



Videojet 2300 Series

Operator Manual

P/N 361764-01
Revision: AD, July 2010

Copyright July 2010, Videojet Technologies Inc.(herein referred to as Videojet). All rights reserved.

This document is the property of Videojet Technologies Inc. and contains confidential and proprietary information owned by Videojet. Any unauthorized copying, use or disclosure of it without the prior written permission of Videojet is strictly prohibited. CLARiTY[®], CLARiSOFT[®] and CLARiNET[®] is a registered trademark.

Videojet Technologies Inc.

1500 Mittel Boulevard
Wood Dale, IL
60191-1073 USA
www.videojet.com

Phone: 1-800-843-3610
Fax: 1-800-582-1343
Int'l Fax: 630-616-3629

Offices - USA: Atlanta, Chicago
Int'l: Canada, France, Germany, Ireland, Japan, Spain,
Singapore, The Netherlands, and The United Kingdom
Distributors Worldwide

Compliance Information

For Customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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



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. These limits are designed to provide responsible protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. In 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 TUV Rheinland of North America, Inc.

For Customers in Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This equipment has been tested and certified for compliance with Canadian regulations regarding safety by TUV Rheinland of North America, Inc.

Pour la Clientèle du Canada

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Cet équipement est certifié CSA.

For Customers in the European Union

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

Low Voltage Directive 2006/95/EC and the Electromagnetic Compatibility Directive 2004/108/EC

- EN60950-1:2006 (IEC 60950-1:2005, modified) Safety of information technology equipment.
- EN61000-6-2:2005 Generic Immunity standard, Industrial Environment.
- BS EN 55022:1998 +A1 2000 +A2 2003 (class A) Radio Disturbance Characteristics: Limits and Methods of measurement for IT Equipment.
- BS EN 55024:1998+A1 2001 +A2 2003 Immunity Characteristics: Limits and Methods of measurement for IT Equipment.
- EN61000-3-2:2000 Limits for harmonic current emissions (equipment input current up to and including 16A per phase).
- EN61000-3-3:1995 +A1 2001 Limitations of voltage fluctuation and flicker in low voltage supply systems for equipment with rated currents up to and including 16A phase.

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., the customers must contact their Videojet Technologies Inc. distributor or subsidiary for assistance.

Videojet Technologies Inc.

1500 Mittel Boulevard
Wood Dale, IL 60191-1073 U.S.A.
Phone: 1-800-843-3610
Fax: 1-800-582-1343
International Fax: 630-616-3629
Web: www.videojet.com

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, to 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.

Table of Contents

Compliance Information

<i>For Customers in the U.S.A.</i>	<i>i</i>
<i>For Customers in Canada</i>	<i>i</i>
<i>Pour la Clientèle du Canada</i>	<i>ii</i>
<i>For Customers in the European Union</i>	<i>ii</i>

Support and Training

<i>Contact Information</i>	<i>iii</i>
<i>Service Program</i>	<i>iii</i>
<i>Customer Training</i>	<i>iv</i>

Table of Contents

Chapter 1 — Introduction

About Videojet 2300 Series	1-1
Print Area	1-1
Main Parts	1-2

Chapter 2 — Safety

Introduction	2-1
Safety Conventions Used in the Manual	2-2
Warning Statements	2-2
Caution Statements	2-2
Equipment Safety Guidelines	2-3
Placement of the Printer	2-4
Ink Safety Guidelines	2-4
Safety Warnings for 2300 series Printers	2-6
Grounding and Bonding	2-6
Electrical Power/Air Supply	2-7
Other Important Guidelines	2-8
Medical Emergencies	2-9
Emergencies Involving Printer Fluids	2-9

Chapter 3 — CLARiTY® Operator Interface

Introduction	3-1
Home Page of CLARiTY®	3-2
Screen Description	3-2
Icons	3-2
Data Entry Pad	3-5

Chapter 4 — Equipment Operation

Turn on the Printer	4-1
Set the Air Pressure	4-3
Start the Printer	4-4
Printer LED Functions	4-5
Add Ink	4-5
Review the Ink Status	4-5
Insert a New Ink Canister	4-6
Capacity of the Ink Canisters	4-10
How to Get High Quality Print	4-13
Clean the Printhead	4-14
Button 'A'	4-15
Button 'B'	4-16

Chapter 5 — Software Operations

Select a Job for Printing	5-1
Introduction	5-1
Variable Information	5-5
Introduction	5-5
How to Change Variable Information	5-6
Information about Current Job	5-9
Enable or Disable the Print (On-Line/Off-Line)	5-10
Print Position Adjustment	5-11
Self Cleaning Frequency of Operation	5-13
Warnings and Fault Messages	5-14
Set the Correct Time and Date	5-18
Select the Correct Language	5-20

About Videojet 2300 Series

The Videojet 2310, 2320, and 2330 printers are auto purging ink jet printers. The design of the printer enables the printer to print high resolution text, barcodes and graphics. These printers are easy to use and cost effective.

The 2300 Series printers use the CLARiTY[®] operator interface as a standard. The interface is a part of the printer (that is you do not require to connect the printers to an external Personal Computer (PC) for normal operation). The icons in the interface provide easy navigation to the operator. The Slave units do not have the interface.

An external PC is required only to configure the printer and download the messages into the printer.

The auto-purging printhead makes sure that there is a consistent and high quality code during the production period. This printhead does not use more than the required amount of ink. The ink is supplied through non pressurised, ink canisters that are installed in the canister chute which make the printers easy to use and clean.

Print Area

The print area for the 2300 Series printers is shown in Table 1-1.

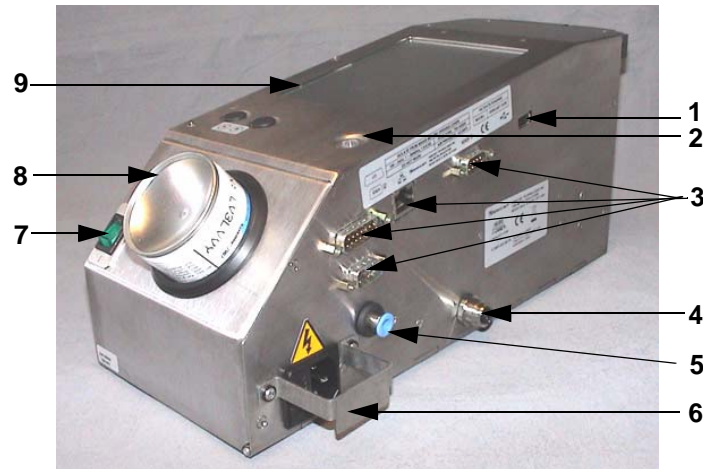
Printer Type	Print Area
Videojet 2310	17mm X 2000mm
Videojet 2320	50mm X 2000mm
Videojet 2330	70mm X 2000mm

Table 1-1: Print Area

Note: The Videojet 2300 series printers are referred to as 'printer' in this document.

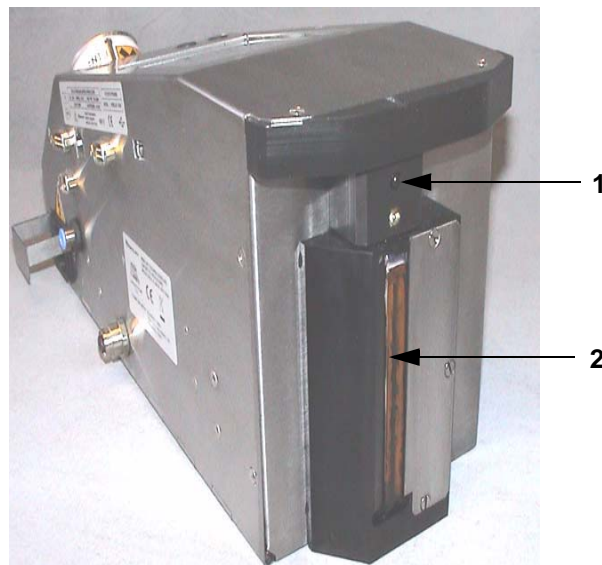
Main Parts

The following figures shows the printer with the main components and connections highlighted.



- | | |
|--|--------------------------------|
| 1. USB Port | 6. Main Power Inlet |
| 2. Printer Status LED | 7. Power Switch |
| 3. I/O, Ethernet and Communications Connectors | 8. Ink Canister |
| 4. Remote Product Sensor Connector | 9. CLARiTY® Operator Interface |
| 5. Air Pipe Connector | |

Figure 1-1: Printer Parts



- | |
|----------------------------|
| 1. Internal Product Sensor |
| 2. Printhead |

Figure 1-2: Printhead

This chapter contains the following topics:

- Introduction
- Safety conventions used in this manual
- Equipment safety guidelines
- Placement of the printer
- Ink safety guidelines
- Safety Warnings for 2300 Series printers
- 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.

Safety Conventions Used in the Manual

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 Statements

- Warning statements are used to indicate hazards or unsafe practices that may result in 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. The next step, “Cleaning the Printhead,” must be performed by service or maintenance personnel. Qualified personnel have successfully completed the training courses, have sufficient experience with the printer, and are aware of the potential hazards to which they are exposed.

Caution Statements

- Caution statements are used to indicate hazards or unsafe practices that can 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

Example:



Caution

EQUIPMENT DAMAGE. Never turn off the printer by switching the AC power switch to the Off (O) position. Before pressing the Off key, allow the printer to complete the three and a half minute shutdown sequence. Failure in following this procedure prevents the printer from drawing the ink in the ink return line, back into the reservoir. This may cause the ink to dry in the ink return line, resulting in problems when you turn the printer on again.

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.



Warning

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



Warning

PERSONAL INJURY. Do not, under any circumstances, remove or obstruct any warning, caution, or instruction labels present on the printer.

Placement of the Printer



Warning

PERSONAL INJURY. Do not place the printer in a hazardous location. Hazardous locations might create an explosion, leading to personal injury.

Hazardous locations, as defined in the United States, are those areas that may contain hazardous materials in a quantity sufficient to create an explosion. These are defined in Article 500 of the National Electrical Code ANSI/NFPA 70-1993.

Outside the United States, you must ensure compliance with all local regulations regarding equipment placement in potentially hazardous locations.

Ink Safety Guidelines

This section provides important safety guidelines pertaining to the use and handling of inks. Read the appropriate MSDS for more information.



Warning

PERSONAL INJURY. Always observe the following safety guidelines when using or handling inks.
For continued protection against possible fire hazard, use only Videojet supplies with a flash point no lower than -22 °C (-8 °F) and boiling point no lower than 56 °C (133 °F).



Warning

PERSONAL INJURY. The printer ink is volatile and flammable. They must be stored and handled according to local regulations. Work only in areas with good ventilation.

**Warning**

PERSONAL INJURY. Do not smoke or use a naked flame in the vicinity of these substances.

Immediately after use, remove any tissue or cloth that becomes saturated with the printer ink. Dispose all such items in accordance with the local regulations.

Only full bottles are recommended for use when replenishing ink; partially filled bottles must be disposed in accordance with the local regulations.

**Warning**

PERSONAL INJURY. Do not smoke when you are near the printer or printhead. If the printer exhaust fumes are subjected to an ignition source, it may result in an explosion or fire.

**Warning**

PERSONAL INJURY. Wear safety glasses with side shields (or equivalent eye protection) when handling ink. If it splashes on your eyes, flush your eyes with water for 15 minutes and consult a physician immediately.

**Warning**

PERSONAL INJURY. Wear butyl rubber gloves when handling ink. Avoid contact with skin and mucous membranes (nasal passage, throat). Upon contact with skin, remove any contaminated clothing and wash the area with soap and water. Consult a physician if irritation persists.

**Caution**

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



Warning

PERSONAL INJURY. Read and understand the Material Safety Data Sheet (MSDS) before using ink. An MSDS exists for each type of ink. The appropriate sheet or sheets are supplied along with the shipped product.

Ensure that you retain all MSDSs for future reference in case you need to consult a physician regarding an ink-related accident. Additional copies of MSDSs are available upon request, and can be obtained by contacting the Videojet Customer Service Department at 800-843-3610. Outside the U.S., customers should contact a subsidiary Videojet office or their local Videojet distributor.



Warning

PERSONAL INJURY. Certain inks are flammable and must be stored appropriately. Storage must comply with local regulations. Contact the appropriate regulatory agency for further information. The label on the bottle or the MSDS indicates if a particular fluid is flammable or not.

Safety Warnings for 2300 series Printers

Grounding and Bonding



Warning

PERSONAL INJURY. Always prevent static discharge from occurring. Use proper Grounding and Bonding methods.



Warning

PERSONAL INJURY. Always bond conductive equipment together with approved cables to maintain them at the same potential and minimize static discharge.

Electrical Power/Air Supply



Warning

PERSONAL INJURY. Before opening or removing any printer covers, ensure that the mains power is disconnected and compressed air supplies are switched off.



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 disconnect or circuit breaker in accordance with IEC 60947-3 or IEC 60947-2.



Warning

PERSONAL INJURY. Always isolate equipment from the mains and remove mains power connector to the printer before attempting any maintenance or repair on any part of the product.



Warning

PERSONAL INJURY. Before connecting compressed air supply to Videojet 2310, 2320 and 2330 ensure that the air regulator is switched OFF.



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 Videojet 2310, 2320 and 2330 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 cannot be replaced by the customer.**



Warning

PERSONAL INJURY. Ensure that all external energy sources are isolated from the printer before opening the outer casing. This includes the mains power cable and I/O cable assembly (if used).

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 and compressed air supplies.



Warning

PERSONAL INJURY. Read any warning or hazard information supplied with any **ink or consumable products**. When using any chemicals, always wear protective gloves and only use in well-ventilated areas. **<<Should we retain this Warning?>>**



Warning

PERSONAL INJURY. The Videojet 2310, 2320 and 2330 printer is supplied with warning symbols for power supply and compressed air. If any part of these symbols become damaged, worn or removed they must be immediately replaced.

Medical Emergencies

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



Warning

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

Emergencies Involving Printer Fluids

If the incident involves an ink, carry the bottle and/or MSDS with you to the physician's office. These items contain important information that the physician may require, to provide the precise medical treatment.

CLARiTY[®] Operator Interface

3

This chapter contains the following topics:

- Home Page of CLARiTY[®]
- Screen Description
- Data Entry Pad

Introduction

The CLARiTY[®] operator interface is a touch screen system. The icons in the interface help the operator to navigate through the software easily.

Normally most areas of the interface are active. The operator can touch the active areas to select the required feature. The interface also contains the icons that are like buttons on the normal control panel (for example,



Home Page of CLARiTY®

The *Home Page* of the CLARiTY® is shown in Figure 3-1.



Figure 3-1: Home Page of CLARiTY®

Screen Description

Icons

The screen has icons that help you navigate to the key pages of the interface. You can reach any key page from the current page with these icons (refer to Figure 3-2 and Table 3-1 on page 3-3).

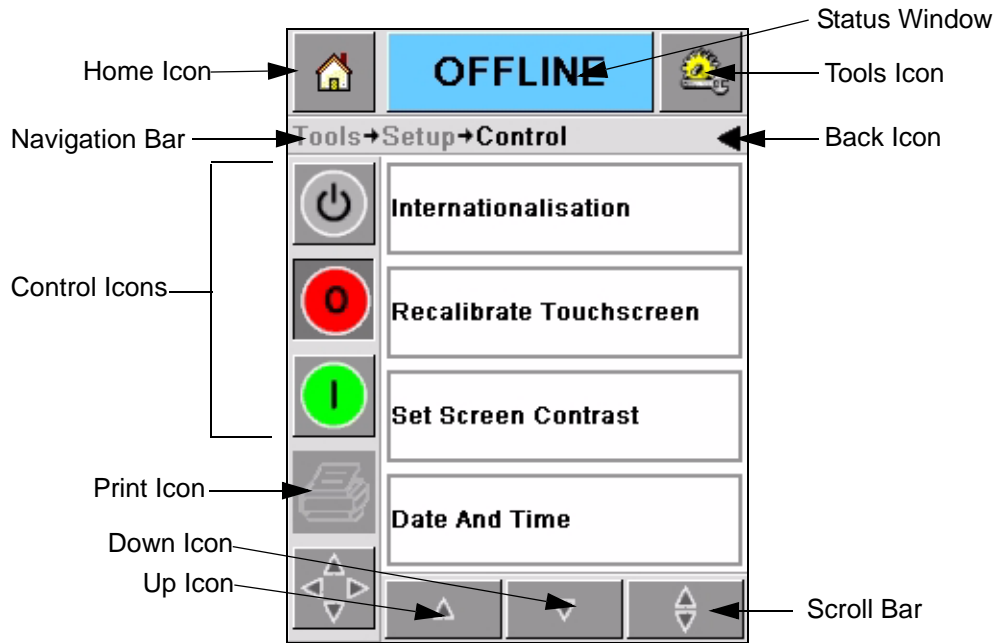


Figure 3-2: Shortcut Icons

Icon	Description
Home	Takes you to the Home page
Status Window	Takes you to the Fault and Warning pages
Tools	Takes you to the Setup and Diagnostics Tools page
Scroll Bar	Allows to navigate up and down the screen selected. This icon is useful to find a Job in the Videojet 2310, 2320 and 2330 database.
Control icons	Refer to "Control Icons" on page 3-4.
Job	Use to load the next image (job) for printing and to enter any variable data
Navigation Bar	Indicates the location of your current screen in the menu tree The current screen allows you to do the following tasks: <ul style="list-style-type: none"> • Touch the Back icon to return one level up • Touch any level displayed on the Navigation Bar to take you to that level

Table 3-1: Shortcut Icons

Control Icons

You can use the control icons to get control on the printer immediately (refer to Figure 3-3).

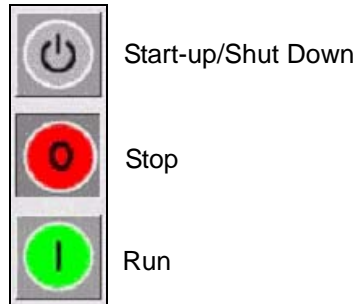


Figure 3-3: Control Frame Icons

Active Areas

The *Production Performance* and *Consumables* areas in Figure 3-4 take you to the screens that have more information and statistics.

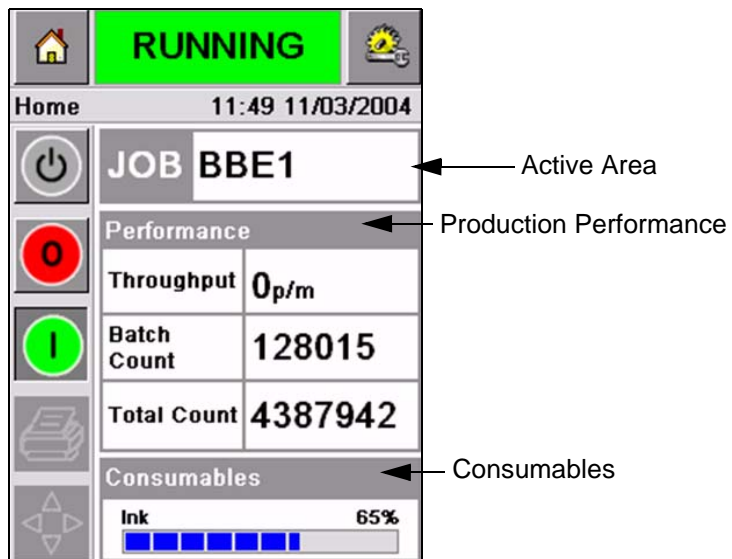


Figure 3-4: Performance and Consumables Status

Data Entry Pad

An alphanumeric, mobile phone style data entry pad is provided to the operator to enter the data in the CLARiTY® interface.

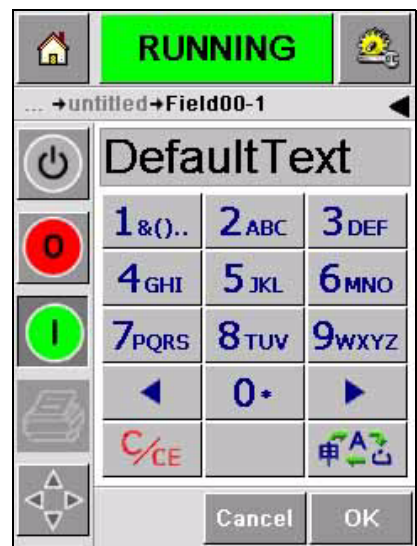


Figure 3-5: Data Entry Pad

The different keys in the data entry pad are shown in Table 3-2.




Key	Characters (in turn)
	1.,?/?!-&;+ #()'" _ @\$%&€¥%<>¿¡\$=¤
	ABC2abcÄÅÄÄÄÄÄÆÇäåääääæçø
	DEF3defÈÉÊËÊèëëë€
	GHI4ghiîïîîîî
	JKL5jkl£

Table 3-2: Data Entry Pad Map - English (Default)










Key	Characters (in turn)
	MNO6mnoÖÏÔÓØÑöôóóøñ
	PQRS7pqrs\$ß\
	TUV8tuvÛÜÚÚúûûú
	WXYZ9wxyz
	Cursor left
	0*
	Cursor right
	Backspace/Clear
	Space

Table 3-2: Data Entry Pad Map - English (Default) (Continued)

This chapter describes the procedures to do the following tasks:

- Turn on the printer
- Set the air pressure
- Start the printer
- Printer LED Functions
- Add the ink
- Get High quality print
- Clean the printhead

Turn on the Printer

Press the power switch on the rear of the unit to turn on the printer (refer to Figure 4-1).

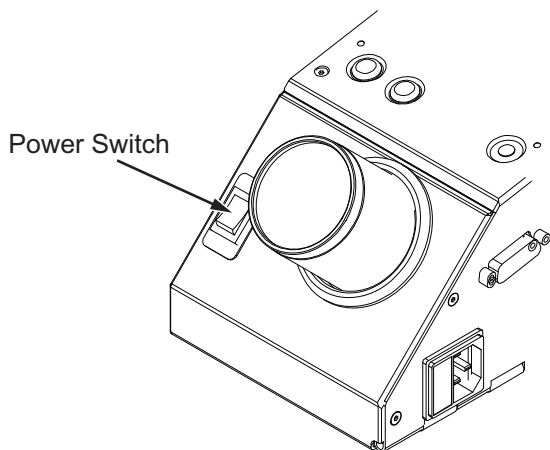


Figure 4-1: Power Switch

The sequence of steps that occur after you turn on the printer are as follows:

- 1 During the startup sequence, the printer performs a number of self-diagnostic checks. These checks take approximately 90 seconds to complete.
- 2 During the self-diagnostic checks, the CLARiTY[®] interface screen shows the first set of diagnostic data. Ignore this data.
- 3 When the self-diagnostic checks are complete, the CLARiTY[®] Home Page appears (refer to Figure 4-2 on page 4-2).
- 4 The status window of the Home Page shows the SHUTDOWN status.

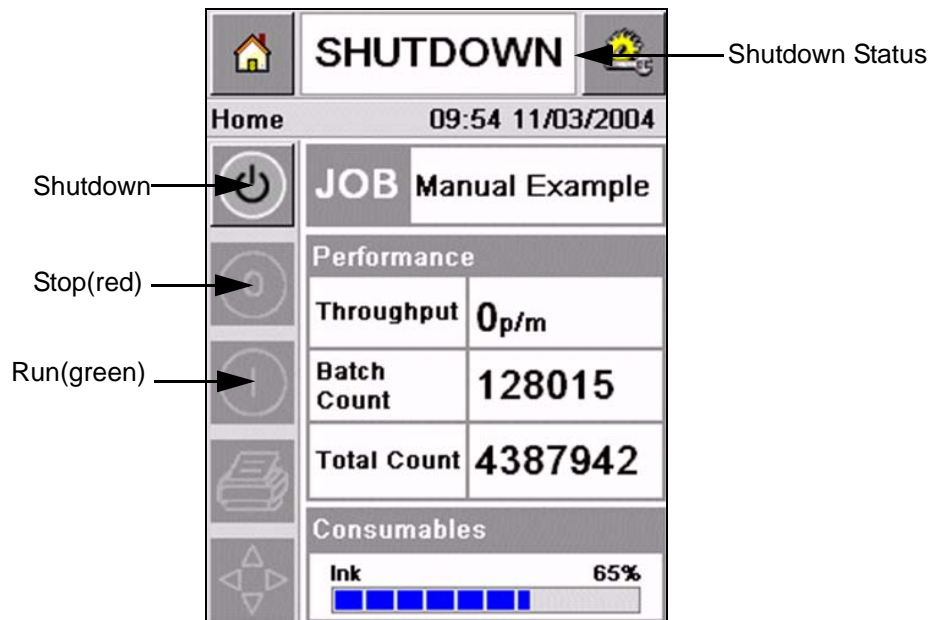


Figure 4-2: Home Page

- 5 During the SHUTDOWN status, the Stop (red) and Run (green) buttons (Figure 4-2) are disabled (in grey color).

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

Note: During the shutdown status, make sure that the production line and printer are prepared and ready for start-up.

Set the Air Pressure

The printer comes with an air regulator. During the installation of the printer, the air regulator must be installed near the printer.



Caution

The air pressure must be set according to the printer type. Follow the recommended values. Failure to follow this caution can decrease the efficiency of the printer.

The air pressure requirement for the 2300 series is shown in the Table 4-1.

Printer Type	Air Pressure
Videojet 2310	2.5 Bar
Videojet 2320	3.5 Bar
Videojet 2330	4.5 Bar

Table 4-1: Air Pressures



Figure 4-3: Air Regulator

Start the Printer

Touch the *Start-Up/Shutdown* icon to start the printer.

The events that occur after you touch the *Start-Up/Shutdown* icon are as follows:

- The *Offline* status appears in the status window of the CLARiTY® Home Page (refer to Figure 4-4).
- The printer runs through a self-cleaning cycle to ensure that it is ready for printing.
- The *Stop* and *Run* buttons become active (Figure 4-4).

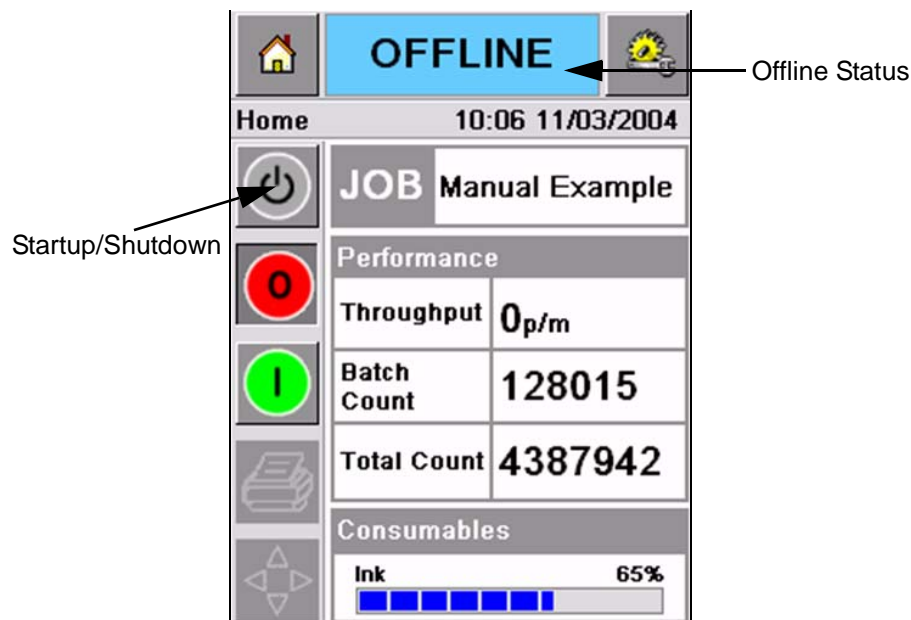


Figure 4-4: Home Page - Offline

- If a fault or a warning condition exists, a fault or warning message appears in the status window instead of the Offline status. You must clear the fault or warning message before you continue the process of printing.

Refer to “Warnings and Fault Messages” on page 5-14 for more information on Fault and Warning messages.

Printer LED Functions

The printer has a tri-colored LED below the CLARiTY[®] interface that indicates the status of the printer (Figure 4-5).

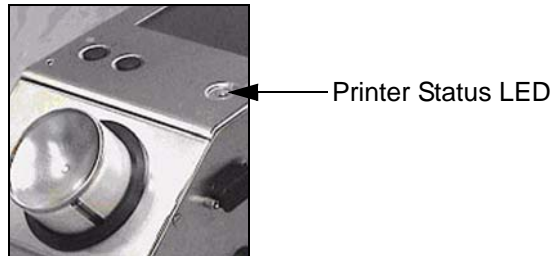


Figure 4-5: Printer LED

The LED states and their functions are shown in Table 4-2.

LED States	Function
Green (constant)	On-line, ready to print
Green (flashing)	On-line and printing (LED flashes for every print)
Orange (Flashing)	CLARiTY [®] update in progress
Red (constant)	Off-line
Red (flashing)	Fault condition

Table 4-2: LED Status and their Functions

Add Ink

This section describes the following topics:

- How to review the status of the ink
- Correct time to insert a new ink canister
- The number of prints possible with the available ink

Review the Ink Status

The Consumables area of the *Home Page* screen displays a percentage value of ink that is left in the ink canister of the printer. For example refer to Figure 4-6 on page 4-6.

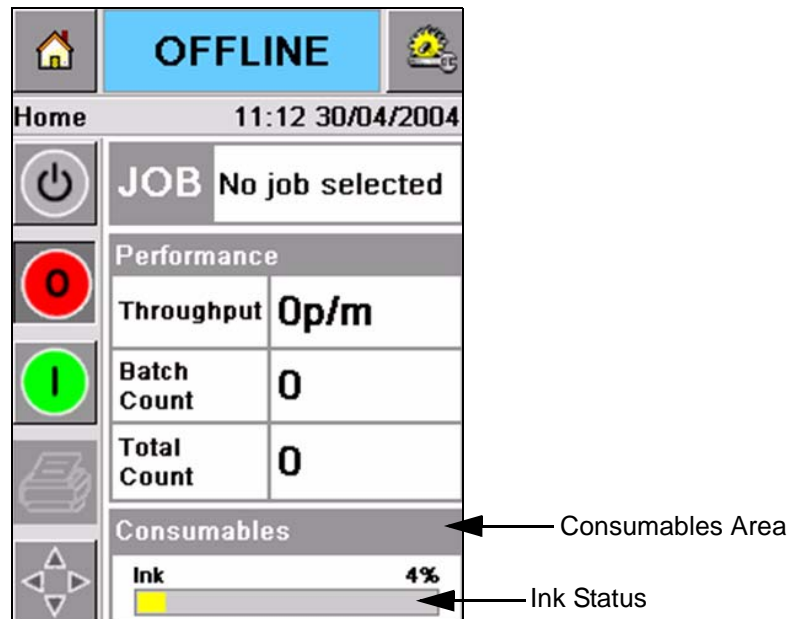


Figure 4-6: Consumables Area

A description of the colors that appear in the status bar is as follows:

Color	Description
Blue	The reservoir is full and replacement ink canister is not required
Yellow	Enough ink is available for printing but you can add a new ink canister. If a new ink canister is not added, the printer operates until the printhead ink reservoir reaches a critically low level.
Red	The ink canister is empty. A new ink canister must be added and the ink empty fault must be cleared.

Table 4-3: Colors in the Consumables Status Area

Insert a New Ink Canister

The ink must be added when the ink low level warning appears on the CLARITY® screen. The ink status bar must show less than 5% (Figure 4-6). The ink status shown on the status bar makes sure that the present ink canister is replaced after the present canister becomes empty.

When the consumables meter status is red before a new canister is fitted, the printer will go through a longer filling cycle before the printing continues.

The ink type required for the type of printer is shown in the Table 4-4.

Printer	Ink Type (for a 175ml Ink Can)	Ink Type (for a 365ml Ink Can)
Videojet 2310	M512-4	NA
Videojet 2320	M512-4	M512-K
Videojet 2330	M512-4	M512-K

Table 4-4: Ink Types

Do the following tasks to replace an empty ink canister with a new canister:

- 1 Touch the *Consumables* area on the *Home Page* (Figure 4-6 on page 4-6). The *Consumables* page appears (Figure 4-7).



Figure 4-7: Consumables Screen

- 2 Touch the *Add Ink* icon (Figure 4-7). The *Add Ink* screen appears (Figure 4-8 on page 4-8).
- 3 On system prompt, unscrew and remove the empty ink canister.



Figure 4-8: Add Ink Screen

- 4 Enter the unique ink canister code found on the label of every ink canister (Figure 4-9) and touch the OK icon.

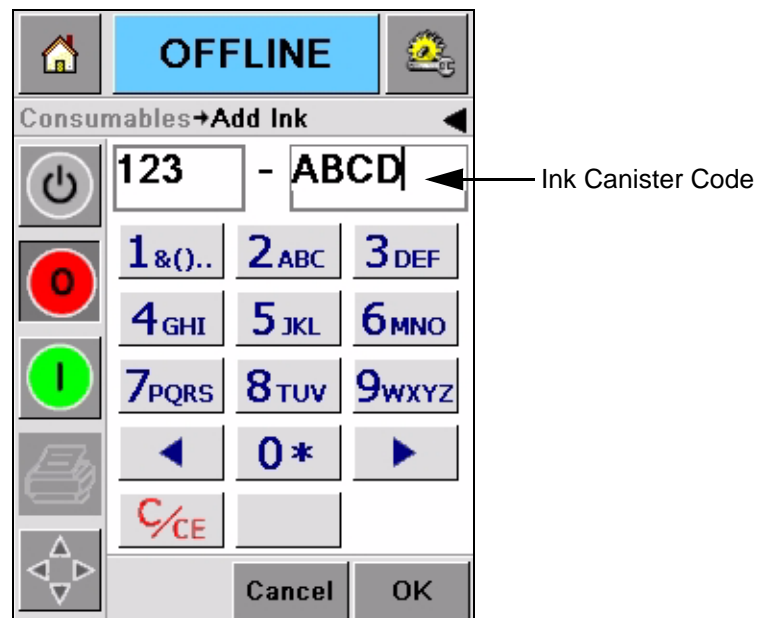


Figure 4-9: Canister Code

If you enter a wrong ink canister code, an error message appears (Figure 4-10 on page 4-9). Enter the correct ink canister code.



Figure 4-10: Invalid Ink Code Messages



Caution

EQUIPMENT DAMAGE. The use of incompatible ink can seriously damage the printer and such damage will not be covered under warranty.

- 5 After the CLARiTY[®] validates the new ink canister code, you can fit the new canister. To fit the new canister do the following tasks:



Figure 4-11: Removal of Empty Ink Canister

- a. Remove the protective cover from the new ink canister.
- b. Align the new canister into the canister chute and turn to your right (Figure 4-12).
- c. Insert and set the new canister inside the chute carefully. Do not overtighten.



Figure 4-12: Direction of Insertion

Note: When you must refill a half full ink canister, the ink canister code must be entered again.

Capacity of the Ink Canisters

Do the following tasks to check the amount of ink that is available in the current ink canister:

- 1 Touch the *Consumables* area on the *Home Page* screen during the printer *Running* status (Figure 4-13 on page 4-11). The *Consumables* screen that displays the number of prints (Figure 4-14 on page 4-11) appears.

This screen displays *Prints Per Ink Canister* and *Prints Left in Canister*.

The *Prints Per Ink Canister* gives the number of prints from a full ink canister and *Prints Left in Canister* gives the number of prints left from the current canister.

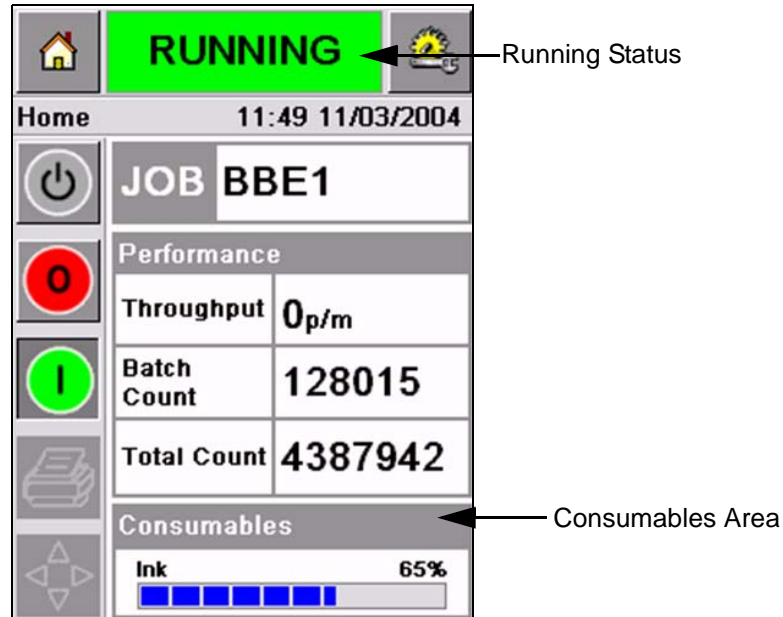


Figure 4-13: Consumables Area - Running

- When a new job is selected, the number of prints is calculated again and displayed on the screen. This number of prints depends on the amount of ink the new image requires.

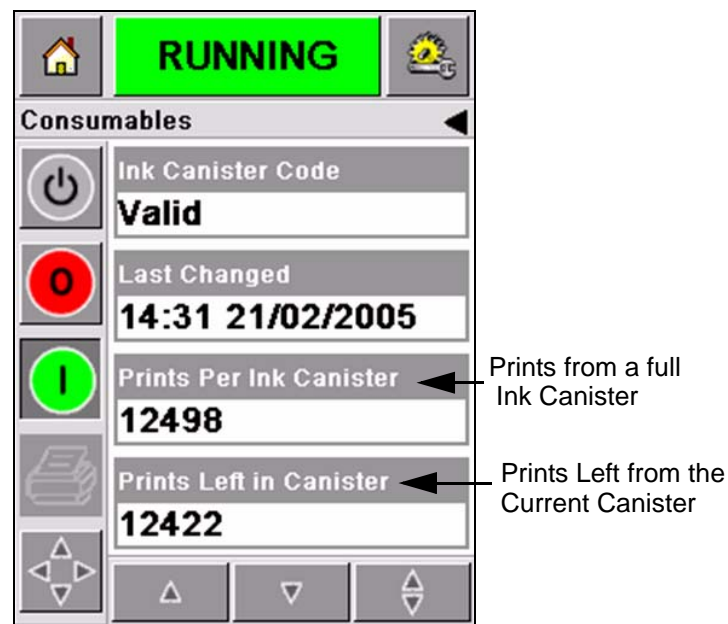


Figure 4-14: Number of Prints

How to Get High Quality Print

To get high quality print, make sure to move the products past the printhead in a consistent method. For correct conveyor movement, refer to the following guidelines:

- A high grip and flat belt conveyor with pack guidance is recommended.
- Make sure that there is enough space between the products to get correct print signals. This action prevents the products from not being printed.
- Gravity roller conveyors are not recommended. The box speed and spacing can change according to the product speed and weight.
- Powered roller conveyors can decrease the print quality. This type of roller is not recommended for barcodes or high resolution graphic applications.
- If barcodes are required in the image, then an encoder must measure accurately the speed of the product. This accuracy in the speed measurement leads to best print performance.

The maximum and minimum conveyor speeds for 2300 series are shown in Table 4-5.

Printer Type	Minimum Speed	Maximum Speed at 100% Resolution
Videojet 2310	10 mm/second (0.6 m/min)	550 mm/second (33 m/min)
Videojet 2320	10 mm/second (0.6 m/min)	550 mm/second (33 m/min)
Videojet 2330	10 mm/second (0.6 m/min)	550 mm/second (33 m/min)

Table 4-5: Conveyor Speeds

The most common causes for low quality of print are described below:

- Incorrect movement of the product past the printhead (for example the use of gravity conveyors, roller conveyors)
- Dust or dirt blocking or deflecting jets
- Slippage of the product on the conveyor
- The distance between the face of the printhead and the printed surface is not consistent. This difference is caused normally because of the following reasons:
 - The product guidance (product handling) does not maintain a consistent gap.

- The product is distorted (for example, bent cardboard box).

Note: To get high quality prints, the distance between the printhead and the product must not be greater than 2mm (Figure 4-16). Use the pack guidance on the conveying equipment to maintain this distance.

Note: The rub plate on the front side of the printer helps to protect the printhead from any potential damage and to maintain the jetting distance to the product.

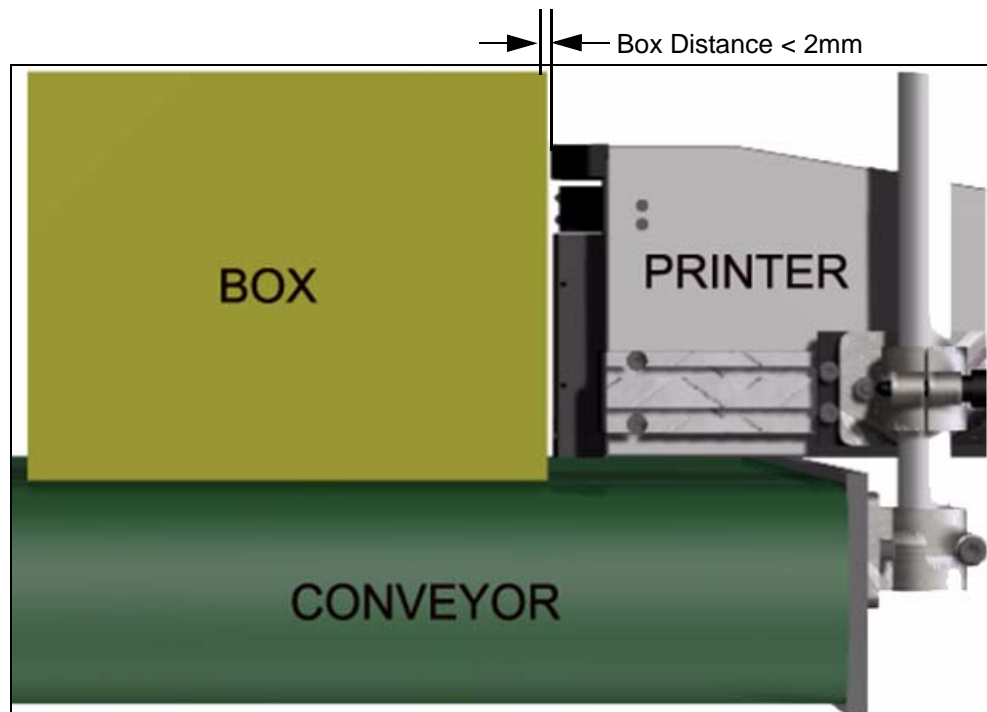


Figure 4-16: Box Distance

Clean the Printhead

If the print quality decreases, the **A** and **B** buttons on the printer provide additional functions to clean the printer further (refer to Figure 4-17).



Figure 4-17: A and B Buttons

Button 'A'



Caution

Do not touch or remove the nozzle plate or the jetting face of the printhead under any condition while you perform the procedures in this section (refer to Figure 4-18 on page 4-16).

When you can see bands of missing print across the print, the quality of the print has decreased and is no longer at an acceptable standard. You must press button A in this condition.

You can use the button for the following two purposes:

- Press the button for less than a second, then release to start the sequence of controlled purge.

A small quantity of ink that removes the dirt from the jetting orifices is purged through the printhead.

- Press and hold the button to activate a longer cleaning cycle. When the cycle begins, release the button A.

Note: This cycle must be used when shorter operation to clean the printer does not remove the blocks in the jets.

A larger quantity of ink that washes the printhead face is purged through the printhead jets. Then an air blast is used to remove excess ink.

Button 'B'

When you press the button 'B', the system uses the air to clear away any contamination on the printhead faceplate.

Press and hold the button B for some seconds to clean the printhead faceplate completely of any ink and dirt.

This method is best to remove any dirt following a visual inspection of the printhead.

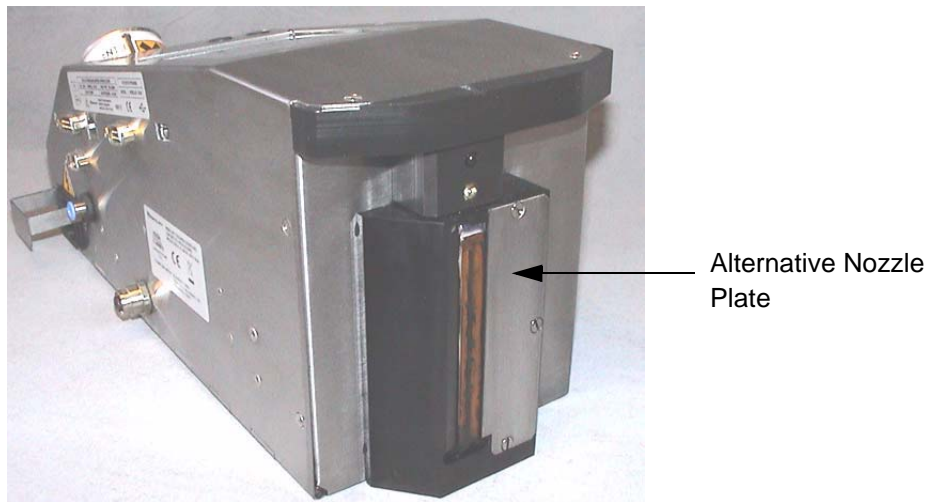


Figure 4-18: Printhead Nozzle Plate

Basic Maintenance

Basic maintenance should be performed as per the cleaning kit instructions. For more information, refer to the Chapter "Routine Maintenance" of the Service Manual.

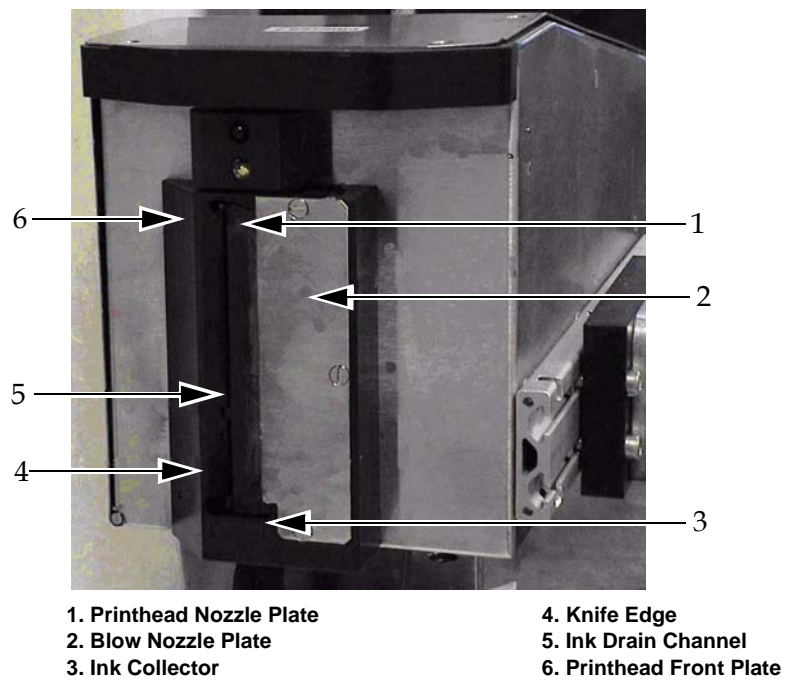


Figure 4-19: Printhead Jetting Face

This chapter contains the following topics:

- Select a Job for Printing
- Variable Information
- Information about Current Job
- Enable or Disable the Print (On-Line/Off-Line)
- Print Position Adjustment
- Self Cleaning Frequency of Operation
- Warnings and Fault Messages
- Set the Correct Time and Date
- Select the Correct Language

Select a Job for Printing

Introduction

When the printer is in *Running*, *Offline* or in the *Shutdown* status, you can select a new print image or job. You can select, edit and see the image on the WYSIWYG display before printing the image.

Touch the *OK* icon to replace the current image with the new job.

If you must cancel the process of job selection, touch the *Cancel* button or the *Home* button (refer to Figure 5-6 on page 5-5).

Procedure

To select a job for printing, do the following tasks:

- 1 Touch the *Job* icon (Figure 5-1 on page 5-2).

A *Job List* screen with the different jobs stored in the local memory is displayed (Figure 5-2 on page 5-2).

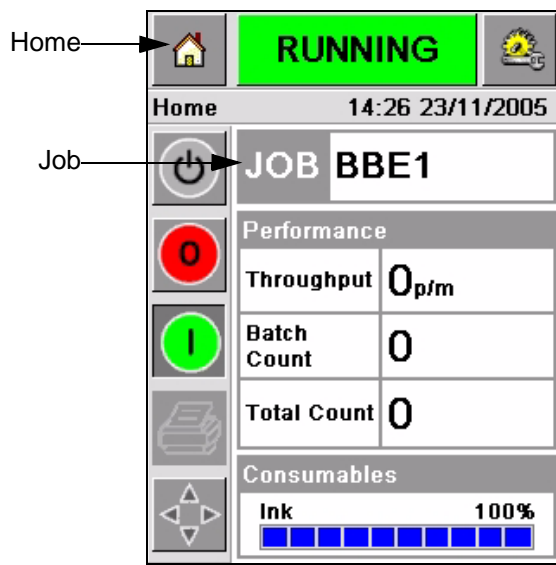


Figure 5-1: Job Icon

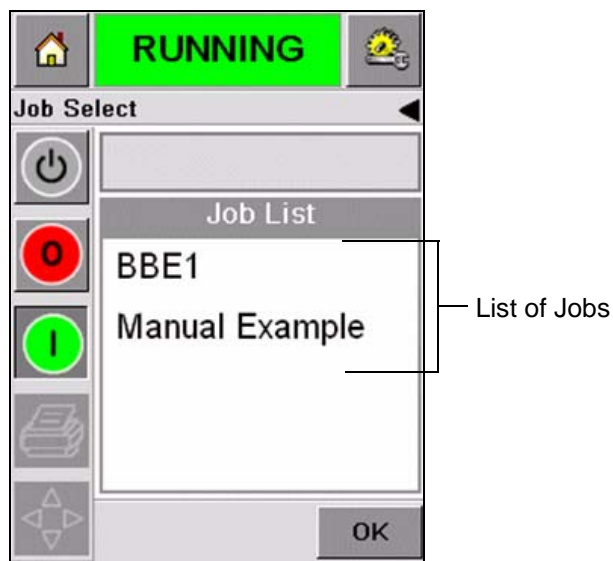


Figure 5-2: List of Jobs

- 2 If the job list is short, then Touch the job name and the name of the job is highlighted (Figure 5-3).

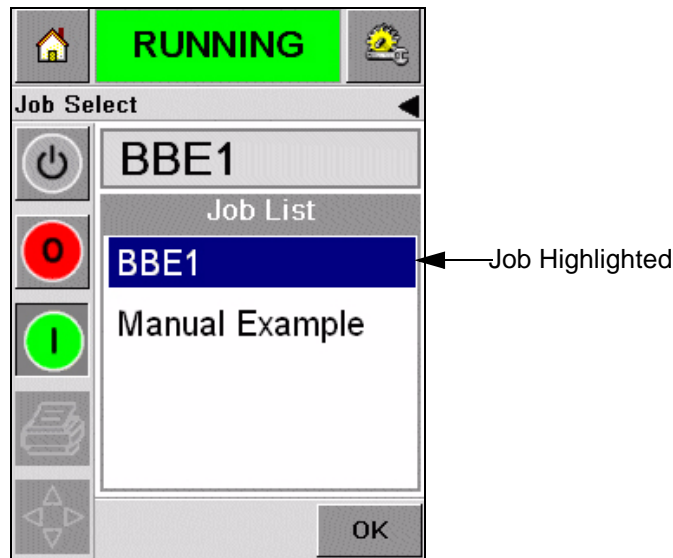


Figure 5-3: Job Selection

- 3 If the job database is large to fit into the screen, you can select the job in two methods:
 - A scroll bar appears (Figure 5-4 on page 5-4). The scroll bar helps you move up and down the database to see all the jobs and select the required job.
 - Touch the *Data Entry Pad* icon (Figure 5-4 on page 5-4). The *Job Select* screen appears with a data entry keypad (like a mobile phone). The job name is completed automatically as you begin to enter the characters in the job name until you select the required job (Figure 5-3).

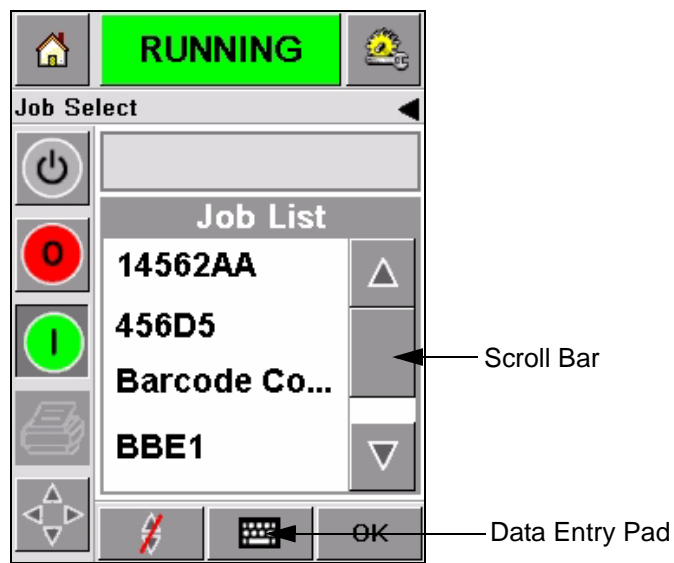


Figure 5-4: Scroll Bar

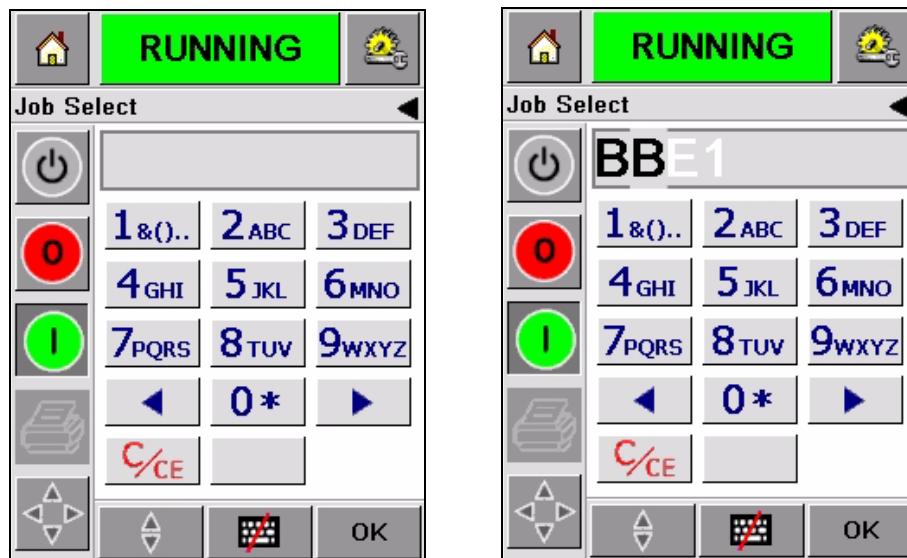


Figure 5-5: Job Selection Screens

- 4 When you select the required job, the CLARiTY[®] displays a print preview of the selected job (Figure 5-6).

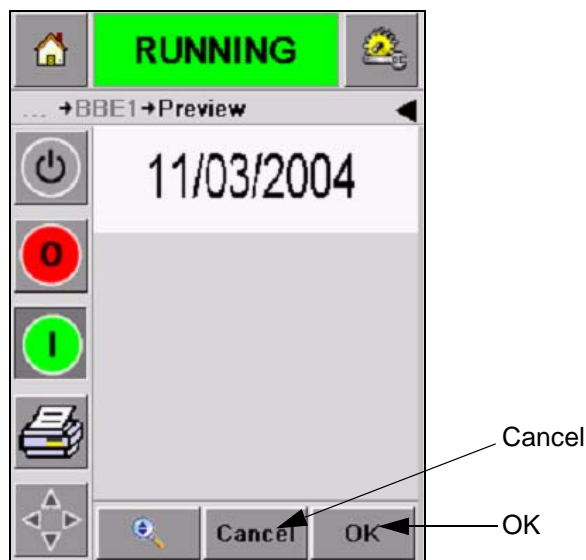


Figure 5-6: Job Preview

- 5 Touch the OK icon after the information displayed is correct (Figure 5-6). The printer starts printing the job.
- 6 If your job contains variable information, refer to “How to Change Variable Information” on page 5-6 for more information.

Variable Information

Introduction

If there are *Job Variables* (variable information fields) like a Batch Code on the selected Job, CLARiTY[®] prompts to edit or enter these fields.

If there are any variable TEXT fields, CLARiTY[®] displays them first.

The check box at the side of variable fields indicates the fields that are entered and fields that are not entered (Figure 5-7 on page 5-6).

A checkmark is added to the check box as you edit or enter the data in the CLARiTY[®]. When all the boxes have a checkmark, you can continue to the next step.

To select the Job variable you require to change, touch the related prompt. This variable gets highlighted and display the default data in the data window (Figure 5-7).

To change the variable text, touch the data window and use the data entry keypad.

The Figure 5-7 shows the Job Variables for the job **BBE1** and there is a DATE field variable only (for use as a Best Before End Date).

How to Change Variable Information

Do the following tasks to change the default data for the DATE field variable in the Job **BBE1**:

- 1 If the default date displayed in the data window (11 March 2004) is correct, touch the *OK* icon and this date is printed (Figure 5-7).

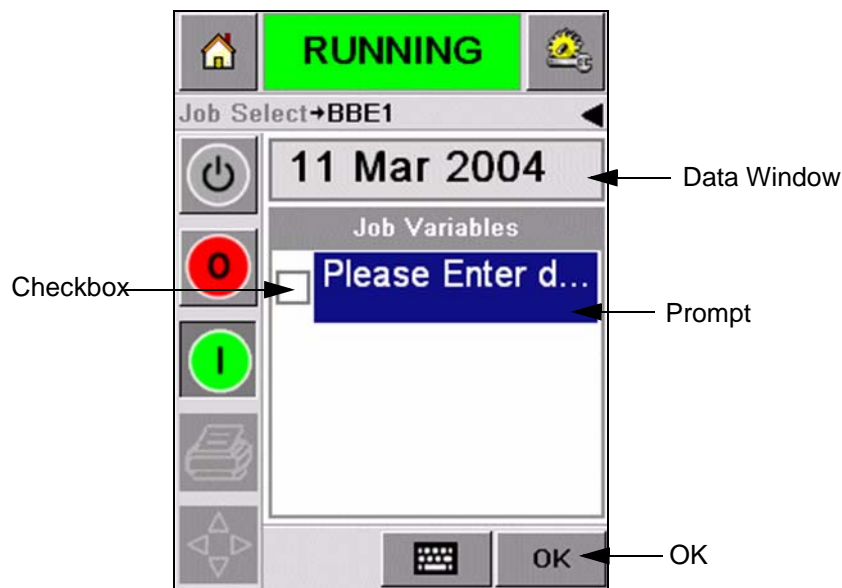




Figure 5-7: Job Variables

- 2 Touch the data window or the data entry pad to move to the calendar screen if you want to change the date information (Figure 5-8).



Figure 5-8: Calendar Screen

- To change the month and the year, touch the  and  icons until the correct month, and year is reached.
- To select a day of the month, touch the date.

Note: The red box in Figure 5-8 displays the current date and the blue background displays the date selected for printing. The dates that are not available for selection are in grey box.

- 3 Touch the OK icon and the data information is changed. If you have many dates in your Job, repeat the steps one and two for each date.
- 4 The CLARiTY[®] automatically returns to the Job variables list where the check box for the date field is checked (Figure 5-9 on page 5-8).



Figure 5-9: Checked Box

- 5 Touch the *OK* icon and continue to the *WYSIWYG Preview* screen (Figure 5-10). Use the *Zoom* icon to see a bigger image.



Figure 5-10: Preview

- 6 Check the Job for correct data and touch the *OK* icon.

The printer prints all the products with the new job information.

You can touch the *OK* icon else, you can touch the *Cancel* icon or the *Home* icon to return to the start.

Information about Current Job

The *Home Page* displays the name of the current job (Figure 5-11). Touch the job name on the screen and the WYSIWYG information of the job is displayed.



Figure 5-11: Job Name

The example below displays the job that the 2310, 2320 and 2330 printer is printing. The job is shown in the WYSIWYG display (Figure 5-12). Use the *Zoom* icon to see a bigger image.

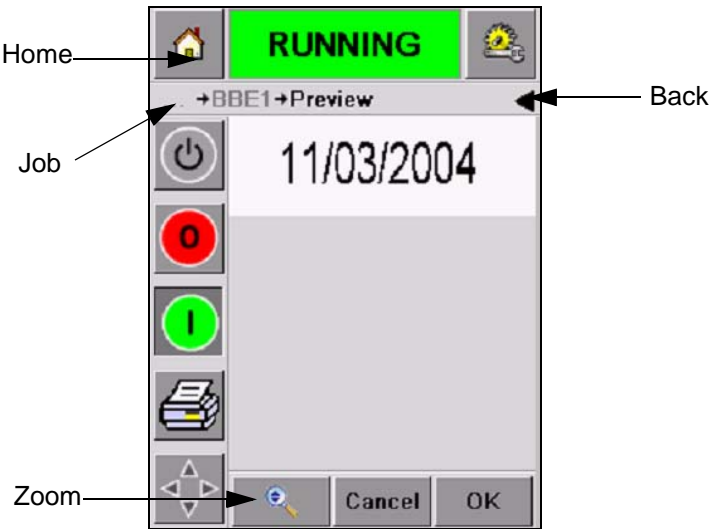


Figure 5-12: Zoom Button

Touch the *Back* or *Home* icon (Figure 5-12) to return to the *Home Page*.

Enable or Disable the Print (On-Line/Off-Line)

To enable the printer, touch the *Run* (green) icon and the printer status bar changes to *Running* status (Figure 5-13).

To disable the printer, touch the *Stop* (red) button (Figure 5-13) and the printer status bar returns to *Offline* status.

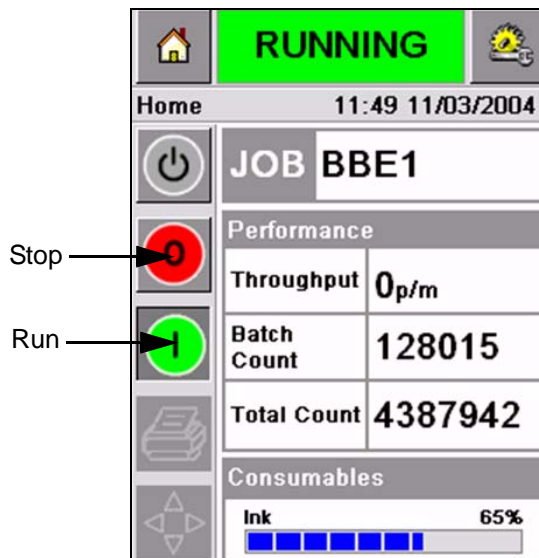


Figure 5-13: Enable and Disable Printing

Note: If the print sensor is activated when the printer is in *Offline* status, the printer will not operate.

Note: If the print sensor is activated when the printer is in *Online* status, the printer starts the print and performs all activities normally.

When the printer is in *Online* or *Offline* status, you can perform the following activities:

- Select a new job
- You can add the ink
- Examine the printer parameters
- Clean the printhead with the buttons **A** and **B** (“Clean the Printhead” on page 4-14).

Print Position Adjustment

To adjust the position of the print with reference to the front edge of the box, do the following tasks:

- 1 Navigate to *Tools > Setup > Printhead* in the *Home Page*. The *Printhead* setup page appears (Figure 5-14).

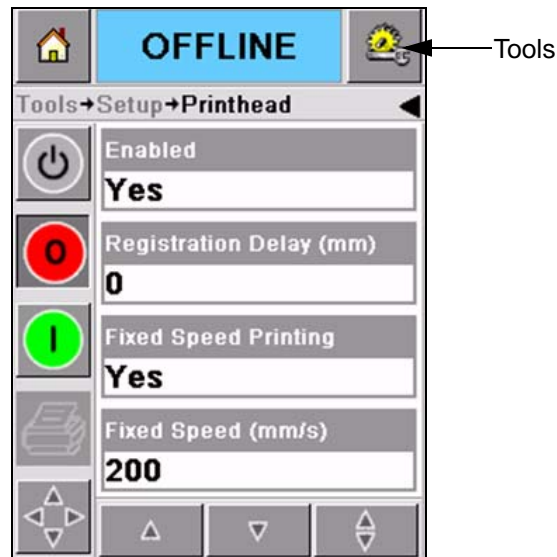




Figure 5-14: Printhead Setup Screen

- 2 Touch the *Registration Delay* icon. Enter the new print position (in millimeters) with the keypad (Figure 5-15 on page 5-12).

Follow any of the below methods to make the adjustments:

- Touch the  and  icons to make small adjustments in the position.
- Touch the data entry pad icon and use the pad to enter a new number (Figure 5-16 on page 5-12).
- Enter the *Min*, *Max* or *Default* values (Figure 5-17 on page 5-13).

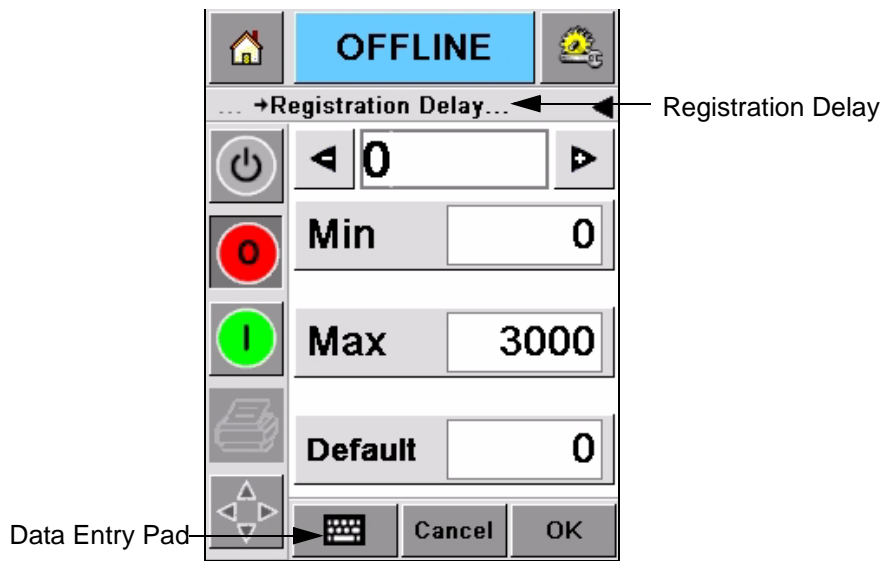


Figure 5-15: Registration Delay



Figure 5-16: Registration Delay - Keypad

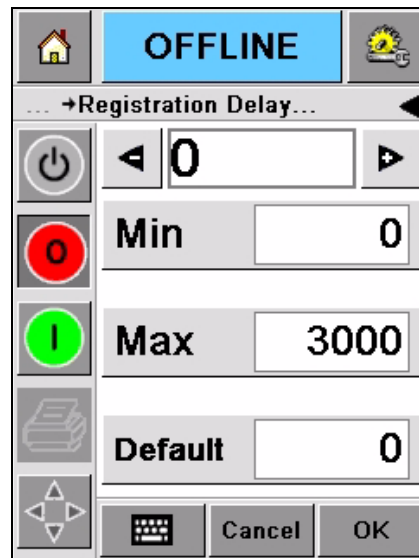


Figure 5-17: Min, Max and Default Values

- 3 Touch the OK icon to set the new position.

Note: Smaller values move the print closer to the front edge of the product. Larger values move the print away from the front edge.

Self Cleaning Frequency of Operation

If a remote print sensor is used, the 2310, 2320 and 2330 printer has the ability to clean the printhead by itself before every box. The filter life increases if the printer cleans the printhead after every tenth box (default setting). However, if the setting is such that the cleaning takes place for more than 10 boxes, it will result in higher filter life.

Note: During the cleaning operations, the ink is returned to the ink reservoir and used again.

If the printer operates in a very dirty environment, the self cleaning cycle must be performed more number of times. This process maintains good print quality and the long life of the printhead.

The printer includes a parameter with the name *Prints per Cleaning Cycle* that you can configure. The parameter helps to set the self cleaning cycle according to the factory environment. The default value is set at 10.

Do the following tasks to enter the *Prints per Cleaning Cycle* value:

- 1 Navigate to *Tools > Setup > Printhead* and scroll below to reach the *Prints per Cleaning Cycle*. Enter the required value (Figure 5-18).

- 2 Touch the *OK* icon followed by the *Home* icon.

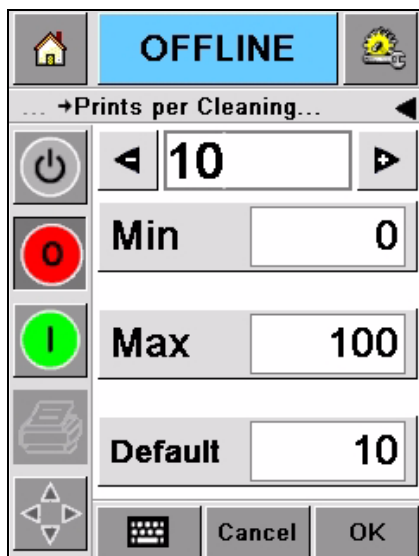


Figure 5-18: Prints per Cleaning Cycle

Warnings and Fault Messages

When a Warning or a Fault condition occurs, the CLARiTY[®] displays the related message at the top of the screen (Figure 5-19 on page 5-14).

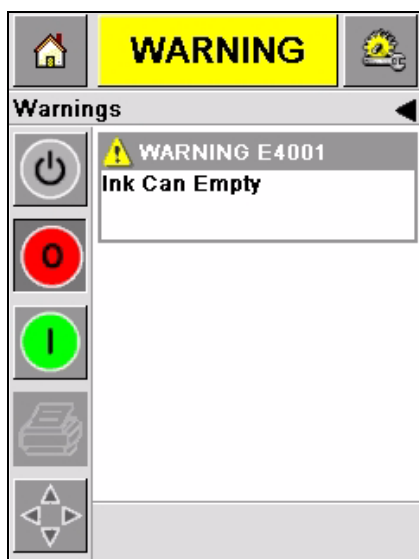


Figure 5-19: Warning Message

Warnings

The CLARiTY® displays all the Warning messages with an amber color in the background (Figure 5-19). When in a Warning condition, the printer continues to operate.

When you touch the Warning message area on CLARiTY®, instructions to clear the message are displayed.

The Figure 5-20 on page 5-15 shows the ink low warning and gives the instructions to clear the Warning sign by replacement of the empty ink canister with a new canister. Follow the instructions displayed on the screen to clear the Warning.

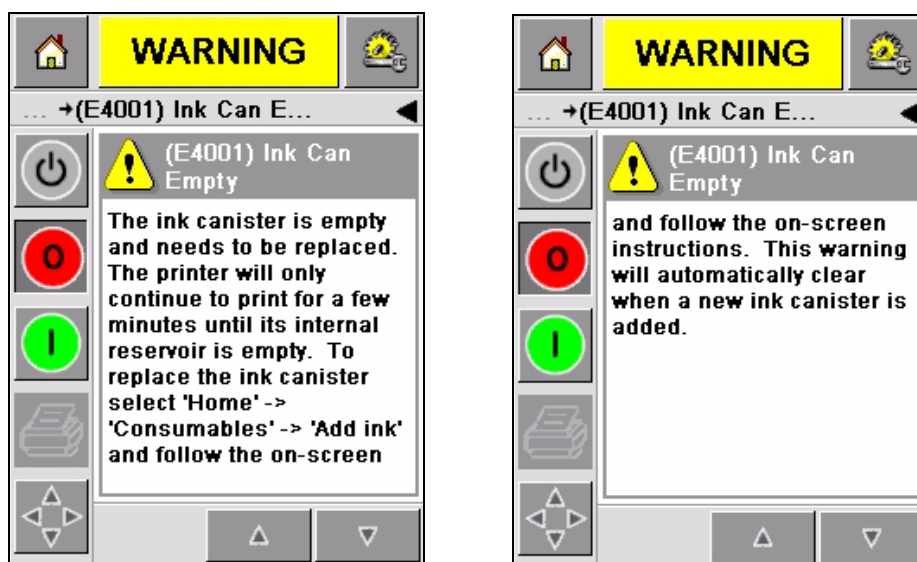


Figure 5-20: Ink Low Warning

Faults

The CLARiTY[®] displays all the Fault messages with a red color in the background (Figure 5-21). During a Fault condition, the printer does not operate until the Fault is cleared. You can see in Figure 5-21 that the ink canister is empty.

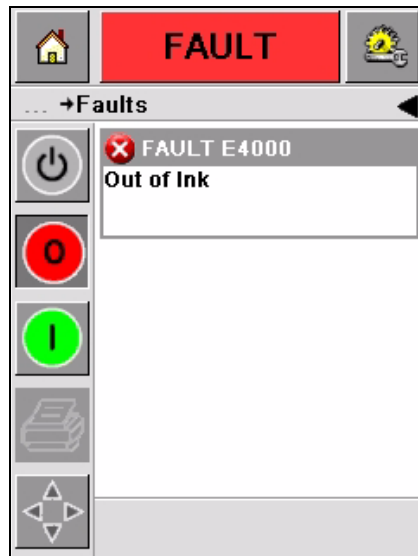


Figure 5-21: Fault

The printer Fault output changes the status of the printer. If you can link the fault status to the production line then, the printer can stop the line. The above interlock helps the customer to make sure that the printing is done on all the products.

Note: The LED below the CLARiTY[®] Operator screen flashes (red) until the fault is cleared and the printer starts printing.

Touch the Fault message area and the CLARiTY[®] screen displays some instructions.

The example in Figure 5-22 on page 5-17 shows that there is no ink in the printer. The instructions on the screen tells you how you can add a new ink canister and clear the Fault on the CLARiTY[®] screen (Figure 5-22 on page 5-17).

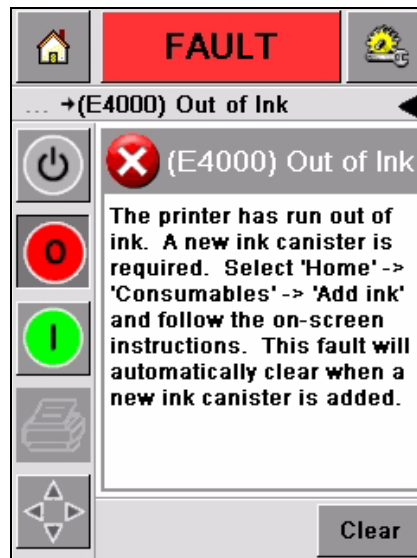


Figure 5-22: Out of Ink Fault

When the Fault message is cleared, then the printer returns to the offline state. The printer is now ready to go online and start printing again.

Set the Correct Time and Date

Do the following tasks to set the correct time and date at the CLARiTY[®] screen:

- 1 Navigate to *Tools > Setup > Control* from the *Home Page*. The *Control Screen* appears (Figure 5-23).

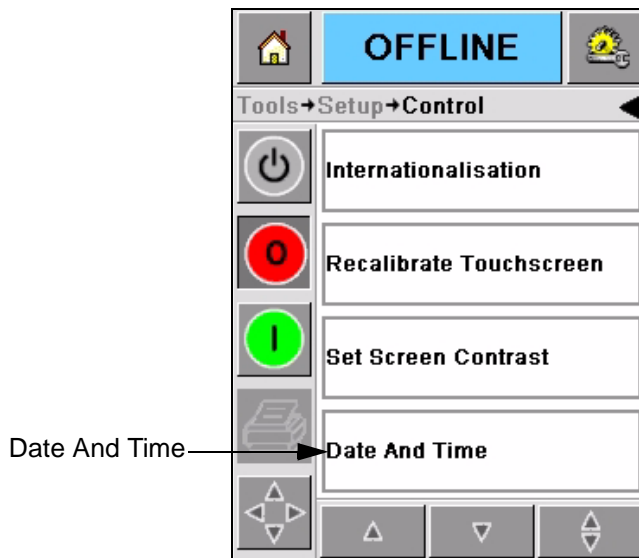


Figure 5-23: Control Screen



- 2 Select the *Date and Time* from the list displayed (Figure 5-23).
- 3 Touch *Date* and the calendar page appears (Figure 5-24 on page 5-19).
- 4 Use the  and  icons to select the current month and year.
- 5 Touch and select the current date from the calendar.
- 6 Touch the *OK* button.



Figure 5-24: Calendar Screen

- 7 Touch the *Time* icon and the time page appears (Figure 5-25).

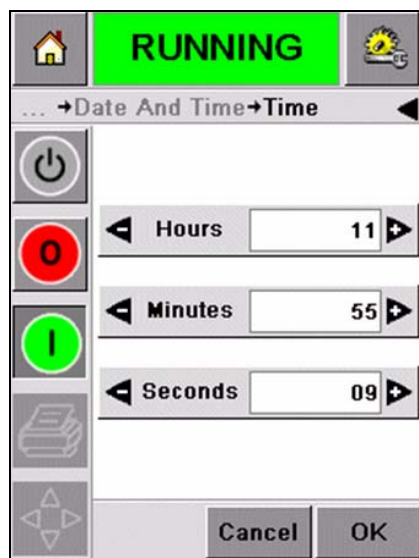




Figure 5-25: Time

- 8 Use the  and  keys to set the *Hours*, *Minutes* and *Seconds*.
- 9 Touch the *OK* button.
- 10 Touch the *Home* icon to return to the *Home Page*.

Select the Correct Language

The CLARiTY[®] has the ability to display all pages in different languages and date codes in the format for that country.

For example: Month Day Year for USA and Day Month Year for UK.

Do the following tasks to select the language:

- 1 Navigate to *Tools > Setup > Control > Internationalisation* and the *Internationalisation* screen appears (Figure 5-26).

The current language is displayed.



Figure 5-26: Internationalisation Screen

- 2 Touch the *Language* icon and select the language you require from the list. The selected language is highlighted (Figure 5-27 on page 5-21).



Figure 5-27: Language Selection

- 3 Touch the *OK* icon.
- 4 Select the *Region/Country* icon to select the region or the country (Figure 5-26 on page 5-20).
- 5 Select the region required (Figure 5-28) and touch the *OK* icon.



Figure 5-28: Region/Country

- 6 Touch the *OK* icon.
- 7 Touch the *Home* icon to return to the *Home Page*.