



Videojet 8610

Operator Manual

P/N WLK462425-01

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Japan, Spain, Singapore, Netherlands,
and The United Kingdom
Distributors Worldwide

Compliance Information

For Customers in the U.S.A.

Safety: The equipment complies to UL 60950-1. NRTL accredited certification.

Emissions: The equipment complies with USA Part 15 of the FCC Rules, subpart B, Class A. Operation of the equipment is subject to the following two conditions:

- 1) This equipment may not cause harmful interference, and
- 2) This equipment must accept any interference received, including interference that may cause undesired operation.



Warning

PERSONAL INJURY. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules, subpart B. These limits are designed to provide responsible protection against harmful interference when the equipment is operated in a industrial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. In such cases, the users will be required to correct the interference at their own expense.

Shielded cables must be used with this unit to ensure compliance with Class A FCC limits.

The user may find the following booklet prepared by the Federal Communications Commission helpful: [How to Identify and Resolve Radio-TV Interference Problems](#). This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-00-00345-4.

This equipment has been tested and certified for compliance with U.S. regulations regarding safety by TÜV SÜD America.

For Customers in Canada

Emissions: The equipment complies with the Canada ICES-003 04, Class A.

Safety: The equipment complies with Canadian standard C22.2 No. 60950-1.

This equipment has been tested and certified for compliance with Canadian regulations regarding safety by TÜV SÜD America.

For Customers in the European Union

This equipment displays the CE mark to indicate conformance to the following legislation:

EU Electromagnetic Compatibility Directive 2004/108/EC

EN 55022 (Class A)	Radio disturbance characteristics: Limits and methods of measurement for IT equipment.
EN 55024	Immunity characteristics: Limits and methods of measurement for IT equipment.
EN 61000-6-2	Generic immunity standard, industrial environment.
EN 61000-4-2	Electrostatic discharge requirements
EN 61000-4-3	Radiated, radio frequency, electromagnetic field burst test
EN 61000-4-4	Electrical fast transient/burst immunity test
EN 61000-4-5	Surge immunity test
EN 61000-4-6	Immunity to conducted disturbances, induced by radio frequency fields
EN 61000-4-11	Voltage dips, short interruptions and voltage variations immunity tests
EN 61000-3-2	Limits for harmonic current emissions (equipment input current up to and including 16A per phase).
EN 61000-3-3	Limitations of voltage fluctuation and flicker in low voltage supply systems for equipment and rated currents up to and including 16A per phase.

EC Low Voltage Directive 2006/95/EC

Essential health and safety requirements relating to electrical equipment designed for use within certain voltage limits.

EN 60950-1

Safety requirements for information technology equipment including electrical business equipment.

EN 60529

Degrees of protection provided by enclosures (IP Code (IP65)).

Support and Training

Contact Information

If you have any questions or need assistance, contact Videojet Technologies Inc. at 1-800-843-3610 (for all customers within the United States). Outside the U.S., customers should contact their Videojet Technologies Inc. distributor or subsidiary for assistance.

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Service Program

About Total Source Commitment

Total Source[®] TOTAL SERVICE PLUS RELIABILITY, is the Videojet Technologies Inc. commitment to provide you - our customer - the complete service you deserve.

The Total Source Commitment

The Videojet Total Source[®] Service Program is an integral part of our business in providing marks, codes, and images where, when, and how often customers specify for packages, products, or printed materials. Our commitment includes:

- Applications support
- Installation services
- Maintenance training
- Customer response center
- Technical support
- Field service
- Extended hours phone assistance
- Parts and supplies
- Repair service

Customer Training

If you wish to perform your own service and maintenance on the printer, Videojet Technologies Inc. highly recommends you complete a Customer Training Course on the printer.

***Note:** The manuals are intended to be supplements to (and not replacements for) Videojet Technologies Inc. Customer Training.*

For more information on Videojet Technologies Inc. Customer Training Courses, call 1-800-843-3610 (within the United States only). Outside the U.S., customer should contact a Videojet subsidiary office or their local Videojet distributor for more information.

Fluids

The printer is designed to operate with certain Videojet Technologies Inc. fluids. To order more fluids please contact Videojet Technologies Inc. at 1-800-843-3610 (for all customers within the United States). Outside the U.S., customers must contact their Videojet Technologies Inc. distributor or subsidiary for assistance.

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Glossary

Videojet 8610 Printer

This is a thermal ink jet printer that can print fixed and variable codes at high speed on consumer and industrial products. The printer delivers high print quality and ease of use to the user.

About the Manual

This Operator Manual is written for the every day user of the printer. The Operator Manual helps the user to understand the different parts and different printing operations of the printer.

Related Publications

The following manual is available for reference:

Videojet 8610 Service Manual, Part Number: WLK462426.

Language Codes

When you order these manuals, make sure to add the 2-digit language code at the end of the part number. For example, the Danish version of the operator manual is part number WLK462425-18. Table 1-1 shows the list of language codes that you can use to identify the translated versions of this manual.

Note: The availability of the Operator Manual is indicated by an asterisk (*). Availability of the Service Manual is indicated by a plus sign (+). For more information, contact the Videojet distributor or subsidiary.

Code	Language	Availability (see note)	
01	English (US)	*	+
02	French	*	
03	German	*	
04	Spanish	*	
05	Portuguese Brazilian	*	
06	Japanese	*	
07	Russian	*	
08	Italian	*	
09	Dutch	*	
10	Chinese (Simplified)	*	
11	Arabic	*	
12	Korean	*	
15	Norwegian	*	
16	Finnish	*	
17	Swedish	*	
18	Danish	*	
19	Greek	*	
21	English (UK)	*	+
23	Polish	*	
24	Turkish	*	
25	Czech	*	
26	Hungarian	*	
34	Bulgarian	*	

Table 1-1: List of Language Codes

Content Presentation

This Operator Manual contains different types of information like safety guidelines, additional notes, user interface (UI) terminology and so on. To help you identify the different types of information, different writing styles are used in this manual. This section describes these writing styles.

Positional References

Positions and directions like left, right, front, rear, to the right and to the left are with respect to the controller when you see from the front, and to the printhead when you see it from the rear (i.e. looking at the cable connections).

Units of Measurement

This manual uses metric units of measurement. The equivalent English measures are included in parenthesis. For example, 240 mm (9.44 inches).

Safety Information

Specific safety information is listed throughout this manual in the form of Warning and Caution statements. Pay close attention to these statements as they contain important information that help in avoiding potential hazards to yourself or to the equipment.

Warning

- The warning statements indicate hazards or unsafe practices that can cause severe personal injury or death.
- They have a triangular symbol with an exclamation mark to the immediate left of the text
- They are always preceded by the word “Warning”
- They are always found before the step or information referring to the hazard

For example:



Warning

PERSONAL INJURY. When replacing cartridge be aware of risk of injury from moving machine parts.

Caution

- The caution statements indicate hazards or unsafe practices that result in equipment or property damage
- They have a triangular symbol with an exclamation mark to the immediate left of the text
- They are always preceded by the word “Caution”

- They are always found before the step or information referring to the hazard

For example:



Caution

EQUIPMENT DAMAGE. Read this chapter thoroughly before attempting to install, operate, service, or maintain this equipment.

Notes

Notes provide additional information about a particular topic.

For example:

***Note:** You can set the password protection for some functions to prevent any access that is not authorised.*

Abbreviations and Acronyms

Abbreviation	Expansion
AC	Alternating Current
LED	Light Emitting Diode
UI	User Interface
WYSIWYG	What You See Is What You Get

Table 1-2: Abbreviations and Acronyms

Chapters in the Manual

This manual is divided into nine chapters. An introduction to the topics that each chapter covers is shown in Table 1-3.

Chapter No.	Chapter Name	Description
1.	Introduction	Contains the information about this manual, the related publications, and writing styles used in this manual
2.	Safety	Contains the safety and hazard information
3.	Main Parts	Contains the information about main components of printer
4.	CLARiTY Operating System	Contains the information about CLARiTY operating system and updating CLARiTY operating system
5.	Printer Operation	Contains information about the printer operations
6.	Additional Printer Operations	Contains the information about the additional printer operations
7.	Maintenance	Contains the information on service and maintenance of the printer
8.	Troubleshooting	Contains the operator level diagnostic and troubleshooting procedures
9.	Specifications	Contains printer specifications

Table 1-3: List of Chapters

This chapter contains the following topics:

- Introduction
- Equipment safety guidelines
- Fluid safety guidelines
- Other important guidelines
- Medical emergencies



Caution

EQUIPMENT DAMAGE. Read this chapter thoroughly before attempting to install, operate, service, or maintain this equipment.



Warning

PERSONAL INJURY. The intended use of this printer is to print information directly onto a product. Follow the installation and operating instructions at all times. Only trained personnel should carry out maintenance or repair. Use of this equipment for any other purposes may lead to serious personal injury.

Introduction

The policy of Videojet Technologies Inc. is to manufacture non-contact printing/coding systems and ink supplies that meet high standards of performance and reliability. Therefore, we employ strict quality control techniques to eliminate the potential for defects and hazards in our products.

The safety guidelines provided in this chapter are intended to educate the operator on all safety issues so that the operator can operate the printer safely.

Equipment Safety Guidelines

This section contains important safety guidelines pertaining to the operation and handling of the printer and associated equipment.



Warning

PERSONAL INJURY. While performing maintenance or repair work, disconnect the mains supply unless it is absolutely necessary to leave the supply on while carrying out adjustments.

Comply with Electrical Codes



Warning

PERSONAL INJURY. All electrical wiring and connections must comply with applicable local codes. Consult the appropriate regulatory agency for further information.

Electrical Power



Warning

PERSONAL INJURY. This equipment must be installed with a locally positioned mains supply isolation device. This can be either a plug and socket or a switch connector or circuit breaker in accordance with IEC 60947-3 or IEC 60947-2.



Warning

PERSONAL INJURY. Ensure that all external energy sources, mains and mains power connector are isolated from equipment. This should be done before attempting any maintenance or repair on any part of the product or before opening or removing any printer covers.



Warning

PERSONAL INJURY. Ensure that any cables from the printer are secured to avoid chance of movement into walkways and becoming a trip hazard.



Warning

PERSONAL INJURY. There will be sections of the printer control board that will be permanently powered via the on-board lithium battery - therefore it is essential that the board should never be placed onto, nor stored in or on any conductive surface (including conductive, plastic bags etc.) as this would flatten the battery and/or potentially result in battery overheating. The battery is not to be replaced by the operator.

Do Not Remove Warning Label



Warning

PERSONAL INJURY. Do not, under any circumstances, remove or obstruct any warning, caution, or instruction labels present on the printer. If any part of these labels become damaged, worn or removed they must be immediately replaced.

Grounding and Bonding



Warning

PERSONAL INJURY. Always prevent static discharge from occurring. Use proper Grounding and Bonding methods. Always bond conductive equipment together with approved cables to maintain them at the same potential and minimize static discharge. Only use Videojet approved metallic service trays and ground cables.

Communications



Caution

EQUIPMENT DAMAGE. Ensure that all Ethernet/communication cables are shielded (STP Cat5).

Printhead and Cartridges



Warning

PERSONAL INJURY. When replacing cartridges be aware of risk of injury from moving machine parts.

**Warning**

PERSONAL INJURY. The device must be switched off when the printheads are being installed, connected or disconnected.

Fluid Safety Guidelines

This section provides important safety guidelines pertaining to the use and handling of printer supplies (fluids, inks, cleaning solutions).

**Warning**

PERSONAL INJURY. Wear eye protection when handling fluids. If fluid splashes in your eyes, flush your eyes with water for 15 minutes and consult a physician immediately.

**Warning**

PERSONAL INJURY. Wear gloves when handling fluids.

If fluid contacts the skin, wash immediately with soap water. DO NOT use cleaning solution, washdown or solvent to clean fluid stains from the skin.

**Warning**

PERSONAL INJURY. Do not pour any fluids into sinks, sewers, or drains. Waste disposal must comply with local regulations. Contact the appropriate regulatory agency for further information.

**Warning**

PERSONAL INJURY. Storage must comply with local regulations. Contact the appropriate regulatory agency for further information.



Warning

PERSONAL INJURY. Read and understand the Safety Data Sheet (SDS) before using fluids. An SDS exists for each fluid.

Ensure that you retain all SDS's for future reference in case you need to consult a physician regarding a fluid related accident. SDS's are available at www.videojet.com and also may be obtained by contacting the Videojet Customer Service Department at 1-800-843-3610 (for all customers within the United States). Outside the U.S., customers should contact a subsidiary Videojet office or their local Videojet distributor.

Other Important Guidelines



Warning

PERSONAL INJURY. Do not point the printhead directly and in close proximity to the eyes, unless the printer is switched off and isolated from the mains.



Warning

PERSONAL INJURY. Read any warning or hazard information supplied with fluids, spares, or other consumable products.

Medical Emergencies

This section provides important medical information in case of an accident.



Warning

PERSONAL INJURY. In the event of a medical emergency, contact a physician immediately.

Emergencies Involving Printer Fluids

If the incident involves the printer fluid, carry the labelled product and/or SDS with you to the physician's office. These items contain important information that the physician may require, to provide the precise medical treatment.

This chapter contains information about the integral parts and accessories of the printer.

Equipment Description

The main parts of Videojet 8610 printer are described as follows:

CLARiTY Controller

The controller is a touch screen user interface with an internal power supply. You can load jobs, modify user editable fields, and set print parameters using the touch screen.

All communication and power supply cables are connected directly to the controller.

The controller is supplied with a standard mounting bracket.

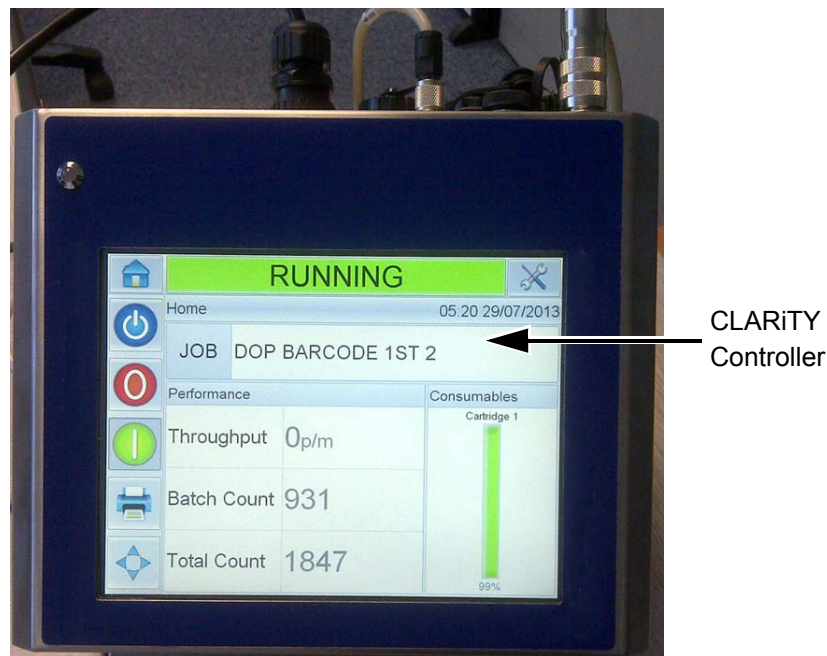
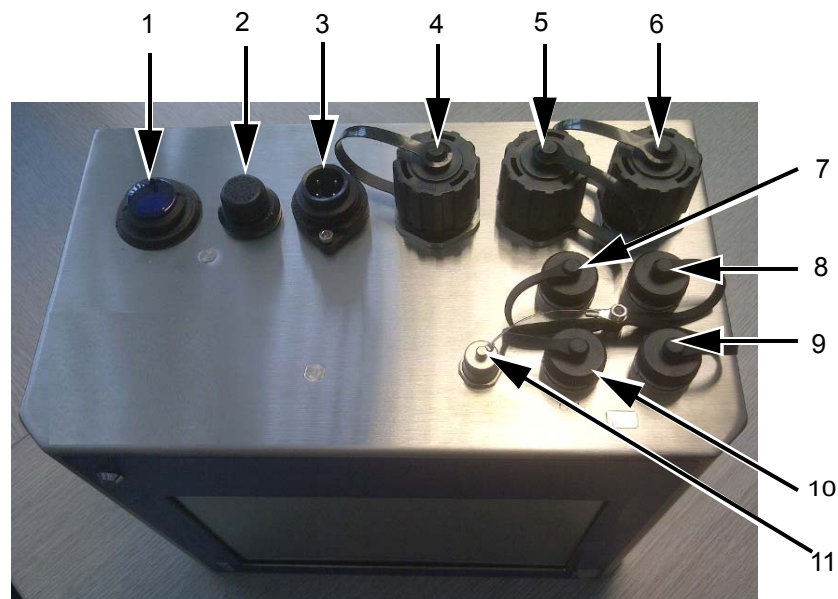


Figure 3-1: CLARiTY Controller Screen



- | | |
|------------------------|-------------------------|
| 1. Power Switch | 7. Encoder (ENC) |
| 2. Fuse Holder | 8. Printhead 2 Dataline |
| 3. AC Power Connector | 9. Printhead 1 Dataline |
| 4. USB | 10. Input/Output (I/O) |
| 5. Power Over Ethernet | 11. Serial Port (IOIOI) |
| 6. Ethernet | |

Figure 3-2: Controller Connections












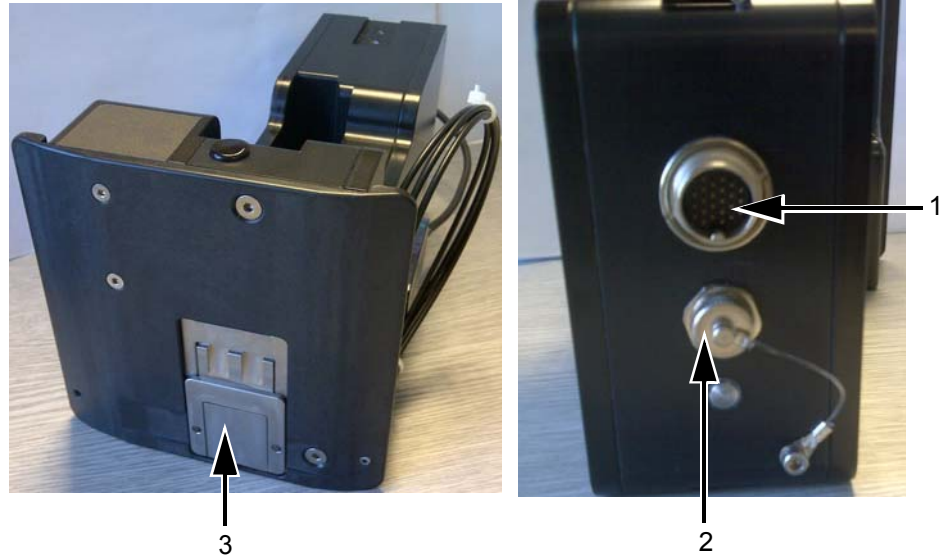
Ports	Symbols	Description
Power Switch		Turns the system ON/OFF
Fuse Holder		Threaded holder for the AC Mains Power fuse
AC Power Connector		Port for connecting the controller's AC Mains Power cable
USB		USB-A Port that allows the connection of a USB memory stick for functions such as printer software updates, transferring Jobs and backup/restore of printer archive or clone files
Power Over Ethernet		RJ-45 port for connecting the printer to a TCP/IP network device that requires Power Over Ethernet (POE) support
Ethernet		RJ-45 port for connecting the printer to a TCP/IP network
Encoder (ENC)		Port for connecting a shaft encoder to the controller to tell the software how fast the substrate is traveling
Printhead 2 Dataline		Port for connecting the data cable that runs between printhead 2 and the controller
Printhead 1 Dataline		Port for connecting the data cable that runs between printhead 1 and the controller
Input/Output (I/O)		Port for connecting external devices to the printer's hardware inputs and outputs. For more information, refer Service Manual (P/N: WLK462426)
Serial Port (IOIOI)		RS-232 Serial Port for connecting to PC, PLC or other capable device (special adapter cable required).

Table 3-1: Controller connections

Printhead

The printhead houses the ink cartridge and capping mechanism, and allows the incorporation of accessories (fiber optic print trigger, mounts etc.).



- 1. Data Line
- 2. Product Sensor Connector
- 3. Cap

Figure 3-3: Printhead

Ports	Description
Data Line	Port for connecting the data cable that runs between printhead and the controller.
Product Sensor Connector	Port for connecting the cable from the standard fiber optic sensor.

Table 3-2: Printhead Connections

Cap

The cap ensures that the ink in the cartridge does not dry out when not in use. The operation of the cap is automatic and is controlled by the controller, and driven by the motor assembly attached to the faceplate assembly.

Note: The cap will close after a period of print inactivity. The default value of this period is 15 seconds.

Note: The cap is located inside the printhead assembly.

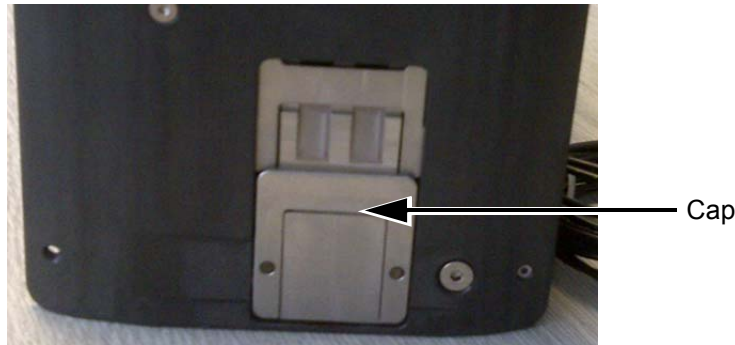


Figure 3-4: Cap

The mechanical cap will automatically open when the product detect is triggered or when a purge command is issued.

The controller will allow the user to open the cap when in the offline mode.

The controller will close the cap after a threshold time, defined in the ink table (or by the user). The controller will ensure the cap is closed when the printer state changes, while entering online mode or offline mode.

Ink Cartridge

The ink cartridge is a self contained ink delivery system and printing mechanism in one housing.

Note: Do not attempt to refill the cartridge.

Note: It is intended to be properly disposed off once empty. Dispose off according to SDS and local regulations.



Figure 3-5: Ink Cartridge

Connector Cables

The printhead data cable is available with straight connectors or with right angled plug on one side.



Figure 3-6: Connector Cable from Printhead to the Controller

Product Sensor

The product sensor and associated components detect the print material and transfers the print signal.



Figure 3-7: Sensor

Optical Fibre

The optical fibre is fitted between the product sensor and controller.



Figure 3-8: Optical Fibre

Other Components

Figure 3-9 shows the system overview of the printer on a production line.

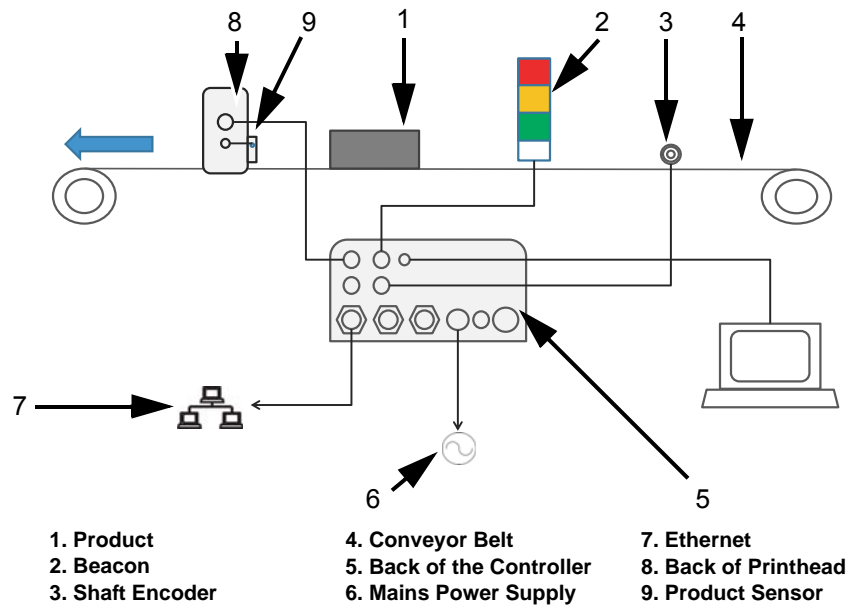


Figure 3-9: System Overview

Shaft Encoder

The shaft encoder is used to measure the product speed which is fed back to the controller.



Figure 3-10: Shaft encoder

Measuring Wheel for Shaft Encoder

The shaft encoder measuring wheels for different conveyor belt surfaces are shown in Figure 3-11.



Figure 3-11: Measuring Wheels for Shaft Encoder

Resilient Shaft Encoder Mount

The resilient mount ensures that the shaft encoder is perfectly supported.

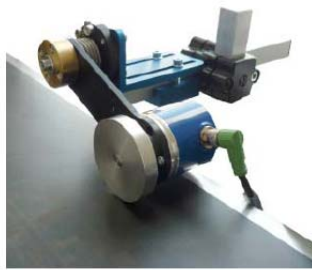


Figure 3-12: Resilient Shaft Encoder Mount

Shaft Encoder Cable

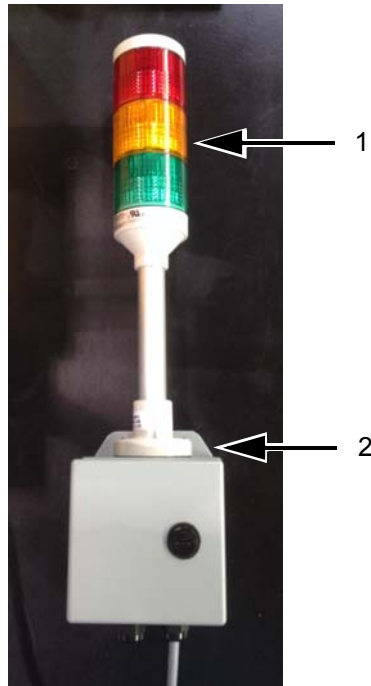
The shaft encoder cable is the connector cable between the shaft encoder and controller (see Figure 3-13).



Figure 3-13: Shaft Encoder Cable

Warning Beacon

The warning beacon is mounted separately and indicates the system faults and the ready for printing state (green). The warning beacon is operated via the 24 V interface.



- 1. Beacon
- 2. Beacon Mounting Bracket

Figure 3-14: Warning Beacon

Serial Interface Cable and Ethernet Cable

The serial interface cable and the ethernet data cable are used for data transmission between PC and printer via the serial or the ethernet data interface.



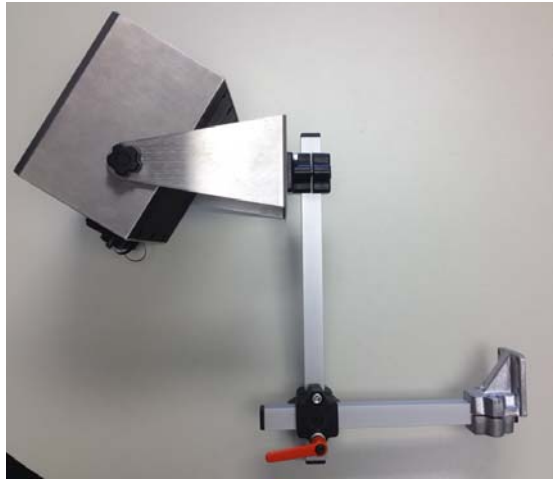
Figure 3-15: Serial Interface Cable

USB Connector

The printer also has a USB connector, which is used for data transmission to the printer using USB Stick.

Mounting System

Mounting System shows the typical mounting of controller (see Figure 3-16) and printhead (see Figure 3-17 on page 3-12) onto a production line.

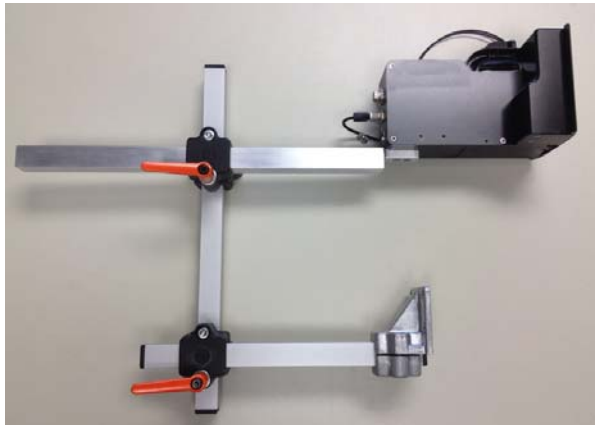


Option 1

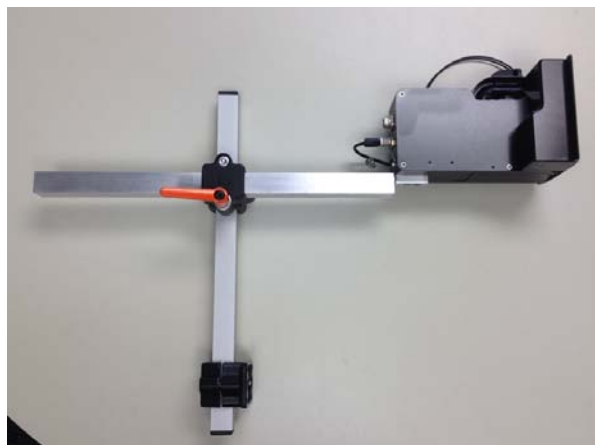


Option 2

Figure 3-16: Controller Mounting System



Option 1



Option 2

Figure 3-17: Printhead Mounting System

Floor Mount System

The floor mount system allows the controller and the printhead to be mounted on to a separate stand.

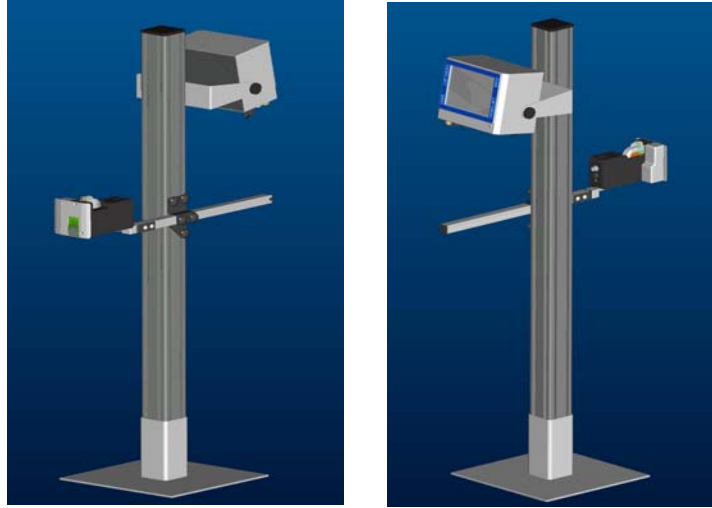


Figure 3-18: Floor Mount System

Parallelogram

Many products and packaging materials (example, wrapping) are slightly uneven/cambered or are transported on the conveyor belt in a range of different positions.

In these cases the parallelogram should be used. This makes sure of a constant optimum print result for such applications.

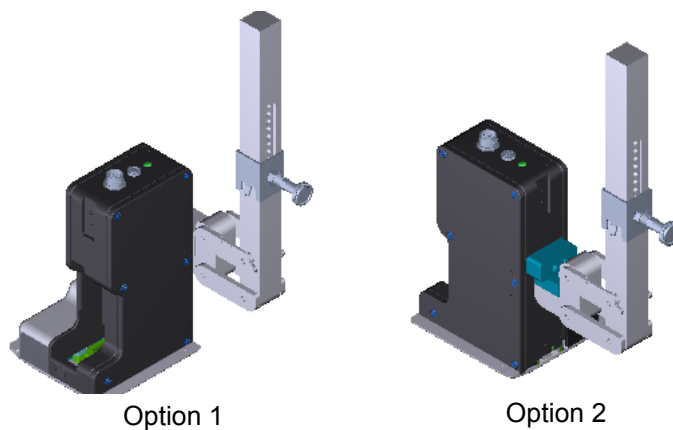


Figure 3-19: Parallelogram

CLARiTY Operating System

4

This chapter contains the following topics:

- Getting started with the CLARiTY operating system
- Using the Home page
- Using the Tools page
- Password protection

Getting started with the CLARiTY

CLARiTY is an icon-based operator control system. It has an easy-to-use touch screen and most areas of the display are active, that is, touching an area on the screen is like pressing a button on a traditional control panel. All technical aspects of the printer setup and control are accessed through the *Tools* button.

Figure 4-1 on page 4-2 shows the home page of the CLARiTY operator control system.

Using the Home Page

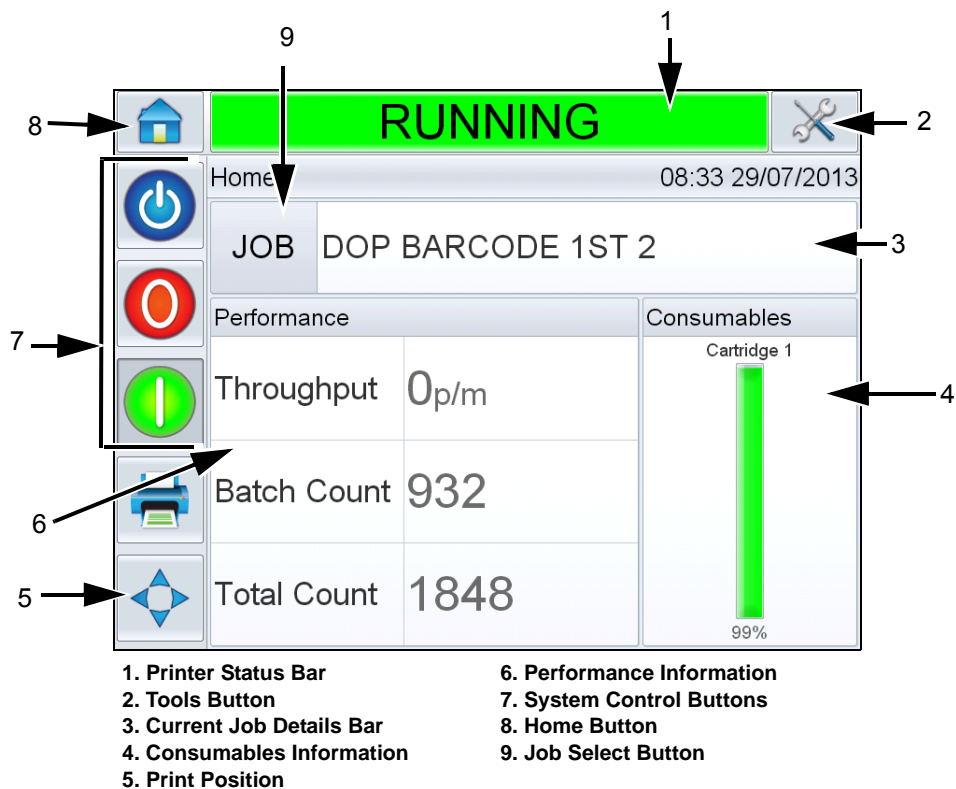


Figure 4-1: CLARiTY Home Page

Warning

PERSONAL INJURY. The printer starts printing if you touch the printer status bar when the printer is in *OFFLINE* mode. Make sure that you do not touch the status bar if the printer is not required to run.

Buttons	Description
Printer Status Bar	<p>Provides information about the status of the printer.</p> <ul style="list-style-type: none"> • Running: Printer is on and ready to print when the proper print trigger is received. • Offline: Printer is on and not printing. • Shutdown: Power to the printhead is disabled and not printing. • Warning: Conditions exist that the Operator should be aware of, but do not keep the system from printing. • Fault: Conditions exist to keep the system from printing. • Allows the user to toggle between offline and running mode, enabling or disabling printing. • Allows the user to access the current warning and fault screens if any present.
Tools Button	Opens the Tools menu when selected.
Current Job Details Page	Displays the information about the current job and when selected, opens the current job details screen.
Consumables Information	Provides information about the status of the consumables like printing ink and when selected opens consumables screen.
Print Position	Opens the print position menu when selected. Permits the user to set the product delay parameters. Product delay is the time between the start of the product (trigger point) and the print start position and can be adjusted for the current job.
Performance Information	<p>Displays the following printer performance information:</p> <ul style="list-style-type: none"> • Throughput: Throughput of the printer in prints per minute since the current Job was loaded. • Batch Count: Number of prints since the current Job was loaded. • Total Count: Number of prints over the life of the controller. <p>Selecting this area opens the performance page showing additional statistical information on the printer throughput.</p>
System Control Buttons	Permits the user to switch off or switch on the printer.

Table 4-1: Home Page

Buttons	Description
Home Button	Returns user to the Home screen as shown in Figure 4-1.
Job Select Button	Permits the user to select the required job from the list.

Table 4-1: Home Page (Continued)

Using the Tools Page

Touch the *Tools* icon on the home page to access the tools page (see Figure 4-2).

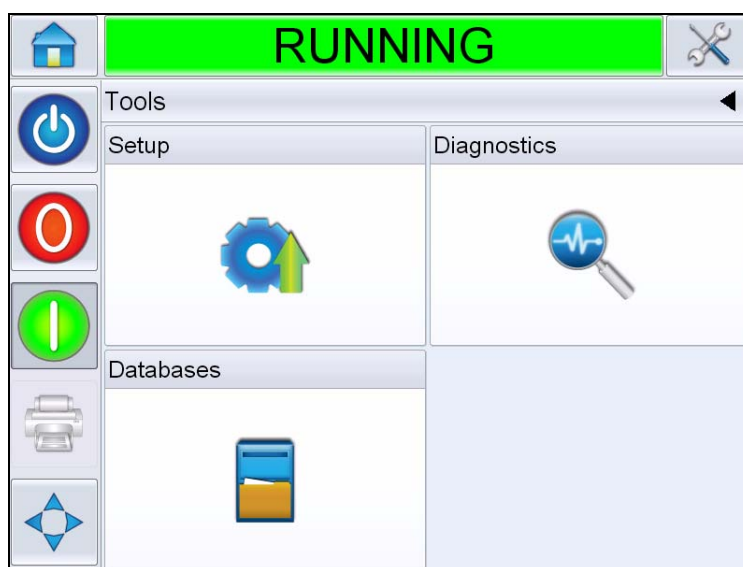


Figure 4-2: Tools Page

Buttons	Description
Setup Page	Permits the user to modify a small subset of the printer setup parameters.
Diagnostics Page	Provides on-line fault finding routines and diagnostic functions.
Databases page	Provides control over the jobs database of the printer.

Table 4-2: Tools Page

Working with Setup Page

Navigate to *Tools > Setup* (see Figure 4-3).



Figure 4-3: Setup Page

The *Setup* page allows you to access the following parameters:

- Printhead
- Consumables
- Control (e.g. time, date, language)
- Options

Printhead Setting

Navigate to *Tools > Setup > Printhead* (see Figure 4-4).

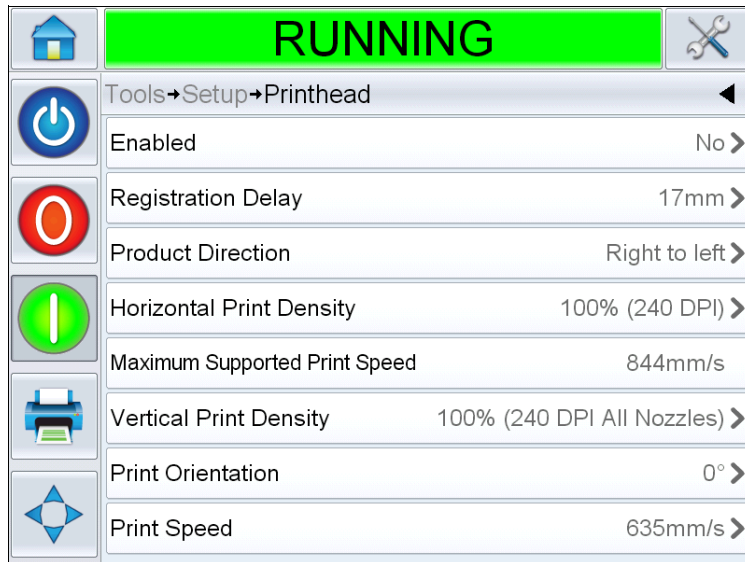


Figure 4-4: Printhead Setting

Buttons	Description
Enabled	Allows the user to enable or disable the printhead for printing.
Registration Delay	Allows the user to set the print registration in millimeter (mm).
Product Direction	Configures the direction of product travel as viewed from behind the printhead
Horizontal Print Density	Allows the user to set the print resolution. For more information, refer "How to Adjust Print Resolution" on page 5-17.
Maximum Supported Print Speed	Shows the maximum value of the print speed that can be set in millimeter per second (mm/s).
Vertical Print Density	Allows the user to set the print resolution.
Print Orientation	Allows the user to set the print orientation to 0 or 180 degrees depending on requirements.
Print Speed	Allows the user to set the print speed in millimeter per second (mm/s) if configured for 'Fixed speed printing'.

Table 4-3: Printhead Setting

Consumables

Navigate to *Tools > Setup > Consumables* (see Figure 4-5).

Consumables page enables the user to purge the printhead.

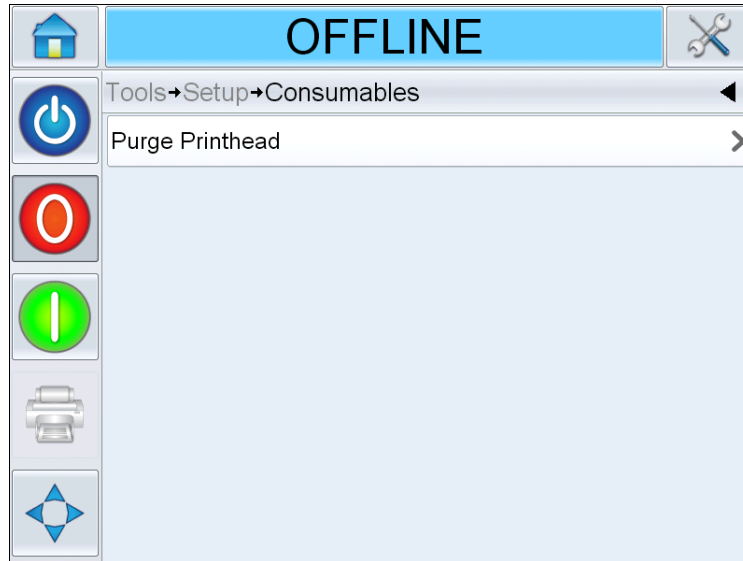


Figure 4-5: Consumables

Note: *Purging can only be carried out if the printer is either the "Offline" or "Running" state. No purge will occur if the printer is in "Shutdown" mode.*



Caution

EQUIPMENT DAMAGE. During the purge a small amount of ink is ejected from the nozzles. Please take the proper precautions to avoid contamination of surrounding equipment or exposure to personnel.

Purge Printhead: Allows the user to manually perform an on-demand purge of the ink cartridge. This feature can be used in an attempt to recover any missing nozzles.

Working with the Control Setup Page

Navigate to *Tools > Setup > Control* (see Figure 4-6).



Figure 4-6: Control Page

Buttons	Description
CLARiTY Parameters Archives	Allows the user to save current printer configurations and to restore previously saved printer configurations. Note: When a USB memory stick is connected to the printer, archives can also be saved or restored to and from the USB drive as well.
CLARiTY Printer Clones	Allows the user to create or restore a Clone file to and from the USB memory stick. A Clone file contains all of the printer settings and Job files. Note: Only present when a USB memory stick is inserted.
CLARiTY Update	Allows the user to select from a list of available updates. Update files must be saved in <i>clarityupdate</i> folder on the root of the USB memory stick to be recognized. Note: Only present when a USB memory stick containing update files is inserted.
Internationalisation	Allows the user to set the language of the CLARiTY screen, the international region/country which control the date/time formats and measurement units displayed within CLARiTY.

Table 4-4: Control Page

Buttons	Description
System Configuration	Allows the user to configure the printer for installation. For more information refer "Setting up the Printer" on page 5-9.
Recalibrate Touchscreen	<p>Allows the user to recalibrate the touchscreen, if touching the screen does not accurately locate the correct CLARiTY button or Icon. The printer requests the user to touch several crosses which are displayed on the screen, one after the other. The screen is recalibrated when the automated process is complete.</p> <p>Note: If the calibration of the machine has too many errors and does not allow a user to navigate to this screen via the CLARiTY panel, the same functionality can be triggered from within CLARiTY Configuration manager (for more information, refer to Service Manual (P/N: WLK462426).</p>
Set Screen Orientation	Allows the user to rotate the entire display through 180 degrees in the event that the CLARiTY panel is installed in an inverted orientation
Date and Time	Allows the user to set the system date and time of the printer.
Image Control	<p>Allows the fine adjustment of the barcode.</p> <p>Note: Do not adjust the Barcode Fine Adjust value from it's default setting without first printing the "Barcode Control Image" test pattern to determine the proper value. Improperly adjusting this value could cause barcodes and 2D codes to become unreadable.</p>
Communications	Allows the user to reset the printer's serial port to factory default settings. These default settings configure the printer to communicate with CLARISOFT® and CLARiTY Configuration Manager.

Table 4-4: Control Page (Continued)

Working with Diagnostics

Navigate to *Tools > Diagnostics* (see Figure 4-7).



Figure 4-7: Diagnostics Page

The diagnostics page allows you to view the following pages:

- Printhead
- Consumables
- Control (for example: software versions, system information, communications port status)
- Options

Working with Printhead Diagnostics

Navigate to *Tools > Diagnostics > Printhead* (see Figure 4-8).

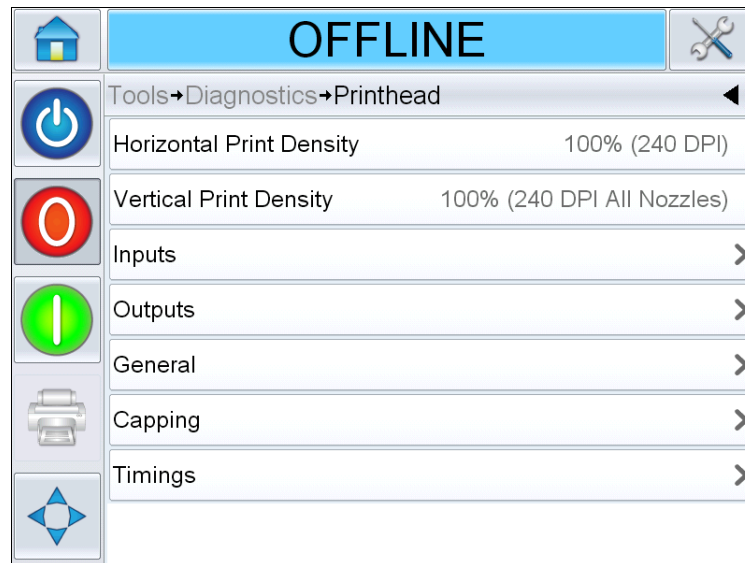


Figure 4-8: Printhead Diagnostics Page

The *Printhead* diagnostics page allows the user to view the following parameters:

- Horizontal Print Density
- Vertical Print Density
- Inputs
- Outputs
- General
- Capping
- Timings

Horizontal Print Density

Navigate to *Tools > Diagnostics > Printhead > Horizontal Print Density*. Shows the current horizontal print density.

Note: To modify this setting navigate to *Tools > Setup > Printhead*.

Vertical Print Density

Navigate to *Tools > Diagnostics > Printhead > Vertical Print Density*. Shows the current vertical print density.

Note: To modify this setting navigate to *Tools > Setup > Printhead*.

Inputs

Navigate to *Tools > Diagnostics > Printhead > Inputs* (see Figure 4-9).

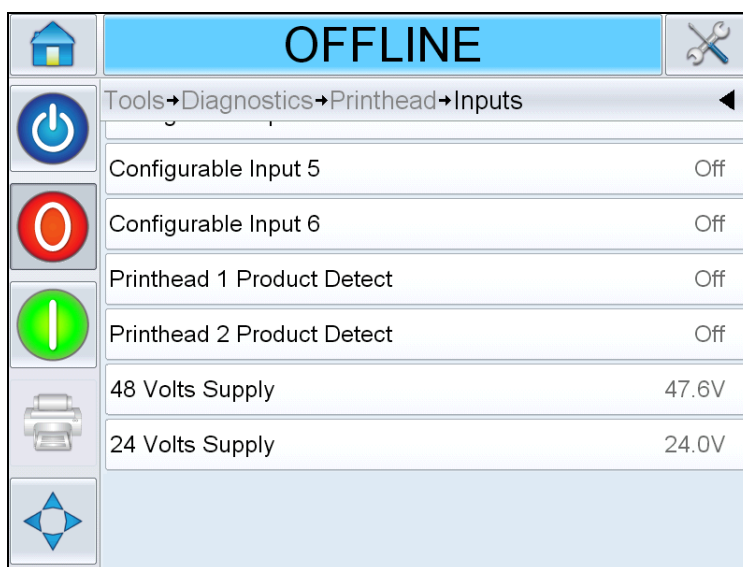


Figure 4-9: Printhead Inputs Diagnostics Page

Buttons	Description
Printer present	Confirms that internal components of the controller hardware/software are communicating properly.
Configurable Input 1-6	Shows the current status of the printer's configurable inputs
Printhead Product Detect	Shows the current status of the product detector connected to each printhead (on or off).
48 Volts Supply	Displays the voltage of the 48 V supply.

Table 4-5: Inputs Diagnostics Page

Buttons	Description
24 Volts Supply	Displays the voltage of the 24 V supply.
Printhead Volts	Displays the printhead voltage.
Cartridge Temperature	Displays the cartridge temperature information.
Controller PCB Temperature	Displays the PCB temperature information.
Printhead Temperature	Displays the Printhead temperature information.

Table 4-5: Inputs Diagnostics Page (Continued)

The *Inputs Diagnostics* page allows the user to view the following parameters:

- Input Configuration: Displays the usage of inputs 1-6 and the status of line inputs 0-3, Print signals, Job queue and so on (see Figure 4-10).

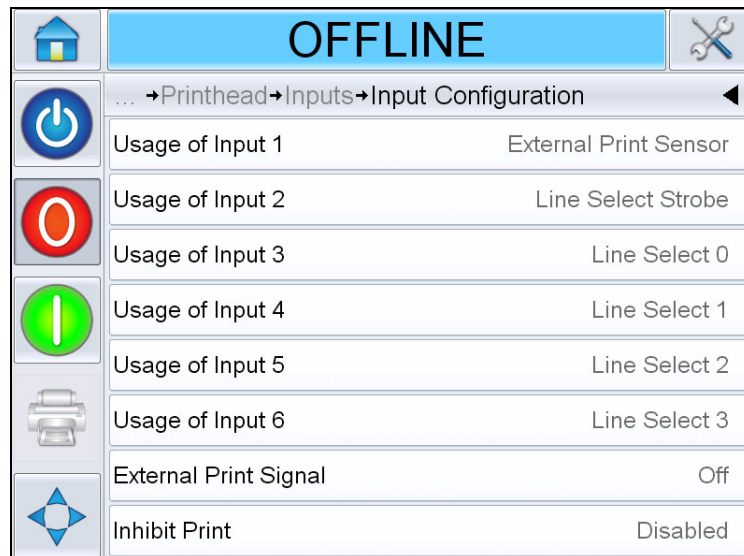


Figure 4-10: Input Configuration screen

- Encoder: Touch the *Encoder* button to view the *Encoder* diagnostics page. The *Encoder* diagnostics page allows the user to view the following encoder parameters (see Figure 4-11).

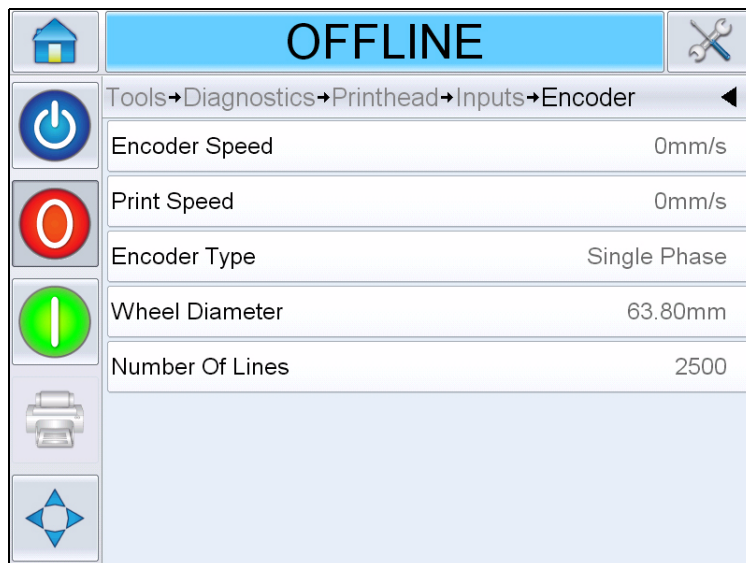


Figure 4-11: Encoder Diagnostics Page

Buttons	Description
Encoder Speed	Shows the actual real-time speed of the object being measured by the encoder
Print Speed	Shows the print speed
Encoder Type	Shows the current encoder type
Wheel diameter	Shows the diameter of the encoder wheel
Number of lines	Shows the resolution of the encoder expressed as the number of pulses per revolution

Table 4-6: Encoder Diagnostics Page

- **Line Select:** If the *Line Select* is enabled on the controller, the user can assign a job to the required line. Line Select allows the user to view the current status of the inputs being used for the Line Select feature of the printer (see Figure 4-12).

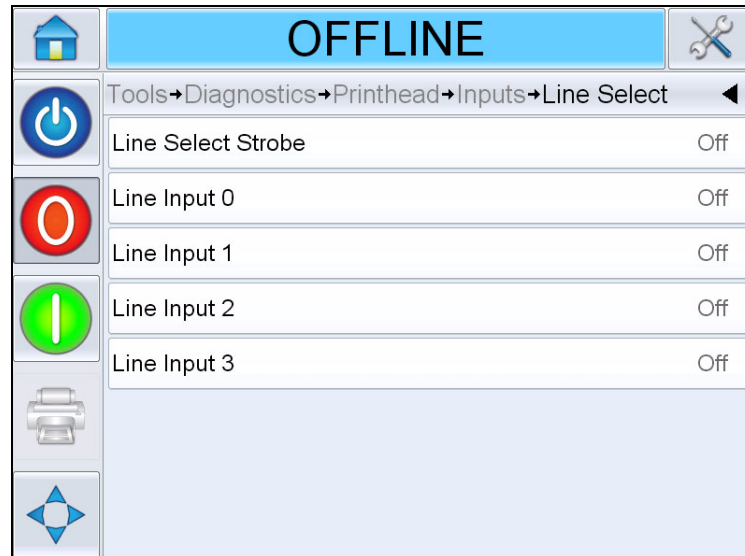


Figure 4-12: Input Line Select Page

Outputs

Navigate to *Tools > Diagnostics > Printhead > Outputs* (see Figure 4-13).

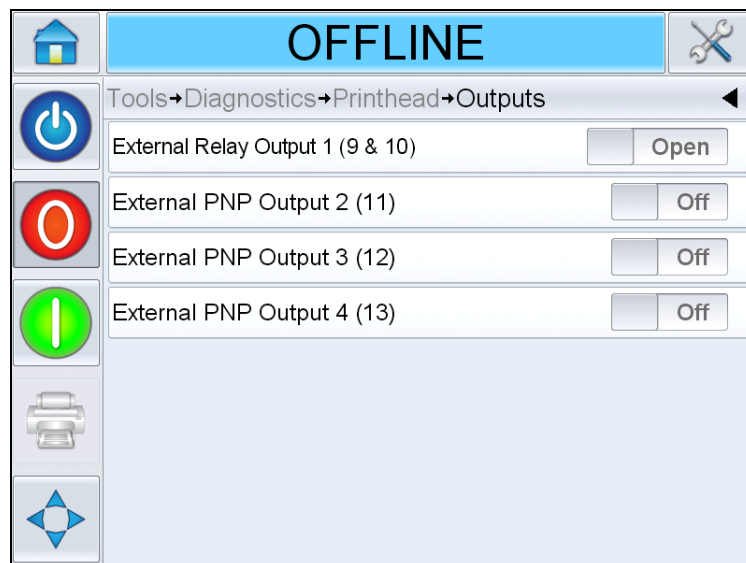


Figure 4-13: Printhead Outputs Diagnostics Page

Each button shows the status of a physical output on the printer. Touching the *Toggle* button allows the user to force the state of an output, *Open/Closed* or *On/Off*, which is useful for diagnostic purposes.

External Relay and PNP Outputs: The printer has one configurable relay output and three configurable PNP 24V outputs.

General

This screen shows the current value of some basic parameters. Navigate to *Tools > Diagnostics > Printhead > General* (see Figure 4-14). The user can view the different printhead settings like product direction, print sensor mode, printhead pocket version and head attached status.

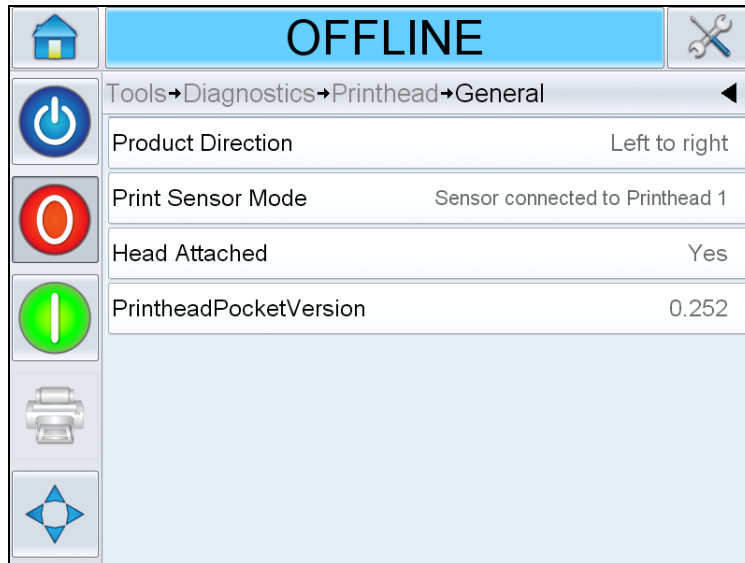


Figure 4-14: Printhead General Diagnostics Page

Capping

Navigate to *Tools > Diagnostics > Printhead > Capping* (see Figure 4-15).

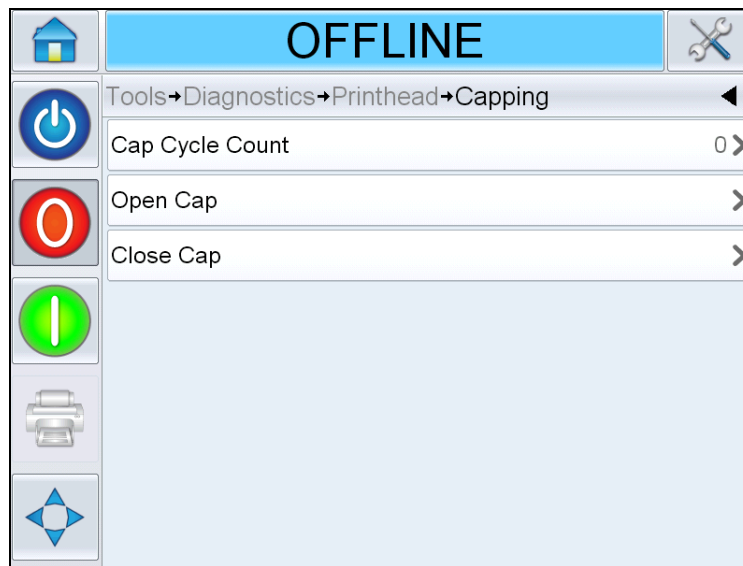


Figure 4-15: Printhead Capping Diagnostics Page

Buttons	Description
Cap Cycle Count	Shows the number of times the cap has opened since the printer was last powered up.
Open Cap	Allows the user to manually open the cap. Note: Option only available when the printer is in "Offline" mode.
Close Cap	Allows the user to manually close the cap. Note: Option only available when the printer is in "Offline" mode.

Table 4-7: Printhead Capping Diagnostics Page

Timings

Navigate to *Tools > Diagnostics > Printhead > Timings* (see Figure 4-16).

It is useful in high throughput applications to understand how quickly the printer is able to perform certain functions.

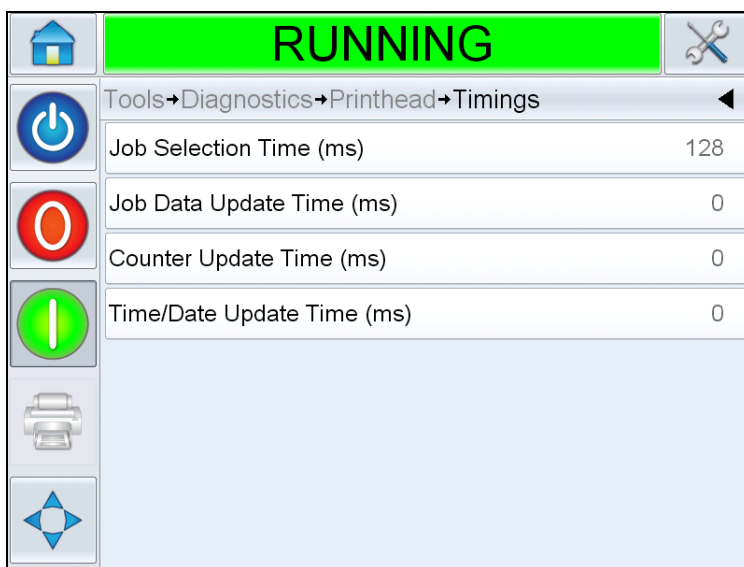


Figure 4-16: Timings

Buttons	Description
Job Selection Time (ms)	Indicates the time taken in selecting the last job from the moment the image was confirmed, to being ready to print
Job Data Update Time (ms)	Indicates the total time taken to update all the dynamic variables in the image (time, date, counters)
Counter Update Time (ms)	Indicates the time taken to update all the counter fields in the image
Time/Date Update Time (ms)	Indicates the time taken to update all the time/date fields in the image

Table 4-8: Timings Page

Working with Consumables Diagnostics

Navigate to *Tools > Diagnostics > Consumables* (see Figure 4-17).

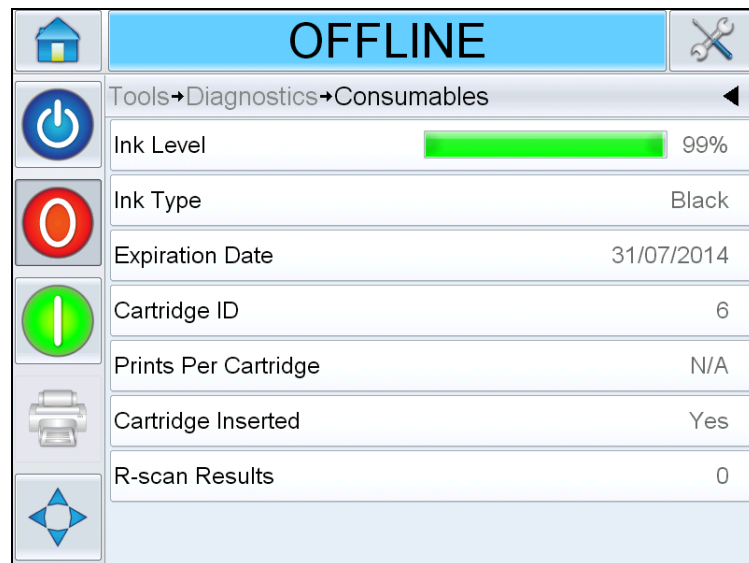


Figure 4-17: Consumables

The Consumables diagnostics page shows the current value of cartridge parameters to help you understand the status of the cartridge. Navigate to *Tools > Diagnostics > Consumables*.

Buttons	Description
Ink Level	Displays the percentage of ink remaining in the cartridge.
Ink Type	Identifies the type of ink cartridge installed in the printhead.
Expiration Date	The date the ink in the currently installed cartridge will expire.
Cartridge ID	Value that helps the software recognize and track cartridges.
Prints Per Cartridge	Estimated number of prints per cartridge that can be expected for the currently loaded Job.
Cartridge Inserted	Confirms that a cartridge is inserted into the printhead and recognized by the software.
R-scan Results	Number of nozzles in the currently installed cartridge that are not measuring within the correct electrical resistance range. This value is only updated when the printer is started up, and a reading of "0" indicates that all nozzles are measuring the correct resistance.

Table 4-9: Consumables Page

Working with Control Diagnostics

Navigate to *Tools > Diagnostics > Control* (Figure 4-18).

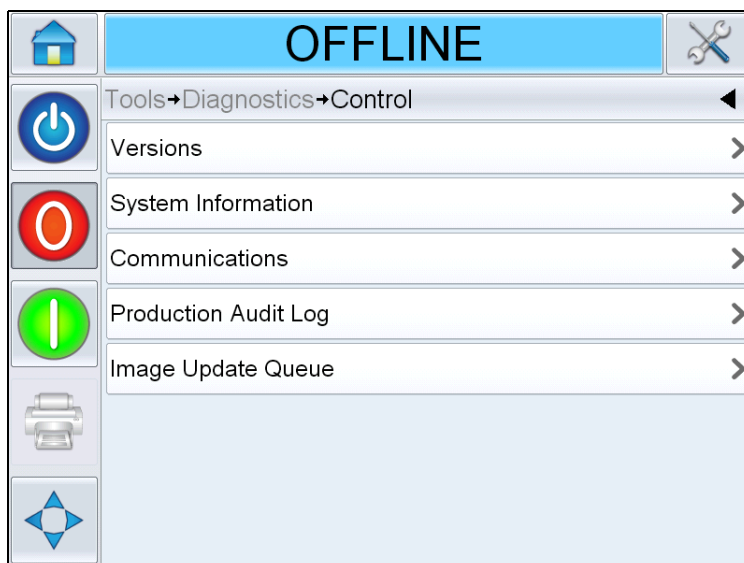


Figure 4-18: Control Parameters

The following parameters can be accessed in Control page:

Buttons	Description
Versions	Displays the software versions of the various software components installed in the printer. The most important number displayed is the <i>Software Part Number</i> . This is the master version number and all the other data displayed is of secondary importance. Note: <i>If there is any inconsistency among the software components that are installed in the printer, the Software Part Number displays the message 'Incompatible Software Versions'. If this is seen, a CLARiTY software update must be performed, otherwise the printer may perform in an unpredictable manner. For more information, refer "How to Update Printer Software" on page 6-21.</i>
System Information	Displays the serial number and revision number of Printed Circuit Board (PCB), CPU speed and equipment reference information.

Table 4-10: Control Parameters



Buttons	Description
Communications	<p>Touch <i>Communications</i> on the <i>Control</i> dialog box. <i>Communications</i> dialog box appears. The following parameters appears in the dialog box:</p>  <ul style="list-style-type: none"> • Communication Port 1: Displays the status of serial port, including the baud rate and usage. • TCP/IP: Displays the configuration and status of the printer's network port. For more information see "TCP/IP" on page 4-22
Production Audit Log	<p>Shows the log of machine changes and user changes made.</p> <p>Note: This option is only present if logging is enabled on the printer using CLARiTY Configuration Manager.</p> <p>Note: Logs can also be backed up to a USB memory stick if one is inserted into the printer.</p> 

Table 4-10: Control Parameters

Buttons	Description
Image Update Queue	Displays all Jobs currently in the printer's queue, and the number of times each Job has been allocated to print. "No Print Limit" indicates that the currently loaded Job will continue to print until a new Job is loaded.

Table 4-10: Control Parameters

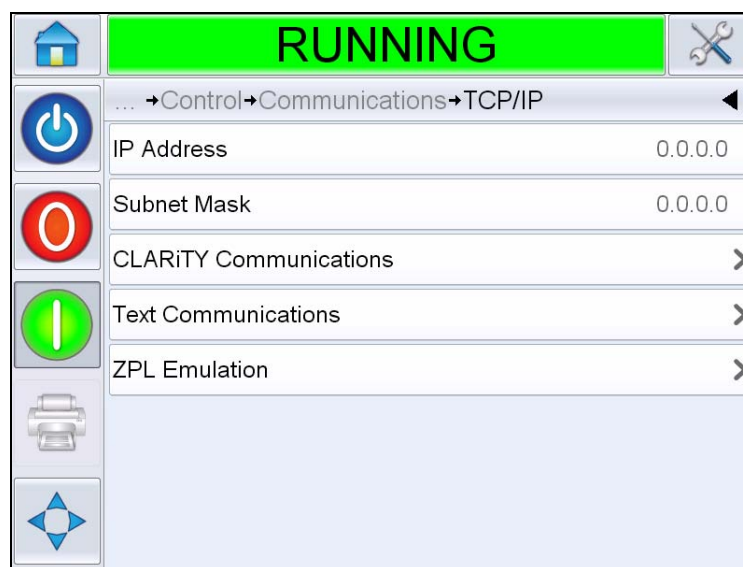
TCP/IP

Figure 4-19: TCP/IP Parameters

Buttons	Description
IP Address	Displays the IP Address of the controller
Subnet Mask	Displays the Subnet Mask number
CLARiTY Communications	Displays the TCP/IP port number and CLARiTY network status.
Text Communications	Displays the TCP/IP port number assigned for Text Communications.
ZPL Emulation	Displays the TCP/IP port number assigned for ZPL Emulation commands.

Table 4-11: TCP/IP Parameters

Working with Database

Navigate to *Tools > Databases* (see Figure 4-20).



Figure 4-20: Database Page

Buttons	Description
Internal	Shows the job(s) stored in the printer and allows the user to transfer Jobs to the USB memory stick (if available). The user is also able to delete Jobs from the Internal database.
Capacity	Shows the estimated number of Job files that could be stored on the printer, based on the size of existing Job files, and the number of bytes of available Job storage remaining.
External	Shows the Jobs stored on the inserted USB memory stick, and allows the user to transfer Jobs to the Internal database. The user is also able to delete Jobs from the USB memory stick. Note: Option only available when USB memory stick is inserted in printer.

Table 4-12: Database Page

Password Protection

Password protection on the user interface allows different protected access levels for the various operational features. During installation, you can set the standard or advanced password selection using CLARiTY Configuration Manager. Refer to Videojet 8610 Service Manual (P/N: 462426).

Note: Password protection is turned off in the printer by default, and must be enabled using CLARiTY Configuration Manager.

Password control can be set up as per the user requirement. When the user tries to access a function that is password protected the user interface prompts the user to enter the password.

When the correct password is entered, that function or menu becomes available. The password level remains active until logged out by the user or timed out.

- **Standard Passwords:** For example, if the *Diagnostics* function is password protected, when the user accesses the *Diagnostics* Menu by navigating to *Tools > Diagnostics*, CLARiTY prompts the user to enter the password.
- **Advanced Passwords:** The user is prompted to select the required username and enter the associated password.

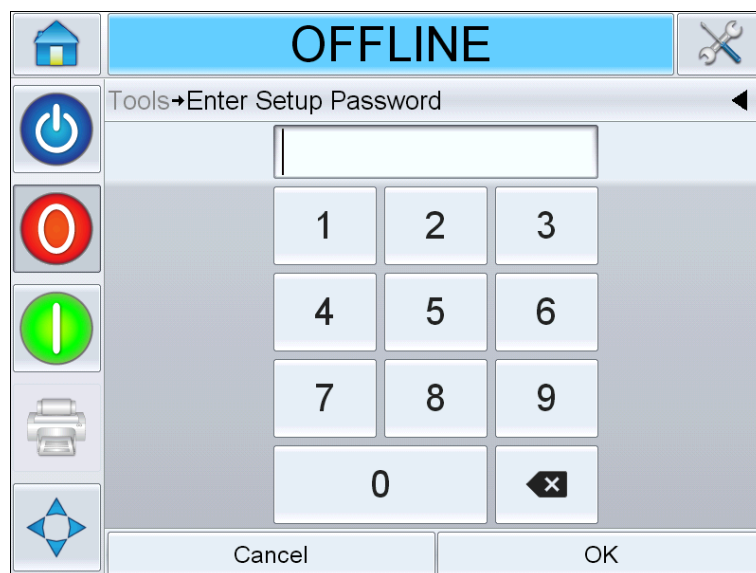


Figure 4-21: Password Screen

This chapter provides the procedures to do the following tasks:

- How to Insert the cartridge into the printhead
 - Priming the Cartridge
- How to Turn ON the printer
- How to Set the Screen Orientation
- Setting up the Printer using the System Configuration Wizard
- How to Setup the Printhead settings
- How to Create a Job
- How to Download a Job File
- How to Load a Job for Printing
- How to Start the printer
- How to Stop the printer
- Print Screen Saver

How to Insert the Cartridge into the Printhead

Priming the Cartridge

***Note:** It is recommended to prime all new cartridges before inserting them into the printhead for the first time, or if missing sections of print begin to appear during normal use that can not be recovered by wiping the nozzles.*



Warning

PERSONAL INJURY. Wear eye protection when handling fluids. If fluid splashes in your eyes, flush your eyes with water for 15 minutes and consult a physician immediately.



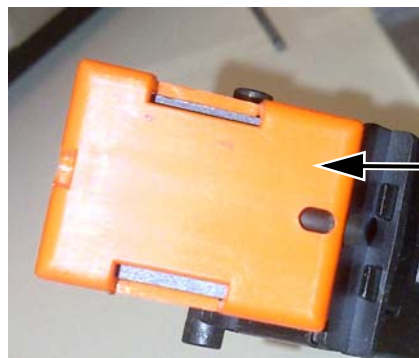
Warning

PERSONAL INJURY. Wear gloves when handling fluids.

If fluid contacts the skin, wash immediately with soap water. DO NOT use cleaning solution washdown or solvent to clean fluid stains from the skin.

For priming the cartridge, do the following tasks:

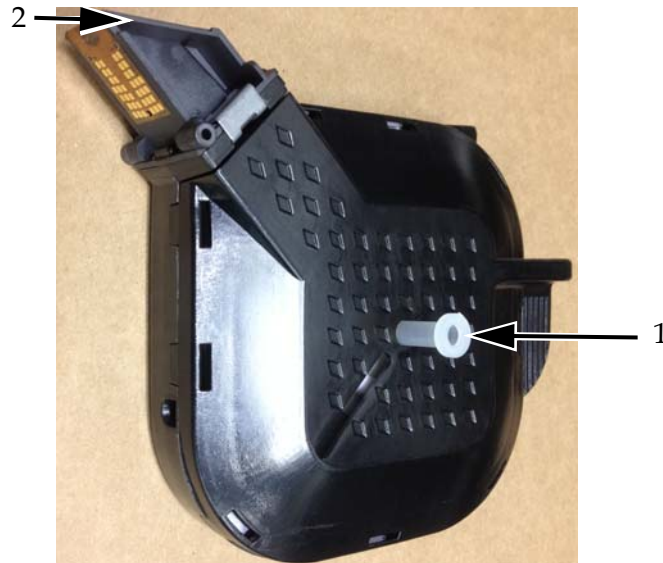
- 1 Remove the cartridge from the box and poly bag.
- 2 Remove the orange snap-on shipping cap and blue tape from the orifice array.



Orange Cap

Figure 5-1: Orange Cap

- 3 Hold the cartridge with the orifice array (item 2, Figure 5-2) pointing upwards.
- 4 Use a priming tool (item 1) to gently press through the access hole until ink begins pooling onto the orifice array as shown in Figure 5-3 on page 5-4.



1. Priming Tool
2. Orifice Array

Figure 5-2: Priming Tool

- 5 Continue pressing until no bubbles are visible on the pooled ink on the orifice array.

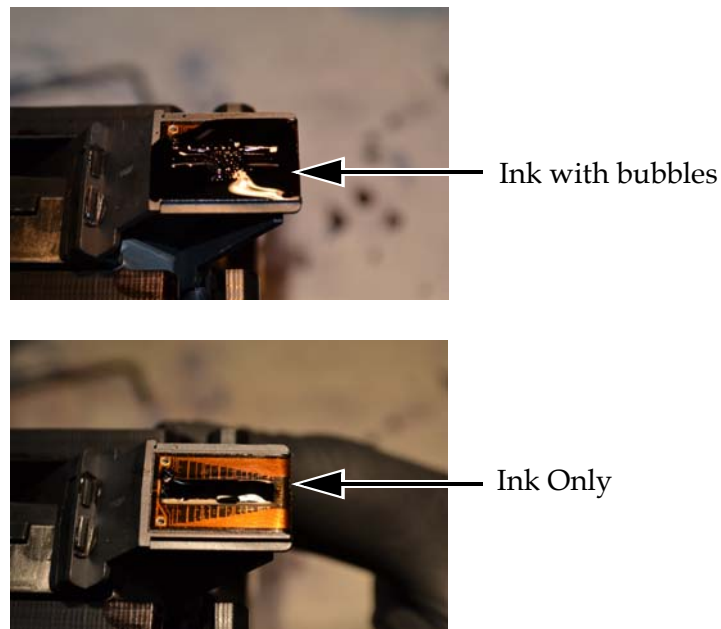


Figure 5-3: Pooled Ink on the Orifice Array

- 6 Gently wipe the orifice array to remove pooled ink.
- 7 Remove the priming tool.

The priming of cartridge is completed, and the cartridge is ready to be inserted to the printhead.

Inserting the Cartridge

To insert the cartridge into the printhead, do the following tasks:

Note: Do not touch the nozzle plate as this may have an adverse effect on the printed image.

- 8 Place the cartridge into the printhead (see Figure 5-4).

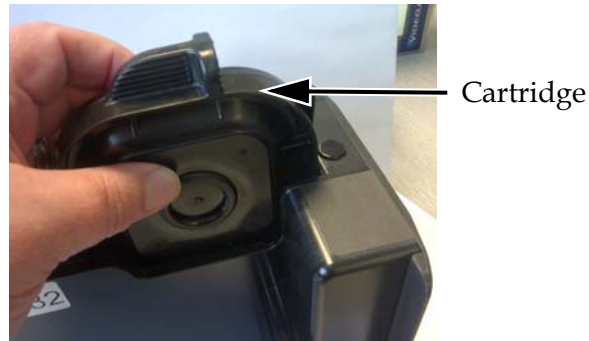


Figure 5-4: Inserting Cartridge into Printhead

- 9 Secure the cartridge in place by pressing it forward until the cartridge snaps in place.

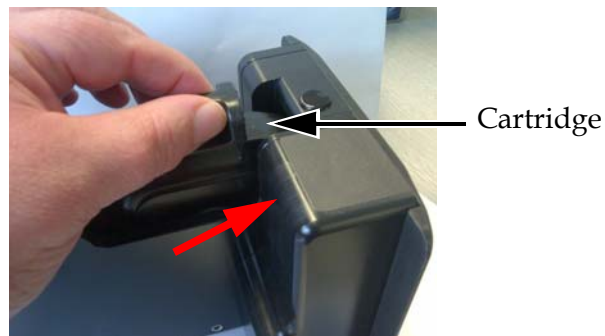


Figure 5-5: Securing Cartridge in place

How to Turn ON the Printer

To turn ON the printer, do the following tasks:

- 1 Make sure that the cartridge is available and inserted correctly.
- 2 Make sure that all the cables are not damaged and are connected correctly.
- 3 Turn ON the mains supply to the printer.

- 4 Press the power switch on the CLARiTY controller (see Figure 5-6).



Figure 5-6: Printer Power Switch

Once power is switched ON, the controller will boot-up. This will take approximately 60 seconds, during which CLARiTY startup screens appear.

On successful boot up, the CLARiTY home page appears (see Figure 5-7 on page 5-7).

To start the system configuration wizard manually, navigate to *Tools > Setup > Control > System Configuration*. The System Configuration dialog box appears. Follow the on-screen instructions and refer to “Setting up the Printer using System Configuration Wizard” on page 5-9.

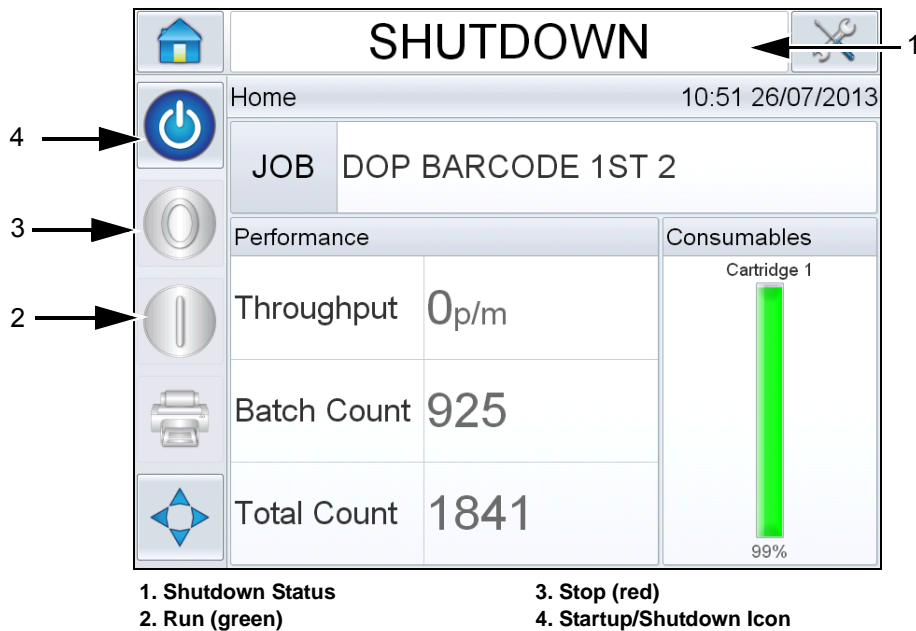


Figure 5-7: CLARiTY Home Page

- 5 During *SHUTDOWN*, the *Stop* (red) and *Run* (green) icons (see Figure 5-7) are disabled (in grey color).

Note: *SHUTDOWN* means Power is ON to the controller but power is OFF to the printhead(s).

Note: If the print sensor is activated accidentally, the printer will not operate because the sensor and encoder input are ignored during the shutdown status.

When production line and printer are ready for start up, perform the steps mentioned in “How to Start the Printer” on page 5-30.

How to Set the Screen Orientation

Depending on the position in which the CLARiTY controller is mounted, it may be necessary to rotate the screen image by 180 degrees.

To change the screen orientation, proceed as follows:

- 1 Navigate to *Tools > Setup > Control*. *Control* page appears (Figure 5-8).



Figure 5-8: Control Page

- 2 Touch *Set Screen Orientation* from the list. *Set Screen Orientation* page appears (Figure 5-9).

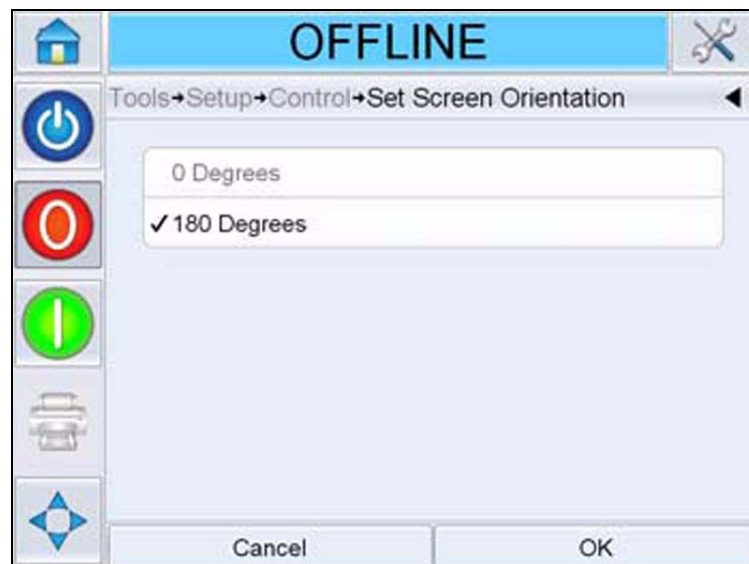


Figure 5-9: Set Screen Orientation

- 3 Select 0 or 180 degrees depending on your requirement and select *OK*. The screen orientation changes.
- 4 Touch the *Home* icon to return to the home page.

Setting up the Printer using System Configuration Wizard

To set up the printer, do the following tasks:

Navigate to *Tools > Setup > Control > System Configuration*. The *System Configuration* dialog box appears.

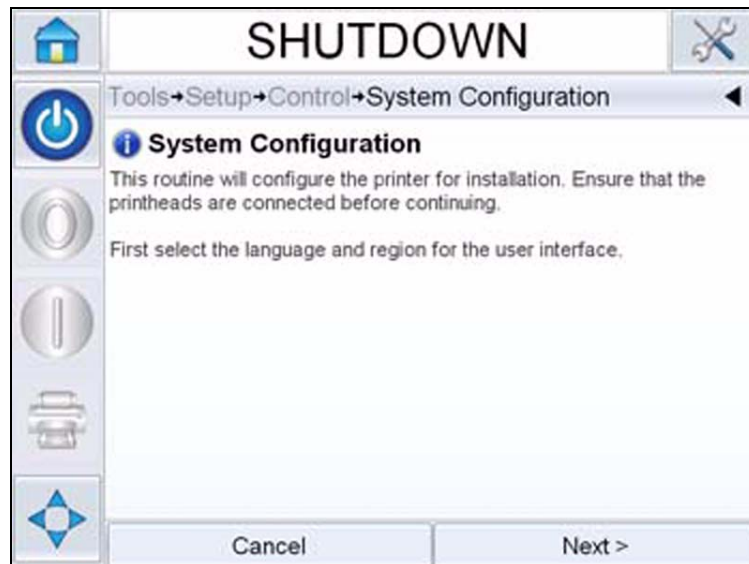


Figure 5-10: System Configuration

Follow the instructions provided by the *System Configuration Wizard* and touch *Next* when ready to progress.

In case of an error, touch *Back* to return to the previous screen and correct the error. Touch *Cancel* to exit from the wizard.

Note: Scroll up and down to see the complete message displayed within a dialog box.

Language, Region/Country, Date and Time

- 1 Follow the instructions displayed on the screen to configure the Language, Region/Country, Date and Time and touch *Next*.

Note: The Region/Country setting will determine the units of measure that will be displayed by the software.

Printhead Settings

The user then will be asked to configure the number of printheads and print trigger.

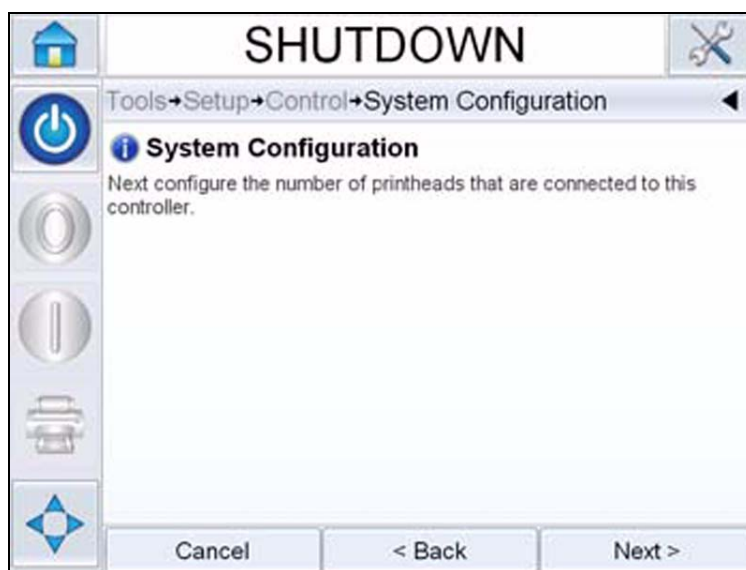


Figure 5-11: Number of Printheads

- 2 Touch *Next* to select the number of printheads. The number of printheads ranges from 1-2. Select the required number of printheads attached to the controller.

- 3 Touch *Next* to configure the direction in which the product will pass the printhead (see Figure 5-13).

Select the product's direction of travel as viewed from behind the printhead.

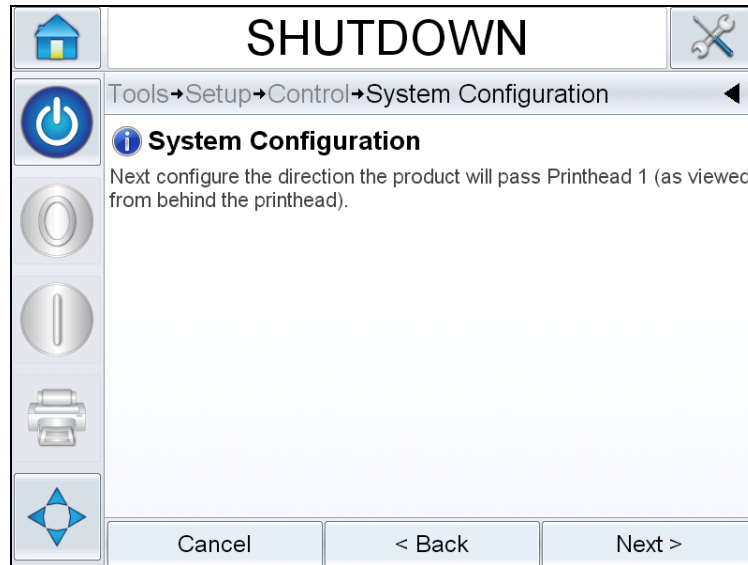


Figure 5-12: Setting up the Printhead Direction

- 4 Touch *Next*, to set up the print trigger mode (see Figure 5-13 on page 5-12).

Select the required print trigger or product detect mode. Options for each Print Trigger Type

a. External Print Sensor:

- Sensor connected to Printhead 1
- Sensor connected to Printhead 2
- External Product Sensor (Used when printer is connected to external trigger source via the printer's I/O port)

After selecting to appropriate sensor, enter the actual distance from the sensor to the center of the cartridge nozzles.

Note: If using the provided holes in the printhead front plate for mounting the print sensor, the sensor distance should be 45mm (1.77in) for left to right applications, and 64mm (2.54in) for right to left applications.

b. Automatic Print Triggering:

Used when configuring the printer to print at a set interval (i.e. web applications). Input the desired distance between leading edges of prints.

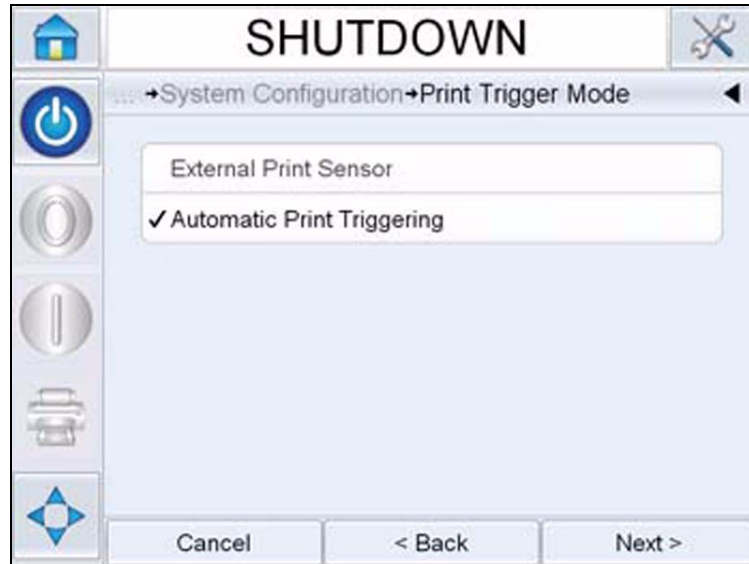


Figure 5-13: Print Trigger Mode

- 5 Select how the printer will determine what speed to print at by following the on-screen (see Figure 5-14).
- Fixed Speed Printing: Used when the conveyor/product speed remains constant. This setting is not recommended when printing barcodes or 2D codes. The actual speed of the conveyor must be entered.

Note: If the line speed is selected as 'Fixed', make sure that the line speed remains constant throughout printing. If the line speed changes, the set up should be adjusted to avoid printing errors.

- **External Encoder:** Used when a shaft encoder is connected to the printer. This setting is recommended for printing barcodes or 2d codes.

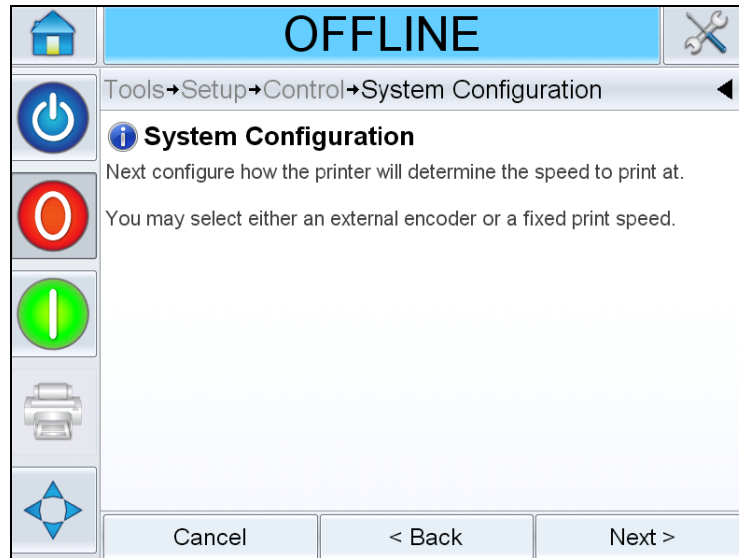


Figure 5-14: Line Speed

- 6 Touch *Next*, to complete system configuration (see Figure 5-15).

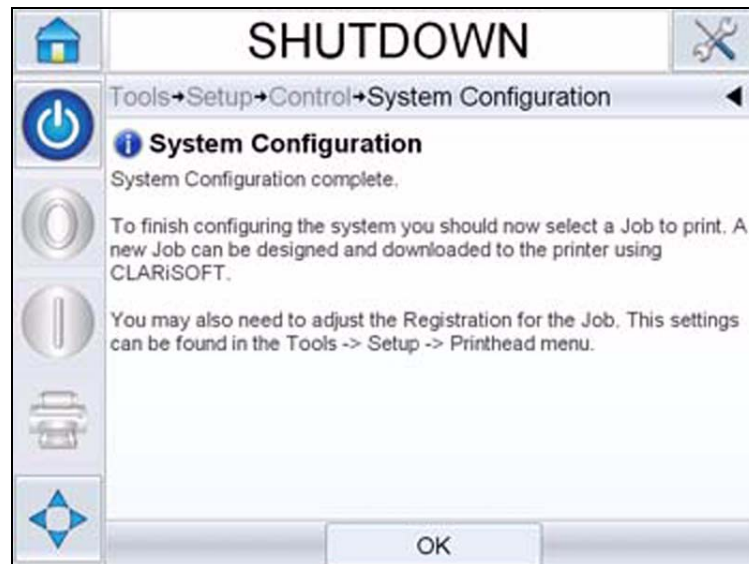


Figure 5-15: System Configuration Complete

- 7 Touch *OK* to exit the System Configuration Wizard.

How to Setup the Printhead Settings

To setup or adjust the printhead, navigate to *Tools > Setup > Printhead* (see Figure 5-16).

Note: The system configuration wizard can be run at any time, navigate to *Tools > Setup > Printhead*.

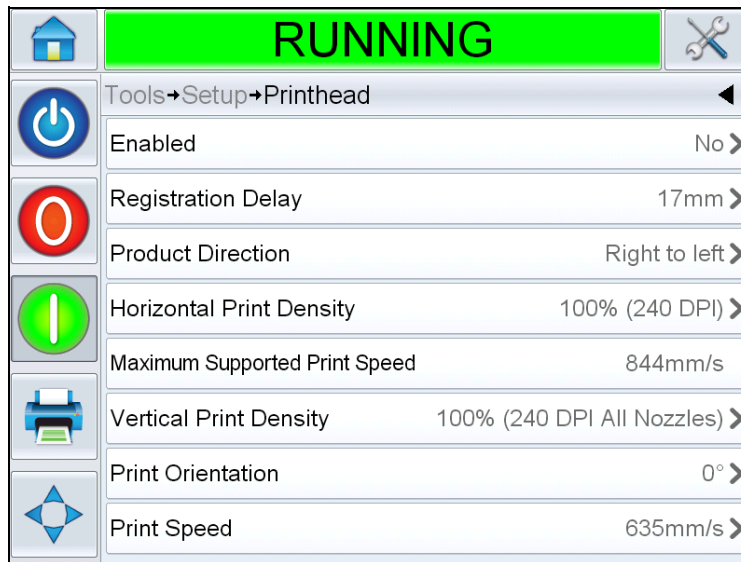


Figure 5-16: Printhead Setting

How to Enable/Disable the Printheads

Allows the printhead to be manually enabled or disabled. When disabled, the printhead is not powered up and will not print.

Navigate to *Tools > Setup> Printhead > Enabled*. Select *Yes* to enable the printhead for printing and *No* to disable the printhead (see Figure 5-17).

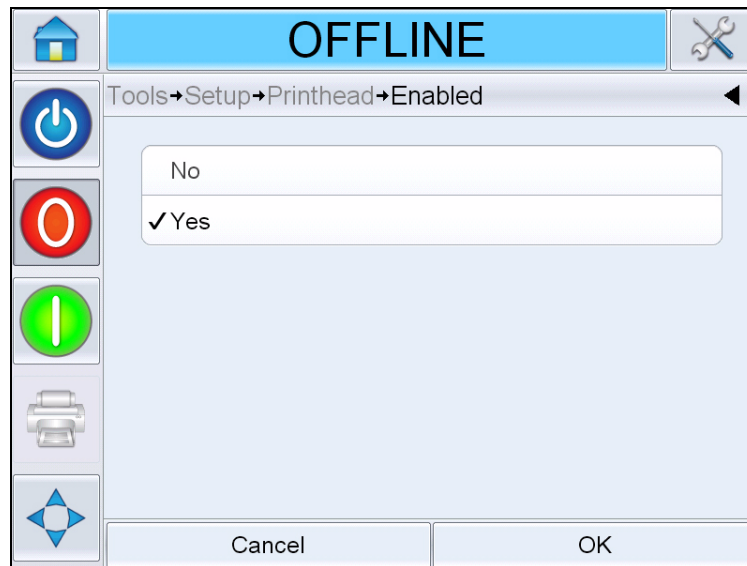


Figure 5-17: Printhead ON/OFF


How to Adjust Registration Delay

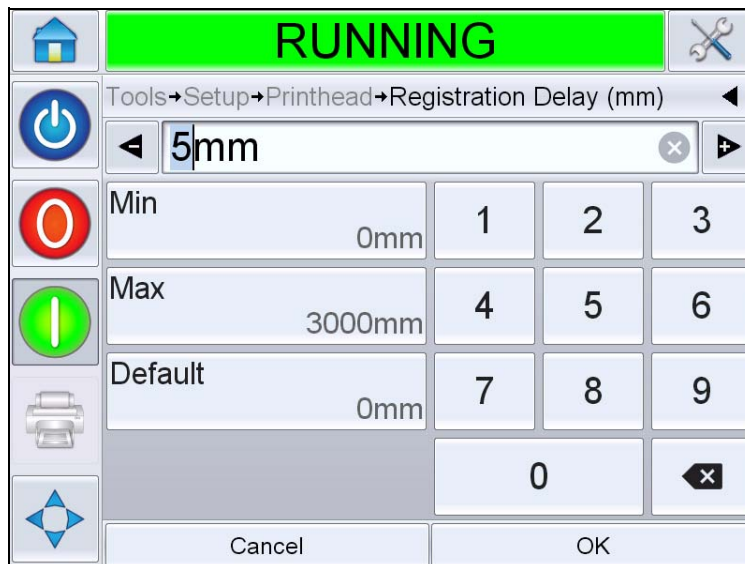
Registration delay allows for additional delay to be added to the Print Sensor Distance that was entered during printer setup. Each Job can have a different Registration Delay, and the entered value gets saved with the Job.

A Registration Delay of "0" should cause the Job to be printed on the leading edge of the product, and increasing the number will cause the Job to print later on the product.

To change the Registration delay, proceed as follows:

- 1 Navigate to *Tools > Setup > Printhead > Registration Delay*. The registration delay screen appears (see Figure 5-18 on page 5-16).

Note: Alternatively, select the print position icon  on the home page to access registration delay screen.



RUNNING				
Tools->Setup->Printhead->Registration Delay (mm)				
◀ 5mm ▶				
Min	0mm	1	2	3
Max	3000mm	4	5	6
Default	0mm	7	8	9
		0	✕	
Cancel		OK		

Figure 5-18: Print Registration

- 2 Input the required *Registration Delay*. Alternately, use the + or - buttons (see Figure 5-18) to make small adjustments in the parameter value.

How to Change Product Direction

Navigate to *Tools > Setup > Printhead > Product Direction*. Select the appropriate direction and touch *OK* to confirm.

How to Change Print Direction

Select the correct direction of product travel as viewed from behind the printhead.

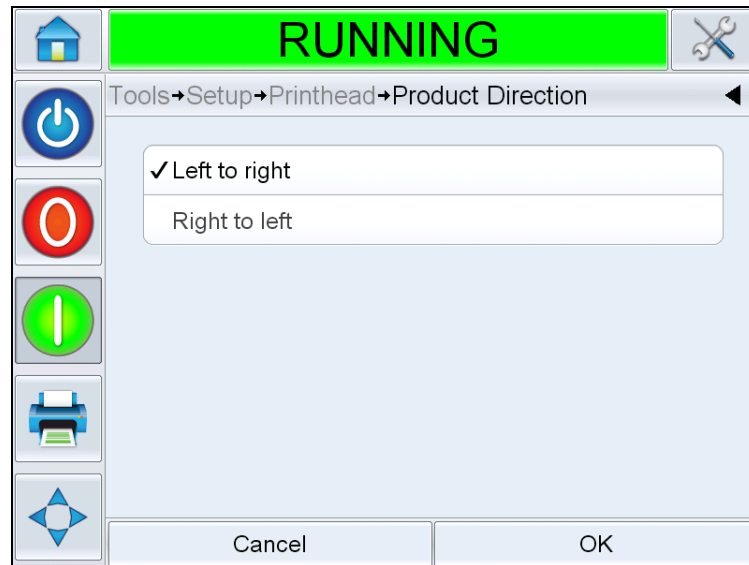


Figure 5-19: Change Print Direction

How to Adjust Print Resolution

Both the Horizontal and Vertical Resolution can be adjusted to control the amount of ink that is used for printing and to accommodate different line speeds. The resolution settings are saved with the Job file, and therefore can be different for every Job.

Horizontal Resolution

Horizontal Resolution (Print Density) determines the maximum line speed of the printer and can be used as a method of reducing the amount of ink used for printing.

Density(%)	DPI	Max Line Speed
100	240	844 mm/sec (166 ft/min)
75	180	1128 mm/sec (222 ft/min)
50	120	1692 mm/sec (333 ft/min)

Table 5-1: Horizontal Print Density

- 1 Navigate to *Tools > Setup > Printhead > Horizontal Print Density*. Select the appropriate print density value and touch *OK* to confirm.

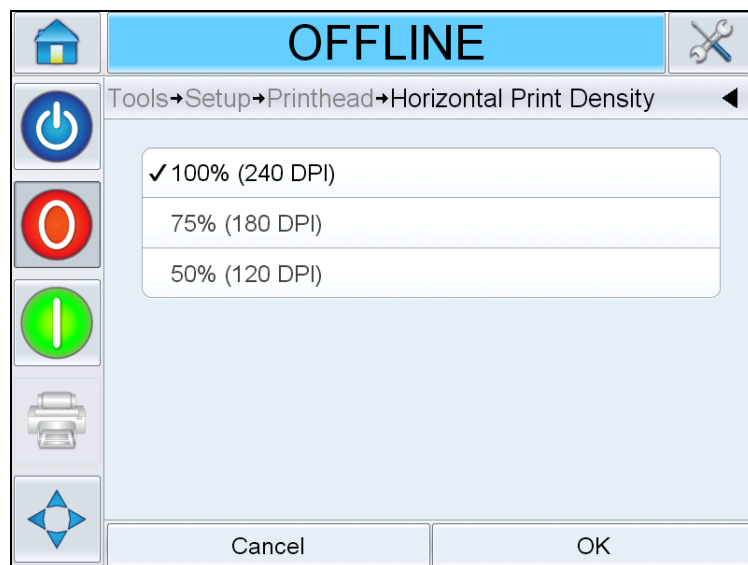


Figure 5-20: Horizontal Print Density Page

Vertical Resolution

Vertical Resolution (Print Density) has no effect on the maximum line speed of the printer but can be used as a method of reducing the amount of ink used for printing.

- 2 Navigate to *Tools > Setup > Printhead > Vertical Print Density*. Select the appropriate print density value and touch *OK* to confirm.

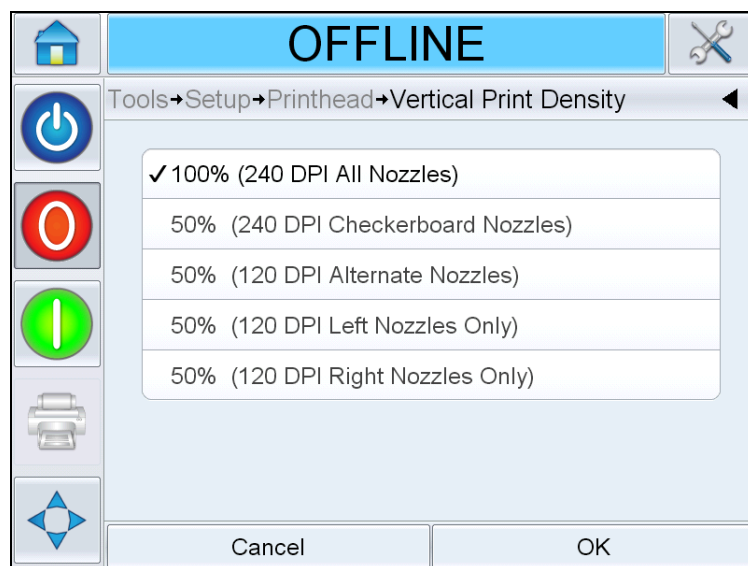


Figure 5-21: Vertical Print Density Page

How to Change Print Orientation

This setting allows the printed image to be rotated by 180 degrees so that it prints in an inverted orientation.

- 1 Navigate to *Tools > Setup > Printhead > Print Orientation*.
- 2 Select the appropriate orientation and touch *OK* to confirm.

How to Create a Job

Jobs are created offline on a PC using CLARiSOFT software, and are then downloaded to the printer (for more information, refer "How to Load a Job for Printing" on page 5-29).

Note: All dimensions in CLARiSOFT are in millimeters (mm)

- 1 Select *File > New* from the CLARiSOFT menu.
- 2 Select VJ8610 from the list of Coders.
- 3 Select the appropriate template for the application:
 - One Head - One Single Head Image: Used for applications with only one printhead attached to the controller. This option will create a Job file with one sub-image, assigned to one printhead.
 - Two Heads - Two Different Images: Used for application with two printheads attached to the controller, and each printhead will print different information. This option will create a Job file with two sub-images, each assigned to a different printhead.
 - Two Heads - All like Head 1: Used for application with two printheads attached to the controller, and each printhead will print identical information. This option will create a Job file with one sub-image, assigned to both printheads.
- 4 Enter the desired Image Width (mm). Typically this value should be the width of the product being printed on so that placement of fields in CLARiSOFT will correspond to the placement of the fields on the product.
- 5 Select *OK* - This will take you to a blank sub-image (#1).

Note: To switch between sub-images, select File > Properties, and on the File tab select the desired sub-image number from the "Sub-Image Name" menu. Then press OK.

- 6 Use the CLARiSOFT Toolbox items on the left hand side of the screen to create the Job.

Inserting Barcodes and 2D Codes into a Job

When creating a Job that contains either 1D barcodes or 2D Datamatrix codes, the following guidelines should be followed to ensure optimal code quality and readability.

All 1D and 2D codes should be printed using a vertical resolution of 240dpi (100% density).

***Note:** For more information, refer "How to Adjust Print Resolution" on page 5-17.*

1D Barcode Optimization

1D barcodes (i.e. UPC-A) consist of a pattern of bars (ink) and spaces (substrate) that must be printed a specific widths to be properly decoded by a scanner. The width of the narrowest bar/space is referred to as the "x" dimension (1x) and the increasing larger bars/spaces are some multiple of the "x" dimension (2x, 3x, etc). The "x" dimension of a barcode is controlled by setting the "Magnification (%)" value in the Properties window for the barcode in CLARiSOFT.

Due to the range of potential Magnification settings and the inherent ability to print in different horizontal resolutions, it is possible for a given combination of these values to result in a lower verification grade, or possibly not scan at all. While the printer will always preserve the vertical height of the code, it can happen that depending on the horizontal resolution configured in the printer, the optimal "x" dimension would require a fractional drop of ink. As this is not possible, the printer will round up or down to the next amount of complete drops, causing the barcode to be longer/shorter than the programmed Magnification.

To keep this issue from occurring, it is recommended to always print 1D barcodes at a Horizontal Print Density of 100% (240dpi).

***Note:** For more information, refer "How to Adjust Print Resolution" on page 5-17.*

2D Datamatrix Code Optimization

Datamatrix codes should be dimensionally as square as possible. Codes where either the x (length) or y (height) dimension are unequal can result in less-than-optimal bar code grading scores due to axial non-uniformity.

Due to the range of potential module sizes and the inherent ability to print in different horizontal resolutions, it is possible for a given combination of module size and resolution to result in a lower verification grade due to axial non-uniformity. While the printer attempts to preserve the vertical height of the code, it can happen that depending on the horizontal resolution configured in the printer, the optimal module size would

require a fractional drop of ink. As this is not possible, the printer will round up or down to the next amount of complete drops.

The following table summarizes the recommended Datamatrix module sizes for different horizontal resolutions to prevent the unintended difference in Datamatrix length and height as described above. The module size is defined in the Properties window when adding a 2D code to a Job in CLARiSOFT.

Print Density	Module Size
100% (240dpi)	Any module sizes greater than 0.50
75% (180dpi)	0.85, 1.27, 1.69, 2.12, 2.54

Table 5-2: Print Density

Note: For more information, refer “How to Adjust Print Resolution” on page 5-17.

How to Download a Job File

A job file can be downloaded from the PC to the printer using the following methods:

- Direct cable connection (serial port or TCP/IP)
- USB memory stick

Download Job File using TCP/IP or Serial Connection

- 1 Connect the communications cable (serial or ethernet) between the PC and the corresponding port of the printer.

Note: The printer must be turned on to download job files.

Note: For details on configuration of printer's communication ports for use with CLARiSOFT, refer to Service Manual (P/N: WLK462426).

- 2 Click the Printer icon from the tool bar in CLARiSOFT. The *Print* window appears (see Figure 5-22 on page 5-22).
- 3 Ensure that the *Real-Time Coder* is selected.
- 4 Ensure that the correct printer is displayed in the *Select Output Device* menu.

5 Select *Download* under *Image Options*.

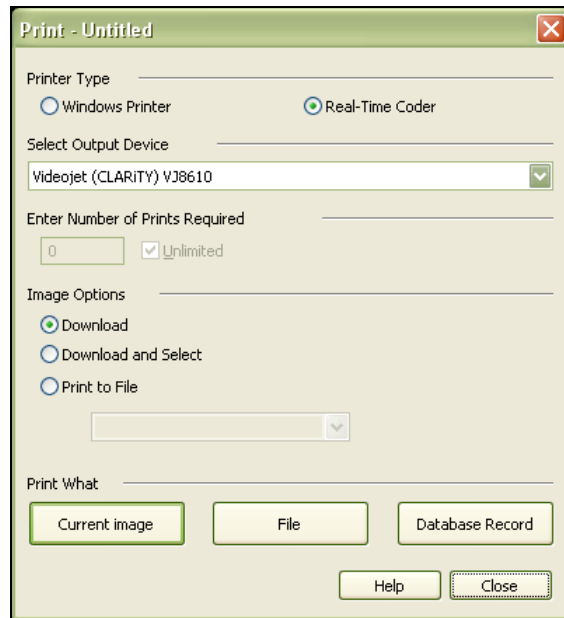


Figure 5-22: Select Output Device

6 To download only the currently opened Job file, select the *Current Image* button.

To download multiple Job files that have been saved to the PC, select the *File* button and navigate to the location on the PC where the files are saved. Highlight all of the Jobs you wish to transfer and select *Open*.

A preview or list of the selected job(s) appears (see Figure 5-23).

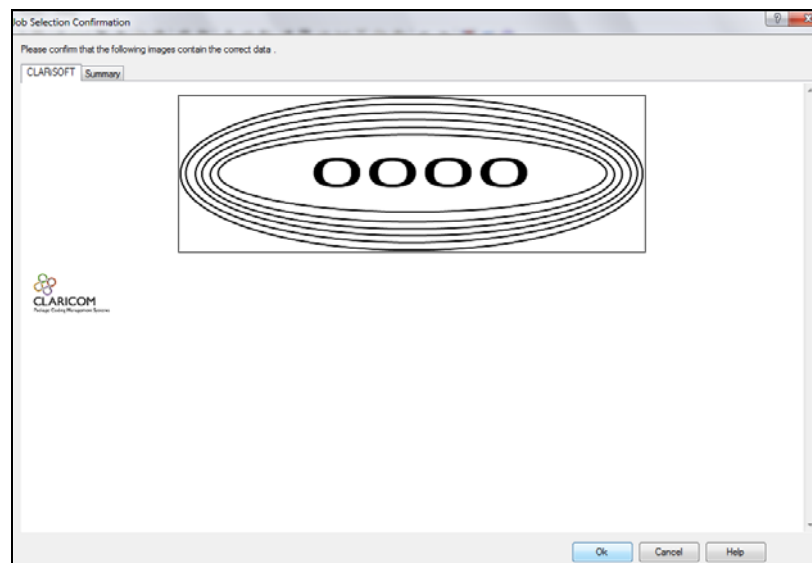


Figure 5-23: Print Preview of Job

- 7 Click the OK button.

The *Progress* window which displays the status bar appears. The status bar indicates the status of the job downloading process (see Figure 5-24).



Figure 5-24: Progress Window

Ensure the Job now exists in the printer's database (see "How to Load a Job for Printing" on page 5-29)

- 8 Disconnect the communications cable between the PC and the printer if no longer needed.

Download a Job File using USB Memory Stick

Do the following tasks to download a job file from the PC to the printer using a USB memory stick:

- 1 Insert the USB memory stick into the PC.

- 2 On the *File* menu, click *Job Download* (see Figure 5-25). The *Download* window appears (see Figure 5-26).

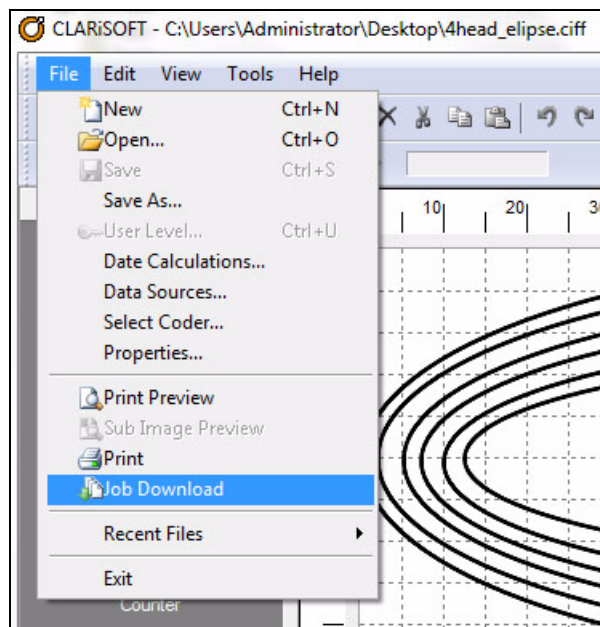


Figure 5-25: Job Download Command

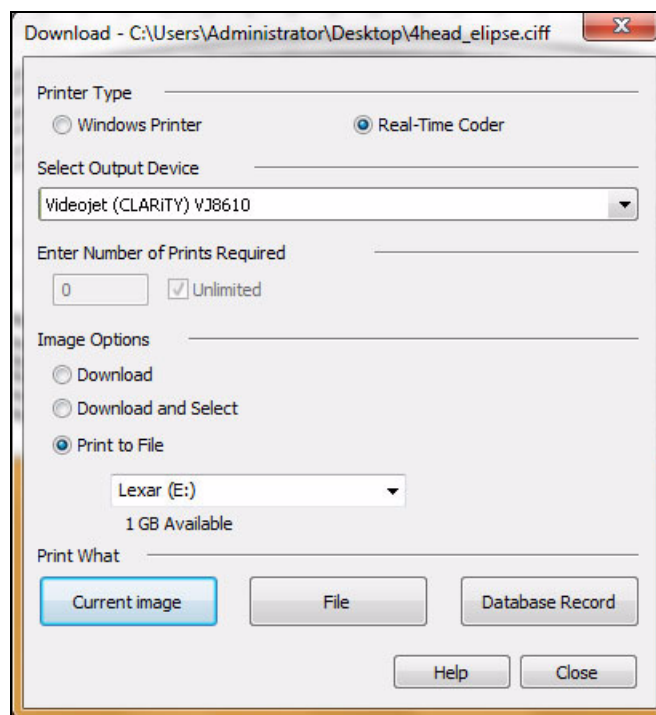


Figure 5-26: Job Download Command

- 3 Ensure that the *Real-Time Coder* is selected (see Figure 5-26).

- 4 Ensure that the correct printer is displayed in the *Select Output Device* menu.

Note: If you do not select the correct output device, the image will not be correct for the printer.

- 5 Select *Print to File* from Image Options.
- 6 Select the USB memory device to use from the drop-down menu.

Note: The *Print What* options will not display until a suitable memory device is selected.

- 7 To download only the currently opened Job file, select the *Current Image* button.

To download multiple Job files that have been saved to the PC, select the *File* button and navigate to the location on the PC where the files are saved. Highlight all of the Jobs you wish to transfer and select *Open*.

- 8 The confirmation window appears (see Figure 5-27).

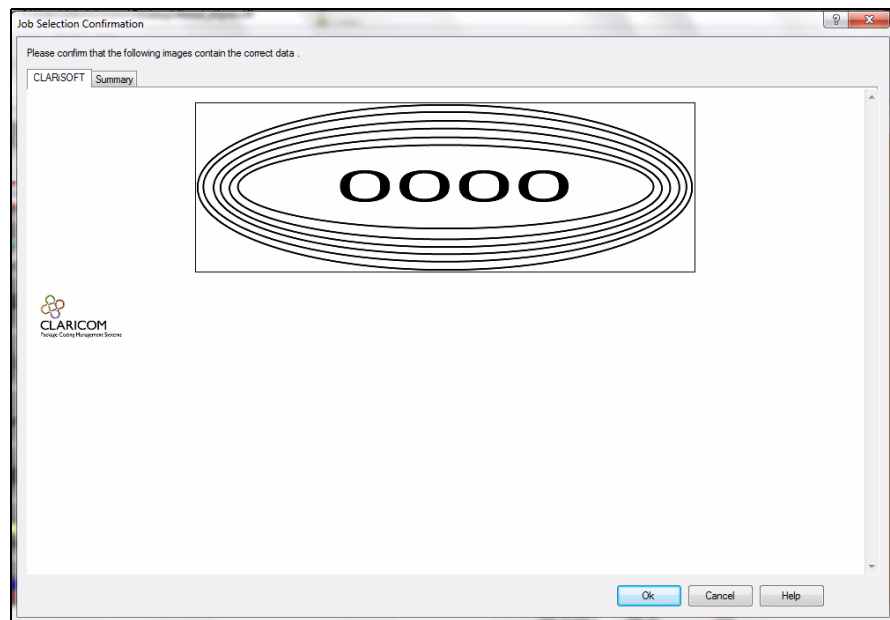


Figure 5-27: Confirmation Window

- 9 Click the *OK* button to continue.

After the files are downloaded, the message shown in Figure 5-28 appears.

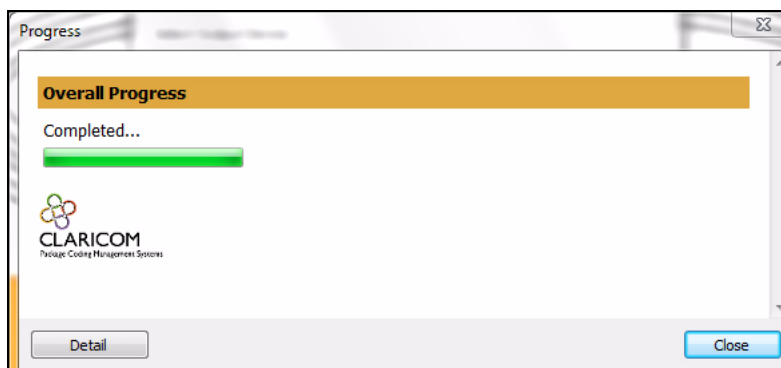


Figure 5-28: Download Complete



Caution

Failure to use the *Print to File* procedure will result in errors and rotated images.

- 10 Remove the USB Memory stick from the PC.

Connecting the USB Database

- 11 Insert the USB memory device into the USB port of the printer (see Figure 5-29).



Figure 5-29: USB Port

- 12 Navigate to *Tools > Databases*. The database page displays the *External Database* (see Figure 5-30).

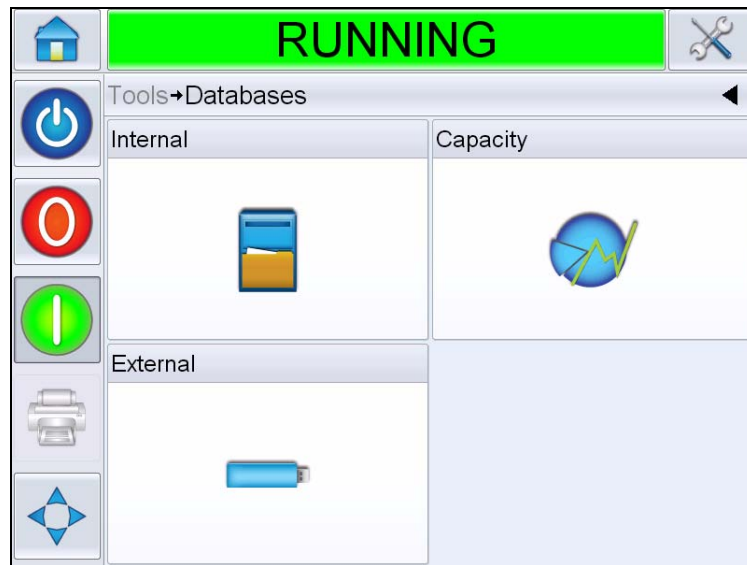
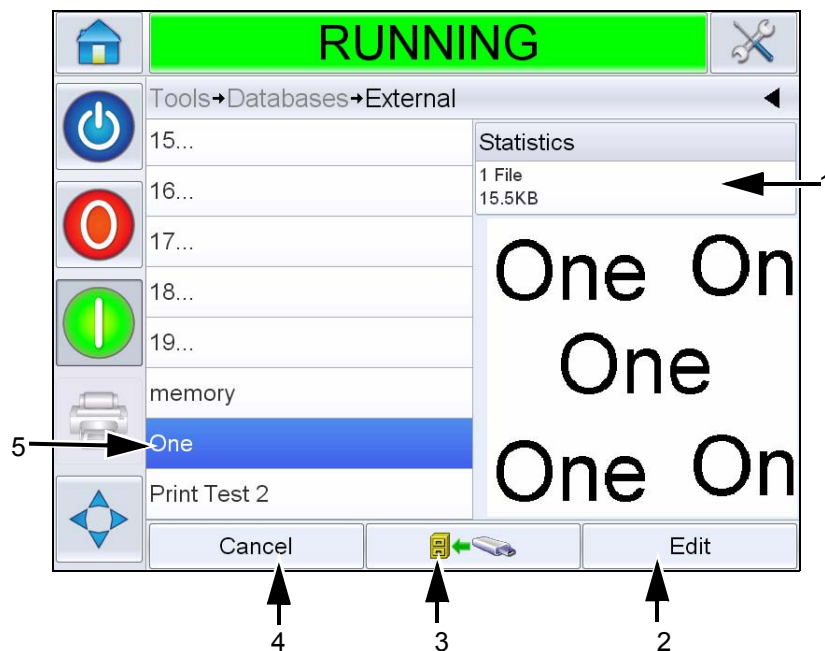


Figure 5-30: External Database

- 13 Touch *External* to view all the jobs in the USB device (see Figure 5-31).
- 14 Touch on the job you require, the file size is displayed.



1. File Size
2. Edit Button
3. Transfer Button
4. Cancel Button
5. Selected Job

Figure 5-31: Jobs List on USB Device

The buttons at the bottom of the page have the following functions:

Buttons	Functions
Cancel	Exits the current operation and takes you back to the previous screen.
Transfer Button	Restores the currently selected Job.
Edit	Allows Jobs to be deleted from the USB Memory Stick.

Table 5-3: Bottom Buttons


- 15 Touch  to restore a job. A confirmation appears (Figure 5-32). Touch Yes to confirm.



Figure 5-32: Confirmation Screen

Note: To restore all Jobs from the USB Memory Stick at one time, do not select a Job name from the list and touch the Transfer button




- 2 Select the test job from the list and touch *OK*. The job print preview appears (see Figure 5-34).



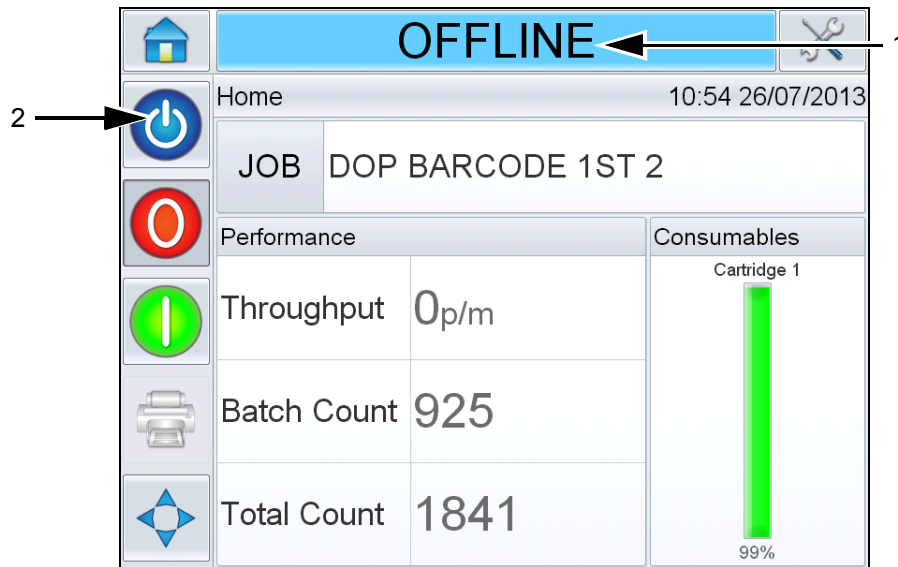
Figure 5-34: Job Print Preview

- 3 Touch *OK*, and the *Home* screen displays the newly loaded Job name. The job is now ready for print.

How to Start the Printer

- 1 Touch the *Startup/Shutdown* icon  to start the printer.
- 2 The *STARTING UP* status appears in the status bar of the CLARiTY *Home Page* (see Figure 5-35 on page 5-31) followed by *OFFLINE* status indicating the printer is successfully prepared for printing.

- 3 The *Stop* and *Run* icons become active.



1. Offline Status
2. Startup/Shutdown

Figure 5-35: Home Page - Offline

- 4 If a fault or a warning condition exists, a fault or warning message appears in the status bar instead of the *OFFLINE* status. Review the “Fault Messages and Warnings” on page 8-1 and clear as required before continuing.
- 5 To enable the printer to print, touch the green *Start* button.

Note: Changing the status to *OFFLINE* mode provides power to the printhead and starts monitoring of the printhead parameters. This will also allow the printhead to be purged manually if conditions are met.

Note: The status bar can also be used to place the printer into *ONLINE* or *OFFLINE* mode (*STOP* or *RUN*). Make sure that the printer is not placed in *ONLINE/OFFLINE* mode in error.

Note: The *Start* button will not function if there is no Job loaded to print.

How to Stop the Printer

To stop the printer from printing, touch the red Stop button (see Figure 5-36) or touch the status bar. The printer returns to the OFFLINE state.

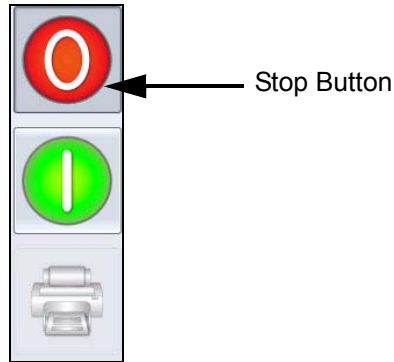


Figure 5-36: Stop Button

Print Screen Saver

The CLARiTY operating system has a *screensaver function* (similar to that of a PC), to extend the service life of the LCD display used in CLARiTY.

The *screensaver* function can be activated or deactivated within CLARiTY Configuration Manger.

The shut-off time of the *screensaver* can be adjusted from 5 to 30 minutes. The default shut-off time has been set to 15 minutes.

Touching anywhere on the screen causes the *screensaver* of the controller to be switched on without triggering any other function on the user interface.

The *screensaver* is also switched ON again whenever data, a warning or an error message appear.

If passwords have been assigned, an input mask appears upon activation of the display to query the password for the *screensaver*.

If a user was logged on before the *screensaver* came ON, then on reactivation, the user will be asked to re-verify password.



Warning

PERSONAL INJURY. When the printer is in production and there has been no activity on the CLARiTY touchscreen for a certain period of time, the screensaver function is activated. This indicates that CLARiTY is in power save mode. This option saves energy and can be configured with CLARiTY configuration manager (Refer to Service Manual for more information). During such instances, do not assume that the printer is switched off and approach the printheads. Always touch the touchscreen to check and confirm printer activity.

Additional Printer Operations

6

This chapter contains the following topics:

- Viewing the current job or image
- Selecting a new job
- User editable fields
- Touch to edit
- Quick position edit
- How to delete a job from the database
- Line select mode
- How to replace the cartridge
- Production audit log
- How to update printer software

Viewing the Current Job or Image

The name of the current job is displayed on the CLARiTY home page (see Figure 6-1). Before starting the production line, make sure that the current job is the job that you want to print.

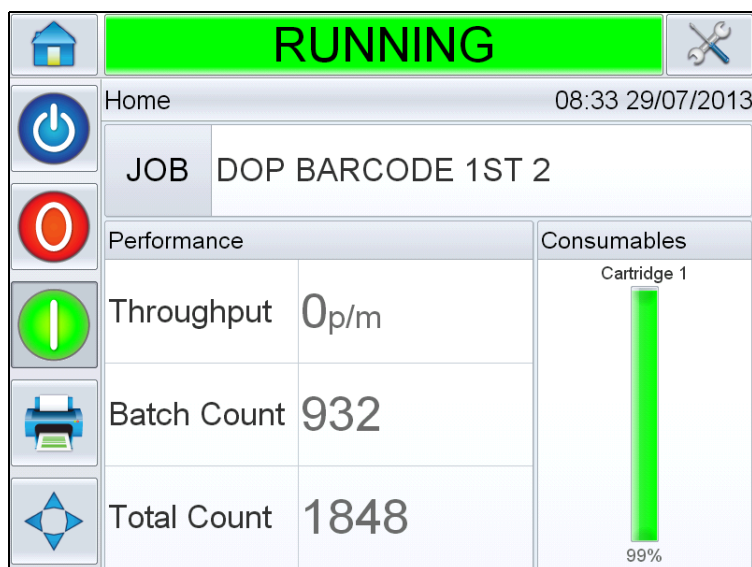


Figure 6-1: CLARiTY Home Page

To view more details of the current job, proceed as follows:

- 1 Touch the name of the JOB on the home page.
- 2 This will display a preview of the job, as shown in Figure 6-2.

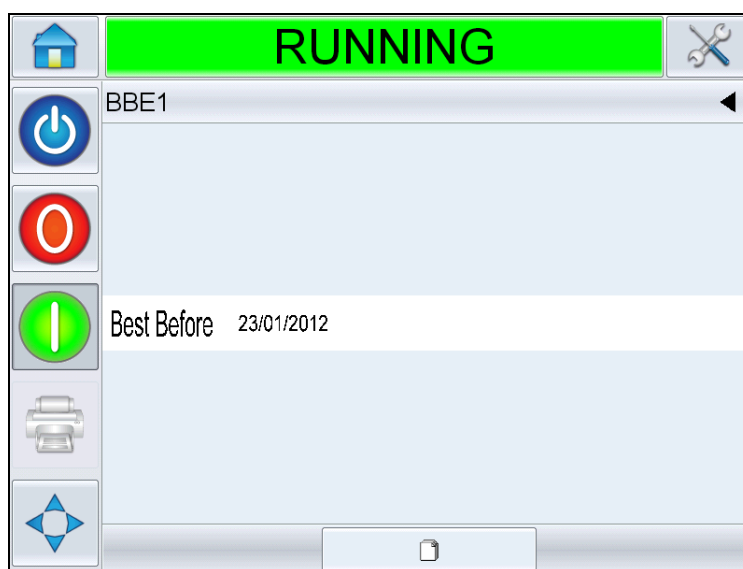


Figure 6-2: Current Job Details Display

- 3 To magnify the image on the screen, double touch on the image to zoom in and zoom out.

If you are satisfied that the job is displayed correctly, you can start the printer, as described in “How to Start the Printer” on page 5-30. If the current job is not the job that you want to print, refer to the instructions in “Selecting a New Job” on page 6-3.

- 4 Touch the Back button on the navigation bar, or the Home button to return to the home page.

Selecting a New Job

If you want to print a job that is not the current job, you can select a different one. Refer “How to Load a Job for Printing” on page 5-29.

You can modify the information before printing the job. Refer “User Editable Fields” on page 6-4 for information on how to change it.

To exit the job selection menu at any stage without making any changes, touch the *Cancel* button.

User Editable Fields

Some jobs contain user editable fields. These fields are part of the job that can be changed. There are three types of user editable fields:

- Variable TEXT fields.
For example, they are used for batch codes, product names, and other text jobs.
- Variable DATE fields.
For example, they are used for sell by dates.
- Variable COUNTER fields.
Allows you to modify the starting value for a counter.

If the selected job has a user editable field, the interface prompts the user to review this field and edit if required.

Note: Each field has a check box. The check box is unchecked initially. As you enter the data and touch OK, the user interface automatically checks the box. You can proceed to the next step only when all the boxes are checked.

How to Change the Text and Date Fields

To edit the user field, proceed as follows:

- 1 When a job is selected, the list of user editable fields in the job are displayed.
- 2 Touch the required field from the list to select it (the first one in the list is automatically selected). The default data for that field appears in the preview window (Figure 6-3).

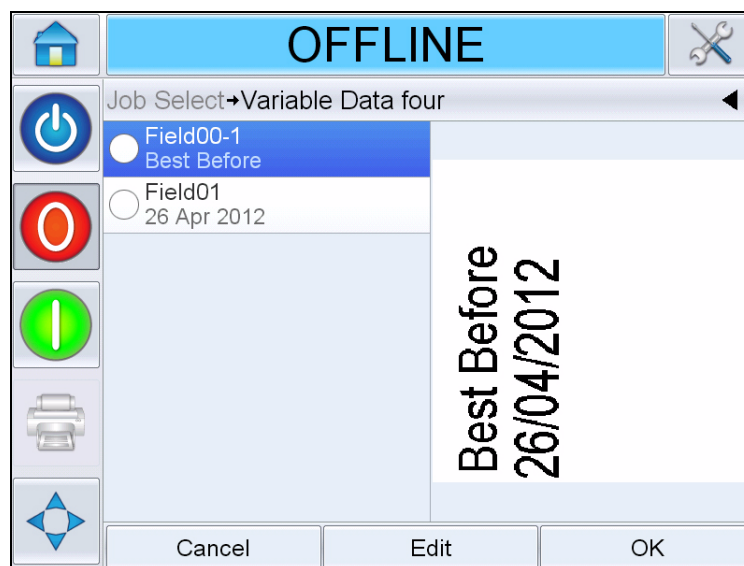


Figure 6-3: Default Data Window

- 3 If the information in the preview window is the information that you want to print, go to step 5. If you want to change the information, perform step 4.

- 4 Touch *Edit* to modify the information.

For text fields, do the following tasks:

- a. Use the alpha key pad to enter the data.

The CLARiTY Operating system supports a number of standard languages for use with 'User Entered' text information.

- b. Touch the 'Language Selection Key', to access the available language selections (see Figure 6-4).

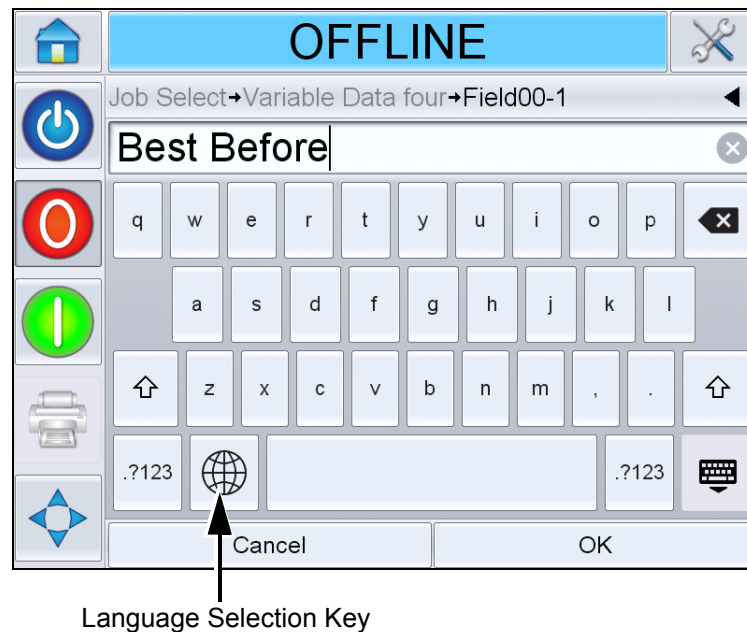


Figure 6-4: Default Keypad

- c. The keypad functions the same way as the keypad on a computer. Make necessary changes to the information.

For date fields, do the following tasks:

- d. Touch the data window to display the Calendar page (see Figure 6-5).

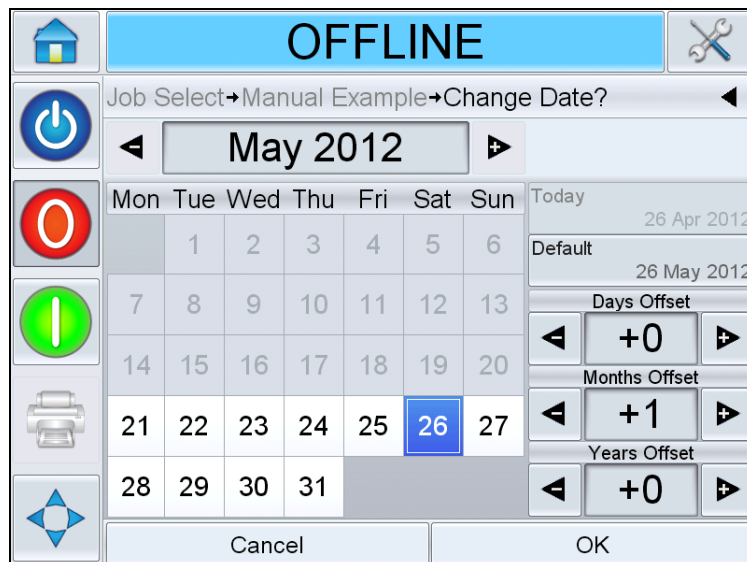


Figure 6-5: Calendar Page


- e. Touch the + or - button to change the month and year.
- f. Touch the date on the calendar to choose the date of the month, and touch OK.

Note: Any dates that are not available for selection because of pre-defined rules that may have been set in CLARiSOFT are dimmed.

- 5 Touch OK when you are satisfied that the information in the data window is correct. The user interface checks the check box. If there are only two user editable fields in the job, the user interface automatically displays the second field. If there are three or more fields, it displays the list of user editable fields, so that you can select one.

When you touch OK at the final field for this job (and all the check boxes are checked) the user interface shows you the preview of the image.

- 6 At the preview, perform one of the following:
 - If you are satisfied with the image and you want to run the new job, touch OK. Products will be printed with the new image until you make further changes or select a new job.
 - If you are not ready to print the job, you can leave this screen as it is. You can touch OK at a later stage, to select the job at that time.

- If you want to step back through the job select screens to make alterations to the variable data, touch *Cancel*.
- To cancel the job selection altogether, touch *Home*  button.

Touch To Edit

To update and change user fields quickly and easily in a printing job, the user can use the 'Touch To Edit' feature.

Note: Touch to Edit feature is turned off by default and needs to be activated in Clarity Configuration Manager.

- 1 Select the 'Current Job Details Bar' to display the job preview.

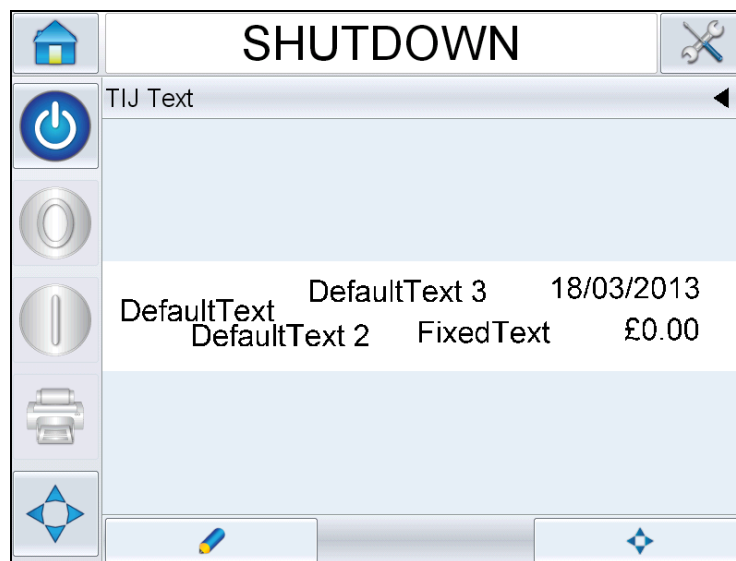


Figure 6-6: Message preview- Touch to edit

- 2 Touch the  button.

- 3 The job opens, with the user editable fields highlighted.

Note: Only jobs that have user editable fields can be edited using Touch to Edit feature. These are set up in CLARiSOFT during message creation.

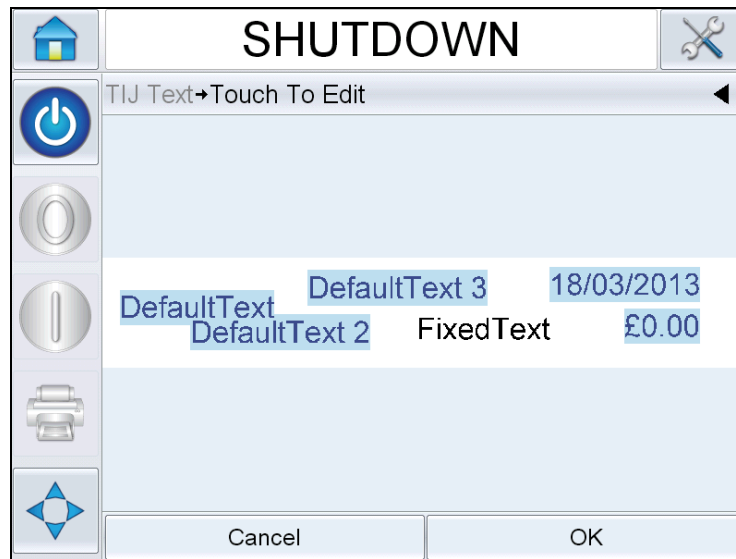


Figure 6-7: User Editable Fields Highlighted

- 4 To edit a user field, touch the user field.
- 5 The appropriate user field editor, based on the user field type, is displayed for the update. Update the user field as required and touch OK.



Figure 6-8: User Field Editor

- 6 If there are additional user fields, repeat step 4 and step 5 for each field.
- 7 Touch *OK* after editing all the required user fields. The job will be updated in the printer and displayed in the 'current job details bar' following the next print.

Quick Position Edit

To reposition the individual fields in a printing job, the user can use the 'Quick Position Edit' feature.

Note: *Quick Position Edit* feature is turned off by default and needs to be activated in *Clarity Configuration Manager*.

- 1 Select the 'Current Job Details Bar' to display the job preview (see Figure 6-9).

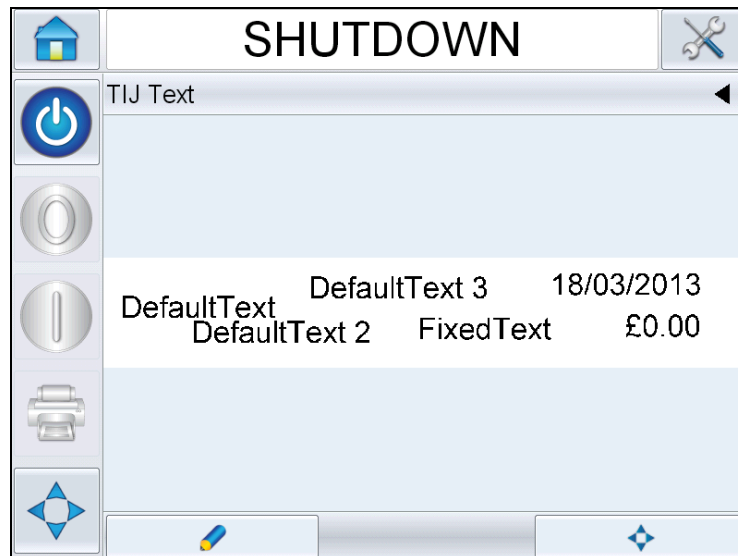



Figure 6-9: Message preview

- 2 Touch the  button.

- 3 The quick position edit job preview opens.

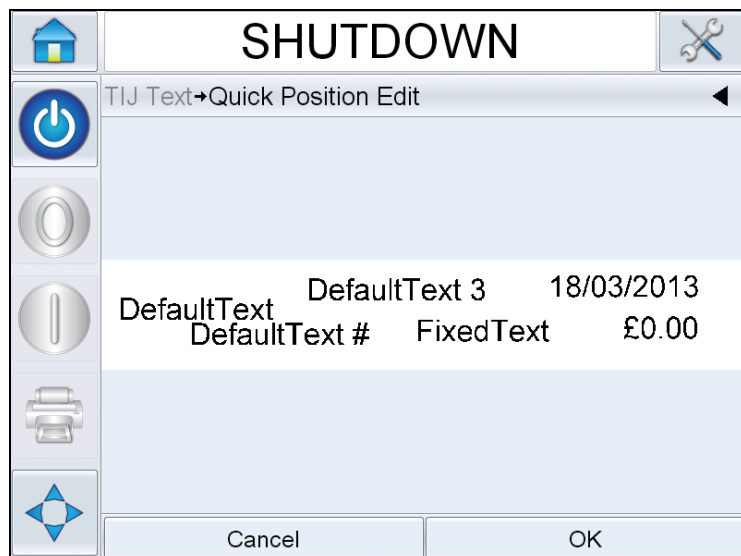


Figure 6-10: Message preview- Quick Position Edit

Note: Unlike Touch to Edit, no fields are highlighted and all the fields in a job can be amended using Quick Position Edit feature.

- 4 Select the required field to re-position, opens the X position edit screen (see Figure 6-11). Quick Position Edit allows each field to be positioned as required in both X and Y axis.

Note: Left hand top corner of the job indicates the position $X=0$ and $Y=0$.

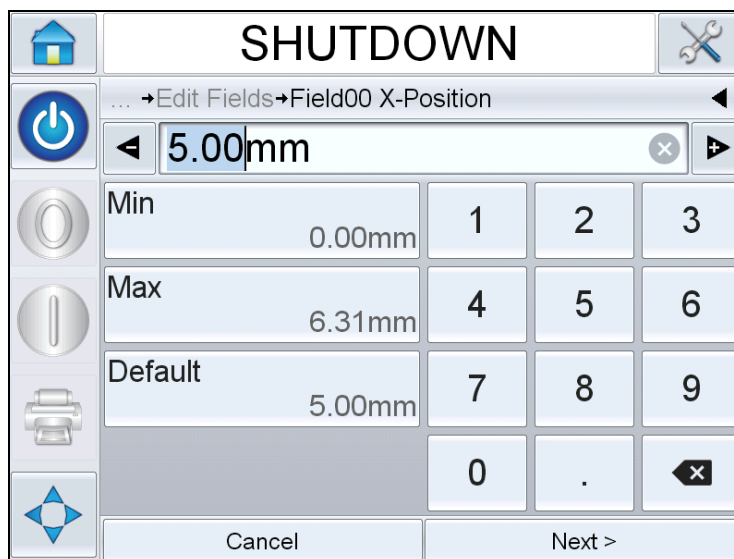


Figure 6-11: Quick Position Edit - X Position

- 5 Touch *Next* to change the Y axis position.

SHUTDOWN			
... → Edit Fields → Field00 Y-Position			
◀ 0.00mm ▶			
Min	0.00mm	1	2
Max	8.64mm	4	5
Default	0.00mm	7	8
		0	.
Cancel		OK	

Figure 6-12: Quick Position Edit - Y Position

- 6 Update the selected field as required and touch *OK*.
- 7 If there is a second field, repeat the steps 4 and 5.
- 8 Touch *OK* after editing all the required fields. The job will be updated in the printer and displayed in the 'current job details bar'.

Note: When *Touch to Edit* and *Quick Position Edit* features are enabled, the *Image Job Queue* icon is removed. You need to navigate to **Tools > Diagnostics > Control** to access *Image Update Queue*.

Note: The changes made to the job using this feature are saved.

How to Delete a Job from the Jobs Database

To remove jobs that are no longer required, proceed as follows:

- 1 Touch the *Tools* icon on the home page.
- 2 Touch the *Database* icon on the tools page to open the database page.

- 3 Select the required database (internal or external) and touch *Edit* to go to the deletion screen (see Figure 6-13). This page contains a list of all the available print jobs along with details of number and size of the selected Jobs.

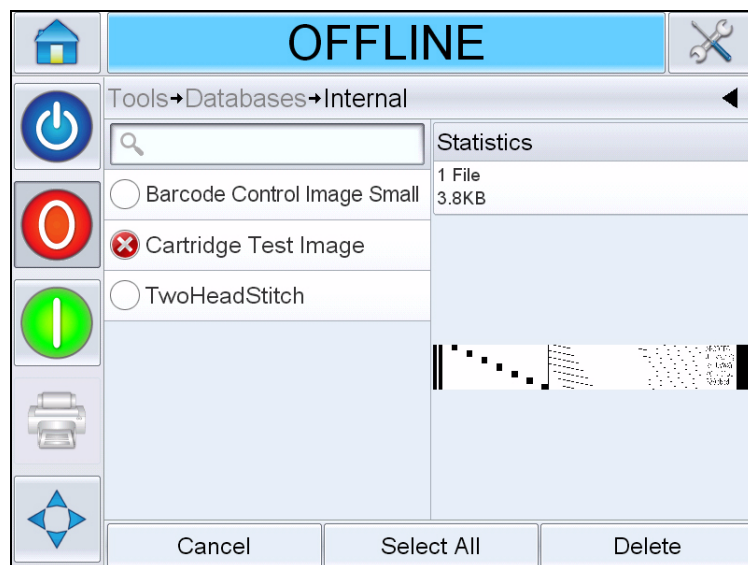


Figure 6-13: Database Delete Window

- 4 Touch the name of the job(s) that you want to remove from the database. The job image appears in the preview window. Ensure that you want to delete the selected job(s).
- 5 Touch *Delete* to delete the job.
- 6 Confirm the job to be removed (see Figure 6-14).

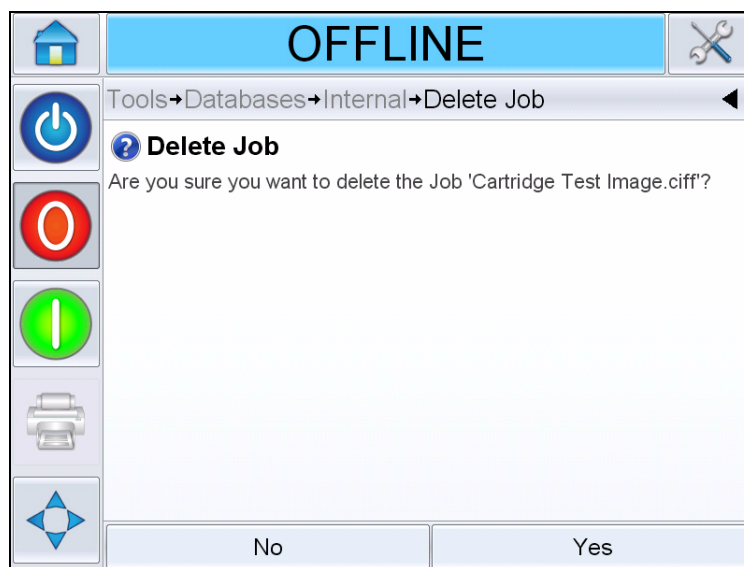


Figure 6-14: Confirmation Screen

- 7 Touch Yes to remove the job.
- 8 Repeat steps 4 to 7 to remove other jobs that are not required.

Note: You can touch *Select All* to remove all the jobs from the list. The job preview will display the last job selected if multiple, or all, jobs are selected.

- 9 Touch the Home icon to return to the home page.

Line Select Mode

Line Selection Mode allows an external device (such as a PLC) to remotely switch between pre-defined jobs.

Note: Line Selection mode is disabled by default and must be enabled using CLARiTY Configuration Manager.

When Line Selection mode is enabled, the desired jobs can be assigned to the correct lines by doing the following tasks:

- 1 Select *JOB* from the *Home* page (see Figure 6-15).

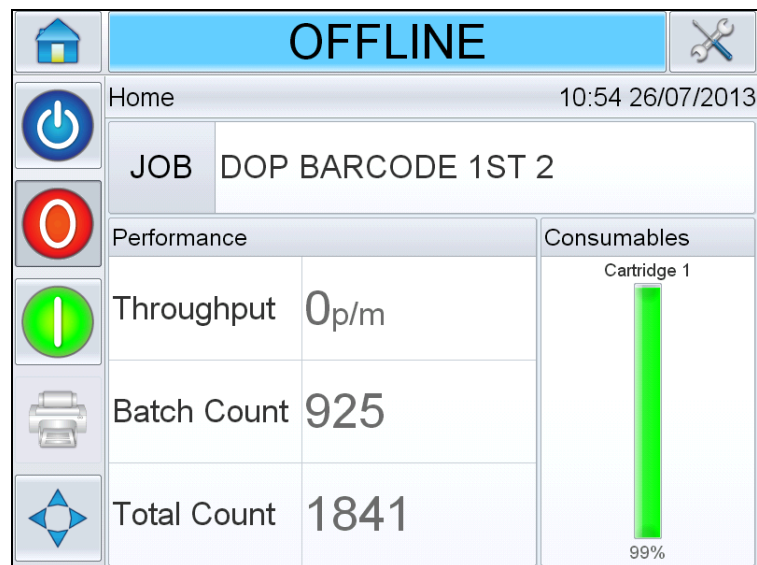


Figure 6-15: Select Job

- 2 To assign a particular job to *Line 1*:
 - a. Select *Line 1* (see Figure 6-16).

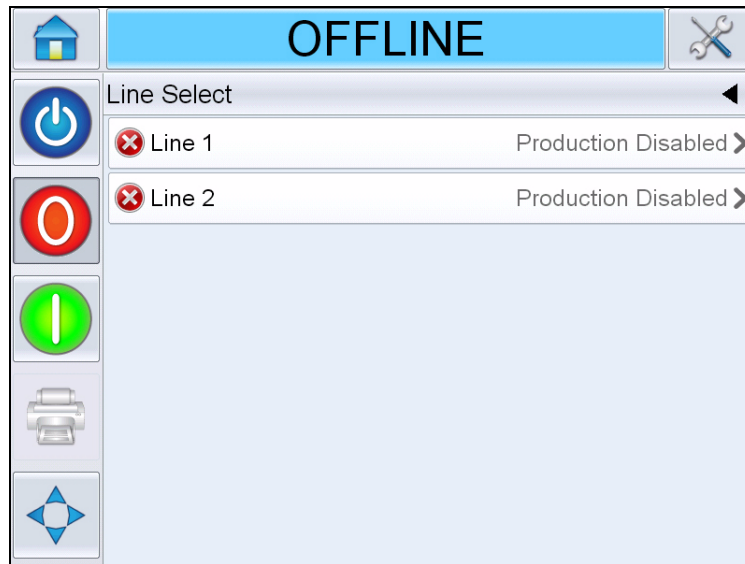


Figure 6-16: Line Select

- b. Select the correct job from the job list and touch OK.
 - c. You can preview the assigned job (see Figure 6-17).
 - d. Touch OK and *Home Page* appears.
- The job selected is shown on the *Line Select* page.

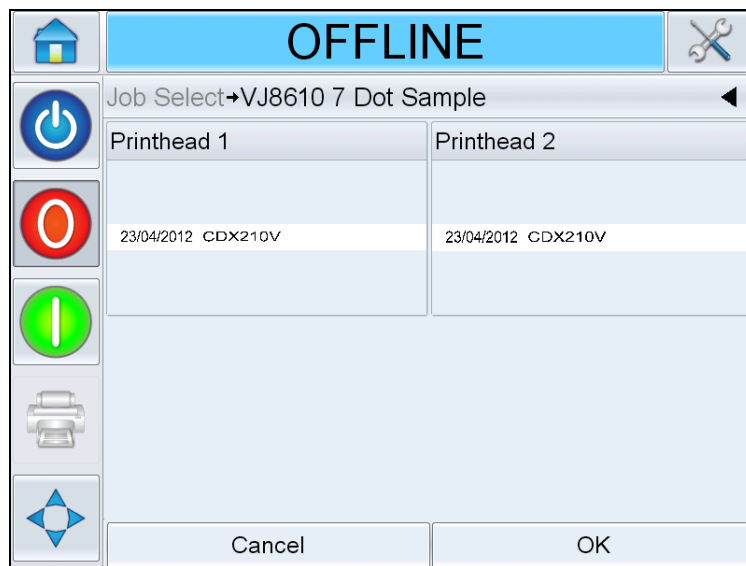


Figure 6-17: Job Select Preview

3 To Remove the line assignment:

- a. Touch  on the *Line Select* page (see Figure 6-18).

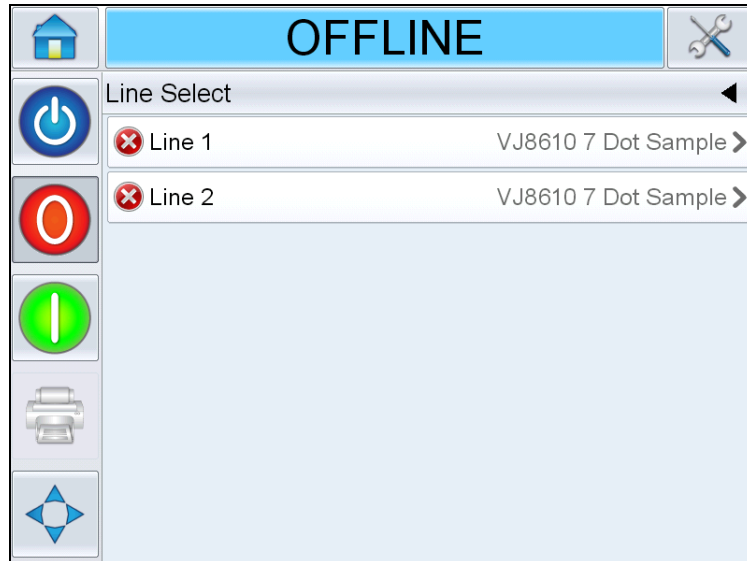


Figure 6-18: Line Select Page

- b. *Remove Line Assignment* page appears with the following choices (see Figure 6-19):
- *Disable*: Selecting this option will cause the printer to go Offline when particular line is selected.
 - *No Print*: Selecting this option will cause the printer to remain in the Running state when particular line is selected, but not print.

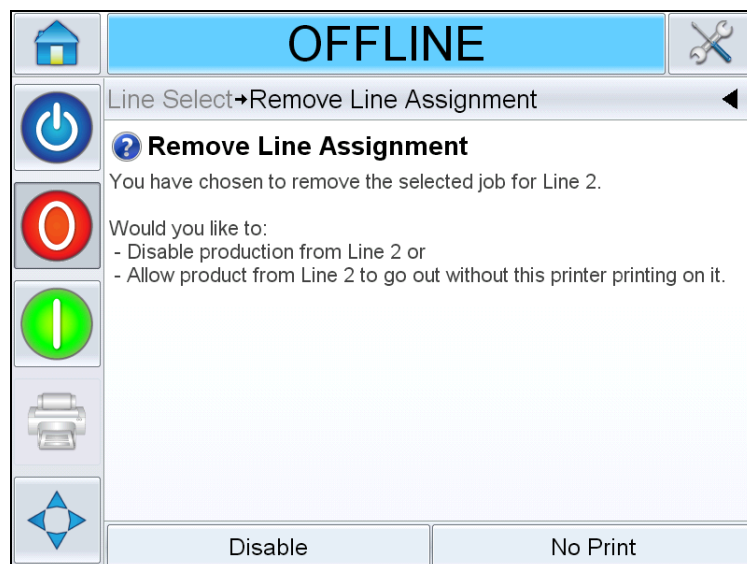


Figure 6-19: Remove Line Assignment

- 4 *Line Select* page appears again (see Figure 6-20).
 - a. If you have selected *Disable*, then the message *Production Disabled* appears.
 - b. If you have selected *No Print*, then the message *Non Printing Job* appears.

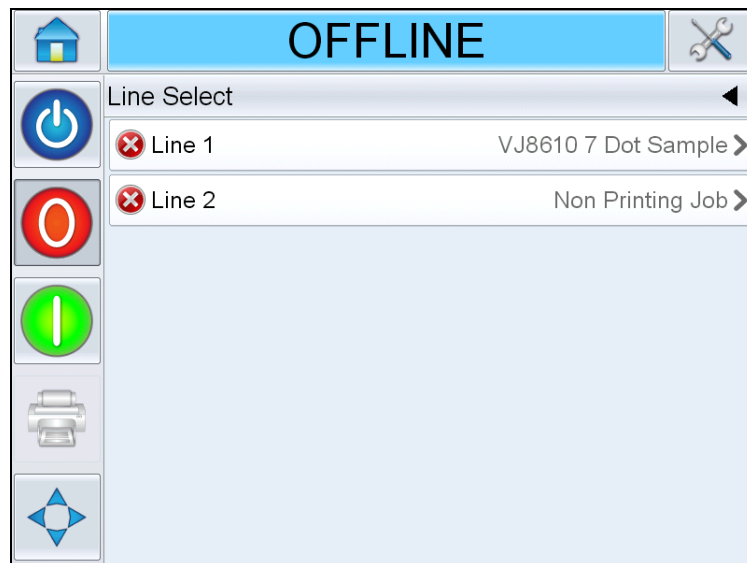


Figure 6-20: Line Select Page

How to Replace the Cartridge

To replace the cartridge, proceed as follows:

Remove the Old Cartridge

To remove the cartridge from the printhead proceed as follows:

- 1 Unlock the old cartridge from the printhead by pressing it back.
- 2 Slowly slide out the old cartridge from the printhead.

Note: When the cartridge is removed with the printer in Running or Offline modes, a fault is raised indicating that no cartridge is inserted. This fault will clear automatically once the new cartridge is inserted. When printer is in shutdown mode, no alarm is raised.

Insert the New Cartridge

To insert a new cartridge into the printhead proceed as follows:

Note: You must prime the new cartridge before inserting it into the printhead (For information on priming, refer to "How to Insert the Cartridge into the Printhead" on page 5-2).

- 1 Place the cartridge into the printhead (see Figure 6-21).



Figure 6-21: Inserting Cartridge into Printhead

- 2 Secure the cartridge in place by pressing it forward until it snaps in place.



Figure 6-22: Securing Cartridge in place

Adjust the Ink Level Manually

The printer is able to determine the approximate amount of ink remaining in a specific cartridge, even if it has never been inserted into that printer before. Therefore, it is usually not necessary to modify the ink level.

If it becomes necessary to modify the ink level (i.e., you wish to continue using a cartridge past its original 0% level), adjust the ink level by selecting *Adjust Ink Level* (see Figure 6-23). Enter the desired percentage of ink remaining in the cartridge.

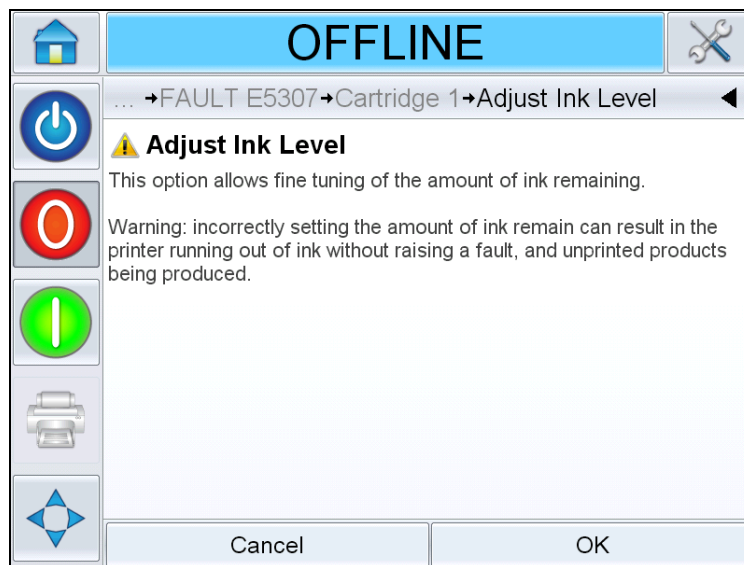


Figure 6-23: Adjust Ink Level

Warning

Manually adjusting the ink level of a cartridge can result in the printer running out of ink without raising a fault or warning, and non-printed products being produced.

Note: The ink level can only be adjusted within the defined Min and Max values shown on the Adjust Ink Level screen.

Production Audit Log

The production audit log shows the log of machine changes and user changes made.

Note: *Production Audit Log is turned off by default and needs to be activated in Clarity Configuration Manager. The logging mode can be set to “None”, “Normal” or “Advanced”.*

Navigate to *Tools > Diagnostics > Control*.

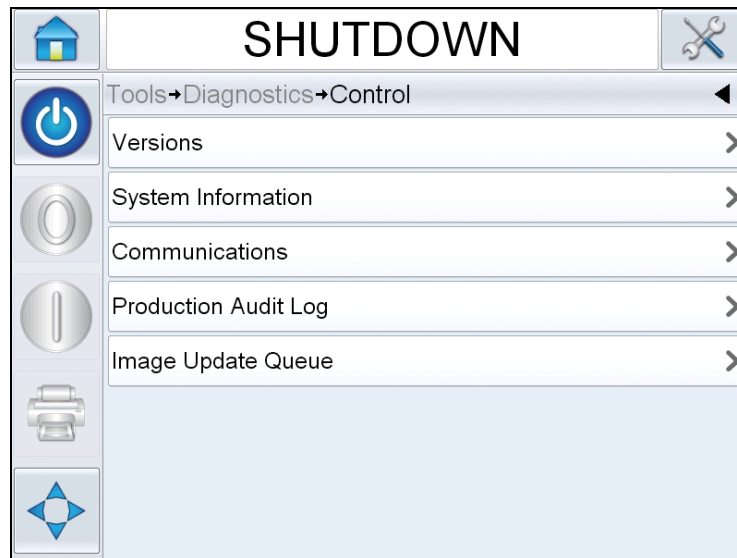


Figure 6-24: Production Audit Log

Note: *‘Production Audit Log’ appears in the menu when the logging mode is set to either ‘Normal’ or ‘Advanced’.*

In Normal logging mode, the log entries are deleted if there are over 500 log entries and older than 90 days.

In Advanced logging mode, entries must be archived to a USB stick before logs will be deleted.

Figure 6-25 shows the audit log for both machine events and user events. The user can also filter results to show either user events only or machine events only (see Table 6-1).



Figure 6-25: Production Audit Log




Button	Function
	Lists both machine and user events
	Lists only user events
	Lists only machine events

Table 6-1: Buttons to Filter the Log

The following machine events are logged.

- CLARiTY Started – [s/w version, PCB serial no]
- CLARiTY Exit
- Power Failure detected
- Fault/Warning raised – [Fault Name]
- Fault/Warning cleared – [Fault Name]
- Parameters download (CCFG)

The following user events are logged. Each user event is also labelled with name of the user performing the change when advanced passwords are turned on.

- Parameter change – [Param Name, old and new value]
- CLARITY Clone restored - [File name]
- CLARITY Archive restored - [File name]
- CLARiTY Update started – [update name]

Touch on any event log to view the details of the log (Figure 6-26).

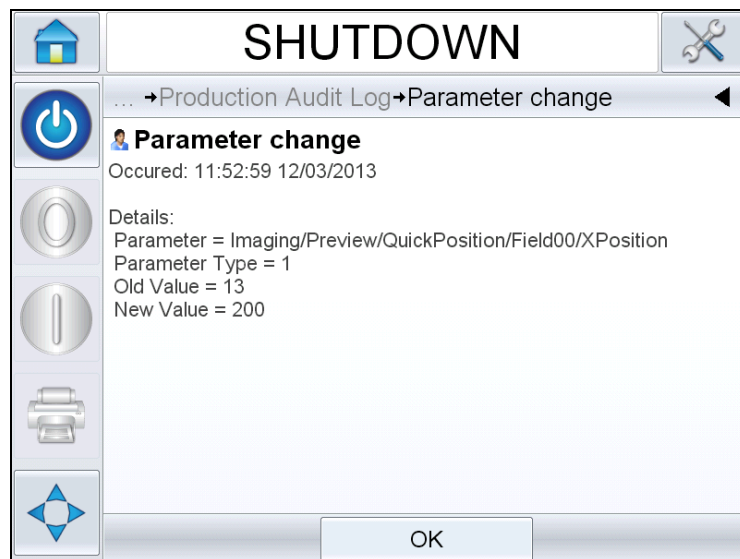


Figure 6-26: Parameter Change

How to Update Printer Software

You can update the printer software by following methods:

- USB key
- CLARiTY Configuration Manager

Updating by USB Key

- 1 Copy the CAB file into the *clarityupdate* folder on the root of a USB drive.
- 2 Plug the USB drive into the coder.
- 3 Follow the on-screen instructions.

*Note: If the instructions does not appear automatically after 15 seconds, navigate to **Tools > Setup > Control > CLARiTYupdate** and select the desired software update.*

Updating by CLARiTY Configuration Manager

- 1 Start the CLARiTY Configuration Utility. Connect it to the printer you wish to update.

Note: Ensure that the CLARiTY Configuration Utility has a valid connection to the printer. This can be observed by the printer icon turning green and the Active Connection message being displayed in the status pane.

- 2 Right click on the name of the coder to be updated and select *CLARiTYupdate* option.
- 3 Locate the file with the same name as the part number above. CLARiTY update starts automatically.
- 4 On completion, navigate to *Tools > Diagnostics > Control > Versions* and ensure that all of the software versions match with those listed below.

Note: Use of a serial link for the CLARiTY update is not recommended due to the size of update and the resulting transmission time.

This chapter contains the following topics:

- Information on care
- Maintaining the cartridge
- Maintaining the controller and the printhead



Warning

PERSONAL INJURY. Before attempting any maintenance or repair on any part of the product, disconnect the printer from the main power supply and isolate the printer from any external energy sources including other connected equipment.

Information on Care

- If the display is soiled, it can be cleaned using a commercially available moist screen cleaning wipe.
- Dust on the contact pins of the printhead can be evacuated using a vacuum pump or be removed with a fine paintbrush. Make sure to switch off the printer while doing this.

Maintaining the Cartridge

Storage of Cartridge

The cartridge should be stored at room temperature. A temperature of 5-40 °C and a relative humidity of 10-90% is ideal.

Whenever the printer is not used for any lengthy period, it is advisable to remove the cartridge from the mounts and to store them in the protective caps (to protect the nozzles from drying out).

Cleaning the Cartridge

Cleaning of the cartridge may become necessary if the print quality has degraded due to accumulated debris/ink on the nozzles, or if the cartridge was left uncapped.

***Note:** You must prime the new cartridges when it is used for the first time. Refer "Priming the Cartridge" on page 5-2.*

Do the following tasks to clean the cartridge nozzles in an attempt to restore optimal print quality:

- 1 Wipe cartridge nozzles from one side to the other using a dry lint-free cloth.

***Note:** Do not wipe nozzles in an up/down motion.*

- 2 Wipe cartridge nozzles from one side to the other using a lint-free cloth moistened with cleaning solution.



Caution

EQUIPMENT DAMAGE. Use approved fluids to clean the ink cartridge.

- 3 Holding the cartridge over an appropriate waste container, rinse the nozzles using the cleaning solution.



Caution

EQUIPMENT DAMAGE. Make sure the cartridge's electrical contacts are dry before re-inserting the cartridge.

- 4 Re-prime the cartridge. Refer “Priming the Cartridge” on page 5-2.

If desired print quality can not be restored using any of these actions, the cartridge must be replaced.

Maintaining the Controller and the Printhead

Do the following inspections and perform the measures as per the scheduled frequency.

Inspection Check point	Frequency	Measures
Printhead		
Check the cartridge contact pins in the printhead for damage/corrosion	Monthly	Clean the contact pins with solvent and swab. If necessary, replace the printhead.
Check the printhead front plate assembly for damage or wear	Monthly	If necessary, replace the printhead front plate assembly.
Check the function of the cap.	As Required	If necessary, replace the printhead front plate assembly.
Cable		
Check all screw-fastened plug-and-socket connectors for tight fit.	As Required	If necessary, re-tighten them.
Check the printhead cables in the cable carriers for visible chafing, wear or crushed areas.	Quarterly	If necessary, replace the printhead cables.
Touch Screen/Controller		
Check if the touch screen is clean	As Required	Clean the touch screen by wiping with a dry soft cloth or cotton pad.
Check if the surface is clean	As Required	Clean the surface by wiping with a dry soft cloth or cotton pad.
Cap		
Check if the cap is clean	As Required	Clean the cap with solvent and swab.

Table 7-1: Controller and Printhead Maintenance Schedule

This chapter contains the following topics:

- Fault messages and warnings
- CLARiTY error messages
- Printing faults
- Controller Faults
- Printhead Faults
- Other Faults
- Diagnostics

Fault Messages and Warnings

If CLARiTY displays a fault or warning, perform the following:

- Read the fault or warning message.
- Perform the task as per the message.
- Clear the message from the display (sometimes the message clears automatically when the fault is corrected, and sometimes you have to clear it by touching the *Clear* button).

Reading a Fault Message or Warning

When a fault or warning occurs, CLARiTY displays the fault message in the status window at the top of all pages.

When a fault occurs, the printer's fault output relay will open. If this relay is wired into the packaging machine's stop circuit, it can be used to ensure that the packaging machine is stopped in the event of an error. This prevents the uncoded product from being produced when the printer has a fault.



Figure 8-1: Fault Display

Several faults and warnings may occur at the same time. Faults will always be displayed first.

To view the faults/warnings in more detail and to view instructions on what to do about them, touch the red or yellow area in the status window at the top of the CLARiTY display.

Clearing a Fault Message or Warning

The instructions in this section provides information on how to clear a fault message. A similar procedure is used to clear warnings.

To view the details of the fault list, proceed as follows:

- 1 Touch the red **FAULT** message to view the list of faults (see Figure 8-2 on page 8-3).

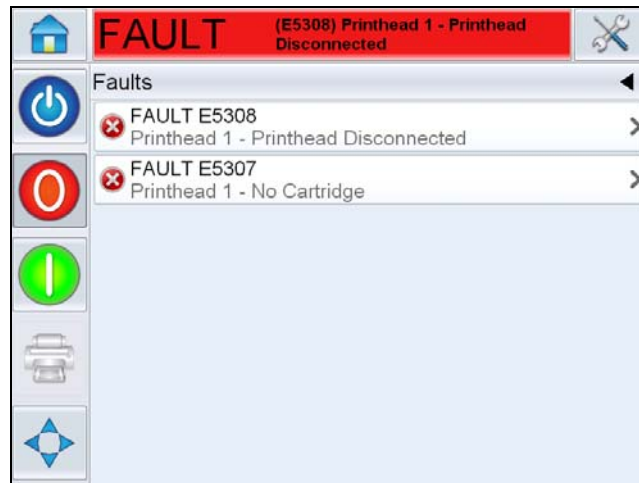


Figure 8-2: Fault Selection

- 2 Touch the fault name in the list to read more details about the fault.
- 3 Read the details of the fault and the on screen instructions that tell you what to do about the fault.



Figure 8-3: Fault Details Display

- 4 When you have corrected the fault, the Clear button is activated. Touch *Clear* to remove the fault message.

CLARiTY Error messages

Error No	Report on CLARiTY Operator Interface	Status
FaultNotClearable	The fault '%1' has occurred and is preventing jobs from being printed. Please correct the problem. Once corrected, the "Clear" button will become available to enable printing to be restarted.	
WarningNotClearable	The warning '%1' has occurred. If the problem is not corrected, the printer may stop printing jobs correctly. Please correct the problem. Once corrected, the "Clear" button will become available to remove the warning.	
FaultIsClearable	The fault '%1' has occurred and is preventing jobs from being printed. Please correct the problem and touch the "Clear" button to enable printing to be restarted.	
WarningIsClearable	The warning '%1' has occurred. If the problem is not corrected, the printer may stop printing jobs correctly. Please correct the problem and touch the "Clear" button to continue.	
E1000	'Image Update Failure' - The printer was unable to update the current Job before the next print was required. This usually occurs because products are too close together. Touch the "Clear" button to enable printing to be restarted.	Fault
E1001	'Count Limit Reached' - One or more of the counters in the image has reached the end value set in the image design. Please select a new job and touch the "Clear" button to restart the printer.	Fault
E1002	'Operation Aborted' - The operation of the printer has been intentionally aborted by a host control system. When ready to resume the operation, the host control system cleared this abort condition, and then this fault message clear automatically.	Fault
E1003	'Real-time Clock Fault' - There is a problem with the real-time clock which is required for the system to operate correctly	Fault
E1004	'Backup Battery is Flat' - The battery which powers the printer's clock is flat. This means that the date and time, the currently selected job and some performance data is lost when the printer is switched off.	Warning

Table 8-1: CLARiTY Error Messages

Error No	Report on CLARiTY Operator Interface	Status
E1005	'Print Limit Exceeded' - The current job is selected with a print limit (i.e. a limit on the number of times the job can be printed). This limit has been reached but the printer has received a further print signal that would have exceeded the limit. This error clears after selecting a new job. Alternatively, a job selection command or variable data update from an external source also clears this error.	Fault
E1006	'Image Update Failure' - CLARiTY is unable to update the image that is printed next. This usually occurs because products are too close to each other. Touch the "Clear" button to restart the printer.	Fault
E1007	'Image Update Failure' - CLARiTY is unable to update the image that is printed next. This usually occurs because products are too close to each other. Touch the "Clear" button to restart the printer.	Fault
E1100	'Invalid Job File (Bad Field Reference)' - Source field reference incorrect - correct in CLARiSOFT®. There is a circular reference between fields in the Job file. Use CLARiSOFT® to check and correct the relationships between fields in this Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1101	'Invalid Job File (Missing Data Source Field)' - Job file missing a data field - correct in CLARiSOFT®. A field in the Job file refers to another field for its source of data, but that field is missing from the job file. Use CLARiSOFT® to ensure that all data source fields used in the Job file are present and correct in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1102	'Invalid Job File (Duplicate Named Fields)' - Field names have been duplicated in Job File - correct in CLARiSOFT®. Duplicate field names were found in the Job file. Use CLARiSOFT® to remove or rename fields so that there are no duplicates. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1103	'Invalid Job File (Invalid Graphic)' - Invalid or missing graphic file - correct in CLARiSOFT®. The Job file refers to a missing or invalid graphic bitmap file. Use CLARiSOFT® to check and ensure that all bitmap files, used by this Job file, display properly in CLARiSOFT®. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1104	'Invalid Job File (Invalid Date Field)' - Default offset date falls outside the date range - correct in CLARiSOFT®. The Job file you are trying to select contains an incorrectly specified Date Calculation. The Default Offset for the date falls outside of the date range specified by the Minimum and Maximum user concession. Use CLARiSOFT® to correct this error in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1200	'Invalid Job File (Invalid Barcode Character)' - Barcode contains invalid characters for type - correct in CLARiSOFT®. A barcode in the Job file contains characters which are not in the character set of the barcode type being used. Use CLARiSOFT® to check and correct the barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below to clear this fault message.	Fault
E1201	'Invalid Job File (Invalid Barcode Check Digit)' - Check if the digit is incorrect - correct in CLARiSOFT®. The check digit supplied for a barcode in the Job file is invalid. Use CLARiSOFT® to check and correct the barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1202	'Invalid Job File (EAN data longer than 48 characters)' - EAN barcode contains more than 48 characters - correct in CLARiSOFT®. The field for an EAN128 barcode does not contain enough data to form a valid Application Identifier. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1203	'Invalid Job File (EAN barcode out of specification)' - Characters to create Application Identifier is insufficient - correct in CLARiSOFT®. The field for an EAN128 barcode does not contain enough data to form a valid Application Identifier. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1204	'Invalid Job File (Application Identifier Incorrect)' - Application Identifier contains non-numeric data - correct in CLARiSOFT®. An EAN128 barcode field contains an application identifier containing non-numeric data, but EAN128 application identifiers must be numeric. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1205	'Invalid Job File (Application Identifier Length Incorrect)' - Application Identifier 23 requires a length digit - correct in CLARiSOFT®. EAN128 barcode fields with an application identifier of 23 should contain a length digit following the application identifier. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1206	'Invalid Job File (EAN Field Incorrect Length)' - EAN barcode does not have expected number of digits specified by Application Identifier - correct in CLARiSOFT®. An EAN128 barcode field in the Job file does not have the number of characters that are specified by its application identifier. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1207	'Invalid Job File (EAN barcode out of specification)' - Separator character being used to terminate barcode data - correct in CLARiSOFT®. An EAN128 barcode field in the Job file contains variable length data followed by a separator character; separator characters should not be used to terminate data in an EAN128 barcode. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1208	'Invalid Job File (EAN field value out of range)' - Data out of range, example '13' for a month code or '25' for an hour code - correct in CLARiSOFT®. An EAN128 barcode field in the Job file contains data that is out of range (for example, an hour field set to 25 or a month field set to 13). Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1209	'Invalid Job File (EAN requires decimal point specifier)' - EAN requires digit to specify the position of the decimal point - correct in CLARiSOFT®. An EAN128 barcode field in the Job file contains an application identifier that requires a digit to specify the position of the decimal point, but this digit is not present. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1210	'Invalid Job File (EAN field invalid or missing check digit)' - Application identifier requires the missing check digit - correct in CLARiSOFT®. An EAN128 barcode field in the Job file contains an application identifier that requires a check digit, but this check digit was either missing or invalid. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1211	'Invalid Job File (EAN over 165 mm long)' - Barcode too large - resize to maximum length of 165 mm - correct in CLARiSOFT®. An EAN128 barcode could not be rendered at a size of 165 mm or more which is the maximum length for this type of barcode. Use CLARiSOFT® to check and correct the EAN128 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1212	'Invalid Job File (Barcode Length Incorrect)' - Barcode field does not have expected number of characters - correct in CLARiSOFT®. A barcode field in the Job file does not have the expected number of characters. Use CLARiSOFT® to check and correct the barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1213	'Invalid Job File (Barcode out of limits)' - Barcode overruns image area. Resize image area to accommodate the barcode - correct in CLARiSOFT®. A barcode field in the Job file overruns the edge of the image and it is not possible to extend the image area to accommodate the barcode Use CLARiSOFT® to check and correct the barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1214	'Invalid Job File (Invalid Checksum Data)' - correct in CLARiSOFT®. A field in the Job file uses a checksum (for example, an EAN13 barcode with a price verifier digit) but the data supplied to calculate the checksum were not valid. Use CLARiSOFT® to check and correct fields using checksums in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1215	'Invalid Job File (Invalid Barcode Height)' - correct in CLARiSOFT®. The height supplied for a barcode in the Job file is smaller than the minimum allowed by the barcode specification. Use CLARiSOFT® to check and correct the barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1216	'Invalid Job File (Barcode Symbology Not Installed)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove the barcode from the Job file. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1217	'Invalid Job File (Undefined Format Identifier)' - correct in CLARiSOFT®. A Data Matrix Barcode field in the Job file uses a Public Format ID which is not currently defined. Touch the "Clear" button below, to clear this fault message.	Fault
E1218	'Invalid Job File (Data too long)' - correct in CLARiSOFT®. A Data Matrix Barcode field in the Job file contains too many data characters for the selected dimensions. Touch the "Clear" button below, to clear this fault message.	Fault
E1219	'Invalid Job File (Invalid Barcode Size)' - correct in CLARiSOFT®. A Data Matrix Barcode field in the Job file has invalid dimensions. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1220	'Invalid Job File (Invalid Barcode ECC Type)' - correct in CLARiSOFT®. A Data Matrix Barcode field in the Job file has an unsupported ECC type. Only ECC 200 is currently supported. Touch the "Clear" button below, to clear this fault message.	Fault
E1221	'Invalid Job File (Barcode uses unsupported coding)' - correct in CLARiSOFT®. A Data Matrix Barcode field in the Job file uses a form of data compression not currently supported by CLARiTY. Touch the "Clear" button below to clear this fault message.	Fault
E1222	'Invalid Job File (Barcode encoding failed)' - correct in CLARiSOFT®. A Data Matrix Barcode field in the Job file failed to encode into a valid image. Touch the "Clear" button below to clear this fault message.	Fault
E1223	'Invalid Job File (Invalid Date Reference)' - correct in CLARiSOFT®. Use CLARiSOFT® to set the 'Reference Date' for all Calculated Dates to 'Current Date'. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1224	'Invalid Job File (Invalid Date Rounding)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove the Rounding for all Calculated Dates. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1225	'Invalid Job File (Invalid Counter)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove all counters from the job. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1226	'Invalid Job File (Invalid Price)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove all price fields from the job. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1227	'Invalid Job File (Invalid Transmitted Field)' - correct in CLARiSOFT®. Use CLARiSOFT® to disable the 'Transmitted Field' option for all fields in the job. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1228	'Invalid Job File (Invalid Graphic Field)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove all Logo and Drawing fields in the job. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1229	'Invalid Job File (Invalid Graphic)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove all Logo fields in the job. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1230	'Invalid Job File (Invalid Drawing)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove all Drawing fields in the job. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1231	'Invalid Job File (Invalid Paragraph Field)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove all Paragraph fields in the job. Then, download the corrected file to the printer. Touch the "Clear" button below, to clear this fault message.	Fault
E1232	'Invalid Job File (PDF417 Barcode out of Specifications)' - correct in CLARiSOFT®. A PDF417 or Micro-PDF417 barcode field in the Job file contains more columns than the barcode symbology supports. Use CLARiSOFT® to check and correct the PDF417 and Micro-PDF417 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1233	'Invalid Job File (PDF417 Barcode out of Specifications)' - correct in CLARiSOFT®. A PDF417 or Micro-PDF417 barcode field in the Job file contains more rows than the barcode symbology supports. Use CLARiSOFT® to check and correct the PDF417 and Micro-PDF417 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1234	'Invalid Job File (PDF417 Barcode out of Specifications)' - correct in CLARiSOFT®. A PDF417 or Micro-PDF417 barcode field in the Job file contains more characters than can be encoded with the specified column and maximum row sizes. Use CLARiSOFT® to increase the number of columns or rows in the PDF417 and Micro-PDF417 barcode fields in the Job file. Then, download the corrected file. Touch the "Clear" button below, to clear this fault message.	Fault
E1235	'Invalid Job File (EAN13 Price Too Large)' - correct in CLARiSOFT®. The EAN13 barcode contains a price that is too large to be encoded within the barcode. Use CLARiSOFT® to check and correct the maximum price value for price field that is referenced by the barcode. Touch the "Clear" button below to clear this warning message.	Warning
E1236	'Invalid Job File (Invalid Font)' - correct in CLARiSOFT®. Use CLARiSOFT® to remove all bitmap font fields in the job. Then, download the corrected file to the printer. Touch the "Clear" button below to clear this warning message.	Warning
E1237	'Invalid Job File (Invalid Font)' - correct in CLARiSOFT®. Use CLARiSOFT® to check and ensure that all text fields used by this Job file, display properly in CLARiSOFT®. Then, download the corrected file to the printer. Touch the "Clear" button below to clear this warning message.	Warning
E1238	'Invalid Job File (Invalid Global Count Value)' - correct in CLARiSOFT®. The current global count value is either too long for the counter specified in the job or contains characters that are not valid. The global count value will be reset when this job is selected. Use CLARiSOFT® to ensure that all jobs contain the same configuration for this global counter. Touch the "Clear" button below, to clear this warning message.	Warning
E1239	'CLARiTY Data File Complete' - All data has been printed in the current CLARiTY Data File. Please select a new Job to resume printing. Note you will have to install a new CLARiTY Data file before selecting the Job if that job uses a CLARiTY Data file. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1240	'Missing CLARiTY Data File' - There is no CLARiTY Data File installed in this printer and the selected Job uses a CLARiTY Data file to lookup the data it prints. Please select a new Job or install a CLARiTY Data file to resume printing. Touch the "Clear" button below, to clear this fault message.	Fault
E1241	'CLARiTY Data File Failed' - There is a problem with the installed CLARiTY Data file. Please select a new Job or install a new CLARiTY Data file to resume printing. Touch the "Clear" button below, to clear this fault message.	Fault
E1242	'Invalid Job File (Barcode data too long)' - correct in CLARiSOFT®. A QR Barcode field in the job file contains too many data characters for the selected dimensions. Touch the "Clear" button below, to clear this fault message.	Fault
E1243	'Invalid Job File (Avoidance Date)' - correct in CLARiSOFT®. Use CLARiSOFT® to check and correct the calculated dates in the job. Then, download the corrected file to the printer. Select a valid Job and then touch "Clear" button below, to clear this fault message.	Fault
E1500	'Log File Corruption' - Corruption has been detected in the log file. Please navigate to <i>Tools > Diagnostics > Control > Log Files</i> for more details. Touch the "Clear" button below, to clear this warning message.	Warning
E1501	'Log File Space Critical' - The available space for logging has reached a critical level. Please archive the log file or delete unnecessary files from the Job database to free up some space. This fault message will clear automatically when the free space is increased.	Fault
E1502	'Log File Space Limited' - The available space for logging becoming limited. Please archive the log file or delete unnecessary files from the Job database to free up some space. Touch the "Clear" button below, to clear this warning message.	Warning
E1503	'Logging Space Exhausted' - The available space for logging is exhausted. Please archive the log file to free some space. Touch the "Clear" button below, to clear this fault message.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1504	'Log File Save Failed' - Failed to save log file information. Some log file information has been lost. Touch the "Clear" button below, to clear this fault message.	Fault
E1505	'Logging Job Events Disabled' - Logging of Job events has been disabled. This is because Job selections and Job updates are happening too frequently. The printer can only log Job events once every 10 seconds. Logging of Job events can be re-enabled via the IncludeJobEvents parameter in CLARiTY Configuration manager if the frequency of Job events is reduced. Touch the "Clear" button below, to clear this warning message.	Warning
E1601	'Barcode Fault' - The barcode scanner cannot read the barcodes printed onto the labels. Check printhead is clean and printing clear barcodes onto the labels. Check that labels are applying properly to the packs, and that they are not wrinkled. Check that the barcode scanner is not obstructed from scanning the barcodes. If the problem persists, call your maintenance engineer or local service representative. Touch the "Detail" button below for maintenance assistance. When ready, touch the "Clear" button below.	Fault
	The barcode scanner has reported multiple consecutive no reads which exceeds the pre-set limit. This can be caused by very poor print quality, or poor label application, resulting in barcodes which cannot be scanned. It can also be caused by physical obstruction of the scanner, or a hardware fault in the printhead or scanner. Check that labels are being applied correctly to the pack. Check that the applied label is not wrinkled on the pack. Check that the printhead is clean and printing visibly clear barcodes. If possible, verify the printed barcodes with a separate barcode verifier. Check the scanner mounting, and for obstruction preventing the scanner seeing the barcodes. If the problem persists, call your local service representative. Once resolved and ready, touch the "Clear" button below.	

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E1602	<p>'Barcode Fault' - The barcode scanner has read a different barcode than the one printed onto the label. The barcode scanner may not be mounted correctly. Call your maintenance engineer or local service representative.</p> <p>Touch the "Detail" button below for maintenance assistance.</p> <p>When ready, touch the "Clear" button below.</p>	Fault
	<p>The barcode scanner has read a different barcode to the one printed on the label. This could be due to the scanner seeing another barcode in its field of view. Check the mounting and configuration of the scanner. This could also be due to a print error, or a communications error with the scanner, or a hardware fault with the scanner. Power off and check cabling between labeller and scanner, then retry. If the problem persists, call your local service representative. Once resolved and ready, touch the "Clear" button below.</p>	
E1603	<p>'Miss-read reported' - The Barcode Scanner has reported a Miss-Read.</p> <p>Consider recalibrating the scanner.</p> <p>Touch the "Clear" button below, to clear this fault message.</p>	Fault
E1604	<p>'No-read reported' - The Barcode Scanner has reported a No-Read.</p> <p>Consider recalibrating the scanner.</p> <p>Touch the "Clear" button below, to clear this warning message.</p>	Warning
E1605	<p>'Barcode verify queue empty' - The Barcode Scanner has been gated when there was no barcode to verify.</p> <p>Touch the "Clear" button below, to clear this fault message.</p>	Fault
E3013	<p>'Printhead Absent' - Communications between CLARiTY and the printer have been lost, check the cabling.</p>	Fault
E3016	<p>'Printhead Volts Error'</p>	Fault
E3024	<p>'24 Volt Error' - The 24 volts supply is not in the working range. Power the printer OFF and ON to try and clear the fault. If the problem persists, call your maintenance engineer or local service representative.</p>	Fault
E3025	<p>'Printer Ambient Temperature' - The internal ambient temperature of the printer is outside its recommended operating range. Touch the "Clear" button below to clear this warning.</p>	Warning

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E3026	'External Error' - The operation of the printer has been suspended by the control system. If the Clear button is available below, you may touch it to clear this error and resume printing.	Fault
E4040	'Allowed Login Attempts Exceeded' - A user enter an incorrect password repeatedly and has been disabled.	Warning
E5300	'Printhead Volts Error' - The Printhead volts are outside the working range. Power off and disconnect all printhead connections. Power back on and check whether the fault persists. If it does then there is a problem with an internal PCB. If it does not then there is a short in a printhead or the interconnecting cable. Contact your local maintenance engineer or service representative for further support.	Fault
E5301	'Group %2 Print Queue Overflow' - Group %2 has detected more than five products between the print sensor and the printhead. This may be due to pack spacing or false sensor triggers, or a faulty sensor. Touch the "Clear" button below to clear this fault message and then try to resume printing. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5302	'Group %2 Not Ready' - Group %2 has been triggered to begin printing on a new product before completing the print for the previous product. This could be due to inadequate product spacing or false print sensor triggers, or incorrect fixed speed setting (if you are running in fixed speed mode, without a conveyor speed encoder), or a faulty print sensor or faulty printhead. Touch the "Clear" button below to try and resume printing. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5303	'Group %2 Print Signal Ignored' - The number of consecutive ignored print signals by Group %2 has exceeded the defined limit. Please check that prints are being triggered correctly and that the selected job fits the product. Touch the "Clear" button below to dismiss this error.	Fault
E5304	'Printhead Power Supply' - An open circuit fault has been detected in the printhead power supply. Power the printer off and on to resume printing. If the problem persists, call your maintenance engineer or local service representative.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E5305	'Printhead Power Supply' - A short circuit fault has been detected in the printhead power supply. Power the printer off and on to resume printing. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5306	'Printhead Power Supply' - An over current has been detected in the printhead power supply. Power the printer off and on to resume printing. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5307	'Printhead %1 - No Cartridge' - No cartridge has been detected in printhead %1. To clear this fault replace the cartridge.	Fault
E5308	'Printhead %1 - Printhead Disconnected' - No printhead is connected to the printhead %1 connection. Power the printer off and check that the cables are correctly connected. Re-power the printer and verify that the fault has cleared. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5309	'Printhead %1 - Voltage Error' - An over voltage error has been detected by printhead %1. Replace the cartridge using the 'Replace Cartridge' option for printhead %1 available from the Consumables panel on the Home screen. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5310	'Printhead %1 - Voltage Error' - An under voltage error has been detected by printhead %1. Replace the cartridge using the 'Replace Cartridge' option for printhead %1 available from the Consumables panel on the Home screen. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5311	'Printhead %1 - Over Temperature' - The temperature of printhead %1 electronics is too high. Continuing to run at this temperature could result in damage to the printhead electronics. Touch the "Clear" button below to dismiss this warning.	Warning
E5312	'Printhead %1 - Over Temperature' - The temperature of printhead %1 electronics is critically high. Printing has been stopped to prevent damage to the printhead electronics. This fault may be cleared by touching the "Clear" button below once the temperature has returned to safe operating levels.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E5313	'Printhead %1 - Monitoring Error' - Printhead %1 temperature and status cannot be monitored due the high duty cycle of the printer. Monitoring of this printhead will recommence when the duty cycle reduces. Touch the "Clear" button below to dismiss this warning.	Warning
E5314	'Printhead %1 - Ink Low' - The ink level of the cartridge in printhead %1 is low. The cartridge should be replaced at the first available opportunity to prevent down time on the production line. This warning will clear when the ink level is restored to above the warning level.	Warning
E5315	'Group %2 Printhead %1 - Ink Low' - The ink level of the cartridge in group %2 printhead %1 is low. The cartridge should be replaced at the first available opportunity to prevent down time on the production line. This warning will clear when the ink level is restored to above the warning level.	Warning
E5316	'Printhead %1 - Out of Ink' - The ink has run out for cartridge in printhead %1. To clear this fault replace the cartridge. To temporarily dismiss this fault, touch the "Clear" button below. However, print quality cannot be guaranteed.	Fault
E5317	'Group %2 Printhead %1 - Out of Ink' - The ink has run out for cartridge in group %2 printhead %1. To clear this fault replace the cartridge. To temporarily dismiss this fault, touch the "Clear" button below. However, print quality cannot be guaranteed.	Fault
E5318	Printhead %1 - Invalid Ink Settings" - The configuration settings for the Ink Type selected for printhead %1 are invalid. Please contact your local maintenance engineer or service representative for further support.	Fault
E5319	'Printhead %1 - Monitoring Error' - A print on Printhead %1 conflicted with temperature or status monitoring. Reduce the print speed or duty cycle to avoid this occurring. Touch the "Clear" button below to dismiss this error.	Fault
E5320	'Printhead %1 - Underspeed during print' - The printer has measured a speed from the encoder that is below the minimum it is capable of printing at. The print on printhead %1 was aborted mid-print. This image may be incomplete.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E5321	'Group %1 - Underspeed during print' - The printer has measured a speed from the encoder that is below the minimum it is capable of printing at. The print on group %1 was aborted mid-print. This image may be incomplete.	Fault
E5322	'Printhead %1 - DPI Mismatch' - The printer attempted to print an image that has a different DPI to the current printer setting. The print on printhead %1 was aborted.	Fault
E5323	'Group %1 - DPI Mismatch' - The printer attempted to print an image that has a different DPI to the current printer setting. The print on group %1 was aborted.	Fault
E5324	'Temperature Readings Missed' - The number of missed temperature readings on Printhead %1 has exceeded the defined limit. This may cause overheating and damage to the printhead. Please check that prints are far enough apart that the temperature can be read. Touch the "Clear" button below to dismiss this error.	Fault
E5325	'Cap Fault' - The capping device on Printhead %1 is in a fault condition. This will cause printing issues. To clear this error, shutdown the printheads and then power them up again. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5326	'Cartridge Fault' - The printhead cartridge in Printhead %1 is in a fault condition. This will cause printing issues. Please clean the cartridge connection pins or replace cartridge. To clear this error, shutdown the printheads and then power them up again. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5327	'Cartridge Fault' - The printhead cartridge in Printhead %1 is in a fault condition. This will cause printing issues. Please clean the cartridge connection pins or replace cartridge. To clear this error, shutdown the printheads and then power them up again. If the problem persists, call your maintenance engineer or local service representative.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E5328	<p>'Cartridge Fault' - The printhead cartridge in Printhead %1 is in a fault condition. This will cause printing issues. Please clean the cartridge connection pins or replace cartridge. To clear this error, shutdown the printheads and then power them up again. If the problem persists, call your maintenance engineer or local service representative.</p>	Fault
E5329	<p>'Cartridge Fault' - The printhead cartridge in Printhead %1 is in a fault condition. This will cause printing issues. Please clean the cartridge connection pins or replace cartridge. To clear this error, shutdown the printheads and then power them up again. If the problem persists, call your maintenance engineer or local service representative.</p>	Fault
E5330	<p>'Maintenance Cap Missed' - The number of missed maintenance cap events on Printhead %1 has exceeded the defined limit. This may degrade the print quality. Please check that prints are far enough apart that the maintenance cap can be preformed. Touch the "Clear" button below to dismiss this error.</p>	Fault
E5331	<p>'Printhead %1 - Cartridge expires soon' - The cartridge in printhead %1 will expire soon. The cartridge should be replaced at the first available opportunity to prevent down time on the production line.</p>	Warning
	<p>'Group %2 Printhead %1 - cartridge will expire soon' - The cartridge in group %2 printhead %1 will expire soon. The cartridge should be replaced at the first available opportunity to prevent down time on the production line.</p>	Warning
E5332	<p>'Printhead %1 - Cartridge expired' - The cartridge in printhead %1 has expired. The cartridge should be replaced at the first available opportunity to prevent down time on the production line.</p>	Warning
	<p>'Group %2 Printhead %1 - cartridge has expired' - The cartridge in group %2 printhead %1 has expired. The cartridge should be replaced at the first available opportunity to prevent down time on the production line.</p>	Warning

Table 8-1: CLARiTY Error Messages (Continued)

Error No	Report on CLARiTY Operator Interface	Status
E5333	'Printhead %1 - Cartridge is past expiration' - The cartridge in printhead %1 is past expiration. To clear this fault replace the cartridge.	Fault
	'Group %2 Printhead %1 - cartridge is past expiration' - The cartridge in group %2 printhead %1 is past expiration. To clear this fault replace the cartridge.	Fault
E5334	'Printhead %1 - Low Temperature' - The temperature of printhead %1 is too low. Continuing to run at this temperature may degrade the print quality. Touch the "Clear" button below to dismiss this warning.	Warning
E5335	'Communication Fault' - Communications to Printhead %1 is in a fault condition. Please check the data cable to the printhead. To clear this error, shutdown the printheads and then power them up again. If the problem persists, call your maintenance engineer or local service representative.	Fault
E5336	'Cartridge Fault' - The printhead cartridge in Printhead %1 is in a fault condition. This will cause printing issues. Please clean the cartridge connection pins or replace cartridge. To clear this error, shutdown the printheads and then power them up again. If the problem persists, call your maintenance engineer or local service representative.	Fault

Table 8-1: CLARiTY Error Messages (Continued)

Printing Faults

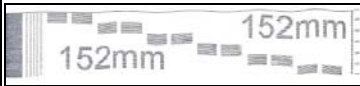
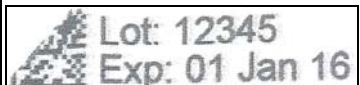
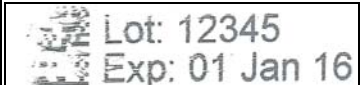
Fault	Cause	Solution
Wavy Print 	External vibration being induced on printhead, possibly from conveyor or other environmental factors.	Isolate printhead and bracketry from the source of the vibration, or add additional bracketry to reinforce the printhead.
	Vibration induced by the printhead cap mechanism opening before a print cycle. This issue would only occur on the print following a cap opening; all subsequent prints will be correct.	Ensure printhead bracketry is configured in a way that allows as little cantilevering of the printhead as possible. If the issue still remains, add additional bracketry to reinforce the printhead.
Missing Print (leading edge with a clean diagonal break) 	Product sensor distance set too short and not allowing cap to open completely before printing	More distance needed between the print trigger (or Cap open signal) and the cartridge nozzles. The Cap takes approximately 30 microseconds to open, so the print trigger must be at least that far upstream from the leading edge of the cap. The actual distance that this equates to will vary depending on product speed. If the print trigger is moved to correct an issue, then the distance will also have to be changed in the printer's configuration. See "Setting up the Printer using System Configuration Wizard" on page 5-9.
Missing/Grainy Print at leading edge 	Cap is remaining open too long after printing allowing the ink on the nozzles to dry	Decrease the Cap Closed Threshold in CLARiTY Configuration Manager (15 seconds is default setting) Contact your local maintenance engineer or service representative for further support.

Table 8-2: Printing Faults

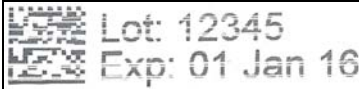
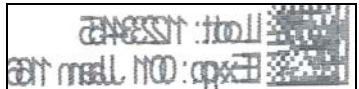
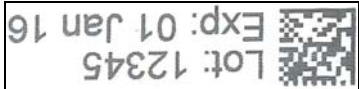
Fault	Cause	Solution
Horizontal sections of print missing 	Cartridge needs cleaning or re-priming	Refer "Maintenance" on page 7-1 for more details
	Cartridge out of ink	Replace cartridge.
No Print - No faults or warnings and counter continues to increment	Cartridge needs cleaning or re-priming	Refer "Maintenance" on page 7-1 for more details
	Cartridge out of ink	Replace cartridge.
No Print - No faults or warnings and counter does not increment	Print trigger not being recognized by controller	Navigate to <i>Tools > Diagnostics > Printhead > Inputs</i> and ensure that "Printhead 1/2 Product Detect" is changing from OFF to ON as the product detect is triggered.
	Encoder signals not being recognized by controller	Navigate to <i>Tools > Diagnostics > Printhead > Inputs > Encoder</i> and ensure that "Print Speed" is reading a line speed.
The job is not printed	The job is empty, i.e. there are no printable objects (such as text, time, date, counter or barcode fields) in the job.	Open, load and start a job with print data in it.
	The protective tape on the nozzle rows on the cartridge was not removed.	The nozzle row on new cartridge is protected by a protective tape. If you forget to remove this protective tape the cartridge will not be ready for printing. Please check whether the protective tape has been removed.
Mirror Image with ghosted print 	Product Direction not set correctly	Navigate to <i>Tools > Setup > Printhead > Product Direction</i> and change accordingly.
Print is upside down 	Print Orientation not set correctly	Navigate to <i>Tools > Setup > Printhead > Print Orientation</i> and change accordingly.

Table 8-2: Printing Faults (Continued)

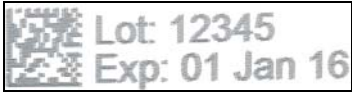
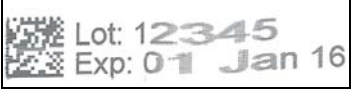
Fault	Cause	Solution
Printed image not the expected length (may have ghosted print) 	Fixed Print Speed set incorrectly	Use the System configuration Wizard to configure the correct Fixed Print Speed. Refer "Setting up the Printer using System Configuration Wizard" on page 5-9.
	Encoder settings do not match actual encoder configuration.	Modify the "EncoderNumberOfLines" and "EncoderWheelDiameter" settings to match actual encoder configuration. Contact your local maintenance engineer or service representative for further support.
	The Horizontal Print Density is set too high for the line speed	Set the Horizontal Print Density to a value compatible with the line speed being used. Refer "How to Adjust Print Resolution" on page 5-17.
Parts of the printed image appear stretched or compressed, while other parts print correctly 	The product is slipping on the conveyor, causing it to move a different speed than the encoder (or Fixed Print Speed) for a brief moment	Improve product handling so that the product is always moving at the same rate as the encoder (or Fixed Print Speed).
	The encoder is moving at a different speed than the product for a brief moment	Ensure that the encoder is making good contact with the conveyor belt or product. Contact your local maintenance engineer or service representative for further support.
The print position is incorrect	The sensor distance is incorrect	Measure the actual values and adjust the setting. Refer "How to Setup the Printhead Settings" on page 5-14.
	The registration delay is incorrect.	Navigate to <i>Tools > Setup > Printhead</i> and modify the Registration Delay. Refer "How to Setup the Printhead Settings" on page 5-14.

Table 8-2: Printing Faults (Continued)

Printhead LED Status

Color	Status
Off	No power to printhead
Flashing Amber	No cartridge installed
Flashing Red	Error or fault (printhead faults only)
Flashing Green	Printhead OK, but not in print mode
Solid Red	Startup
Solid Amber	Printhead is printing
Solid Green	Printhead is ready to print
Solid Green with Red Flash	Printhead ready to print but cap is closed

Table 8-3: Printhead LED Status

Controller Faults

Fault	Cause	Solution
LCD is dark (no backlight) but the Power Indicator LED on the controller is ON.	Screen Saver is active	Touch the screen to turn backlight on again.
	Faulty printhead or accessory is connected to the controller	Power down the controller and disconnect all data cables and other devices from the unit and attempt to re-power it. If this corrects the issue, then re-connect the previously removed items (power the unit down each time) one at a time until the faulty item is identified.
	LCD has failed and needs replaced	Replace LCD/Touchscreen assembly. Contact your local maintenance engineer or service representative for further support.
	Main Controller PCB has failed and needs replaced	Replace Main Controller PCB. Contact your local maintenance engineer or service representative for further support.

Table 8-4: Controller Faults

Fault	Cause	Solution
LCD backlight is ON, but no image is displayed (white screen)	Faulty printhead or accessory is connected to the controller	Power down the controller and disconnect all data cables and other devices from the unit and attempt to re-power it. If this corrects the issue, then re-connect the previously removed items (power the unit down each time) one at a time until the faulty item is identified.
	LCD has failed and needs replaced	Replace LCD/Touchscreen assembly. Contact your local maintenance engineer or service representative for further support.
	Main Controller PCB has failed and needs replaced	Replace Main Controller PCB. Contact your local maintenance engineer or service representative for further support.
Touchscreen not registering input in the correct location of the screen.	Touchscreen out of calibration	Recalibrate the touchscreen by navigating to <i>Tools > Setup > Control > Recalibrate Touchscreen</i> and following the on-screen instructions. If the touchscreen is too far out of calibration to navigate to software, then it must be recalibrated using CLARiTY Configuration Manager. Refer Service Manual or contact your local maintenance engineer or service representative for further support.
Touchscreen not registering ANY input	Touchscreen out of calibration	Touchscreen must be recalibrated using Clarity Configuration Manager. Refer Service Manual or contact your local maintenance engineer or service representative for further support.
	Touch screen has failed and needs replacement	Replace LCD/Touchscreen assembly. Contact your local maintenance engineer or service representative for further support.
	Main Controller PCB has failed and needs replacement	Replace Main Controller PCB. Contact your local maintenance engineer or service representative for further support.

Table 8-4: Controller Faults (Continued)

Fault	Cause	Solution
Controller not powered up <ul style="list-style-type: none"> Power Indicator LED is OFF LCD is dark (no backlight) 	No AC power to unit	Check that the AC power being supplied to the unit is within specification.
	Controller fuse has blown	Remove fuse from fuse holder and check continuity. Replace if blown. If new fuse blows immediately after replacing, contact your local maintenance engineer or service representative for further support.
	Faulty printhead or accessory is connected to the controller	Power down the controller and disconnect all data cables and other devices from the unit and attempt to re-power it. If this corrects the issue, then re-connect the previously removed items (power the unit down each time) one at a time until the faulty item is identified.

Table 8-4: Controller Faults (Continued)

Printhead Faults

Fault	Cause	Solution
Printhead not powered up (Status LED is OFF)	Controller not powered up	Refer "Controller Faults" on page 8-25.
	Printer in Shutdown mode	Take the printer out of Shutdown mode. "How to Turn ON the Printer" on page 5-5.
	Printhead not enabled	Navigate to <i>Tools > Setup > Printhead</i> and set <i>Enabled</i> to <i>Yes</i> .
	Printhead not configured for use (printhead 2)	Use the System configuration Wizard to configure the printer to use printhead 2. Refer "Setting up the Printer using System Configuration Wizard" on page 5-9.

Table 8-5: Printhead Faults

Fault	Cause	Solution
Cap not opening when product detect is triggered.	Printhead not powered up	Refer to fault "Printhead not powered up (Status LED is OFF)" on page 8-27.
	Print trigger not being recognized by controller	Navigate to <i>Tools > Diagnostics > Printhead > Inputs</i> and ensure that "Printhead 1/2 Product Detect" is changing from OFF to ON as the product detect is triggered.
	Cap mechanism has failed or is damaged	Replace Front Plate/Motor Assembly. Contact your local maintenance engineer or service representative for further support.
	Printhead PCB has failed	Replace Printhead PCB. Contact your local maintenance engineer or service representative for further support.

Table 8-5: Printhead Faults (Continued)

Other Faults

Message	Possible Cause	Solution
Product/ Substrate damaged while passing printhead	Cap not completely open when product passes its leading edge	<p>More distance needed between the print trigger (or Cap open signal) and the leading edge of the cap. The Cap takes approximately 30 microseconds to open, so the print trigger must be at least that far upstream from the leading edge of the cap. The actual distance that this equates to will vary depending on product speed.</p> <p>If the print trigger is moved to correct an issue, then the distance will also have to be changed in the printer's configuration. See "Setting up the Printer using System Configuration Wizard" on page 5-9.</p>

Table 8-6: Other Faults

Diagnostics

The diagnostic screens show the current value of different parameters which help you in troubleshooting the printer. To access the diagnostics screen, Navigate to *Tools > Diagnostics* (Figure 8-4). For more information, refer “Working with Diagnostics” on page 4-10.



Figure 8-4: Diagnostics Page

This chapter contains the following topics:

- Technical drawings
- Technical specifications
- System specifications
- Networking and External Communications
- Terminals

Technical Drawings

Printhead

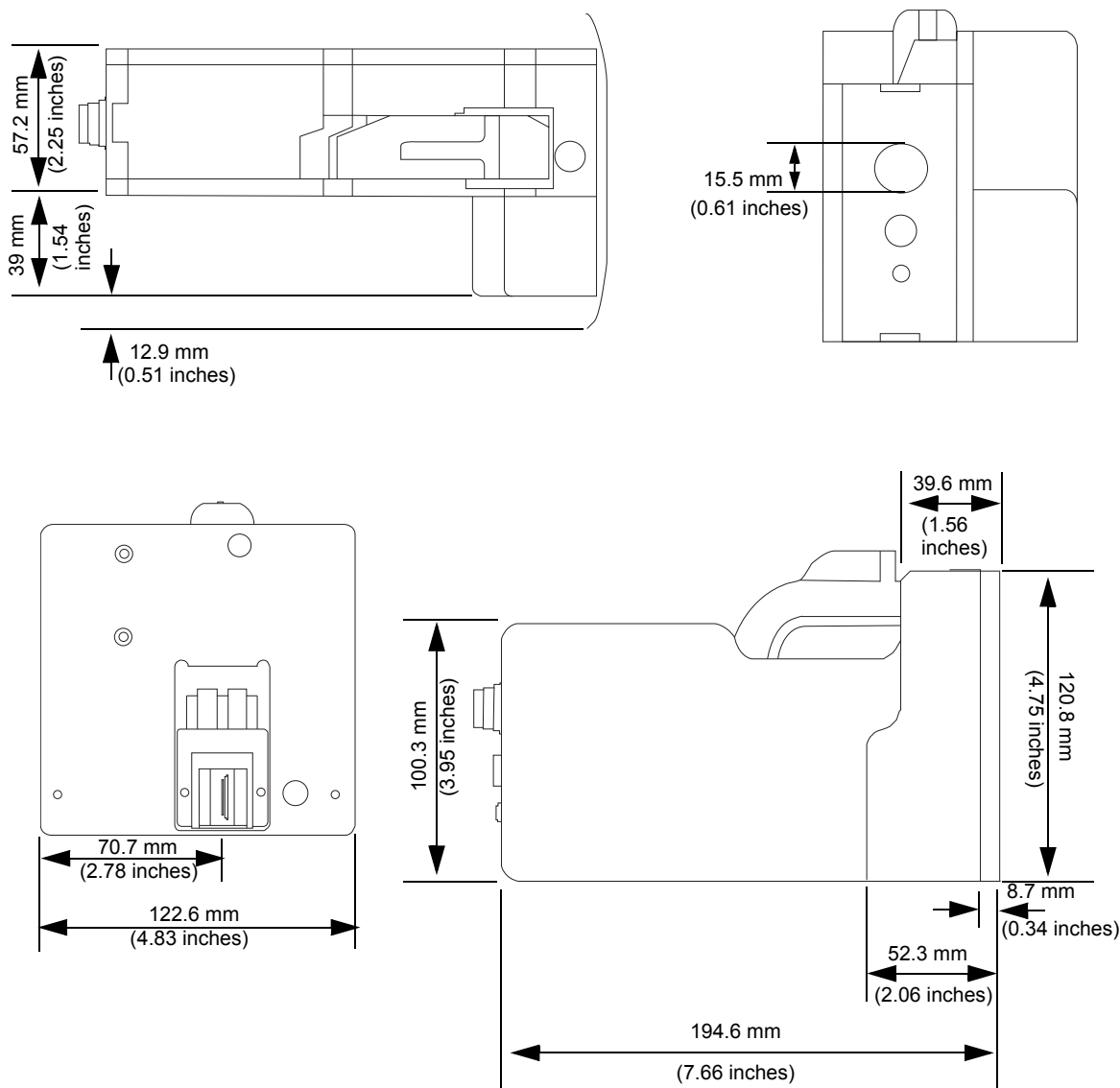


Figure 9-1: Printhead Dimensions

Product Sensor with Installation Mount

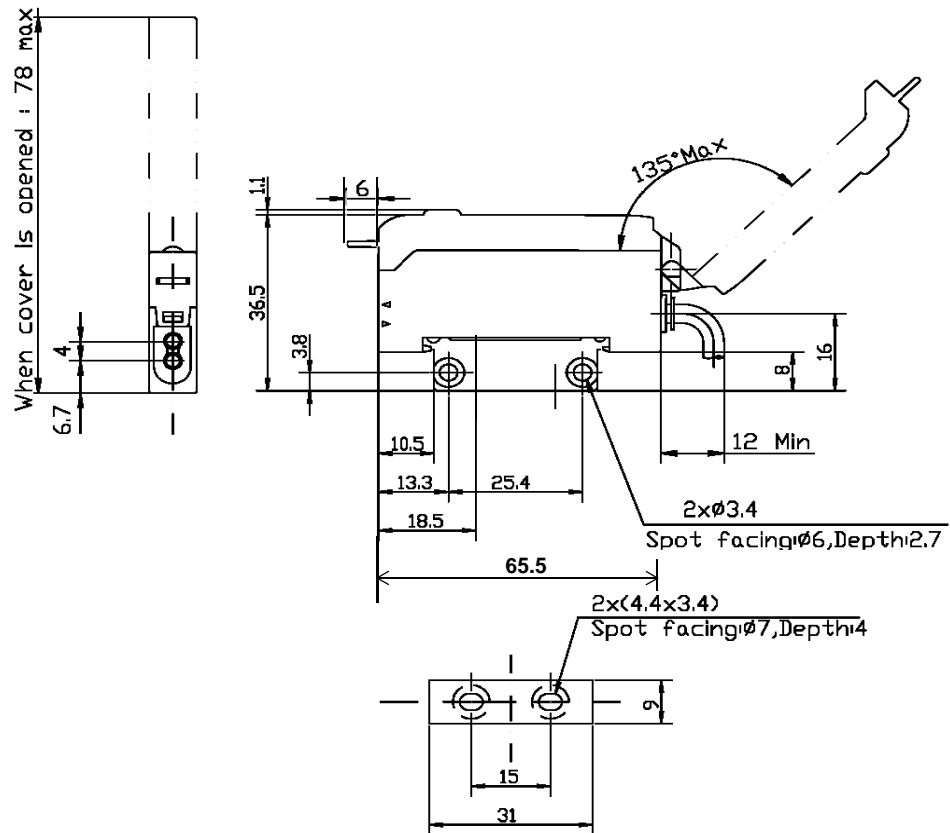


Figure 9-2: Product Sensor with Installation Mount Dimensions

CLARiTY Controller

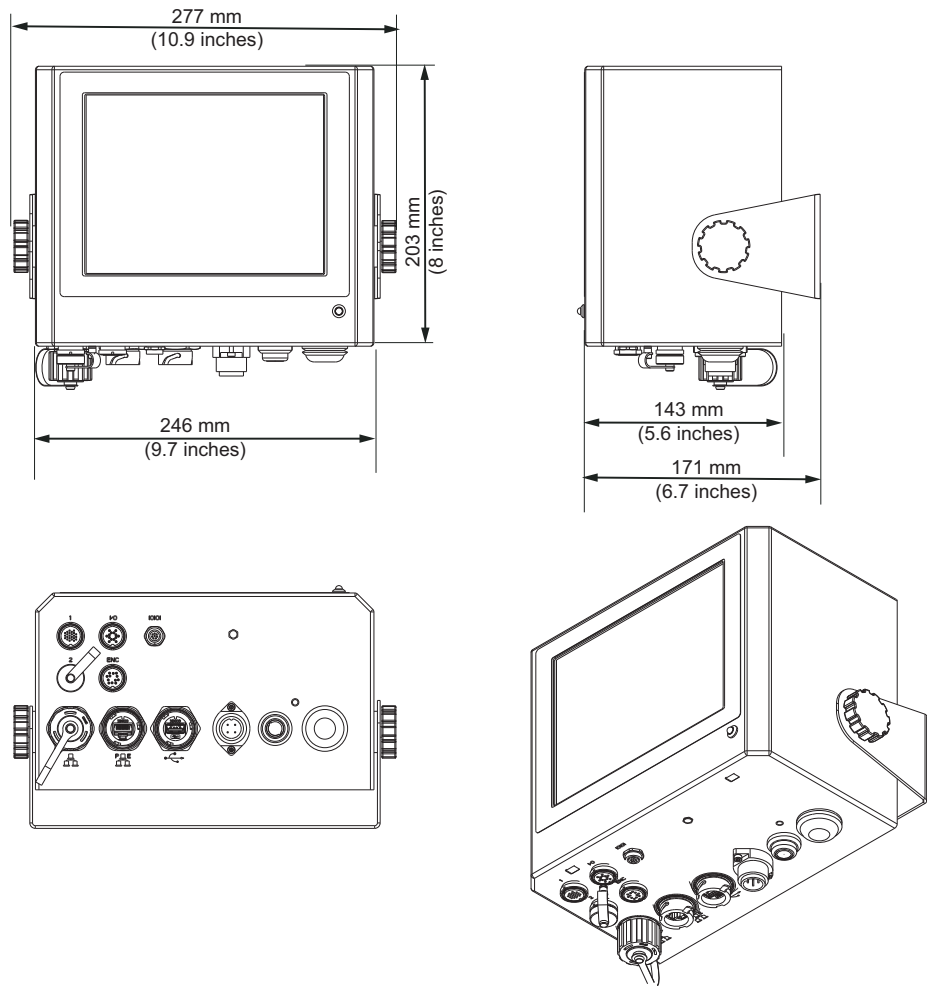


Figure 9-3: CLARiTY Controller Dimensions

Technical Specifications

Table 9-1 lists the technical specifications of the printhead.

Technical Specification	Length (L) in mm	Width (W) in mm	Height (H) in mm	Weight in Kg
Printhead	194.6	122.6	120.8	1.96
Controller/User interface (CLARiTY)	143	246	203	4.9

Table 9-1: Technical Specifications

System Specifications

Table 9-2 lists the system specifications.

System Specifications	Description
Operator Interface	Full color LCD touch-panel CLARiTY Interface
	Job selection and database support as standard. WYSIWYG print preview.
Operator Interface Languages	Language selection includes English, Dutch, French, Italian, German, and Spanish*
Password protection	Three user-levels
Remote Printer Configuration Software	CLARiTY configuration manager
	Offline set up and parameter storage available as standard
Diagnostics	On-board diagnostics as standard
On-board Memory	SD Card

Table 9-2: System Specifications

* - Other languages available are listed in Table 1-1 on page 1-2.

Networking and External Communications

Table 9-3 lists the networking and external communication systems and its components.

Networking and External Communications	Component
External Data Communication	RS232 point-to-point communications
	Ethernet 10/100 base TX network communications
	Binary and ASCII Comms Protocols
	Host PC mode (Remote database) using CLARiNET®
	USB Port
Network Control Software	CLARiNET® printer independent network management software

Table 9-3: Networking and External Communications

Terminals

Power Supply

Table 9-4 lists the power supply performance values.

Value	Range
Power Supply Requirements	100 – 240 VAC at 50 – 60 Hz Single-phase type 'TN' or 'TT' 320 VA (max), 2.75A @ 115 V AC, 1.4A @ 230 V AC, 60A max surge @ 230 V, 30A max surge @ 115 V

Table 9-4: Power Supply Performance

Type of Connection

Videojet 8610 is equipped with a directly mounted plug housing. A connecting cable, approximately 1.8 m length, with matching connector will also be included while delivering the Videojet 8610 printer.

Glossary

Cap

Cap is the gate or the controlled opening in the printhead through which the ink cartridge operates. It is also a protective cover for the cartridge to prevent it from drying out.

Job or Image

Job is the set of characters, that is required to be printed on the product label.

Label: Job or Image

Line Select

Line Select mode allows the controller to hold multiple jobs in RAM, which in turn allows the user to select the jobs for printing. Line selection mode allows up to 16 jobs to be configured on the printer.

BCD mode: Line Select

Cartridge

Cartridge is the printing consumable that includes a jetting and an ink delivery system in a disposable package.

Printhead

Printhead is the package intended to be mounted next to a production line. The ink cartridge is inserted into printhead.

Reverse Print

Reverse printing is used in systems whose printheads are moved on traveling units. Reverse printing permits printing in both directions of movement.

Bi-directional printing: Reverse Print