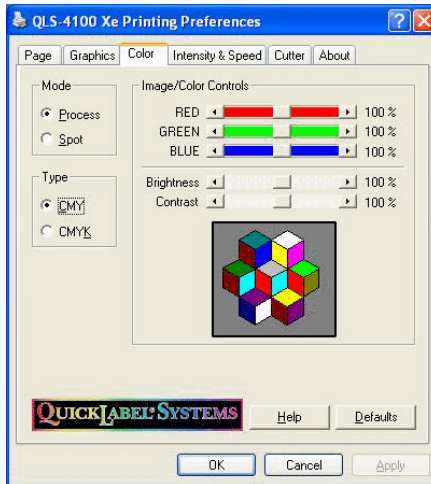
- **Sharpness** - Allows you to change the overall sharpness of the printed photographic image. 100% sharpness will yield sharpest quality with some chance of pattern artifacts in large regions of solid color. Lower the sharpness percentage if you would like to generate more random patterns with less likelihood of artifacts in large areas of solid color.

Lowering the sharpness from 100% will affect overall line definition and perceived spatial resolution of printed sample.

- **Intensity** - Allows you to adjust overall intensity of image. Low intensity will generate the lightest halftoned image. Dark will generate the darkest halftoned image.

Sample Graphic - As you select halftoning options, the sample graphic will be updated based on your selection. Experimentation with each option is required as label image content varies. The sample graphic changes as options are changed, but actual output is dependent upon many factors, including media type, ribbon type, printer heat settings and speed, etc.

Color Options - Process



Color Type - Select the color type to be used by the driver. The following color types are available:

- **CMY** - Select this option to print in CMY (cyan, magenta, and yellow).

If your printer has a black ribbon installed and you choose CMY printing, black ribbon will still be consumed. In this situation, disabling the black printhead station will prevent black ribbon from being consumed. Refer to the user documentation for your printer for information about disabling a printhead.

- **CMYK** - Select this option to print in CMYK (cyan, magenta, yellow, and black).

Red, Green, and Blue - Use the color sliders to adjust the amount of red, green, and blue on the label. Numbers to the right indicate in percent the amount adjusted from a nominal of 100%. The higher the number, the more intense a particular color component will print.

The sample graphic changes as options are changed, but actual output is dependent upon many factors, including media type, ribbon type, printer heat settings and speed, etc.

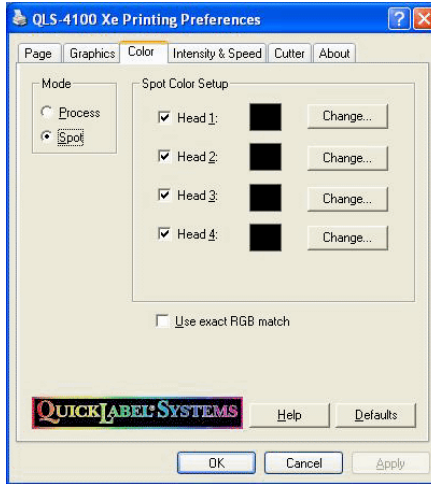
Brightness and Contrast - Use these controls to adjust the brightness and contrast of the image. As you adjust the brightness and contrast, the sample graphic will be updated. Actual output is dependent upon many factors, including media type, ribbon type, printer heat settings and speed, etc.

- **Brightness** - Use the Brightness slider to adjust the brightness of the entire label. A setting of 100% is the default brightness.
- **Contrast** - Use the Contrast slider to adjust the intensity of colors around the Contrast Threshold.

Colors above the threshold are adjusted the percent specified above the threshold. Colors below the threshold are adjusted the percent specified below the threshold. The nominal settings for contrast is 100%.

The nominal setting for the threshold is 50% of the entire range of the color components. That is, a color intensity is defined as a number between 0-255. A threshold of 50% corresponds to 128 or mid-range intensity.

Color Options - Spot



Spot Color Setup - Use the spot color setup options to indicate the spot colors that are installed on your system.

- **Checkbox** - Some printer models provide a checkbox next to each printhead color setting. If the check box is unchecked, the print station will not be used by the driver.

If ribbon is installed on an unused print station, you may want to disable the print station to conserve ribbon. Refer to the user documentation for your printer for information about disabling a printhead.

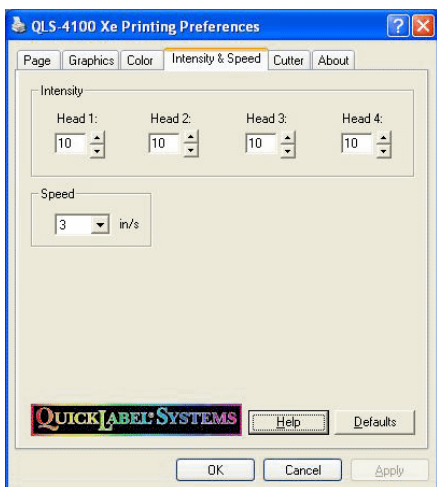
Note: If no checkbox is displayed, the associated print station is always enabled.

- **Color Box** - A color box is associated with each print station. It displays the current color set up on the print station. You can display a color's RGB values by hovering the mouse pointer over the color box.
- **Change** - Choose this button to open the standard Windows color selection window and select a new color for the print station.
- **Use exact RGB match** - If you check this option, the color on the label must match the defined spot color exactly.

If you leave this option unchecked, the driver executes a nearest color algorithm, and attempts to match the label colors with the correct printhead. In this case, no specific RGB value setup is required. Simply

pick colors that closely resemble those that are on the label when setting up the driver.

Intensity & Speed Options



Intensity - Use the Intensity settings to adjust the printhead temperature on each printhead. Intensity values range from 1 to 32. Higher numbers result in more heat being applied, resulting in transfer of more color to the label. The optimal setting for intensity will vary greatly depending on the media type being used.

The degree of heat is determined by two factors: the length of time that power is applied to the printhead, and the rate at which the stock passes below the printhead. The first factor is controlled by the print intensity (printhead temperature) you select, while the second factor is controlled by the motor speed.

In general, lower-quality stock that requires more heat to produce a satisfactory image is less advantageous in terms of speed and performance than higher-quality stock that images easily and quickly at lower temperatures. If you use stock that requires more heat, it is recommended that you set the speed at a slower rate.

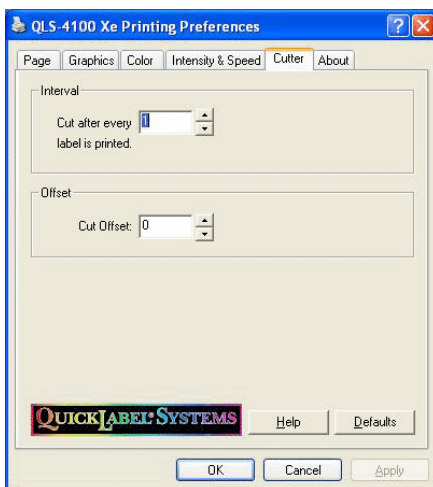
Note: When increasing the heat, a point may be reached where the image will turn lighter. This is a result of over-burning the ink. At this point, decreasing the heat will darken the printed image.

Speed - Use the speed option to control the printer's motor speed. The available speed range is 2 - 7 inches/second.

When setting the motor speed, consider the requirements of the media you are using and the heat setting you are selecting. These three factors are interrelated in determining performance on a particular job.

In general, the lower the speed, the higher the print quality. For large batches where quality is less important, high speed will produce labels quickly.

Cutter Options



Cutter Interval and Offset - Use these settings to configure the installed cutter or cutter/stacker.

- **Cut Interval** - This setting specifies the number of labels to print before cutting. The default setting is 1.
- **Cut Offset** - Cut offset allows the adjustment of the cutter up or down the label, allowing correct positioning of the cut. Range of adjustment is +/- 1200 dots (+/- 4 inches).



Appendix F:

Format error codes

QLS-4100 Xe Format Error Codes

- 1 Field X location error**
The X coordinate of a Set Field Location command (<STX>FLx,y) is out of bounds.
- 2 Field Y location error**
The Y coordinate of a Set Field Location command (<STX>FLx,y) is out of bounds.
- 3 Alphanumeric field font error**
The font parameter of a Define Alphanumeric Field Font command (<STX>AFfont,r,w,h,m) is invalid.
- 4 Alphanumeric rotation error**
Valid rotations are 0, 90, 180, 270°.
- 5 Alphanumeric character height error**
Valid settings for font height are 10 to 2000 for TrueType® fonts and 1 to 10 for bitmap fonts.
- 6 Alphanumeric character width error**
The range for width values is the same as for height values.
- 7 Bar-code field type error**
The barcode type value of a Define Bar-code Symbol command (<STX>BFtype,r,...) is out of bounds.
- 8 Bar-code field rotation error**
Valid rotations are 0, 90, 180, 270°.
- 9 Bar-code height error**
Bar-code height is out of bounds.
- 10 Bar-code narrow element error**
The narrow element value in a Define Bar-code Symbol command is out of range.
- 11 Bar-code wide element error**
The wide element value in a Define Bar-code Symbol command is out of range.
- 12 Bar-code interpretation error**
The selection for enabling bar-code text interpretation is faulty.

- 13 Bar-code check digit error**
The selection for enabling the bar-code check digit is faulty.
- 15 Bar-code interpretation width error**
The range for width values is the same as for height values.
- 16 Bar-code interpretation height error**
Valid settings for font height are 10 to 2000 for TrueType® fonts.
- 17 Bar-code interpretation font selection error**
The font parameter of a Define Bar-code Symbol command (<STX>BFn,...,i,...) is invalid.
- 18 Alphanumeric write method error**
The AF command contains an invalid “write method” parameter (must be “1”).
- 20 Format command error**
The structure of one or more label format commands is faulty. Some examples would be:
- misplaced or missing delimiter
 - invalid characters in the command string (e.g., <STX>FQ...)
 - missing or faulty line termination (<lf><cr> rather than <cr><lf>)
- 21 Numeric value error**
A numeric value in a format string is invalid. If a non-numeric string is placed where the printer expects a numeric string, this error will occur.
- 30 Label length error**
The length parameter of the Set Label Length command is out of range.
- 31 Batch count error**
Acceptable batch count range is 1 to 100000.
- 32 Group count error**
Acceptable group count range is 0 to 100000.
- 33 Serial copies error**
Acceptable serial copies range is 1 to 100000.
- 35 Box width error**
The width value of a graphics field is invalid.

- 36 Box height error**
The height value of a graphics field is invalid.
- 37 Line thickness error**
The value for line thickness in a graphics field is invalid.
- 38 Print intensity error**
Valid print intensity settings are 1 to 32.
- 39 Print speed error**
Valid print speeds are 2 to 7 inches per second.
- 50 .PCX Bitmap error**
This error results from any of the following:
- Bad file format (not monochrome, not a .pcx file)
 - File not present (may have stored to RAM and attempted to recall from card)
- 80 .PCX Bitmap scale error**
Valid scale factors for .PCX graphics fields are 1 to 10.
- 81 Code 49 start character error**
The value to enable start and stop characters in a Code 49 bar-code field is invalid.
- 82 Code 49 group error**
The group size value is out of range.
- 83 Code 49 symbol error**
The symbol specifier is invalid. (Refer to the Define Bar-code Symbol command for Code 49.)
- 84 Reverse-image field association parameter error**
The association parameter in the Define Reverse-Image Field command is invalid.

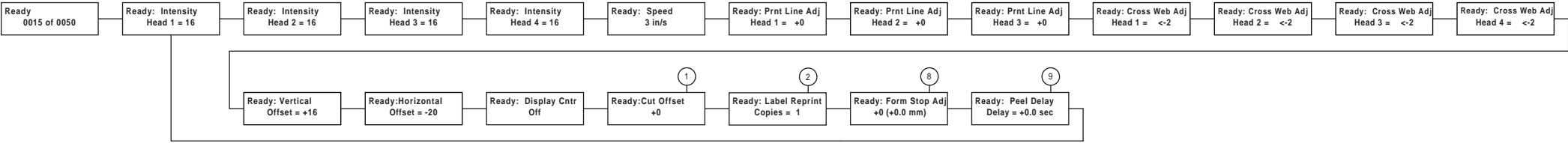
- 85 Field data string error**
An invalid data string is part of the label format. Valid ASCII characters are from 20h to FFh, and all data fields must be terminated with an End Field Data command (<STX>FE). This error results from any of the following:
- Too much data (barcode, font, GS1 Data Matrix)
 - GS1 Data Matrix symbol that extends off the label
 - Bar-code field strings contain characters not supported by the chosen symbology.
- 86 Print disable command error**
Print disable command contains invalid parameters (<STX PD).
- 87 Field color error**
An invalid color number has been specified. Valid field colors range from 1 to 15.
- 88 PDF417 security level error**
An invalid error correction (security) level has been specified for a PDF417 bar code.
- 89 PDF417 reserved 1 error**
Must be 0
- 90 PDF417 reserved 2 error**
Must be 0
- 91 PDF417 reserved 3 error**
Must be 0



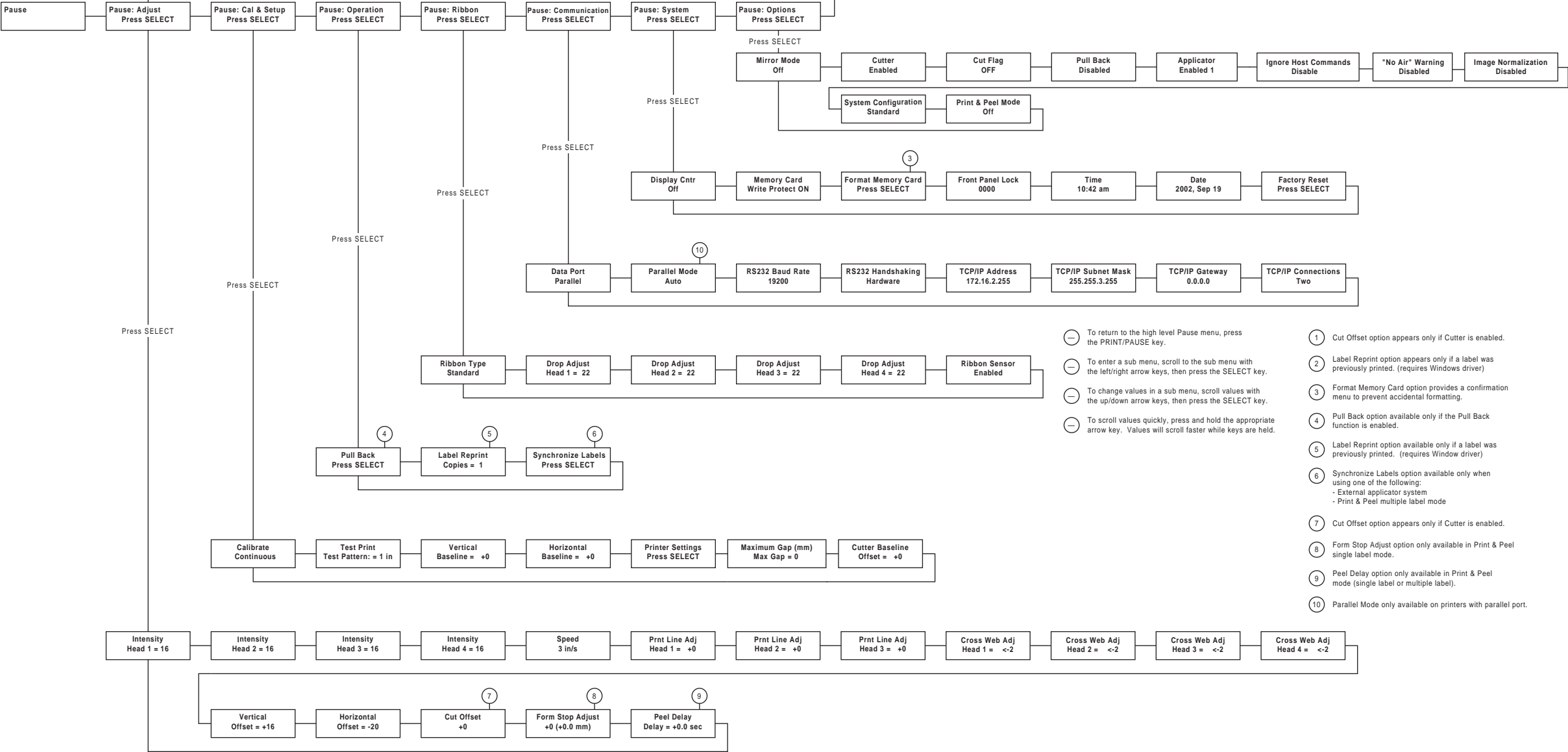
Appendix G: Menu Structure

QLS-4100 Xe Menus

Ready State



Pause State



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