Videojet 9550

Service Manual

P/N 462470 - 01

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Compliance Information

For Customers in the U.S.A.

Safety: The equipment complies to UL 62368-1. 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. 62368-1.

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:

EMC Directive 2014/30/EU

Essential health and safety requirements relating to electromagnetic compatibility.

IEC 61000-6-2	Generic standards - Immunity of industrial environments.
IEC 61000-6-4	Generic Emissions Standard for Heavy Industrial Environments.
IEC 61000-3-2	Limits for harmonic current emissions (equipment input current up to and including 16A per phase).
IEC 61000-3-3	Limitations of voltage fluctuation and flicker in low voltage supply systems for equipment with rated currents up to and including 16A phase.

Low Voltage Directive 2014/35/EU

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

EN 62368-1 IEC 62368-1	Safety requirements for audio/video, information and communication technology equipment.

Machinery Directive 2006/42/EU

EN 60204-1 IEC 60204-1	Safety of machinery - Electrical equipment of machines.
EN ISO 12100	Safety standard for machinery.

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 LPA, Videojet Technologies Inc. highly recommends you complete a Customer Training Course on the LPA.

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.

Introduction

1

This chapter contains the following topics:

- Equipment description
- About the manual
- Related publications
- Content presentation
- Abbreviations and acronyms
- Chapters in the manual

Equipment Description

The Videojet 9550 is a smarter print and apply labeler that eliminates unscheduled downtime and reduces costs and errors in case coding operations. The labeler is a simple, reliable system with a minimum number of wear parts, and zero manual adjustments. Applying Intelligent Motion^{TM} technology ensures automatic and precise control of the entire system. In addition, Direct Apply provides accurate placement of on-demand labels at high speed without the need for an applicator (top or side applications only), enabling it to never miss a pack even during build-back.

Videojet 9550 maximizes uptime, increase productivity and remove the risk of mislabelled packages by using the most intelligent and user friendly labelling system.

About the Manual

The Service Manual is intended for the use of technicians servicing the LPA. The Service Manual contains the configuration, maintenance, and troubleshooting procedures.

Related Publications

The following manuals are available for reference:

Videojet 9550 Operator Manual, Part Number: 462469.

300T Tamp Applicator Addendum, Part Number: 462475-01.

Rear Corner Wrap Applicator Addendum, Part Number: 462571-01.

Front of Pack Applicator Addendum, Part Number: 462554-01.

Language Codes

When you order this manual, make sure to add the 2-digit language code at the end of the part number. For example, the English UK version of the service manual is part number 462470-21. 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	*	
13	Thai	*	
15	Norwegian	*	

Table 1-1: List of Language Codes

Code	Language	Availability (see note)	
16	Finnish	*	
17	Swedish	*	
18	Danish	*	
19	Greek	*	
20	Hebrew	*	
21	English (UK)	*	+
23	Polish	*	
24	Turkish	*	
25	Czech	*	
26	Hungarian	*	
33	Vietnamese	*	
34	Bulgarian	*	
36	Chinese (Traditional)	*	
55	Romanian	*	
57	Serbian	*	

Table 1-1: List of Language Codes (Continued)

Content Presentation

This Service Manual contains different types of information like safety guidelines, additional notes, CLARiTY configuration manager terminologies and so on. To help you identify the different types of information, different writing styles are used in this manual.

Positional References

Positions and directions like left, right, front, rear, to the right and to the left are with respect to the CLARiTY display when you see it from the front.

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

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 authorized.*

Abbreviations and Acronyms

Abbreviation	Expansion
AC	Alternating Current
I/O	Input/Output
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LPA	Print and Apply Labeler
POE	Power Over Ethernet
UI	User Interface
USB	Universal Serial Bus
WYSIWYG	What You See Is What You Get

Table 1-2: Abbreviations and Acronyms

Chapters in the Manual

This manual is divided into thirteen 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	Describes the main parts of the LPA.
4.	Installation	Contains the information about installation of the main components of LPA.
5.	CLARiTY Operating System	Contains the information on CLARiTY configuration manager.
6.	Maintenance and Troubleshooting	Contains the information on replacement instructions, service, maintenance, error messages, its possible causes and the remedies.
7.	IPL	Contains the illustrated parts list of orderable parts.
8.	Leader Follower Setup	Contains information about Leader/Follower setup.
9.	Appendix A	Contains information about technical drawings, technical and system specifications, and external inputs and outputs.
10.	Appendix B	Contains the lists of all the configurable parameters of LPA.
11.	Appendix C	Contains informations about Mains board test points.
12.	Appendix D	Contains the theory of printing.
13.	Appendix E	Contains information about availability.

Table 1-3: List of Chapters

Safety

2

This chapter contains the following topics:

- Introduction
- Equipment Safety Guidelines
- Print Ribbon Safety Guidelines
- Placement of Equipment
- Other Important Guidelines

Warning

PERSONAL INJURY. Observe all safety and warning labels on the device for the safe operation of the system.

Warning

PERSONAL INJURY. Follow the installation and operating instructions at all times. Only trained personnel should carry out maintenance or repair. Adjustments should only be made as per instructions and training given. Use of this equipment for any other purposes may lead to serious personal injury.

Introduction

The policy of Videojet Technologies Inc. is to manufacture coding and labeling systems 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 equipment safely.

Equipment Safety Guidelines

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

Warning

PERSONAL INJURY. Only trained service or maintenance personnel should perform the installation or replacement procedures. Qualified personnel are those who have successfully completed the training courses, have sufficient experience with this equipment, and are aware of the potential hazards to which they will be exposed.

Warning

PERSONAL INJURY. The LPA should be operated by an authorized personnel who can use the machine independently and without causing damage to the equipment or a personal injury. The operating personnel should be trained and informed regularly about safety and environmental hazards.

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. The mains plug is the mains disconnect and must be accessible at all times.

Warning

PERSONAL INJURY. Before beginning any maintenance work or working close to the tamp application module, ensure that the equipment is switched off and the air pressure is exhausted.

Warning

PERSONAL INJURY. The LPA has exposed rotating parts. Keep hands, long hair, ties, loose clothing and so on away from the machine at all times, when it is switched on. Do not wear jewelry, e.g. ear or finger rings, while working with the equipment.

Caution

EQUIPMENT DAMAGE. Operate the LPA in an area where the environmental conditions outlined in Appendix A, “Specifications” of this manual are met. The LPA should be installed and operated on a stable, solid base.

Caution

EQUIPMENT DAMAGE. The LPA should not be modified. Only add accessories that are approved for the specific use by your supplier. Ensure that no fluids enter the LPA unit.

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. Ensure that all external energy sources, mains power leads 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 equipment covers.

Warning

PERSONAL INJURY. Ensure that any cables from the equipment and compressed air hoses (if applicable) are secured to avoid chance of movement into walkways and becoming a trip hazard. Route or protect all cables to prevent damage.

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.

Caution

EQUIPMENT DAMAGE. Do not unplug any connector on the equipment when the mains power is on (except USB and ethernet cables).

Caution

EQUIPMENT DAMAGE. Operate the LPA within the voltage range specified on the rating label affixed to the unit. This information is also repeated in Appendix A, “Specifications” of this manual.

Caution

EQUIPMENT DAMAGE. The LPA must be connected to a power socket fitted with an earth connection that complies with applicable local codes. Devices connected to the interfaces at the LPA must fulfil SELV (Safety Extra Low Voltage) circuit requirements according to IEC 62368-01.

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 equipment. If any part of these labels become damaged, worn or removed they must be immediately replaced.

Grounding and Bonding

Caution

EQUIPMENT DAMAGE. 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.

Printhead

Caution

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

Caution

EQUIPMENT DAMAGE. The printhead may become hot during normal operation. Observe necessary precautions before attempting to touch the printhead.

Warning

PERSONAL INJURY. Do not place your fingers under the printhead when the equipment is operating.

Print Ribbon Safety Guidelines

Caution

EQUIPMENT DAMAGE. Print ribbons should be stored at a temperature range of 5 ºC to 40 ºC, and at a non-condensing humidity range of 20% to 85%.

Caution

EQUIPMENT DAMAGE. The use of incompatible ribbon can seriously damage your equipment and such damage will not be covered by your equipment warranty. Use only the ribbon approved by your dealer.

Placement of the Equipment

Warning

PERSONAL INJURY. Do not place the equipment 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 United States, you must ensure compliance with all local regulations regarding the equipment placement in potentially hazardous locations.

Using Accessories

To maintain regulatory approval for the equipment, use only Videojet approved accessories when attaching any device to the equipment.

Other Important Guidelines

Warning

PERSONAL INJURY. Before disconnecting any air component ensure that the equipment is switched off and the air pressure is exhausted.

Caution

EQUIPMENT DAMAGE. Do not run the equipment with the air pressure supply above the recommended level.

Warning

PERSONAL INJURY. In an emergency, push the E-Stop button to stop the LPA. For information, refer to “Emergency Stop (E-Stop)” on page 3-18.

Warning

PERSONAL INJURY. The CLARiTY display should be mounted in a convenient location to eliminate the potential entanglement with the exposed rotating parts.

Cleaning Safety Guidelines

Caution

EQUIPMENT DAMAGE. Do not apply excessive force to the printhead while cleaning, as this can cause damage and can void the warranty.

Caution

EQUIPMENT DAMAGE. Use approved dealer cleaning supplies for cleaning. Do not use high pressure air or cotton.

Equipment Handling Safety Guidelines

Warning

PERSONAL INJURY. Follow manual handling guidelines when moving equipment and loading labels.

Caution

EQUIPMENT DAMAGE. Take precautions to prevent the LPA from tipping over when anchoring or moving the equipment.

Warning

PERSONAL INJURY. Only accessories provided by Videojet Technologies Inc. are approved for the mounting of the LPA. Follow the instructions provided for the mounting of the LPA onto the stands to ensure safe operation.

Main Parts

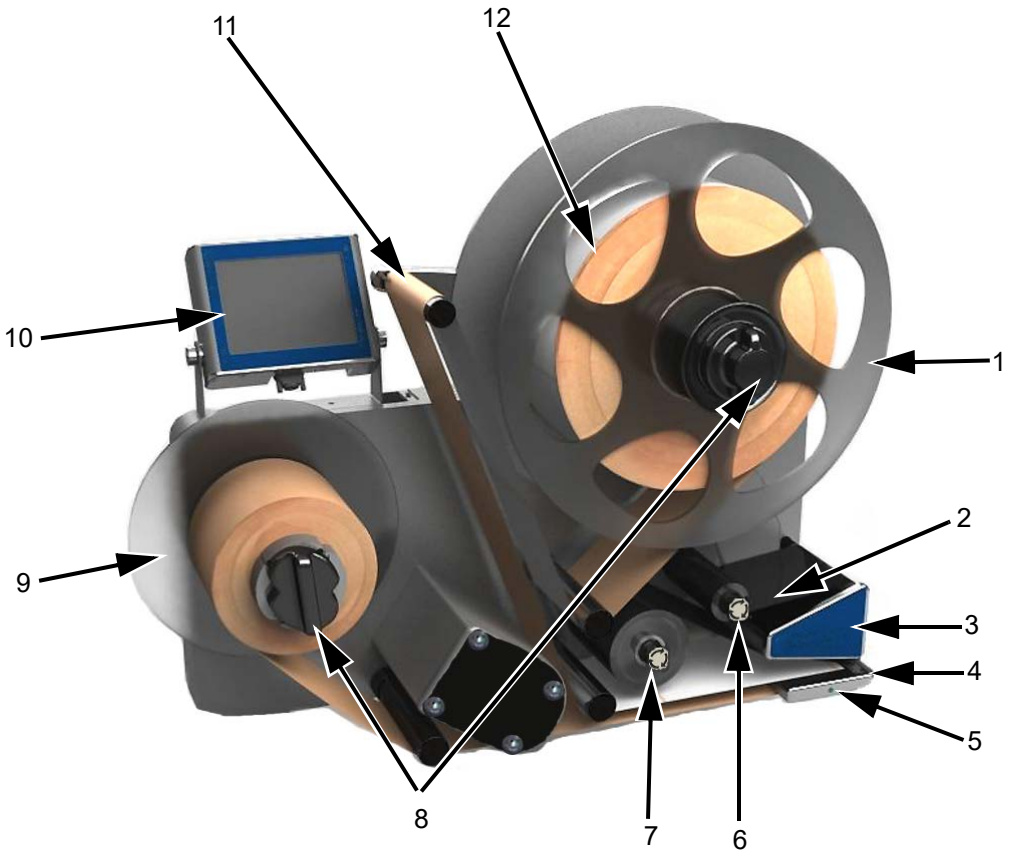
3

This chapter contains the following topics:

- System Overview
- CLARiTY Display
- Labeler
- Printhead

System Overview

Figure 3-1 shows the system overview of the Labeler on a production line.



1. Label Supply Disc
2. Ribbon
3. Printhead
4. Peel Tip
5. LED
6. Ribbon Waste Mandrel
7. Ribbon Supply Mandrel
8. Mandrel Locks
9. Label Waste Mandrel
10. CLARiTY Display
11. Dancer Arm
12. Label Stock

Figure 3-1: Videojet 9550 LPA (Left Hand Machine)

The main parts of the LPA are:

- CLARiTY Display
- Labeler
- Printhead

For more information on other integral parts of the LPA, refer to “Main Parts” chapter of Operator Manual.

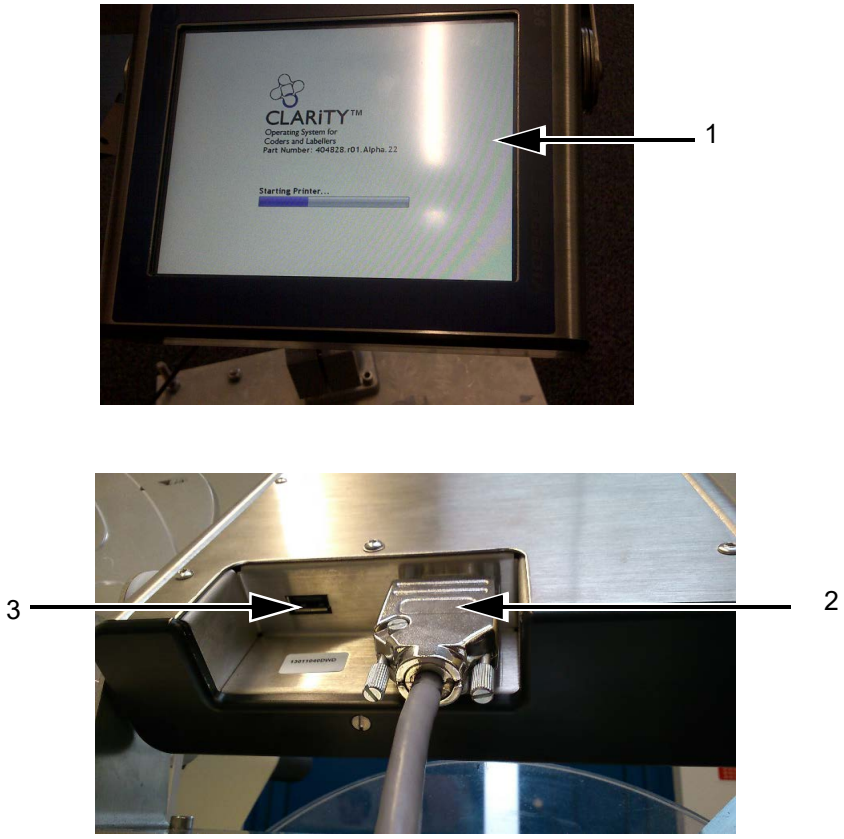
The Videojet 9550 LPA is available with 115 mm label width with high speed 107 mm thermal transfer printhead. The LPA is available in either left-handed or right-handed versions to suit different configurations of the packaging line and can be oriented horizontally or vertically.

CLARITY Display

This display is a touch screen user interface connected to the main controller board via a communication/power cable (see Figure 3-2).

The display has an LCD 6.5" display.

For more details on user interface, refer to “CLARiTY Operating System” on page 5-1.



1. Touch UI
2. Interconnecting Cable (Communications Cable)
3. USB

Figure 3-2: Display Connections

Caution

EQUIPMENT DAMAGE. The interconnecting cable must be connected in the correct orientation to avoid damage to the LPA main board.

Labeler

The labeler consists of the following main parts:

Main Controller Board for the LPA

The main controller board is located at the back of the labeler. The connector panel is directly mounted to the main controller board.

Figure 3-3: Main Controller Board

Caution

EQUIPMENT DAMAGE. Care must be taken during servicing and handling to ensure that the connectors are not subjected to mechanical stress. This may damage the main controller board.

Gap Sensor and Print Roller Sensor PCB

The gap sensor and print roller sensor PCB is located near the peel tip assembly.

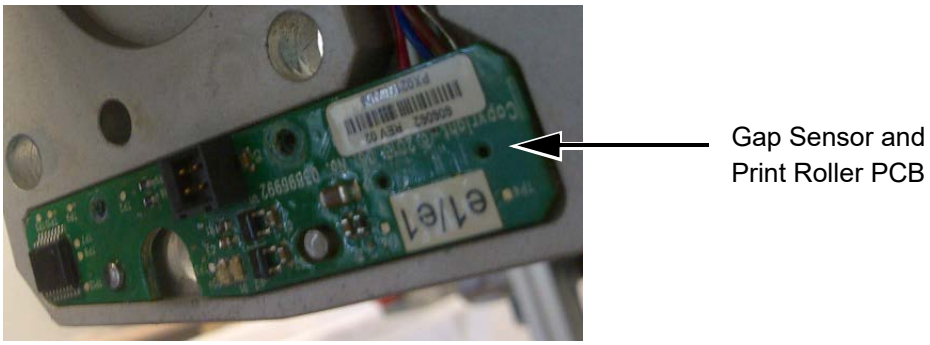
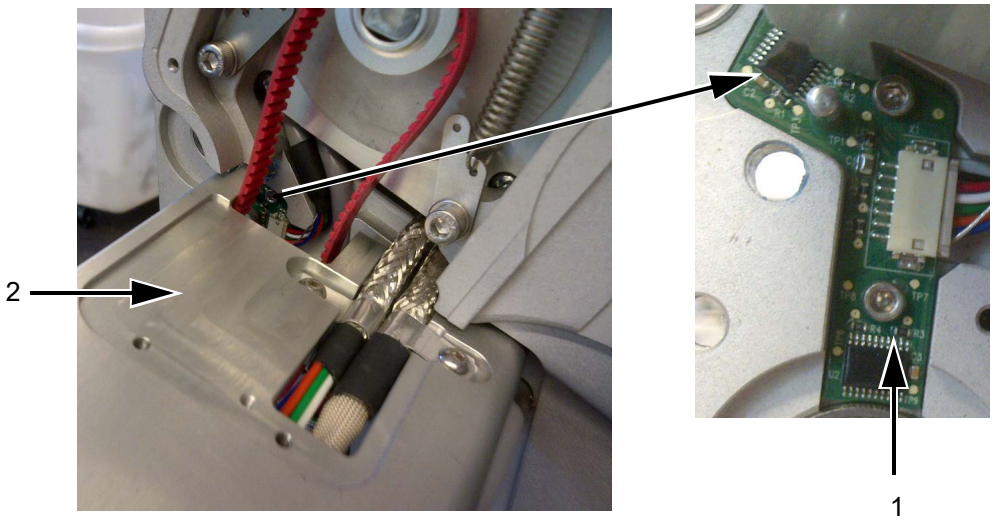


Figure 3-4: Gap Sensor and Print Roller PCB

Ribbon and Printhead Sensor PCB

The ribbon and printhead sensor PCB is located near printhead assembly.

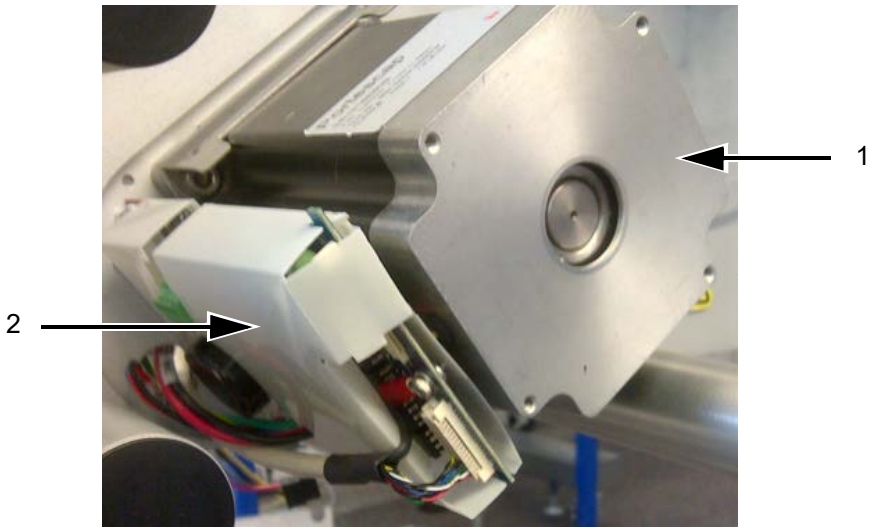


1. Ribbon and Printhead Sensor PCB
2. Motor Drive Cover Plate Removed

Figure 3-5: Ribbon and Printhead Sensor PCB

Label Drive Motor PCB

The label drive motor PCB is located near label drive motor.



1. Label Drive Motor
2. Label Drive Motor PCB with Protective Cover

Figure 3-6: Label Drive Motor PCB

CLARiTY Display PCB

The CLARiTY display PCB is located behind the LCD.

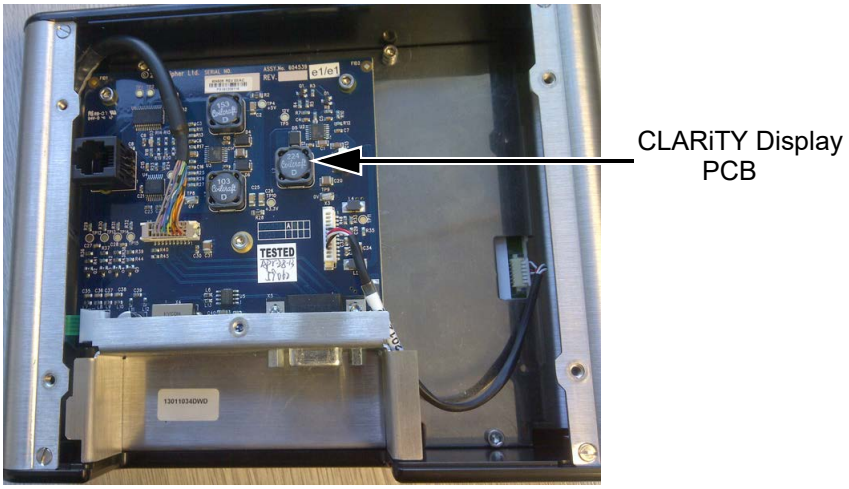
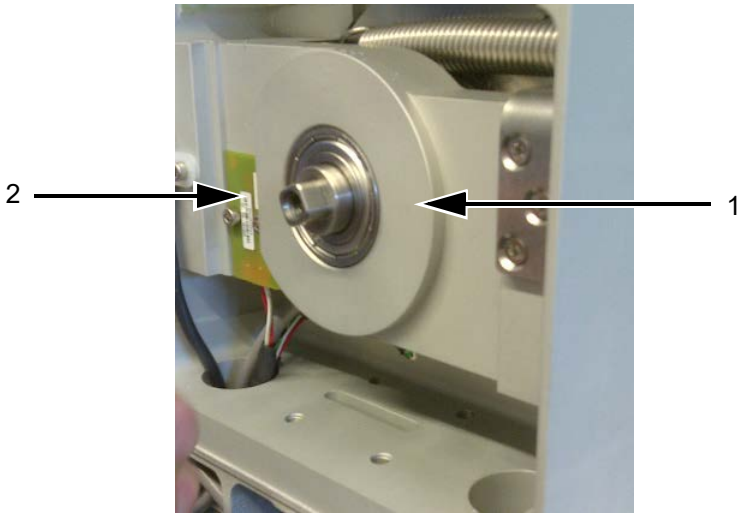


Figure 3-7: CLARiTY Display PCB

Supply Reel Hall Sensor PCB

The supply reel hall sensor PCB is located beside the pulley in the brake belt assembly.

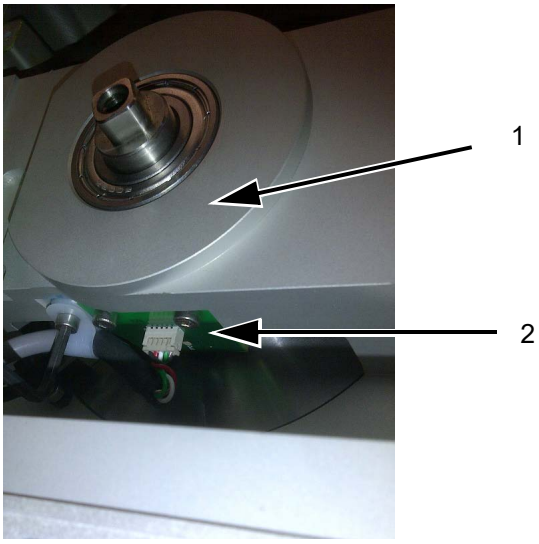


1. Pulley Removed
2. Supply Reel Hall Sensor PCB

Figure 3-8: Supply Reel Hall Sensor PCB

Dancer Arm Sensor PCB

The dancer arm sensor PCB is located below the pulley in the brake belt assembly.

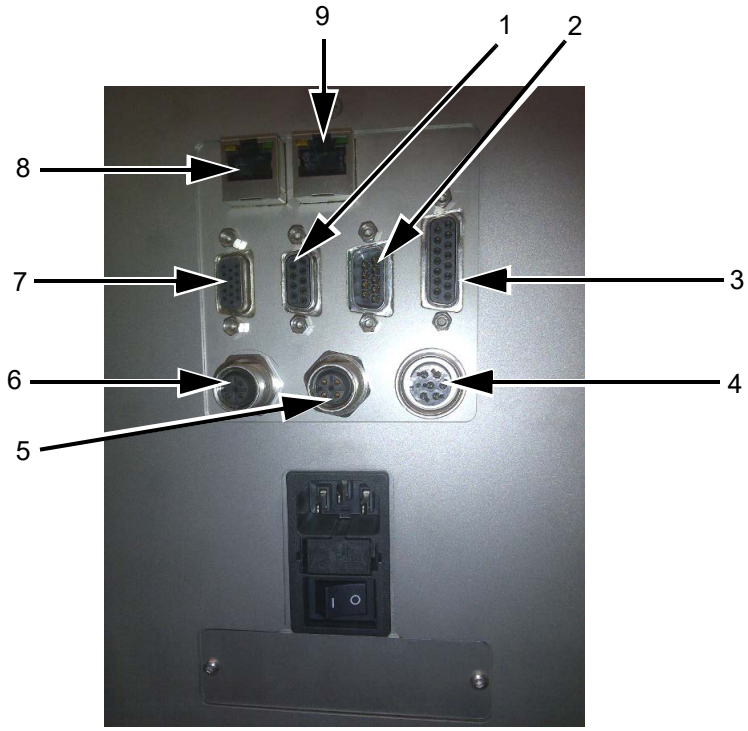


1. Pulley Removed
2. Dancer Arm Sensor PCB

Figure 3-9: Dancer Arm Sensor PCB

Connectors

The main controller board provides the following connections.



1. Encoder
2. Serial Port (IOIOI)
3. Input / Output (I/O)
4. Beacon
5. Product Detect 2
6. Product Detect 1
7. CLARiTY Display
8. Ethernet
9. Ethernet POE

Figure 3-10: Connector

Ports	Connectors	Description
Encoder		Port for connecting a shaft encoder to the controller to tell the software how fast the substrate is traveling.
Serial Port (IOIOI)		RS-232 Serial Port for connecting to PC, PLC or other capable device.

Table 3-1: Controller Connections

Ports	Connectors	Description
Input/Output (I/O)		Port for connecting external devices to the LPA's hardware inputs and outputs.
Beacon		Port for connecting external beacon. For more details, refer to the IPL chapter of Service Manual.
Product Detect 2		Second product detector connector is used for barcode scanning.
Product Detect 1		The product detector connector detects the product and informs the LPA when to print and apply the label on the product.
CLARiTY Display		Port for Communicating with the CLARiTY Display and provides power to it.
Ethernet		RJ-45 port for connecting the printer to a TCP/IP network
Ethernet POE		RJ-45 port for connecting the printer to a TCP/IP network device that requires Power Over Ethernet (POE) support.

Table 3-1: Controller Connections (Continued)

Note: *When an applicator is purchased then additional connector(s) are provided as required.*

Pin Description for Connectors

Encoder

Figure 3-11: Encoder Pin

Encoder	Cable Pin	Wire Color	Function
1	1	Red	+24 V ENC
2	2	Black	0 V QENC
3	3	White	ENC AX
4	4	Green	ENC BX
5	5	-	-
6	6	-	-
-	7	Link to Pin 8	Enc Present
-	8	Link to Pin 7	-
-	9	-	-
7	SHELL	BRAID SHIELD	CHASSIS

Table 3-2: Encoder Pin

Input / Output

Figure 3-12: Input/Output

Cable Pin (15 pos) DSUB	Wire Color (Alpha-Wire)	Function
1	Black	LINE SEL BCD0
2	White	LINE SEL BCD1
3	Red	LINE SEL BCD2
4	Green	LINE SEL BCD3 / LINE INTERLOCK
5	Orange	LINE STROBE
6	Blue	IGNORE PACK
7	White/Black	0 V IO
8	Red/Black	+24 V APPL
9	Green/Black	LINE INT'LK COM
10	Orange/Black	LINE INT'LK N/C
11	Blue/Black	LINE INT'LK N/O
12	Black/White	REJECT OUT
13	Red/White	READY / BUSY OUT
14	Green/White	0 V
15	DRAIN WIRE	0 V

Table 3-3: Input/Output

Beacon

Figure 3-13: Beacon Pin

Cable Pin	Wire Color	Function
1	Red	24 V, 50 mA, PNP
2	Amber	24 V, 50 mA, PNP
3	Green	24 V, 50 mA, PNP
4	Yellow	Not connected
5	Black	Not connected
6	-	0 V

Table 3-4: Beacon Connection

Power Cable (RS232)

Figure 3-14: RS232 Connection

Scanner	Cable Pin	Wire Color	Function
1	5	Brown	GND
2	9	Blue	+12 V DC
3	-	-	-

Table 3-5: RS232 Connection

Scanner	Cable Pin	Wire Color	Function
4	-	-	-
5	-	-	-
6	2	Yellow	TXD (RS-232)
7	-	-	-
8	-	-	-
9	5	Red	SENS GND
10	4	Violet	SENSOR 1
11	-	-	-
12	3	Red/Blue	RXD (RS-232)
-	SHELL	BRAID SHIELD	CHASSIS

Table 3-5: RS232 Connection (Continued)

Product Detect

Figure 3-15: Product Detect Pin

Sensor	Cable Pin	Wire Color	Function
1	1	Red	+24 V
2	-	White	-
3	3	Black	0 V
4	4	Green	PNP OUTPUT
5	-	White	-
6	-	Blue	-
7	SHELL	DRAIN WIRE	CHASSIS

Table 3-6: Product Detect Connection

Ribbon Web

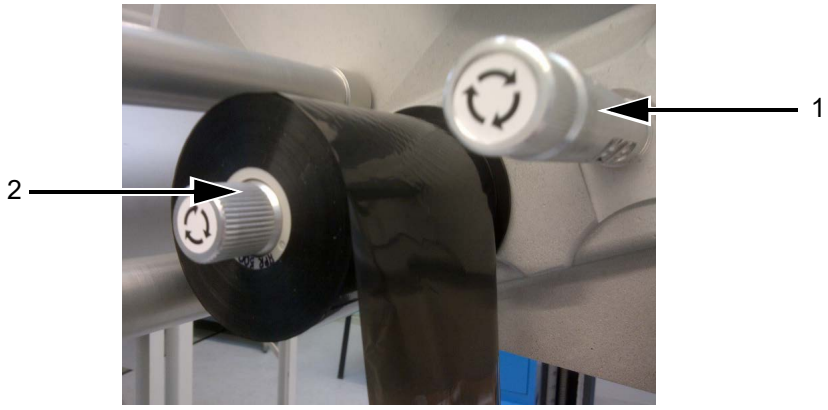
Note: *In Direct Thermal applications, the ribbon web is not required.*

The ribbon is routed from the ribbon supply mandrel, through the printhead to the ribbon waste mandrel. This forms the ribbon web.

Ribbon Supply Mandrel (Black disc)

The ribbon supply mandrel (with black disc) holds the ribbon, that is pre-coated with ink. During printing, the ribbon is supplied to the thermal printhead where the ink is applied onto the labels.

Note*: The ribbon supply mandrel for 160mm version has a pullout shaft and does not include the black disc.*



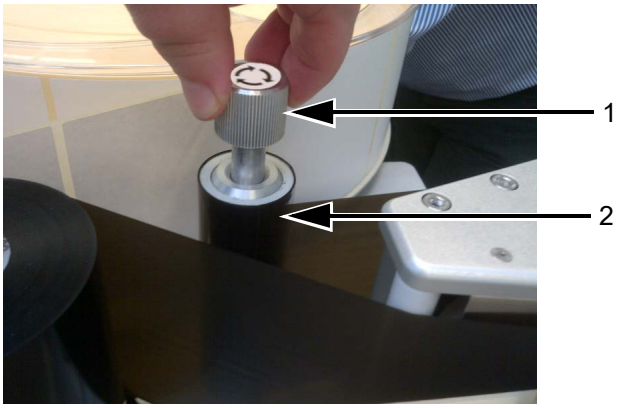
1. Ribbon Waste Mandrel
2. Ribbon Supply Mandrel

Figure 3-16: Ribbon Mandrels

Ribbon Waste Mandrel

The ribbon waste mandrel collects the waste ribbon that remains after the label has been printed.

The waste ribbon can be easily removed by using the pullout shaft in the ribbon waste mandrel which allows the core to be easily removed.



1. Pullout Shaft
2. Ribbon Waste Mandrel

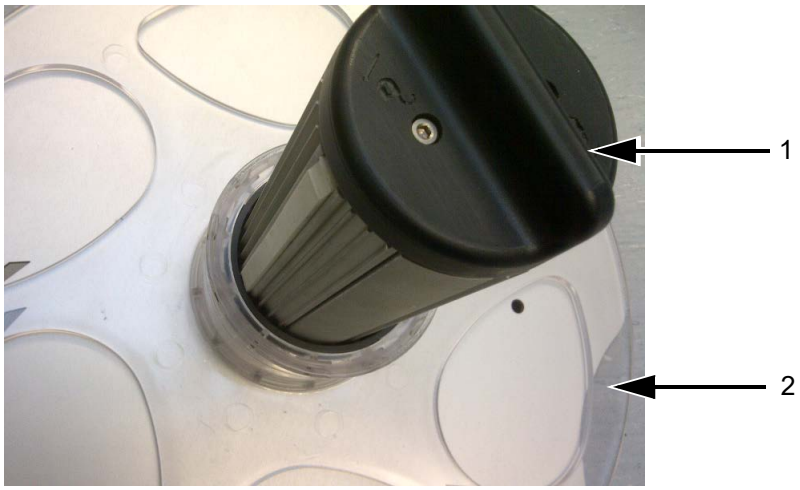
Figure 3-17: Ribbon Mandrels

Label Web

The labels are routed from the label supply mandrel, through the printhead assembly to the label waste mandrel. This forms the label web.

Label Supply Mandrel

The label supply disc holds the label roll in place on the mandrel. The mandrel lock is used to retain the roll in place. The mandrel lock indicates the locking and unlocking directions.

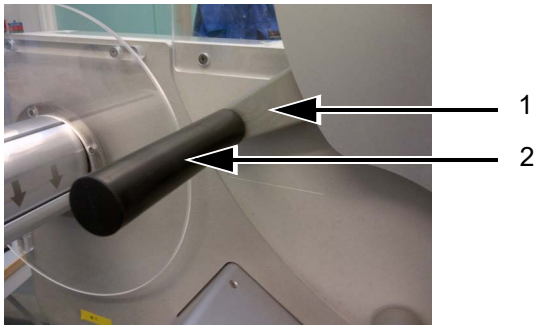


1. Mandrel Lock
2. Label Supply Disc

Figure 3-18: Label Supply Mandrel

Dancer Arm

The dancer arm is designed to absorb the change in tension of the label web, during its movement through the LPA.



1. Dancer Arm
2. Dancer Arm Roller

Figure 3-19: Dancer Arm

Idler rollers

The idler rollers are free-spinning rollers that support and guide the label web through the LPA. The position of the rollers is set for optimum feeding of the label web.

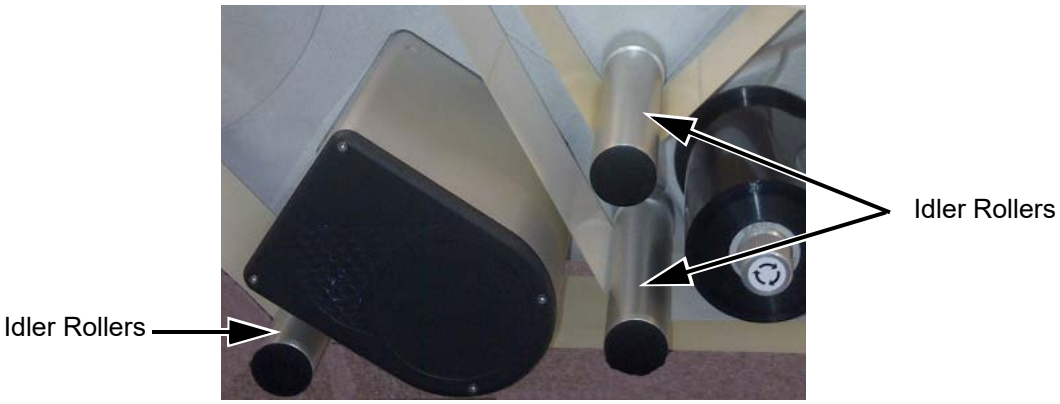


Figure 3-20: Idler Rollers

Label Waste Mandrel

The label waste mandrel winds the empty label backing (waste) that remains after the label has been printed and applied onto the product. The mandrel lock is used to hold and retain the roll in place and allows easy removal of the waste roll. The mandrel lock indicates the locking and unlocking directions.

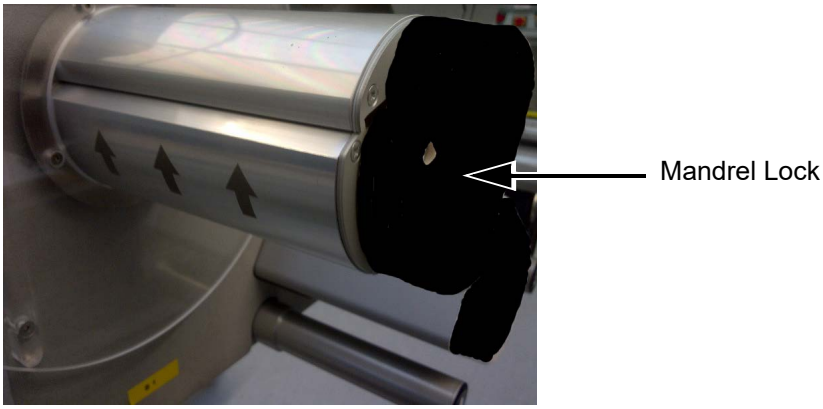


Figure 3-21: Label Waste Mandrel

Emergency Stop (E-Stop)

Warning

PERSONAL INJURY. The LPA has exposed rotating parts. Keep hands, long hair, ties, loose clothing and so on away from the machine at all times, when it is switched on. Do not wear jewelry, e.g. ear or finger rings, while working with the equipment.

In case of emergency, the LPA can be stopped immediately by pressing the E-Stop button. When the E-Stop button is pressed, power to the label drive is removed and the LPA is stopped. A fault message is displayed.

The E-Stop button is fitted on the side wall of the machine (see Figure 3-22).

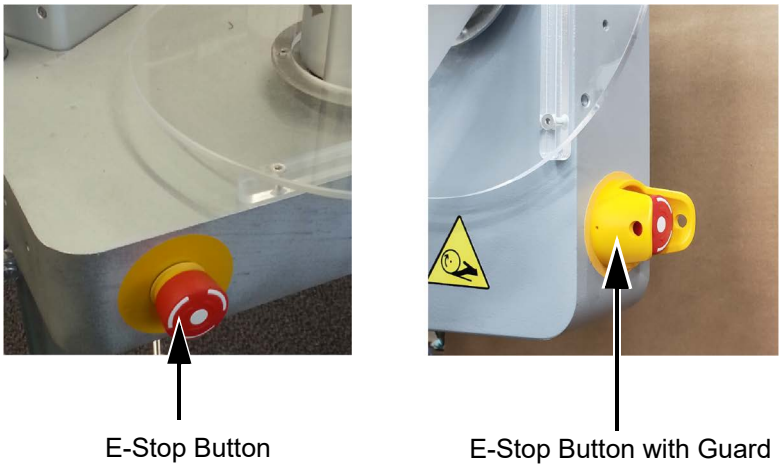


Figure 3-22: Emergency Stop Button Position

Figure 3-23: Emergency Stop Button Position (Engaged)

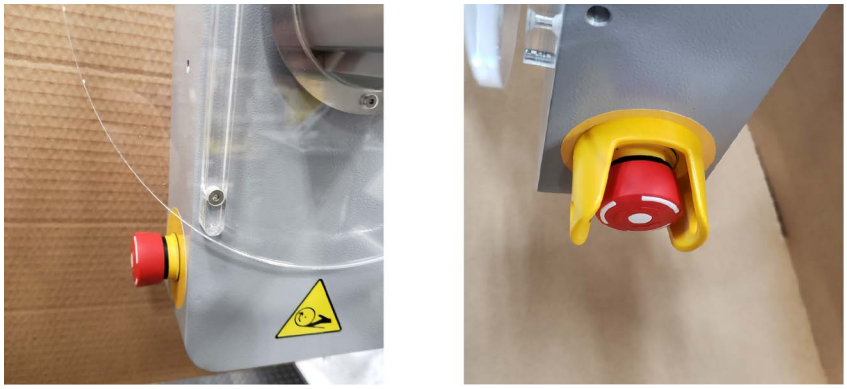


Figure 3-24: Emergency Stop Button Position (Disengaged)

The E-Stop is disengaged by turning in the direction indicated by the arrows and releasing (do not pull). However, the LPA will remain in fault mode until the fault message is cleared.

Note: *The E-Stop should not be used to routinely stop the machine.*

Note: *The E-Stop is not a lifting point.*

Note: *The E-Stop for the LPA will not stop the conveyor. It is only for the LPA operation.*

The warning label for moving parts is attached on the face of the baseplate of the machine.

Figure 3-25: Moving Parts Warning Label

Warning

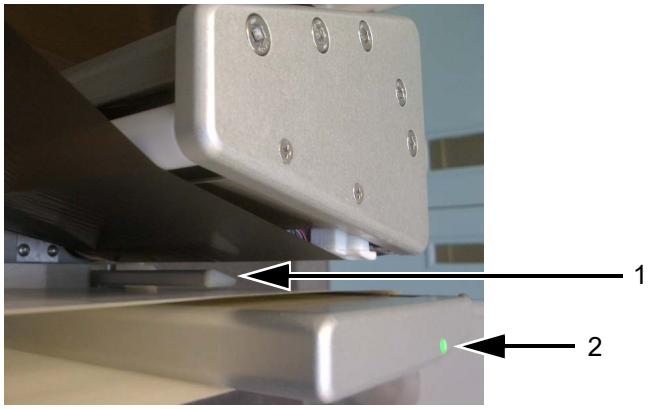
PERSONAL INJURY. Do not, under any circumstances, remove or obstruct any warning, caution, or instruction labels present on the equipment. If any part of these labels become damaged, worn or removed they must be immediately replaced.

Sensors

The LPA is equipped with the following sensors to ensure correct operation of the system without manual intervention.

Label Gap Sensor

The label gap sensor detects the gap between each label. The LED (item 2, Figure 3-26) displays the status of the sensor. Refer to “LED Indicator Description” on page 6-20.



1. Label Gap Sensor
2. LED

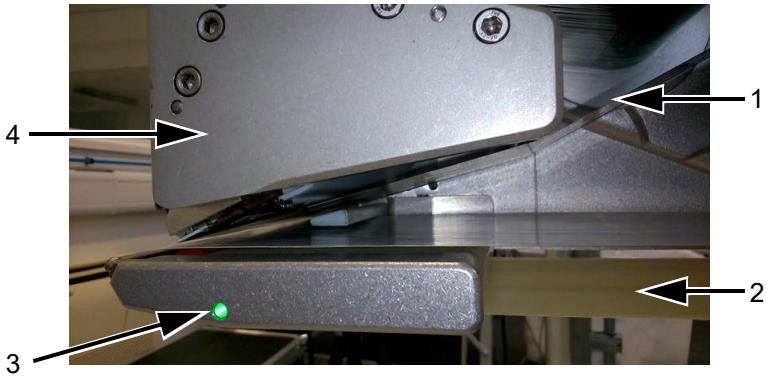
Figure 3-26: Label Gap Sensor

Printhead

The printhead is equipped with a series of very small, densely clustered heating elements (dots) mounted on a ceramic substrate. When electrical current is supplied to the dots, they get heated rapidly.

Thermal Transfer Print melts the ink on the ribbon. The ink deposits on the label, and quickly dries after the label leaves the printhead.

In Direct Thermal, the color change of the label is directly caused by the heating elements without ribbon.



1. Ribbon
2. Label
3. LED
4. Printhead

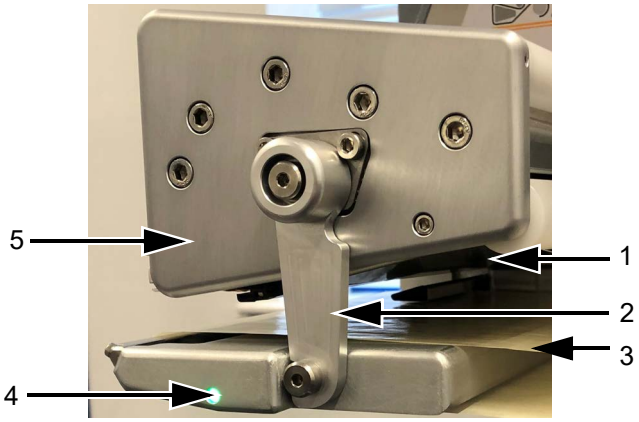
Figure 3-27: Printhead

For the printing theories, refer to Appendix D, “Theory Of Printing”.

Latch

The 160mm LPA has a latch connecting the printhead and the print roller support plate.

For optimum print performance, the latch needs to be closed during printing and opened to allow label and ribbon changes.



1. Ribbon
2. Latch
3. Label
4. LED
5. Printhead

Figure 3-28: Printhead - Latch

Installation

4

This chapter contains the following topics:

- Tools and Supplies
- Unpacking and inspecting the labeler
- Selection of a suitable installation position
- Installing the label applicator

Caution

EQUIPMENT DAMAGE. Only Videojet trained personnel must carry out the installation and maintenance work. Any such work undertaken by unauthorized personnel can damage the LPA and invalidate the warranty.

Warning

PERSONAL INJURY. Make sure that the mains electrical supply is within the range indicated by the label adjacent to the mains inlet of the labeler. If the voltage ratings differ, do not use the labeler until you consult your Videojet supplier.

Use only the mains power cable supplied with the labeler. This cable must terminate in an approved, three-pole, mains plug which has a protective ground conductor.

Keep electrical power cables, sockets and plugs clean and dry at all times.

Warning

PERSONAL INJURY. The labeler must be connected to an AC power supply, which has a protective ground conductor in accordance with IEC requirements or applicable local regulations. Any interruption of the protective ground conductor or disconnection to the protective ground terminal may render the apparatus dangerous.

Warning

PERSONAL INJURY. Lethal voltages are present within this equipment when it is connected to the mains electrical supply. Observe all statutory electrical safety codes and practices. Unless it is necessary to run the labeler, disconnect the labeler from the mains electrical supply before removing the covers, or attempting any service or repair activity. The failure to follow this warning can cause death or personal injury.

Warning

PERSONAL INJURY.The LPA and stand components are heavy. Exercise proper lifting precautions when removing components from their packaging, and during assembly.

Caution

EQUIPMENT DAMAGE. Take care when manipulating Videojet 9550 and stand components. Tighten all fittings securely.

Tools and Supplies

Tools

- Allen Wrenches
- Adjustable wrench
- Level
- Ruler

Supplies

- Ribbon Roll
- Label Roll
- Gloves
- Tissue

Unpacking and Inspecting the Labeler

Open the shipping box. Inspect the parts, if any part is missing or damaged, 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.

If the printer has shifted inside its packaging, or unit was received without two pallet straps in place take photos and notify your Videojet representative.

Refer to Chapter 7, “Illustrated Parts List” for part numbers.

Selection of a Suitable Installation Position

The LPA is available to print and apply labels in Right Hand or Left Hand directions and can be mounted vertically or horizontally. Choose a suitable installation position based on the mounting requirement of the customer.

When choosing a suitable installation position for the labeler on the line, make sure that it is possible to replace the labels and ribbons easily, and the emergency stop and mains plug are easily accessible.

Warning

PERSONAL INJURY. Risk of injury to hands from moving machine parts. When selecting the installation position, make sure that the labels and ribbons can be replaced at any time without any danger.

Caution

EQUIPMENT DAMAGE. Select an installation position to avoid vibrations on the printhead, electrostatic charge and soiling caused by lacquer, adhesive or other similar products used in the production process.

Warning

PERSONAL INJURY. The mains plug must remain accessible at all times, because it serves as the main power disconnect.

Positioning of Labeler/Peel Tip

Identify a suitable position for the LPA according to the required product direction and the type of applicator module used. Refer to the appropriate Applicator Addendum for details on the applicators.

Note: *Direct apply applicator is fitted on the standard LPA unit.*

Installing the Label Applicator

The following procedure explains the installation of the Videojet 9550 Label Applicator on a production line.

Assembling the Stand

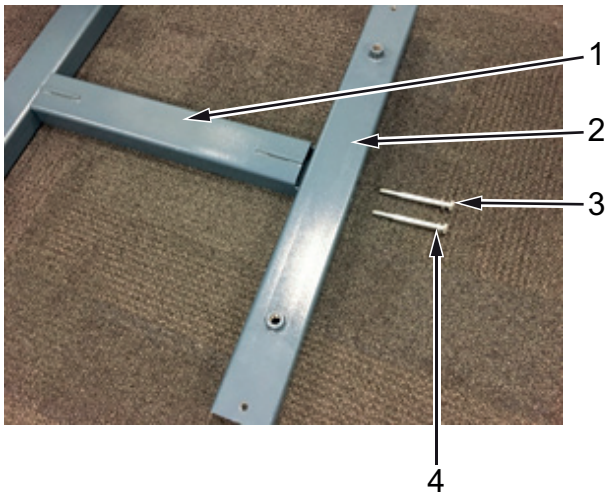
Do the following procedure to assemble the Stand.

Note: *This procedure explains a typical horizontal left hand configuration. A different configuration may require a different stand. Make sure the installation is completed as per the requirement.*

Note: *Additional stand instructions are available for different configurations.*

1. Remove the stand from the packaging in an area with sufficient room to build the stand close to the final production location.
2. Attach the side members (item 2, Figure 4-1) to the cross member (item 1) using the M12 bolts (item 3) and M12 washers (item 4). Make sure that the holes for the casters and bosses for the leveling feet on one side member are on the same side as the other side member and the position limiter on the cross member.

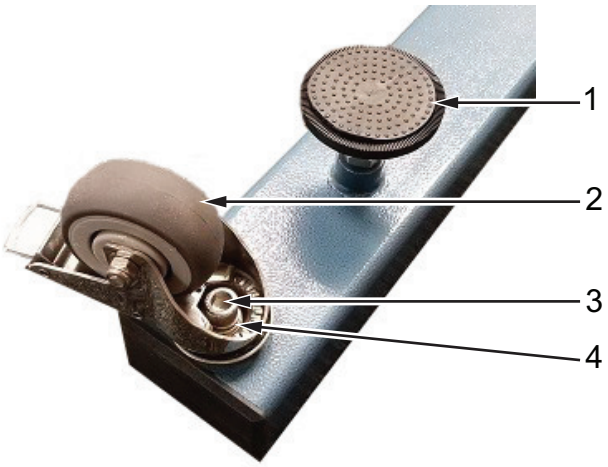
   Note: Ensure torque in the range of 100 -110 Nm is applied for M12 bolts used for fitting the side members.



1. Cross Member
2. Side Member (x2)
3. M12 Bolt (x4)
4. M12 Washer (x4)

Figure 4-1: Side Member to Cross Member Assembly

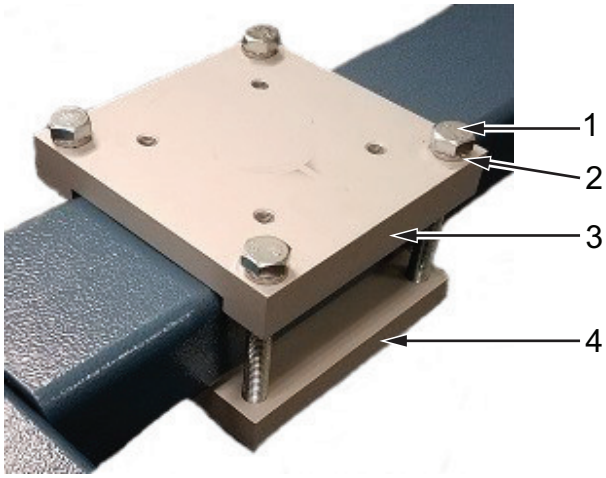
3 Attach the casters (item 2, Figure 4-2) using the M10x20 socket head cap screws (item 3) and M10 lock washers (item 4) and the leveling feet (item 1) to the H base.



1. Levelling Feet
2. Caster (x4)
3. M10xM20 Socket Head Cap Screw (x4)
4. M10 Lock Washer (x4)

Figure 4-2: Casters and Leveling

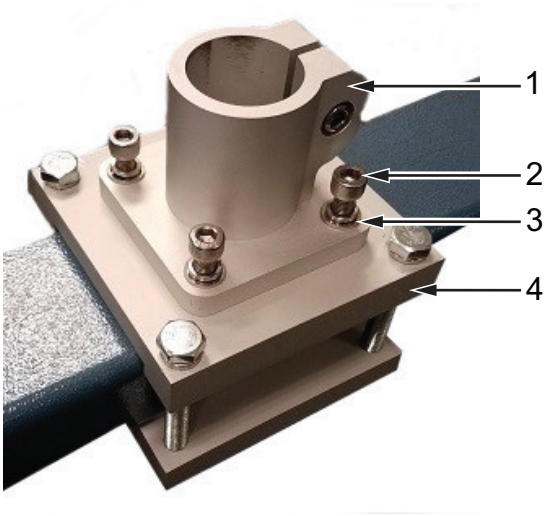
4 Position and clamp together the top clamping plate (item 3, Figure 4-3) and the bottom clamping plate (item 4) using the M12x100 bolts (item 1) and M12 lock washers (item 2).



1. M12x100 Bolt (x4)
2. M12 Lock Washer (x4)
3. Top Clamping Plate
4. Bottom Clamping Plate

Figure 4-3: Top and Bottom Clamping Plates

5 Attach the base clamp (item 1, Figure 4-4) to the top clamping plate (item 4) using M10x35 socket head cap screws (item 2), M10 washers (item 5), and M10 lock washers (item 3).

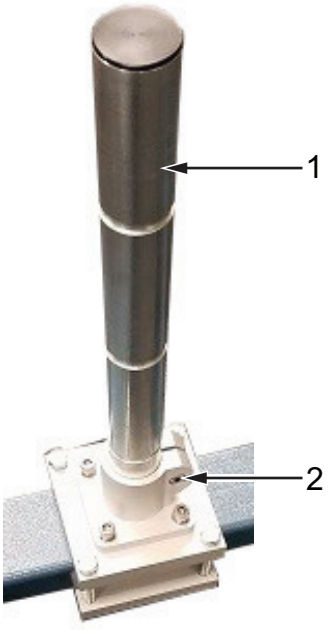


1. Base Clamp
2. M10x35 Socket Head Cap Screw (x4)
3. M10 Lock Washer (x4)
4. Top Clamping Plate
5. M10 Washer (x4)*

Figure 4-4: Base Clamp

* item not shown in figure

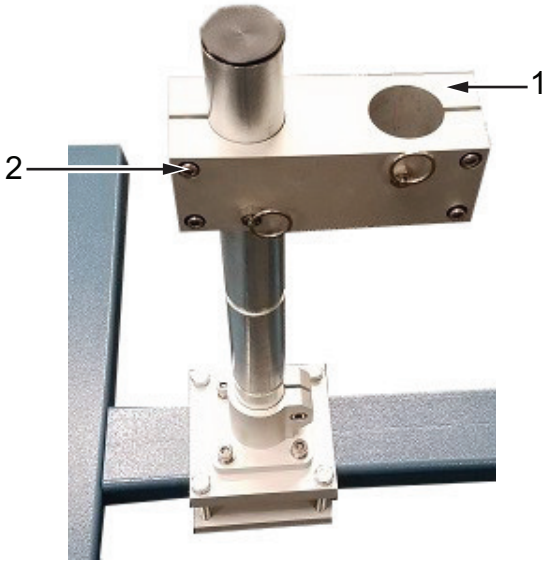
6 Place the tube (item 1, Figure 4-5) in the base clamp and tighten the base clamp using the M10 socket head cap screw (item 2).



1. Tube
2. M10 Socket Head Cap Screw

Figure 4-5: Tube in Base Clamp

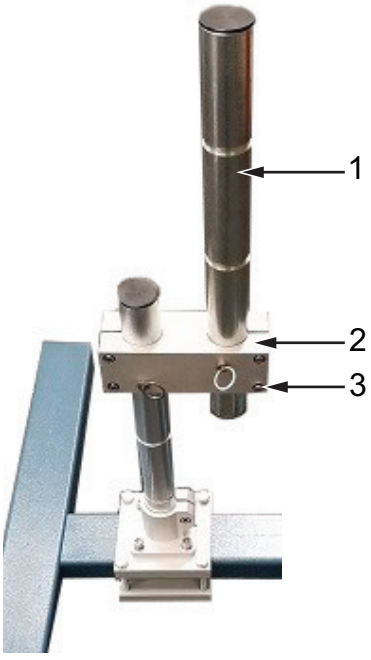
7 Orient the parallel clamp (item 1, Figure 4-6) in the desired location and clamp it to the tube using M8 socket head cap screws (item 2).



1. Parallel Clamp
2. M8 Socket Head Cap Screw (x2)

Figure 4-6: Parallel Clamp

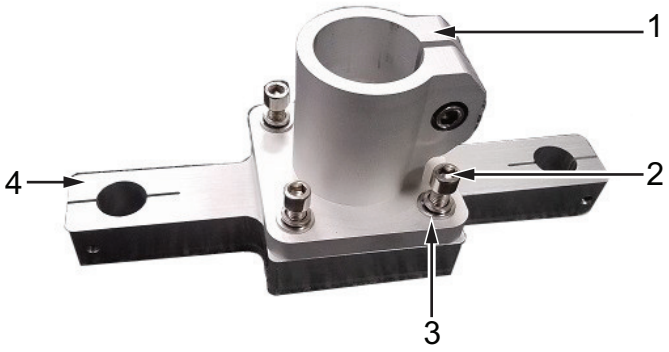
8 Clamp the second tube (item 1, Figure 4-7) in the parallel clamp (item 2) using M8 socket head cap screws (item 3).



1. Tube
2. Parallel Clamp
3. M8 Socket Head Cap Screw (x2)

Figure 4-7: Second Tube

9 Mount the tube clamp (item 1, Figure 4-8) to the mounting fixture (item 4) using M10x35 socket head cap screws (item 2), M10 washers (item 5) and M10 lock washers (item 3).



1. Tube Clamp
2. M10x35 Socket Head Cap Screw (x4)
3. M10 Lock Washer (x4)
4. Mounting Fixture
5. M10 Washer (x4)*

Figure 4-8: Tube Clamp and Mounting Fixture

* item not shown in figure

10 Place the tube clamp over the top tube, orient the position of the mounting fixture to the desired position and tighten the tube clamp to the tube using an M10 socket head cap screw (item 1, Figure 4-9).

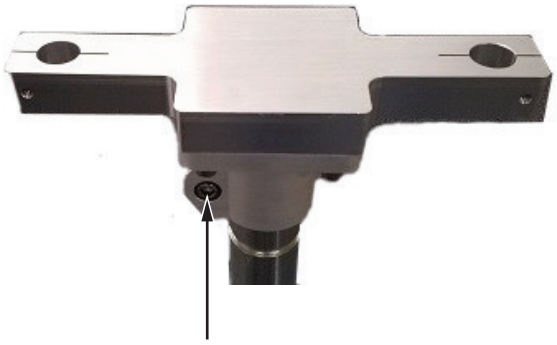
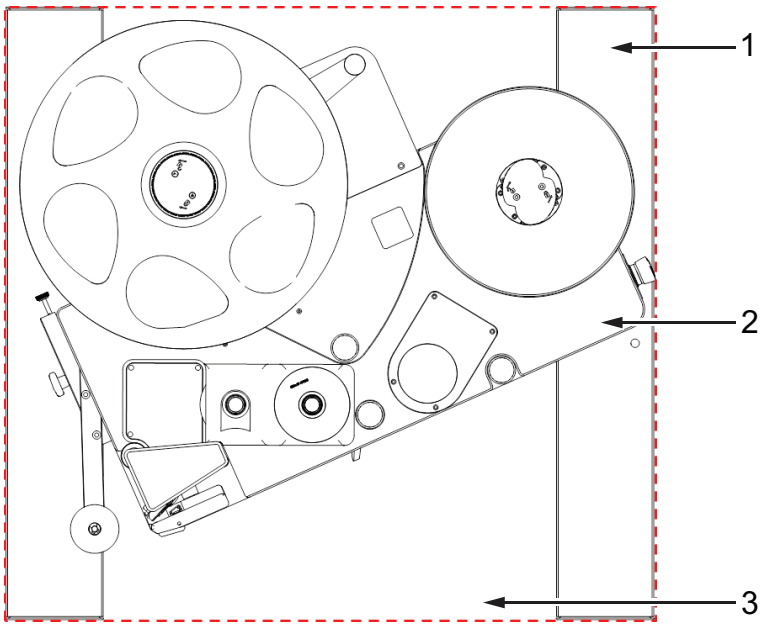


Figure 4-9: Top Tube Clamp Mounting

11 Place the warning sticker (item 1, Figure 4-10) on one of the side members that will remain visible to the user.

Figure 4-10: Warning Sticker

12 Adjust the mounting fixture (item 4, Figure 4-8 on page 4-9) to be centred over the centre of the H base.



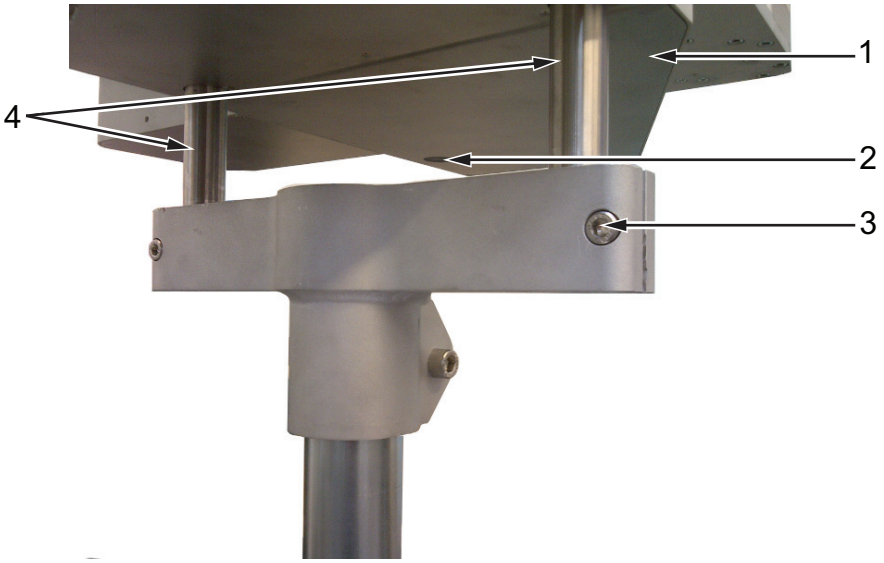
1. H Base
2. LPA
3. Indicates Containment Area

Figure 4-11: LPA Contained Within H Base Footprint

Warning

PERSONAL INJURY. To minimize the likelihood of tipping, orient the unit so that it is entirely contained within the footprint of the stand.

13 Mount the two stand bars (item 4, Figure 4-12) to the LPA base (item 1). There are three locations (item 2) on the LPA base to mount stand bars, choose the most appropriate locations for horizontal mounting.

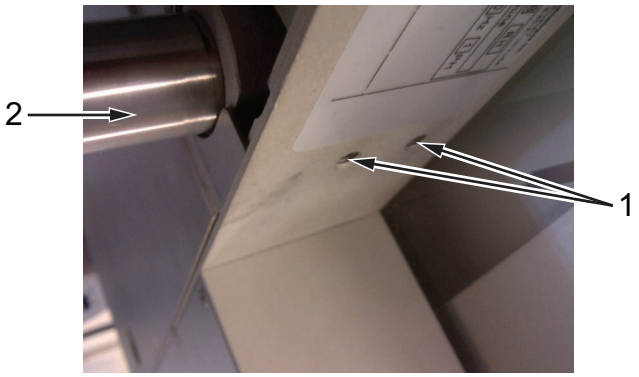


1. LPA Base
2. Location to Mount Stand Bar (X3)
3. M8 Screw (X2)
4. Stand Bar (X2)

Figure 4-12: LPA Base

14 Secure the stand bars (item 2, Figure 4-13) with the M6 grub screws (item 1).

Note: It is recommended not to fully tighten the grub screws to allow some movement of the stand bars whilst securing to the stand.



1. M6 Grub Screws
2. Stand Bar

Figure 4-13: Stand Bar and Grub Screw

15 Place the LPA stand bars along with the LPA to the mounting fixture ensuring that the LPA is within the correct footprint as shown in Figure 4-11 on page 4-10. Secure it by tightening the M8 screws (item 3, Figure 4-12 on page 4-11).

16 Tighten the M6 grub screws (item 1, Figure 4-13 on page 4-11) on the LPA.

17 When the LPA is secure in place, raise the feet and unlock the casters. Move the stand and LPA into position on the production line.

Note: It is not recommended to transport the unit while mounted on the stand over long distances.

Warning

PERSONAL INJURY. Before moving the stand with the unit mounted, lower the unit to its lowest position to reduce the likelihood of tipping during movement.

18 Secure the stand in position by locking the casters and lowering the feet.

19 If necessary rotate the mounting fixture to place the LPA in the correct location.

Note: Ensure that the LPA remains within the H base footprint.

Setting up the Production Line

20 Position the label applicator and the stand adjacent to the conveyor.

Use the height adjustments on the stand to position the printhead and the peel tip so that the label will be applied at the correct vertical location on the box.

Figure 4-14: Labeler on Line

21 Using a level, check that both the conveyor belt and the label applicator are close to “perfect horizontal alignment’ as possible. Make adjustments if necessary.

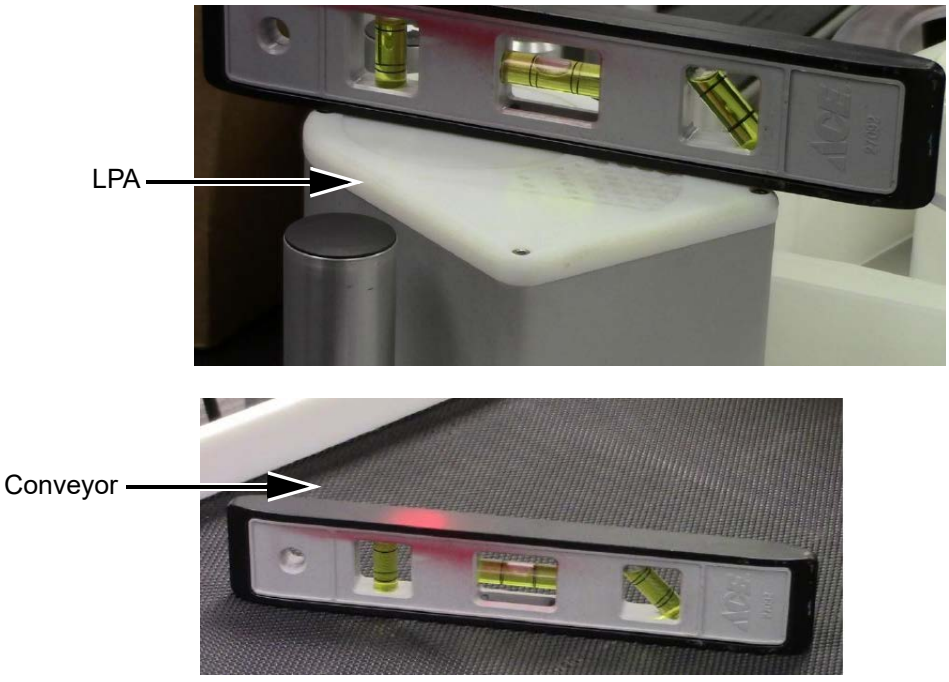


Figure 4-15: Level Check

22 Visually check to ensure that the plane of the peel tip runs perfectly parallel to the side of the box.

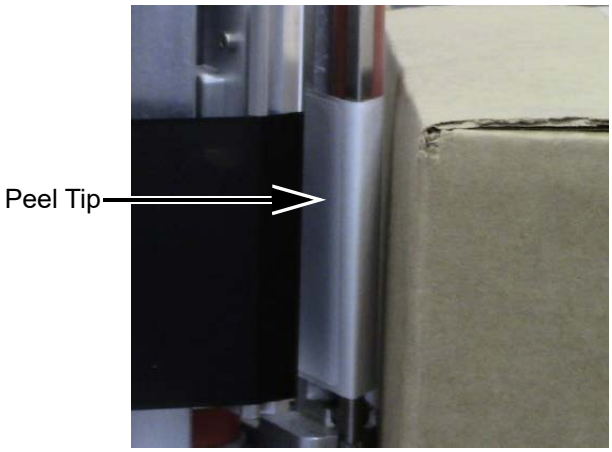


Figure 4-16: Peel Tip Alignment

23 Use the leveling feet to make any fine adjustments to the angle between the peel tip and the side of the box.

Otherwise, use the leveling feet to secure the LPA and stand in place. Use an adjustable wrench.

Mounting the CLARiTY Display

24 Fix the CLARiTY display bracket to the labeler using the 3 mm allen wrench and two M3 screws.

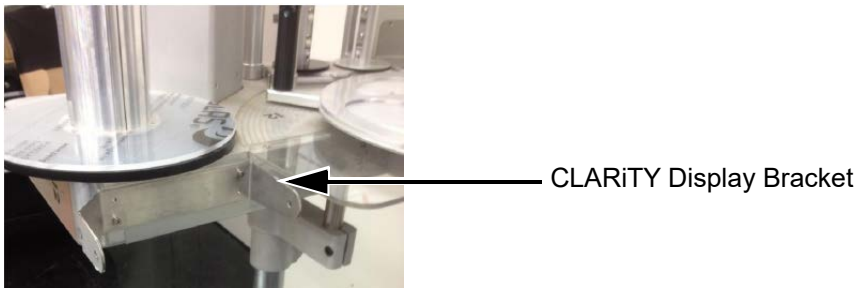
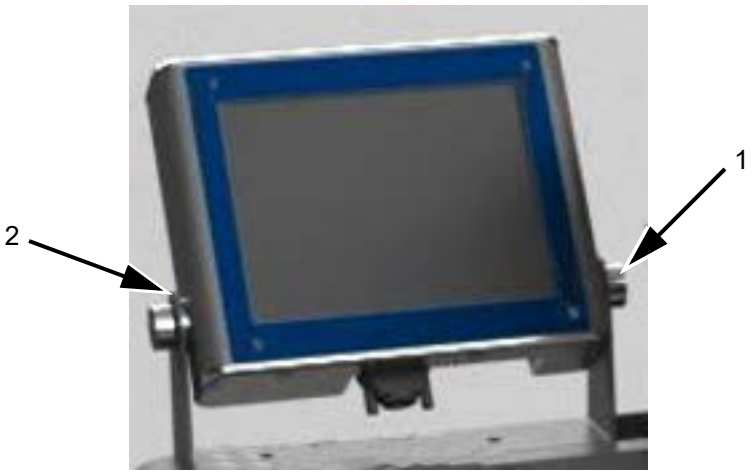


Figure 4-17: CLARiTY Display Bracket

Warning

PERSONAL INJURY. The CLARiTY display should be mounted in a convenient location to eliminate the potential entanglement with the exposed rotating parts.

25 Mount the CLARiTY display on the bracket using the two button head screws with washers and metal washers.



1. Button Head Screw with Washer (x2)
2. Metal Washer (x2)

Figure 4-18: CLARiTY Display

Instating the Product Detector

26 Mount the product detector to the conveyor, upstream of the label applicator.

Note: *Position the product detector as needed for the application and the production line.*

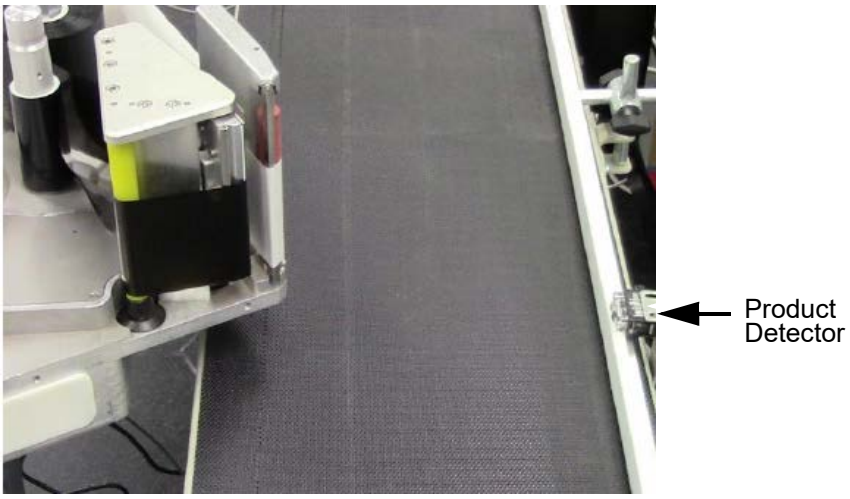


Figure 4-19: Product Detector

27 Connect the external shaft encoder (if used) to the DB-9 port on the side of the applicator.

Cable Connections

28 Make the cable connections as shown in and Figure 4-20 on page 4-17.

Note: *Barcode scanner can connect to RS232 or Ethernet with POE dependent on connection.*

Note: *Make sure the mains switch is turned off before connecting cables.*

Note: *Two identical product detector connectors are available. Make sure that the product detector connector is plugged into the 'Product Detect 1' port.*

Note: *Do not place excessive strain on the beacon cable before mounting the beacon.*

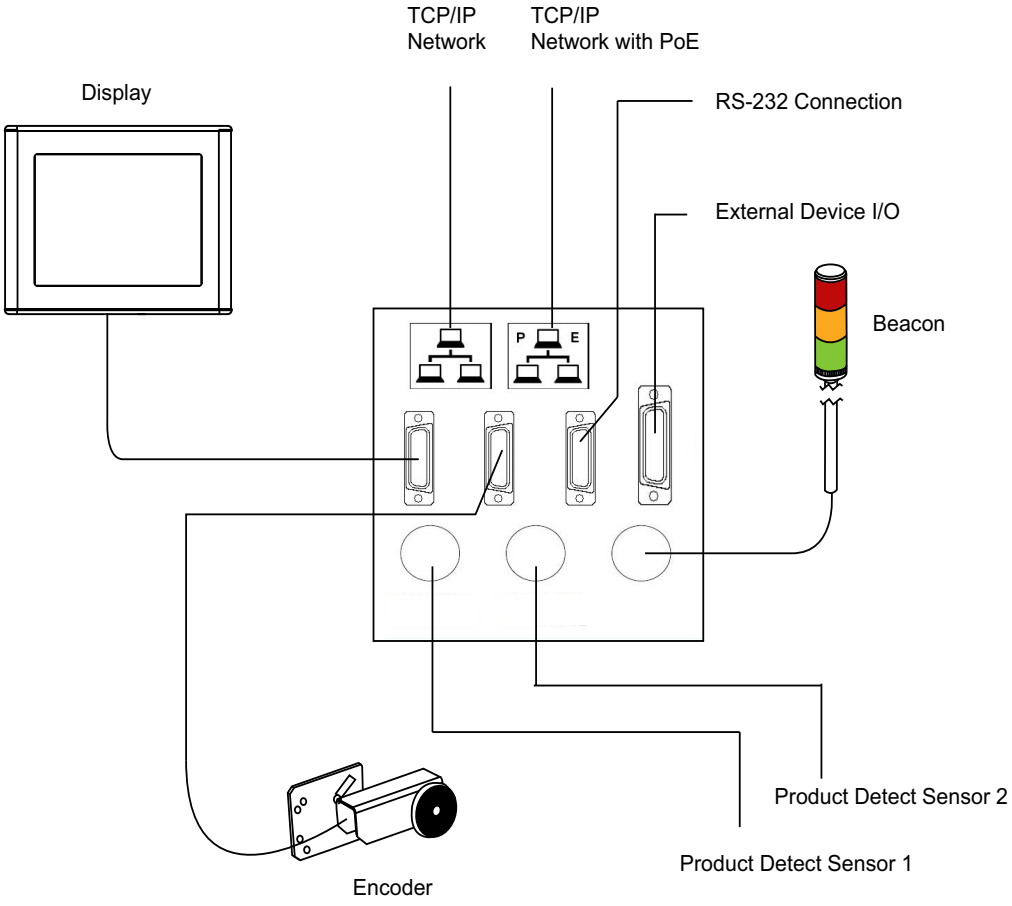
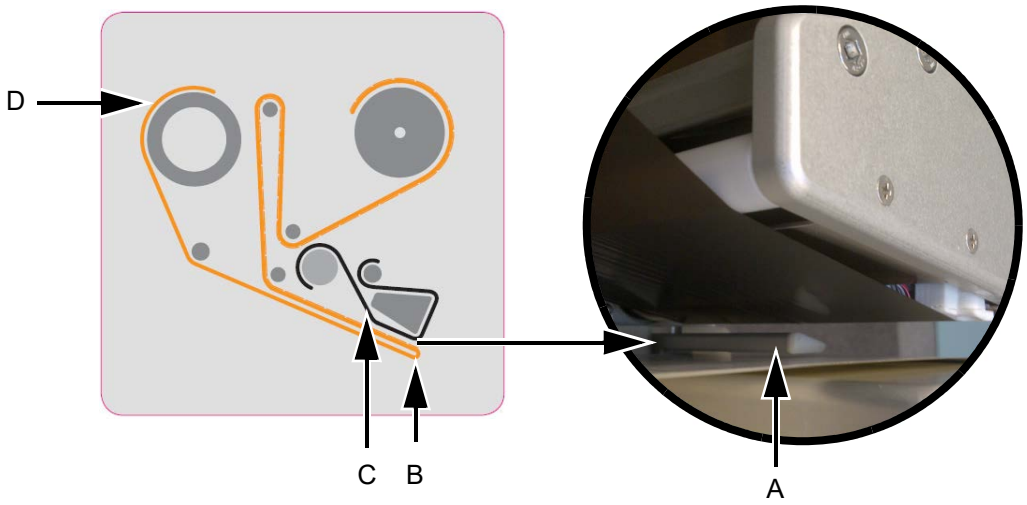


Figure 4-20: Wiring Connection

Loading the Web

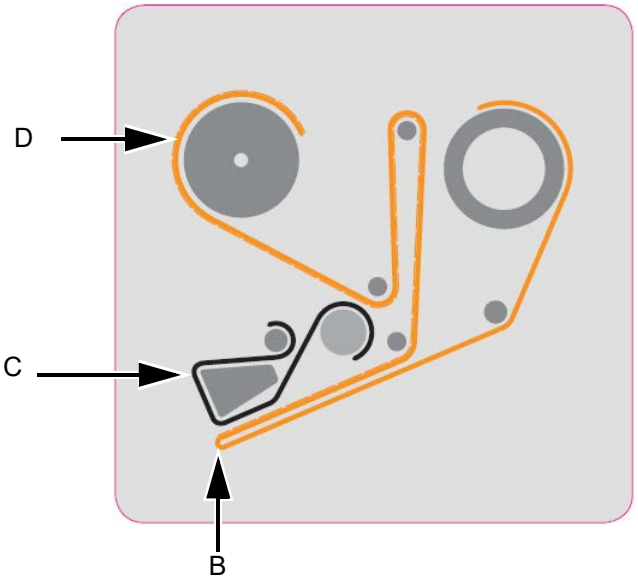
Loading the web involves following procedures:

- Loading a label roll on to the label supply disc mandrel
- Loading a ribbon roll on to the ribbon supply mandrel



A. Gap Sensor
B. Peel Tip
C. Ribbon
D. Label

Figure 4-21: Left Hand Webbing Diagram



A. Gap Sensor*
B. Peel Tip
C. Ribbon
D. Label

***- Items not shown in picture**

Figure 4-22: Right Hand Webbing Diagram

Loading a Label Roll on to the Label Supply Disc Mandrel

Warning

PERSONAL INJURY. Follow manual handling guidelines when moving equipment and loading labels.

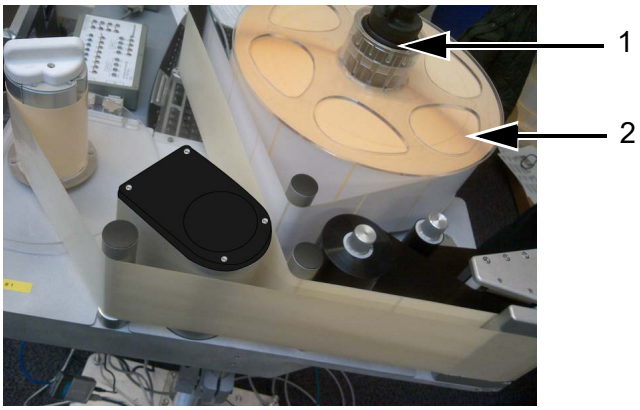
Do the following tasks to load a label roll:

1 Unlock the mandrel lock in the direction indicated on the lock on the supply mandrel (see Figure 4-23). Remove the label supply disc.

Note: Left Hand unit shown

Figure 4-23: Mandrel Lock

2 Fit the label roll to the label supply mandrel. Ensure that the label supply is placed onto the mandrel so that the labels feed in the direction indicated on the supply disc.



1. Label Supply Mandrel
2. Label Supply

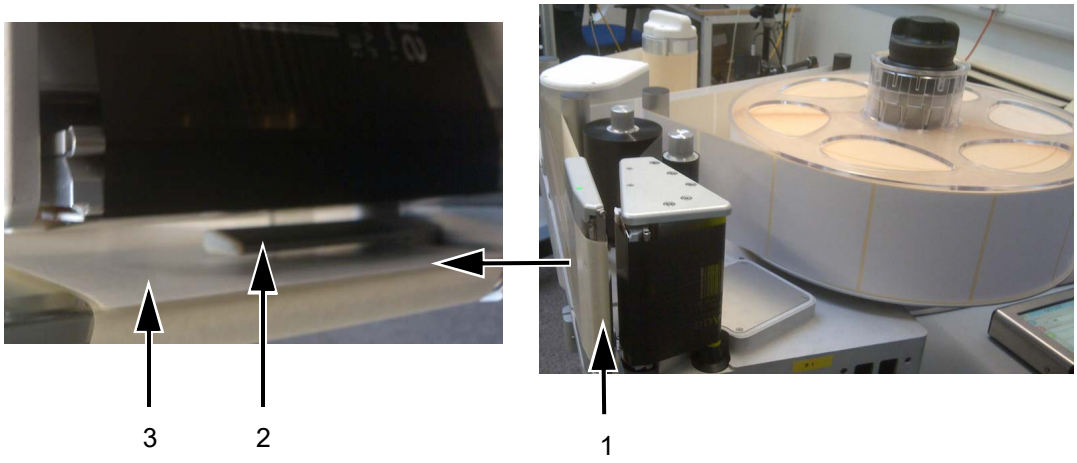
Figure 4-24: Label Web Path

3 If the unit is vertical, replace the label supply disc and secure it with the label supply mandrel lock by turning the lock to the locked position as indicated on the mandrel lock (see Figure 4-23).

4 Where fitted, open the latch.

5 Remove a number of labels from the beginning of the roll to support the label routing. Thread the label web as shown in Figure 4-21 on page 4-18 and Figure 4-22 on page 4-18 (i.e, route the labels around each of the rollers in turn as shown on the webbing diagram).

Ensure that the labels are threaded through the label gap sensor and around the peel tip.



1. Label Around Peel Tip
2. Label Gap Sensor
3. Label

Figure 4-25: Label Around Peel Tip

Note: *The label gap sensor detects the gap between the labels. Refer to "Label Gap Sensor" on page 3-20 for more information. When the labels are correctly routed, the LED will turn green.*

6 Unlock the waste mandrel by rotating it in the direction indicated on the mandrel lock. (see Figure 4-26).

Note: Left Hand unit shown

Figure 4-26: Waste Mandrel Lock

7 Secure the waste label backing to the waste mandrel by slotting the backing into the slot as indicated by the arrows on the waste mandrel.

Note: Right Hand unit shown

Figure 4-27: Mandrel Slot

8 Secure with the mandrel lock (a click sound is audible when secured) and wind the label web around the mandrel two or three times until the label web is secure.

***Note:** If the mandrel lock is not secured, the label speed will not be accurate.*

9 Place the supply disc on the supply mandrel and lock it if not already completed.

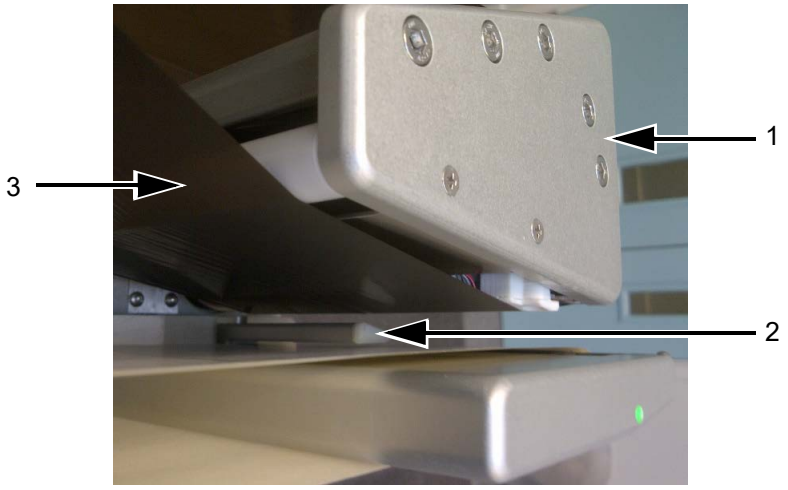
10 Where fitted, secure the latch in position to the print roller support plate.

Loading a Ribbon Roll on to the Ribbon Supply Mandrel

Do the following tasks to load a new ribbon roll:

1. Remove the new ribbon from its packaging.
2. Unwind approximately 300 mm of ribbon from the reel (an initial length of the ribbon is ink free and is termed 'leader').
3. Fit the new ribbon to the supply mandrel, and ensure that the reel is pushed fully onto the mandrel.

   ***Note**: Make sure that where available, the pullout shaft is in required position.*
4. Where fitted, open the latch.
5. Thread the ribbon around the printhead, ensuring that the ribbon is not routed below the gap sensor (see Figure 4-28).



1. Printhead
2. Gap Sensor
3. Ribbon Supply (Ink Side Down)

Figure 4-28: Loading Ribbon Around

***Note:** Ensure that the ink side of the ribbon is facing the label after the ribbon is routed through the printhead.*

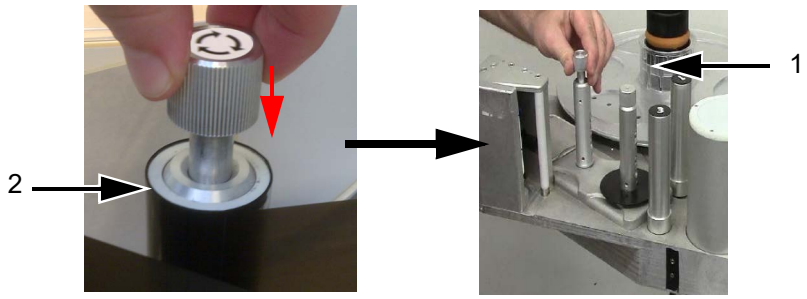
Refer to the webbing diagram for the correct web path (see Figure 5-3 on page 5-9 and Figure 4-22 on page 4-18).

***Note:** If the ribbon is detected in the incorrect position by the gap sensor the LED will turn red.*

6. Load the fresh waste core onto the waste mandrel and ensure that the ribbon runs in the direction of the mandrel arrow.

7 Secure the ribbon to the waste mandrel with an adhesive tape to prevent from slipping.

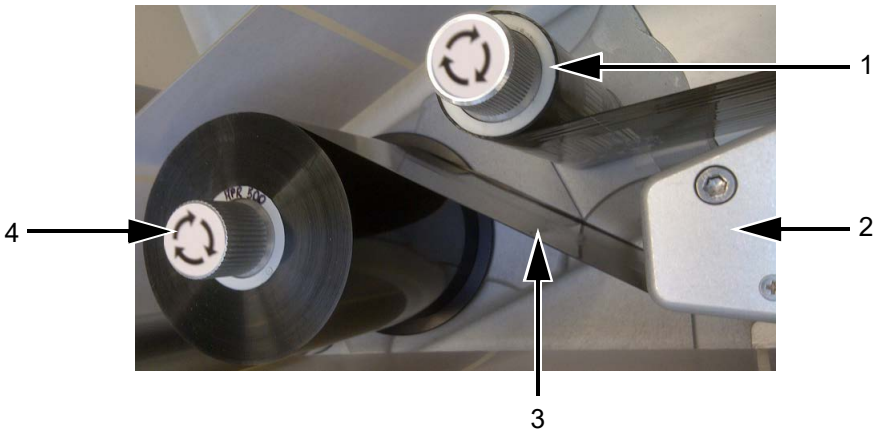
Note: *Make sure that the pullout shaft is in required position.*



1. Pullout Shaft
2. Waste Ribbon Mandrel

Figure 4-29: Pullout Shaft

8 Wind excess ribbon onto the waste mandrel, ensuring that the ribbon is not torn or wrinkled.



1. Ribbon Waste Mandrel
2. Printhead
3. Ribbon Supply (Ink Side Down)
4. Ribbon Supply Mandrel

Figure 4-30: Loading Ribbon Around

9 Where fitted, secure the latch in position to the print roller support plate.

Figure 4-31: Latch Closed

Caution

EQUIPMENT DAMAGE. Turn the waste mandrel only to provide tension in the ribbon.

Turning On the Machine

10 Switch on the power switch on the rear of the unit.

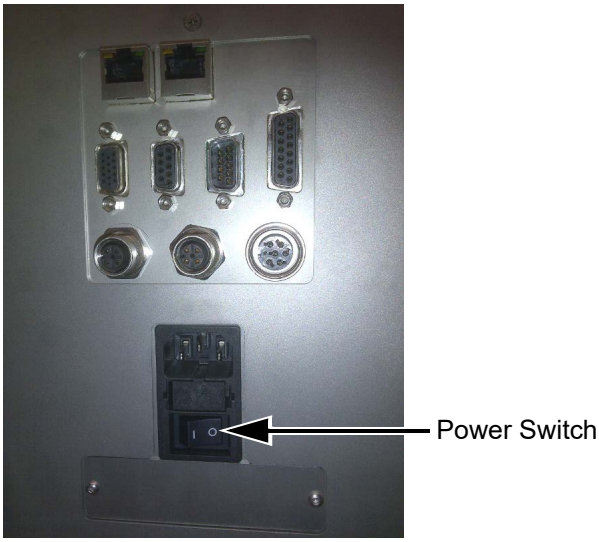


Figure 4-32: Power Switch

11 CLARiTY Display will power on.

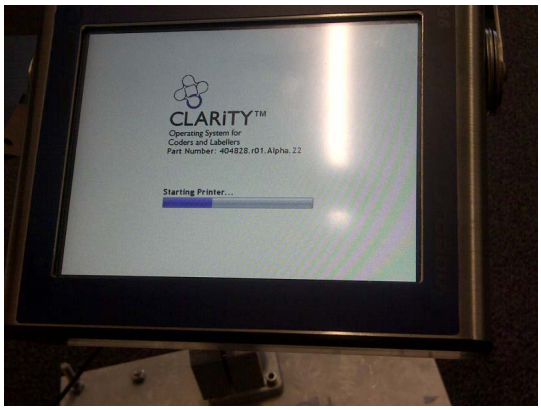


Figure 4-33: CLARiTY Display Power On

Setting up the User Interface

12 In the CLARiTY Display, navigate to *Tools* > *Setup* > *Control* > *Installation Wizard*. The Installation Wizard dialog box appears.

13 Follow the on-screen instructions provided by the Installation Wizard and touch *Next* when ready to progress. For information on Installation Wizard, refer to Operator Manual.

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

Refer to the Operator Manual for setting up the LPA using the installation wizard.

Note: *Parameters altered when running through the installation wizard are saved on selection. Selecting 'Cancel' will exit the user from the wizard, it will not reset any parameter to the previous value.*

Note: *If the LPA is setup offline to confirm operation, it may be necessary to restart the installation wizard to ensure that the online setup is correct.*

CLARiTY Operating System

5

This chapter contains the following topics:

- Getting started with the CLARiTY
- How to configure the LPA
- How to set the external outputs
- Working with passwords
- CLARiTY power saving
- How to configure job settings
- Managing Clones

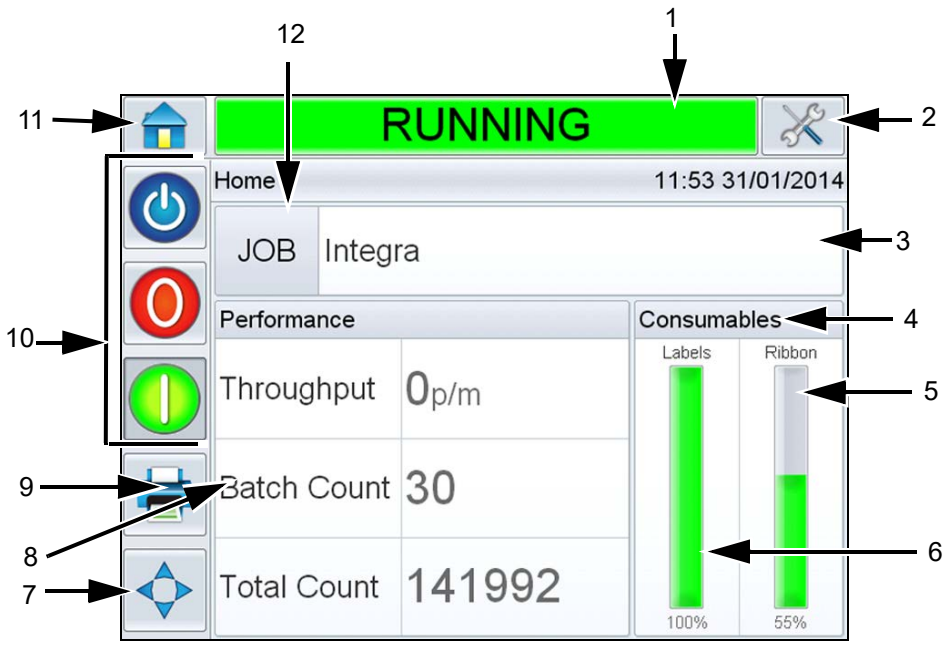
For more information on the user interface, refer to Operator Manual.

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 LPA setup and control are accessed through the *Tools* button.

Figure 5-1 shows the home screen of the CLARiTY operator system.

Using the Home Page



1. Status Bar
2. Tools Button
3. Current Job Details Bar
4. Consumables
5. Ribbon
6. Labels
7. Print Position
8. Performance Information
9. Print Button
10. System Control Buttons
11. Home Button
12. Job Select Button

Figure 5-1: CLARiTY Home Page

Warning

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

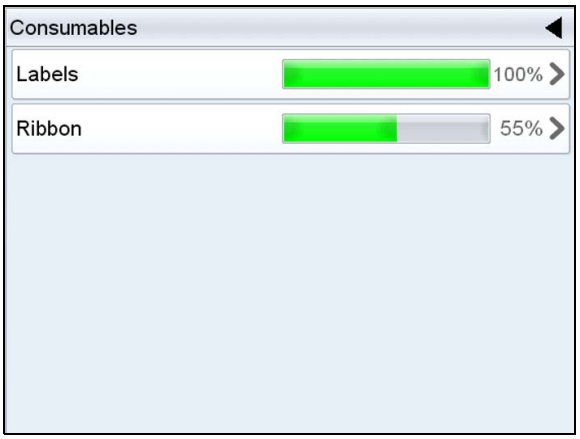
Buttons	Description
Status Bar	Provides information about the status of the LPA. • **Running**: LPA is on and ready to print when the proper print trigger is received. • **Offline**: LPA is on and not printing. • **Shutdown**: Power to the printhead is disabled and not printing. • **Warning**: Conditions 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	Displays the *Consumables* page showing labels and ribbon information. 

Table 5-1: Home Page

Buttons	Description
Labels	Displays the following label information (user can also access *Labels* page by navigating to *Consumables > Labels*): • **Percentage**: Percentage of label available • **Estimated Empty Time**: Estimated time by when the label will empty based on the current job and the production rate. • **Estimated Time Remaining**: Estimated time remaining based on the current job and the production rate. • **Last Changed**: Date and time when the label was last changed. 

Table 5-1: Home Page (Continued)

Buttons	Description
Ribbon	Displays the following ribbon information (user can also access *Ribbon* page by navigating to *Consumables* > *Ribbon*): • **Percentage**: Percentage of ribbon available • **Estimated Empty Time**: Estimated time by when the ribbon will empty based on the current job and the production rate. • **Estimated Time Remaining**: Estimated time remaining based on the current job and the production rate. • **Last Changed**: Date and time when the ribbon was last changed. 
Print Position	Opens the *Print Position* menu when selected. Permits the user to set the label position on the product, print position X and print position Y on the label. For more information, refer to the Operator Manual. 

Table 5-1: Home Page (Continued)

Buttons	Description
Performance Information	Displays the following LPA performance information: • **Throughput**: Throughput of the LPA 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 LPA. Selecting this area opens the performance page showing additional statistical information on the LPA throughput. For more information, refer to the Operator Manual.
Print Button	Permits the user to print a test image on selection. ***Note:*** *This option is only present if option is enabled on the printer using CLARiTY Configuration Manager.*
System Control Buttons	Permits the user to switch off or switch on the LPA. It also allows the user to change the LPA between *RUNNING* and *OFFLINE* modes.
Home Button	Returns the user to the Home screen as shown in Figure 5-1 on page 5-2.
Job Select Button	Permits the user to select the required job from the list. For more information, refer to the Operator Manual.

Table 5-1: Home Page (Continued)

How to Configure the LPA

CLARiTY Configuration Manager

As coding and labelling equipment have become increasingly versatile and flexible with a wide range of applications, the number of variables that can be configured within a LPA has become very large. Although LPAs are pre-programmed with default values, as the extent of the application increases, it becomes less likely that the default configuration is ideal. This can lead to a large and cumbersome menu tree on the LPA's user interface that users have to work with.

Most LPA variables are set during the installation process. The variables are set to values that tailor the LPA to the application. Once set, these variables only need to be changed when the application for the LPA changes.

As such, these installation parameters are set through a configuration programme called CLARiTY Configuration Manager.

The CLARiTY Configuration Manager (Figure 5-2) is a PC software program, that provides the following basic features:

- Setting of the LPA variables
- Saving/retrieving a set of variable values to a PC file for later/repeated use
- Downloading a set of variables to the LPA's CLARiTY user interface for non-volatile (permanent) memory storage in the LPA
- Uploading a set of variables from the LPA for review/comparison/ modification
- Updating the system software
- Saving/retrieving language files
- Saving/retrieving job, font, and graphics files
- Snapshot of CLARiTY screens

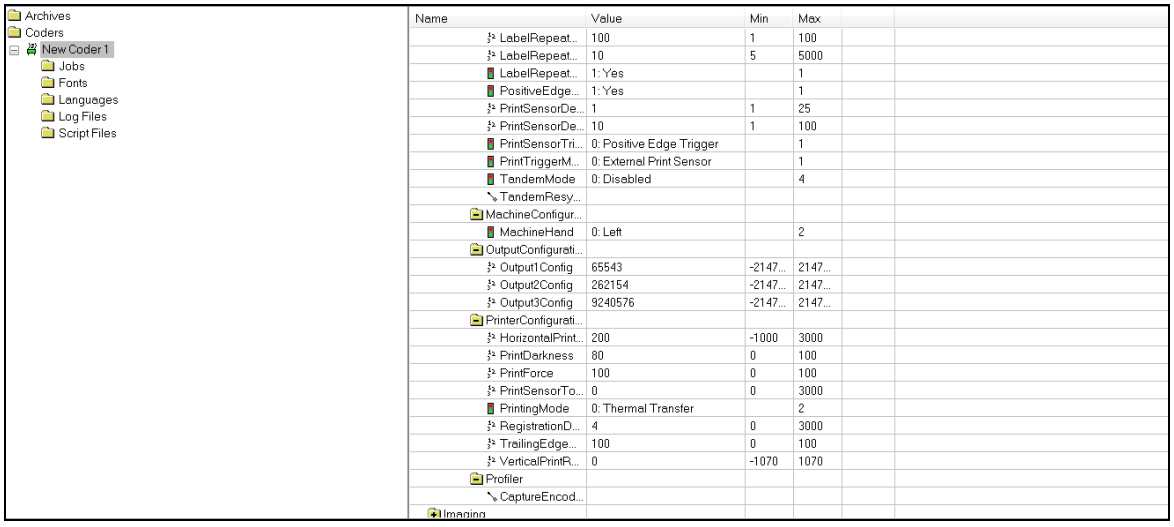


Figure 5-2: CLARiTY Configuration Manager

As a result, the CLARiTY user interface retains the availability of a small number of operating variables for the user to change.

It also provides an increased level of LPA system integrity, because the configuration variables cannot be accessed from the LPA itself, but from a connected PC.

If the LPA is installed to run in a standalone mode (i.e., the LPA is not connected to network), the PC is only linked briefly (via the RS232 serial or ethernet port) for the period of upload/download of the variables (a few seconds). The PC would then be removed.

In a networked environment, system administrators could have direct access to the LPA, while line operators are limited to accessing only the operating variables that are relevant to them.

How to Install the CLARiTY Configuration Manager

CLARiTY Configuration Manager is available in the CD with the Operator Manual. To operate the CD, the system requires Windows 7.0 or Windows 10 operating system with minimum 5 MB capacity and ethernet or serial port. The installation routine commences automatically.

Do the following tasks to install:

1. Insert the CD.
2. Click on the CD drive.
3. Select CLARiTY Configuration Manager on the CD Index. File Downloads page appears.
4. Run the CLARiTYConfig.exe file.

Follow the on-screen instructions to install the software. The software is installed in the PC and is ready for use.

How to Connect the CLARiTY Configuration Manager to the LPA

Note: *When you connect the CLARiTY Configuration Manager to the LPA, the first connection must be done using an RS232 connection.*

How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection

Do the following tasks to connect the CLARiTY Configuration Manager to the LPA:

1. Connect the PC serial port to the main controller board using the null-modem cable.
2. Ensure that all other programs (such as, Active sync and other PDA applications) that use the serial port are disabled.

3 Run the CLARiTY Configuration Manager on the PC (Figure 5-3).

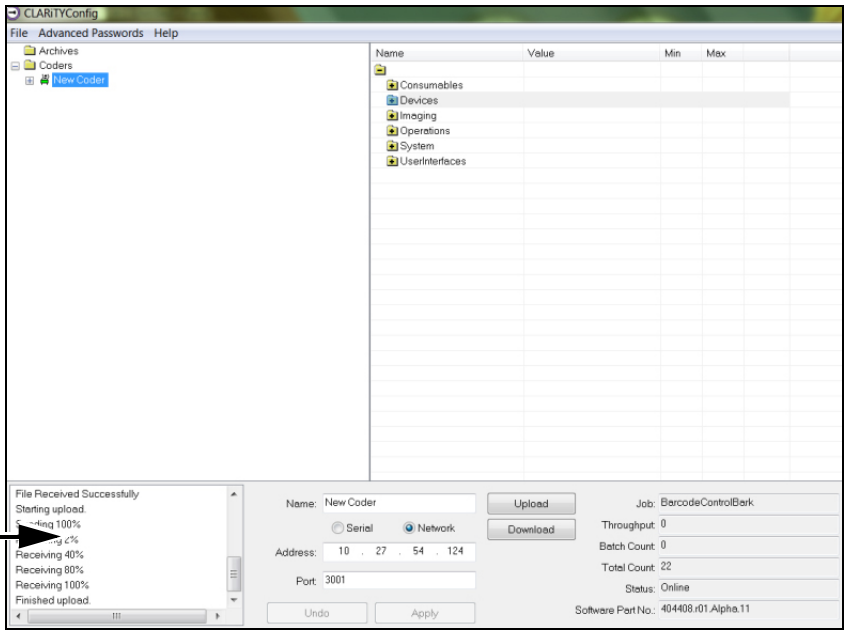


Figure 5-3: CLARiTY Configuration Manager

4 Ensure that the LPA status panel (at the bottom left of the window) reports the message "Connection Active" and the new printer icon turns green.

If the status displays "Not connected", disable or quit the other applications running on the PC that are using the serial port. Check that the baud rate settings on the Configuration Manager matches with the LPA's baud rate.

5 Click the *Upload* button (see Figure 5-4). The progress of the operation is displayed in the status panel. This uploads the LPA parameters set to the PC.

The list of folders containing the configuration parameters appears in the parameter listing (in the right hand frame of the Configuration Manager).

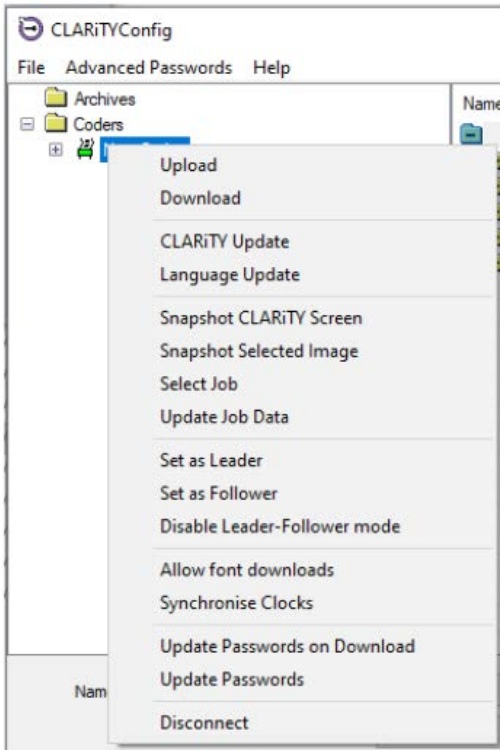


Figure 5-4: CLARiTY Configuration Manager

Note: *It is possible to setup the IP address using the CLARiTY user interface Archive feature with USB. Refer to “Creating, Editing and Restoring a USB Archive on a CLARiTY LPA” on page 5-18.*

How to Connect the CLARiTY Configuration Manager to the LPA using an Ethernet cable

The following components are required to connect the LPA to CLARiTY Configuration Manager via Ethernet cable:

- Correct Ethernet cable
  - If connection is being made directly between the PC and the LPA, a crossed Ethernet cable must be used.
  - If the connection is being made via an office LAN or Ethernet hub, an ordinary uncrossed patch cable is used.
- Correct configuration of the PC ethernet port
- Correct configuration of the LPA’s ethernet port

To connect the CLARiTY Configuration Manager to the LPA, the following settings have to be done on the PC ethernet port and LPA's ethernet port:

PC

The PC Ethernet port must be set up to connect at a specific IP address. If you are connecting via an office LAN, consult with your IT manager before assigning IP addresses to your PC. If you are making a direct connection, you may specify any IP address.

1 Open the PC Ethernet port properties and select *Use the following IP address*. Then specify the new address (for example: 10.27.55.130 in Figure 5-5) and the subnet mask (Usually 255.255.255.0).

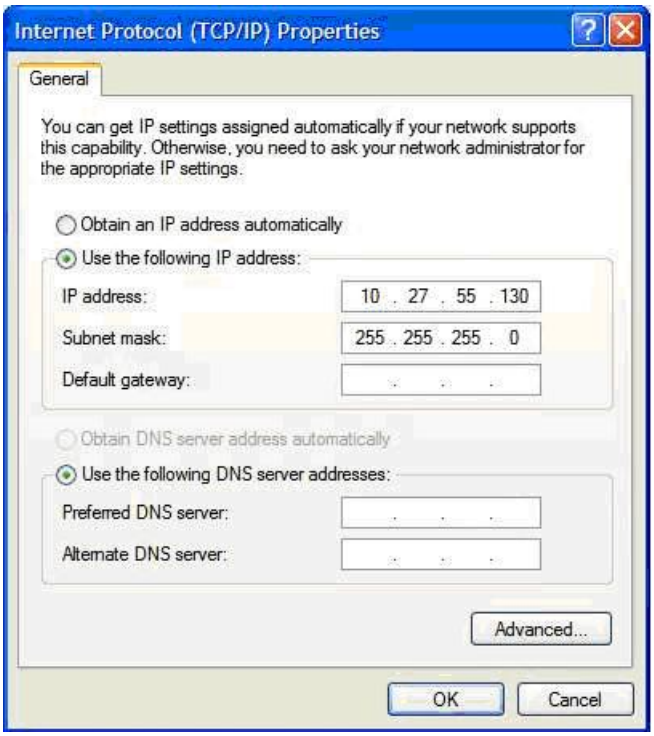


Figure 5-5: IP Address Settings on the PC

***Note:** The screen above shown varies depending on the operating system installed on your PC.*

2 Click *OK* to apply the settings.

LPA (Coder) Ethernet Port

3 Locate the TCP/IP configuration parameters as shown in Figure 5-6.

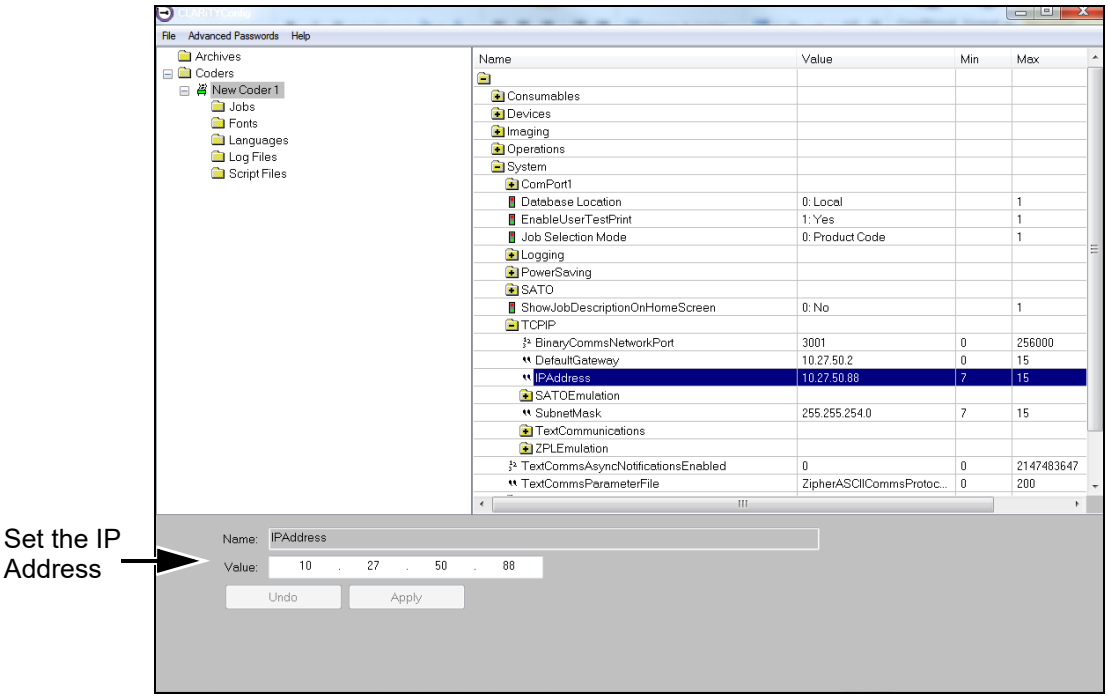


Figure 5-6: TCP/IP Configuration Parameters

4 Set the *BinaryCommsNetworkPort* parameter to 3001.

5 Set the IP address to be in the same range as the PC port (for example: 10.27.55.131 in Figure 5-5 on page 5-11) and click *Apply*.

***Note**: The LPA IP address should not be the same as the IP address of the PC.*

6 Set the *Subnet mask* to match that of your PC port.

7 Right-click on the *New Coder 1* icon and click the *Download* button to download the parameters to the LPA.

8 Click the *New Coder1* icon and change the method of connection to Network. Enter the correct IP address and Port number to match the values downloaded into the LPA.

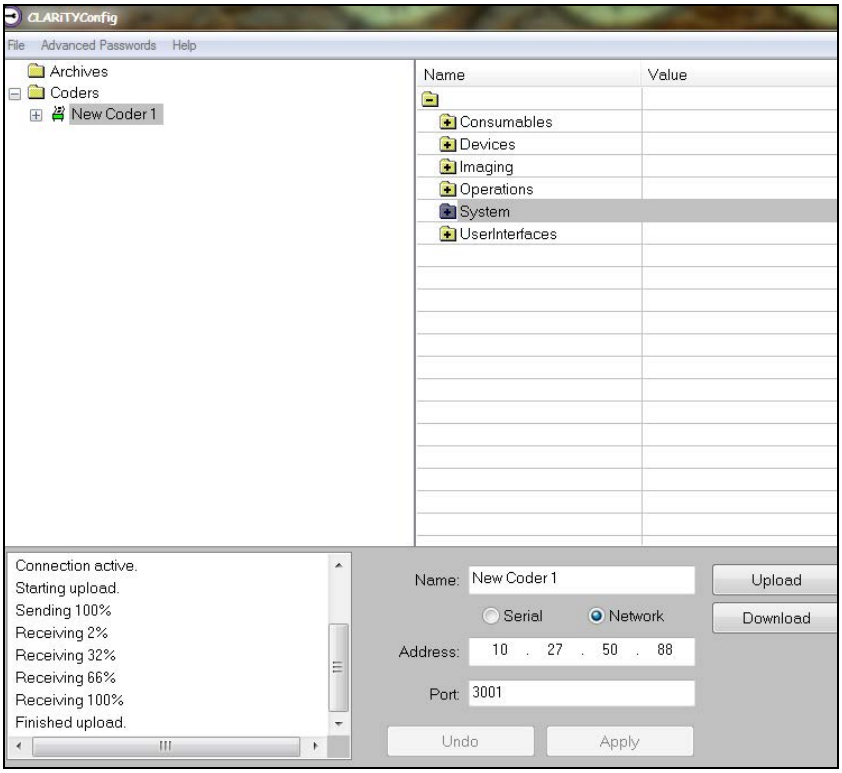


Figure 5-7: New Coder Settings

9 Click the *Apply* button and the new settings are activated and the coder icon turns green.

10 Click the *Upload* button. The progress of the operation is displayed in the status panel. This uploads the LPA parameters set to the PC.

The list of folders containing the configuration parameters appears in the parameter listing (in the right hand frame of the Configuration Manager).

How to Edit the Parameters

Figure 5-8 displays the list of parameters that are available in the LPA settings.

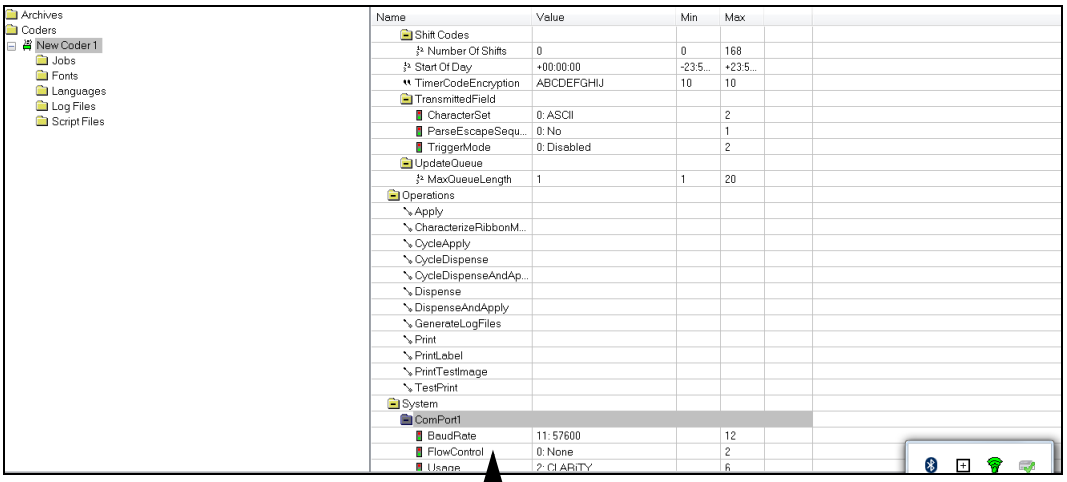


Figure 5-8: Parameters

Click the folder required to open or close it or to gain access to the parameters it contains. You may have to click and open a number of nested folders to get to the parameter that you want.

There are a number of different types of parameters. Click *Help* on the menu at the top of the screen, and select *Key To Legends* to get a list of the different icons/parameter types.

Do the following tasks to change the value of a parameter:

1. Click the required parameter from the parameter list. The current value is displayed in the *Value* box at the bottom of the screen.
2. Change the value to the required value using the mouse and the keyboard.
3. Click the *Apply* button. The value displayed in the parameters list is updated to reflect the change.

Note: *Event parameters do not have values that can be set. Touching the Trigger button that is available in the bottom pane causes the LPA to perform the given action on download.*

Note: *The list of configurable parameters for the LPA are shown in Appendix B, "CLARiTY Configuration Manager".*

For many parameters, it may be satisfactory to leave them with their default values. Some of the parameters may need tuning after some initial prints have been made. Some of the listed parameters are available at the CLARiTY user interface. It may be more convenient to make final adjustments at the UI rather than using the CLARiTY Configuration Manager.

CLARiTY Configuration Manager has a default administrative password. This protects certain parameters from change. To change the administrative password navigate to *Advanced passwords* > *Change Admin Password.* The Default password is '*password*'.

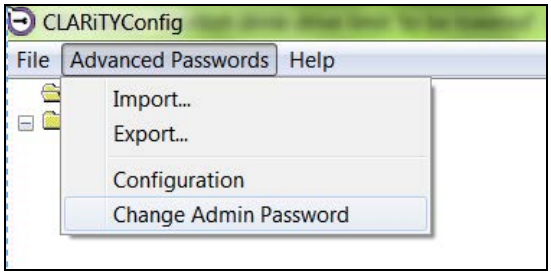


Figure 5-9: CLARiTY Change Password

How to Save the Changes in the LPA

Do the following tasks to make the changes effective:

1. Click the *Printer* icon in the left-hand pane to open the LPA controls at the bottom pane of the window.
2. Click the *Download* button to update the LPA with the changes that you have made to the parameters.

   A dialog box opens with the message "The parameters to be downloaded have not been saved to an archive".
3. Touch *OK* to continue with the download.

   The new parameters are active when the download is complete.

   Note: *Unless steps 1 to 3 are performed, none of the parameter changes become effective in the LPA.*

How to Save the User Password changes in the LPA

Do the following tasks to make the changes effective:

1. Click the *Printer* icon in the left-hand pane to open the LPA controls at the bottom pane of the window.
2. Either select *'Update Passwords on Download'* to update the passwords when changes are downloaded to the LPA or select *'Update Passwords'* to update the passwords only.

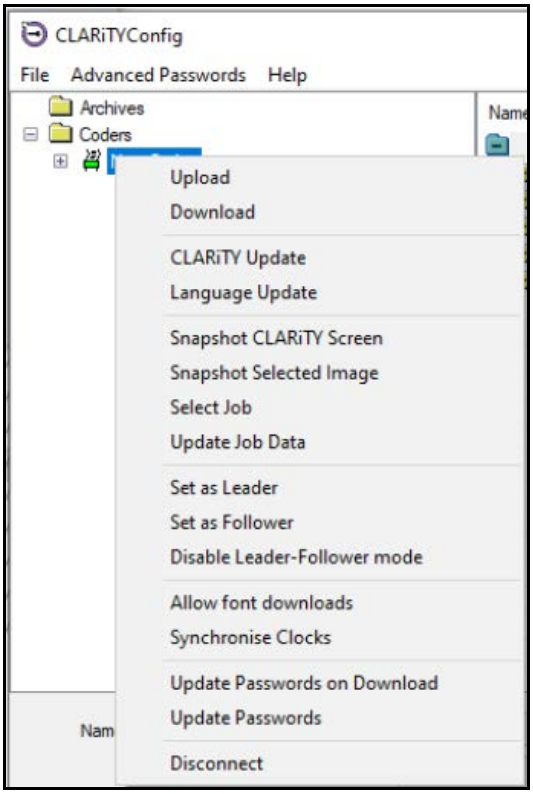


Figure 5-10: CLARiTY Save Password Change

How to Archive the Current Parameters

The set of parameters can also be saved as an archive and are stored on the PC. The archive can be loaded into the Configuration Manager and downloaded to the LPA again at a later date to revert to the archived set of parameters.

Once the LPA has been configured, it is recommended that all the parameters be uploaded into the PC, and saved as an archive.

Do the following tasks to archive the current parameters:

1 Right click the *Archives* folder in the left-hand panel.

2 Select the *New Save* option from the pop-up menu.

3 Change the default Archive name by overwriting the name in the pop up dialog box as required. Select *OK*.

A file for the new save appears under the archives folder with a name containing the current time and date.

4 Once saved, the name of the archive can be changed in the bottom panel, by selecting the file, changing the name as required and clicking the *Apply* button.

How to Load a Saved Archive

Do the following tasks to load an archive that was saved previously though PC:

1 Locate the archive in the left panel and right click on it.

2 Choose *Load* from the pop-up menu.

The archived parameters are displayed on the right-hand pane.

3 Click the *Printer* icon from the left-hand panel and click the *Download* button to load the archive of parameters to the LPA.

Caution

EQUIPMENT DAMAGE. If the CLARiTY user interface is used within a network (Ethernet/IP or TCP/IP), the “Power over Ethernet“ (PoE) setting must be deactivated for the network being used. Otherwise, the LAN module of the CLARiTY user interface may be damaged.

Note: *To put the new settings into effect, the CLARiTY user interface must be rebooted. If you have any questions concerning your network, contact your IT administrator.*

Creating, Editing and Restoring a USB Archive on a CLARiTY LPA

This procedure describes how to save an archive of a CLARiTY LPA's settings to a USB memory stick so that it can be transferred to another LPA, or opened and edited with CLARiTY Configuration Manager.

This feature is useful for setting the IP address of the LPA, or other initial settings, if user don't have the capability to connect serially (RS-232).

Creating the Archive

Do the following tasks to create the archive:

1. Insert a USB memory stick into the LPA's USB port.

   Note: USB memory stick should have no more than 8GB capacity.

2. Navigate to *Tools* > *Setup* > *Control* > *CLARiTY Parameter Archives*.
3. Select the *Create Archive* button at the bottom of the screen.
4. Name the Archive file (or keep the default name) and press *OK*.
5. Once the screen indicates the Archive was created successfully, press *OK*.
6. Remove the USB memory stick from the LPA

Editing the Archive in CLARiTY Configuration Manager

Do the following tasks to edit the archive in CLARiTY Configuration Manager:

1. Insert the USB memory stick into a USB port of the computer running CLARiTY Configuration Manager.
2. Locate the "Archives" folder for the USB memory stick on the left side of the CLARiTY Configuration Manager window (i.e. "D:\Archives") and press the "+" next to the folder.

Figure 5-11: CLARiTY Config

3. Locate the archive file you wish to edit from the list and right-click on the file name.

4 Select *Load* from the pop up menu.

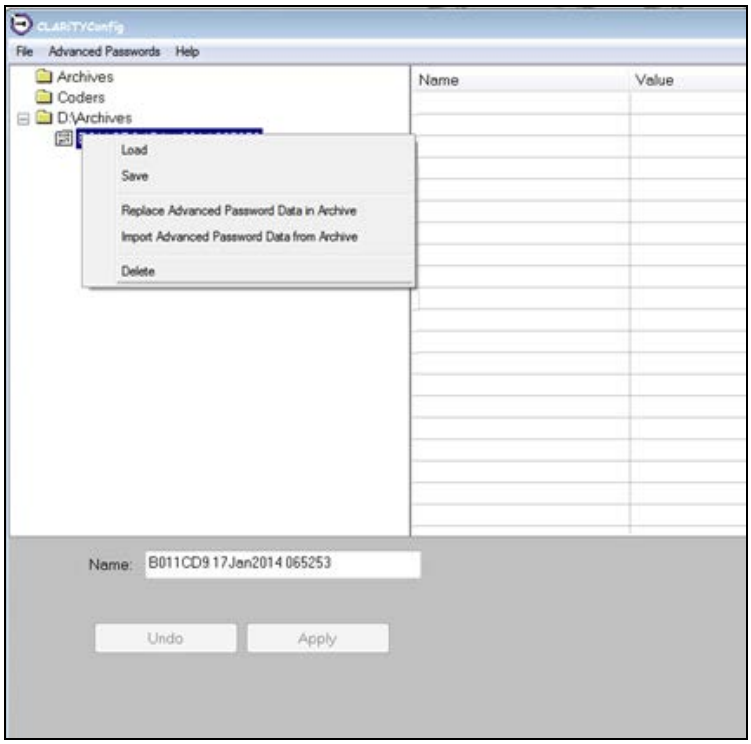


Figure 5-12: Load Archive File

5 Make the required changes to the setting on the right hand side of the CLARiTY Configuration Manager window.

6 Right-click on the name of the archive file and select *Save*.

7 Select *OK* after confirming that the correct archive has been selected.

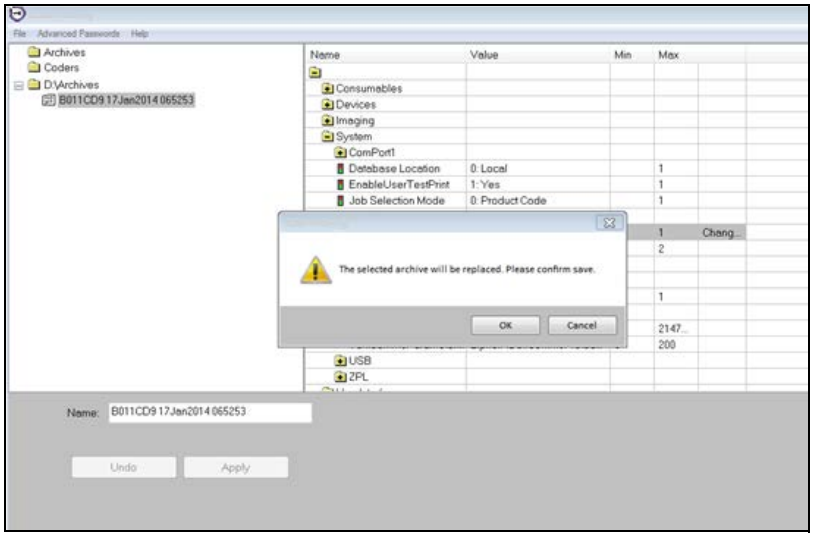


Figure 5-13: Confirm Archive Replacement

8 Close the CLARiTY Configuration Manager software.

9 Remove the USB memory stick from the computer.

Restoring the Archive to the LPA

Do the following tasks to restore the archive to the LPA:

1 Insert the USB memory stick containing the desired archive into the LPA's USB port.

2 Navigate to *Tools* > *Setup* > *Control* > *CLARiTY Parameter Archives*.

3 Locate the desired archive from the list on the screen and select it.

4 Select the *Restore Archive* button at the bottom of the screen.

5 Select *Yes* if you are sure that you want to continue with the restore process after reading the message on the LPA's screen

6 Select *Yes* or *No* depending on whether or not you want to restore the network settings from the archive.

7 Select *Yes* or *No* depending on whether or not you want to restore the password settings from the archive.

8 Once the screen indicates the Archive was restored successfully, press *OK.*

How to Set the External Outputs

External Outputs

External Outputs 1-3

The CLARiTY has three digital outputs. The outputs indicate various items of information about the status of the CLARiTY. The outputs 1-3 are configurable.

To configure the outputs go to *Devices* > *PHds* > *1* > *Output Configuration*. Select *Output Configuration*, and the options for configuration are shown for output activation and/or deactivation.

The options for selection are listed in Table 5-2.

Options
Consumables are Low
Consumables are not Low
Job Allocation Aborted
Job Allocation Complete
Job Selected
Job Update Queue is Empty
Job Update Queue is Full
Job Update Queue is High
Job Update Queue is Low
Job Update Queue is Not Empty
Job Update Queue is Not Full
Job Update Queue is Not High
Job Update Queue is Not Low
Machine Enters Fault
Machine Enters Warning
Machine Finishes Printing
Machine Is Busy
Machine Is Not Busy

Table 5-2: External Output 1-3 Options

Options
Machine is Offline
Machine is Online
Machine Leaves Fault
Machine Leaves Warning
Machine Starts Printing
New Job Allocation Received
New Job Allocation Rendered
Not Used
Print Data is Not Ready
Print Data is Ready
Print Failed
Print Signal Ignored
Reject Product

Table 5-2: External Output 1-3 Options (Continued)

Status of the Warning Beacon in Typical Setup

The external outputs 1-3 are evaluated with reference to the status of the warning beacon (see Figure 5-14).

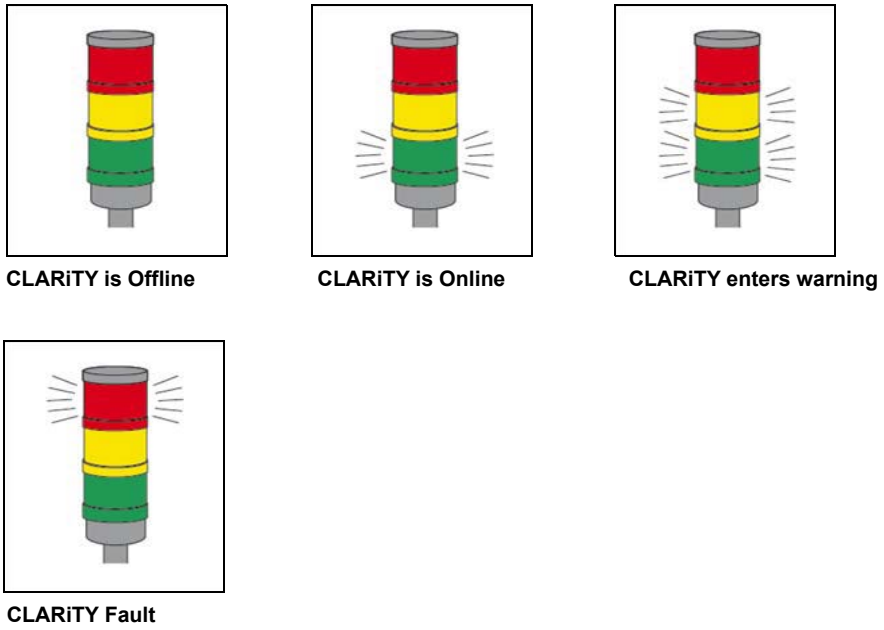


Figure 5-14: Various Indications of the Warning Beacon in Typical Setup

Working with Passwords

Password protection on the CLARiTY user interface allows various operational features of the CLARiTY User Interface to be protected by different user access levels. During installation, you can set the standard (normal) or advanced password selection using CLARiTY Configuration Manager.

The default password option is Disabled (see Figure 5-15). Protection may be globally enabled or disabled.

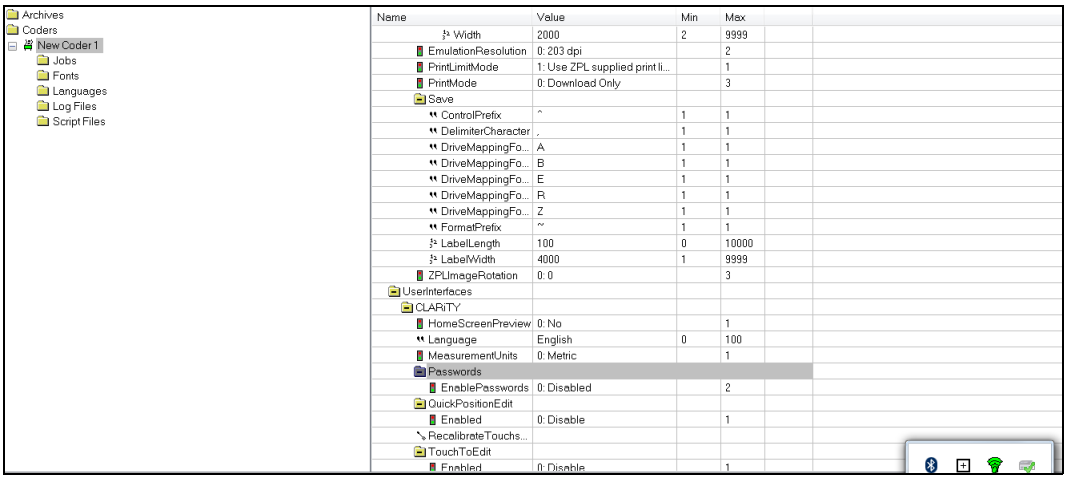


Figure 5-15: Password

***Note:** If you do not want to have password protection, select "Disabled" option.*

CLARiTY has five different functions that may be optionally password protected:

- Job Select
- Registration
- Set-up
- Diagnostics
- Databases

Password control can be set up as per the user requirement.

The password level remains active until logged out by the user or timed out.

- Standard (normal) Passwords: This is a general password setup where the LPA function is protected by a common password for the level of user.
- Advanced Passwords: This is a fully configurable option that allows individual users to be setup for bespoke access either as an individual or part of an access group with individual passwords.

To set up the passwords, navigate to *UserInterfaces* > *Passwords* > *Enable Passwords*. Select the required password (Figure 5-16).

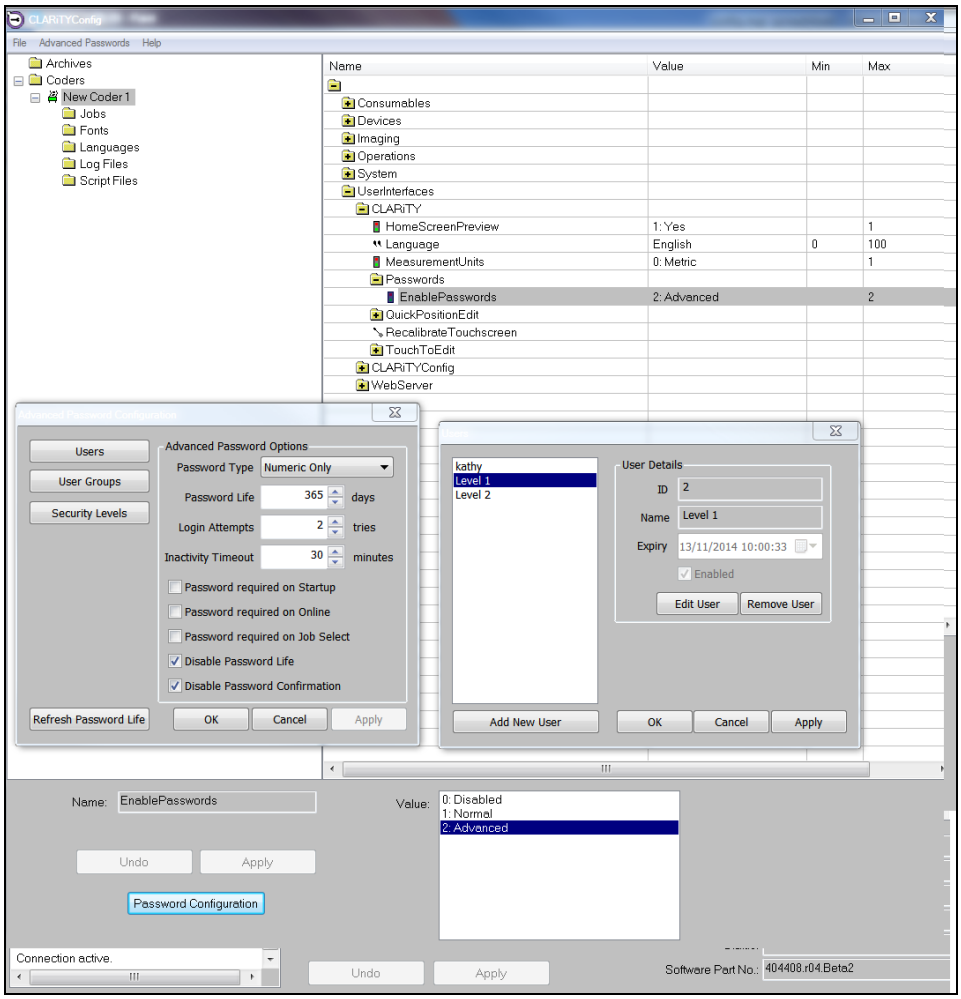


Figure 5-16: Advanced Password Configuration

***Note:** To download passwords and save changes to passwords, use either 'Update password on download' or 'Update Password' option.*

CLARiTY Power Saving

This section describes the behaviour of the CLARiTY display in the various power saving states. It is possible to set the power saving mode of the CLARiTY display. There are four modes:

- None
- Minimal
- High
- Full

The default power saving mode is set to Full.

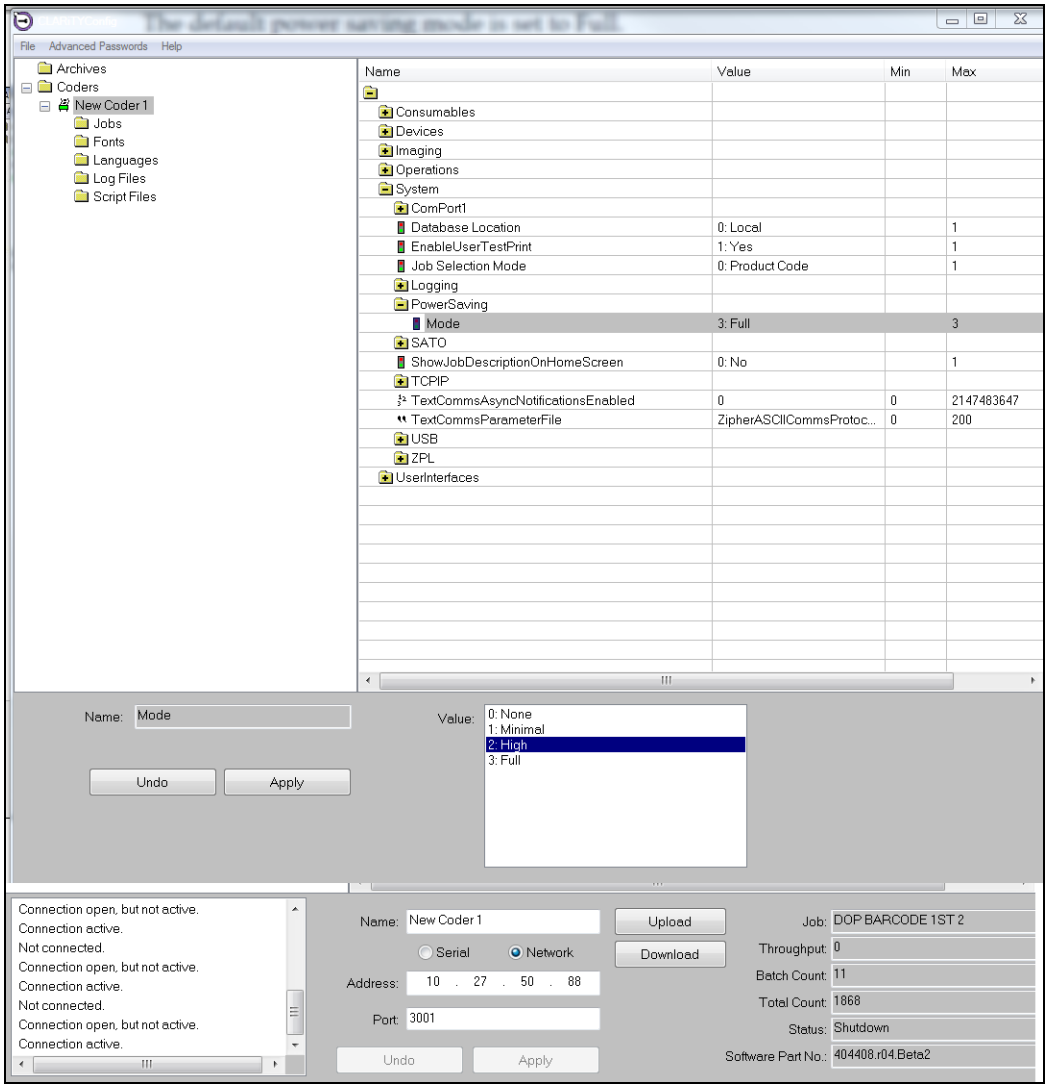


Figure 5-17: Power Saving Modes

Power Saving Mode = 0: None
User interface will not dim when power is applied.

Power Saving Mode = 1: Minimal
User interface will dim after 1 minute of inactivity.

Activity:

- User touching the screen
- USB keyboard input
- Raising of an warning (e.g. the moment the LPA transitions from No Error into Warning)
- Presence of an error

Power Saving Mode = 2: High
User interface dims after 1 minute of inactivity.

User interface turns off after a further 14 minutes of inactivity.

Activity:

- User touching the screen
- USB keyboard input
- Printing
- Raising of a warning (e.g. the moment the LPA transitions from No Error into Warning)
- Presence of an error

Power Saving Mode = 3: Full

- User interface dims after 1 minute of inactivity.
- User interface turns off after a further 14 minutes of inactivity.

Activity:

- User touching the screen
- USB keyboard input
- Raising of a warning (e.g. the moment the LPA transitions from No Error into Warning)
- Presence of an error

Note: *When an error is present the screen will be at full brightness.*

Note: *When a warning occurs the LPA treats it as an activity event and will dim and switch off after 15 minutes, if the warning is ignored.*

Note: *In High power saving mode, printing is treated as an activity event.*

How to Configure the Job Settings

Job Creation and Settings

Jobs are setup in CLARiSOFT®. The settings are specific to the active print job (.CIFF File).

For information on creating jobs in CLARiSOFT®, refer to the CLARiSOFT® Manual (P/N: 462458) or the Operator Manual.

Note: *Ensure that the image width and height settings are set so that the image is created and saved in the orientation as needed to print onto the label. During job creation, if the image needs to be rotated, go to 'File > Properties > Image Orientation'. Select required orientation value and click 'OK'. The viewed image will be saved and loaded to LPA correctly (see Figure 5-18).*

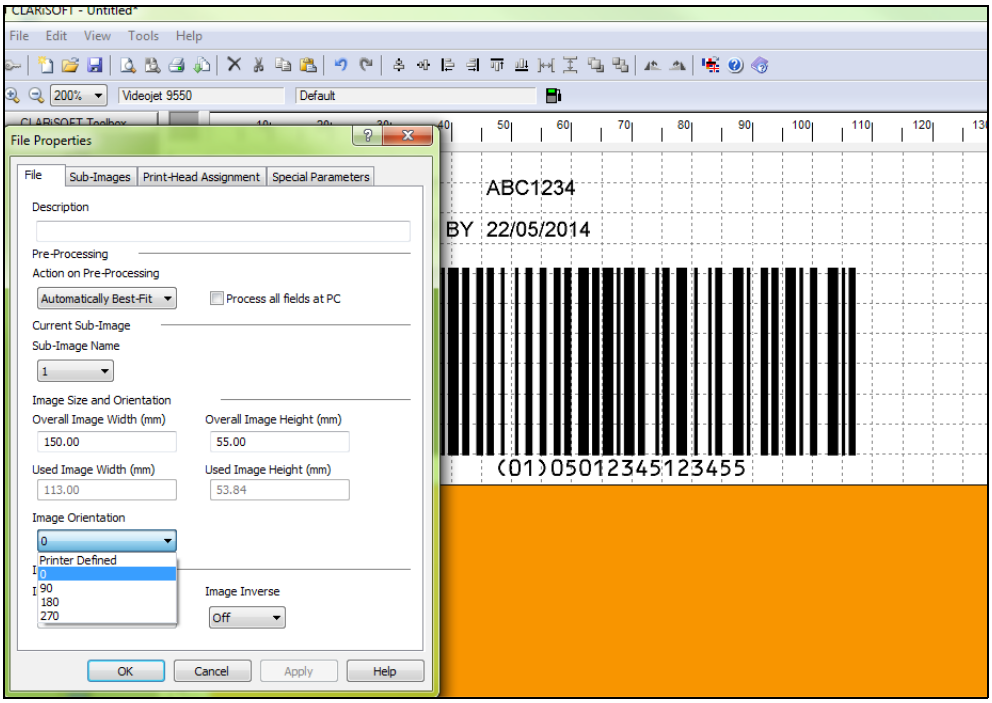


Figure 5-18: Image Orientation

CLARiTY Configuration Settings

Print Allocation

Note: *During power failure, on start up, the CLARiTY display navigates to SHUTDOWN, with the last printed job displayed or selected.*

Some coding applications demand strict control of batch sizes for example controlled pharmaceutical products.

To work in such production situations it is useful to set the coder so that it only prints a precise number of codes before shutting down and waiting for the next batch instruction.

This is called a Print Allocation and it is administered by another computer or line CLARiTY display.

When the production control PLC or PC authorizes a new production batch, a special message can be sent to the LPA using the External Serial Interface. This message selects the Job to print, any variable data in the job, and the allocation count, which is the production batch size. These messages can be stored in a queue in the LPA and the size of the permitted queue is configurable.

The LPA prints the current job until the number of products printed equals the allocation count sent by the CLARiTY display, at which point it stops. When one allocation batch has been completed, the next job is automatically selected by the LPA if there is a pending job in the queue. If there is no pending job in the queue the LPA will not execute any further printing operations until a new allocation is sent to it.

Setup of the allocation operation for the LPA is performed via the CLARiTY configuration manager, where the following parameter can be set:

- Maximum Queue Length (*Imaging* > *Update Queue* > *Max Queue Length*): Defines how many jobs are permitted to be in the Job queue.
- The configurable inputs and outputs also can be setup to trigger on certain events related to Print Allocations. To setup configurable inputs and outputs navigate to *Devices* > *PHds* > *1* > *Output Configuration.*
- Clear Print Queue (Input) - Resets the print job queue and deletes all jobs in the queue.
- Job allocation has completed (Output): The current allocation of prints has been completed.
- Job Update queue is full (Output): The maximum permitted number of jobs in the queue has been reached.
- Job Update Queue is not full (Output): The maximum permitted number of jobs in the queue has not been reached.

- New Job allocation is received (Output): A new job allocation message has been received by the LPA.

When allocations are enabled, it is possible to view the job queue at the CLARiTY UI in two different ways.

Do the following tasks to view the job queue:

1 Touch the *Current job details* bar on the home screen to access the 'Job Preview' page.

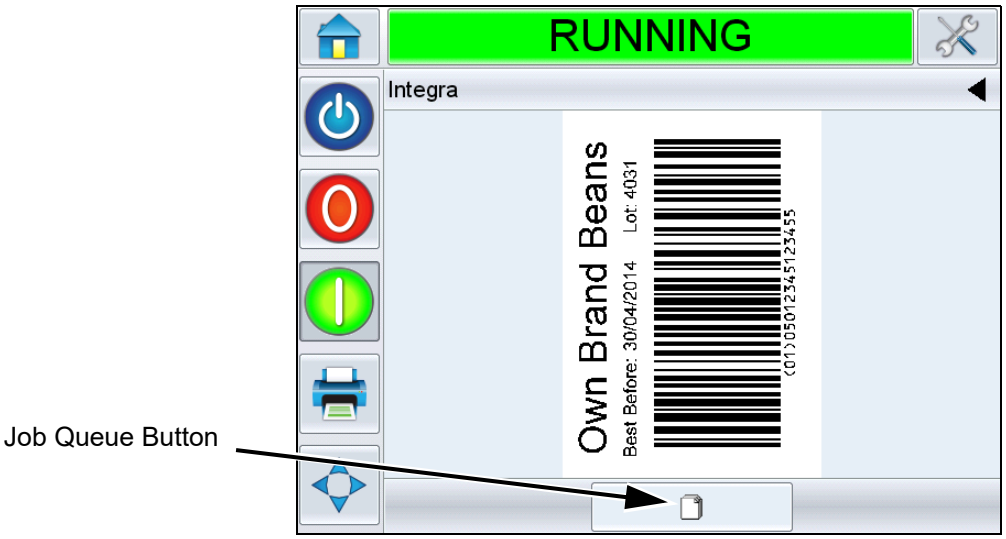


Figure 5-19: Job Preview Page

2 Touch the *Job Queue* button, to display the 'Image Update Queue' page. You can view the queue of jobs and the progress of the current job and allocation (see Figure 5-20 on page 5-30).

3 Select the *Edit* button to change print limit of the job.

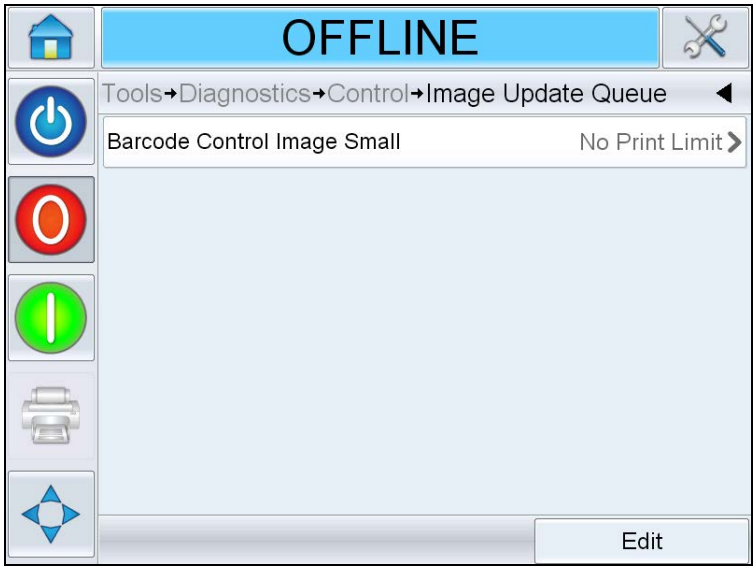


Figure 5-20: Job Queue Page

Alternately, touch *Tools* > *Diagnostics* > *Control* > *Image Update*.

Auto Print Mode

Auto print triggering mode allows the LPA to print and apply the label at specific intervals on the substrate.

Auto print trigger can be setup from the system configuration wizard during start up.

Once the LPA is placed in *Running* mode, the LPA will print as setup until the CLARiTY display is placed in *Offline* or *Shutdown* mode.

Managing Clones

How to Create a Clone

1 Insert a USB memory stick into the LPA's USB port.

***Note**: USB memory stick should have no more than 8GB capacity.*

2 Navigate to *Tools* > *Setup* > *Control* (see Figure 5-21).

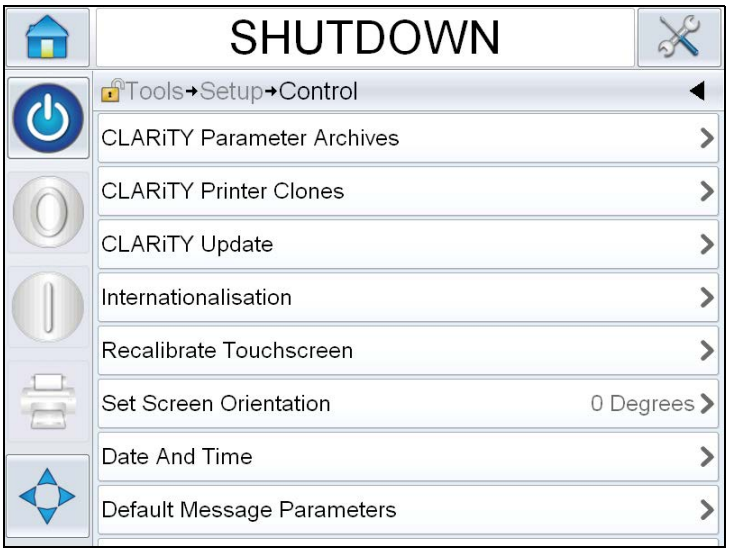


Figure 5-21: Control Page

***Note**: The options 'CLARiTY Printer Clones' and 'CLARiTY Update' are not visible until a memory stick is inserted into the printer.*

3 Touch *CLARiTY Printer Clones*.

4 If there are no previous clones available to restore, you will see the message as shown in the Figure 5-22. Touch *Create Clone*.

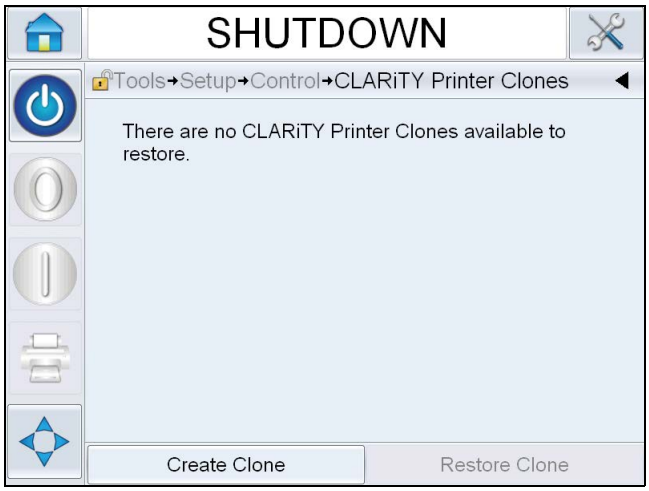


Figure 5-22: Create Clone

5 After selecting *Create Clone,* you can then rename the clone if you wish. Then touch *OK.*

Figure 5-23: Create Clone

6 The progress bar screen appears while the clone is being created.

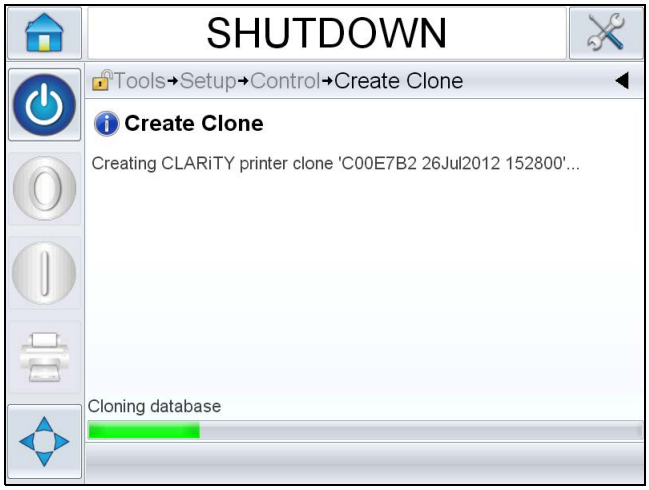


Figure 5-24: Clone Creating Screen

7 The clone is successfully created and the completion status screen appears (see Figure 5-25). Select *OK* to exit from the screen.

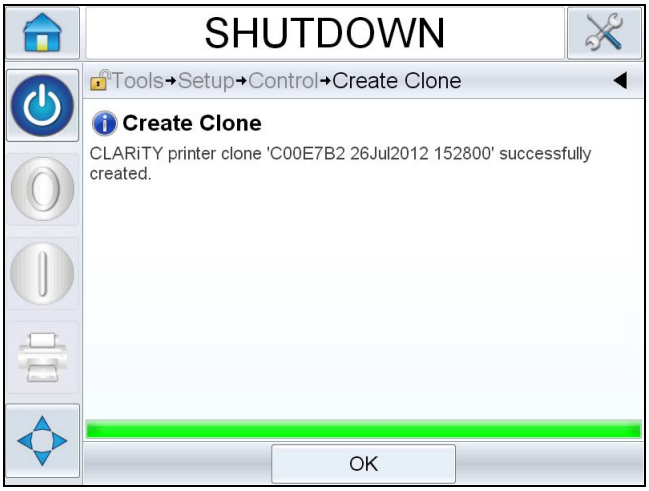


Figure 5-25: Successful Clone Creation Message Screen

How to Restore a Clone

Warning

Restore clone or archive should only be carried out when print mode is disabled that is printer *Offline* or *Shutdown* mode.

1 Navigate to *Tools* > *Setup* > *Control* > *CLARITY Printer Clones*, to restore a clone.

2 Touch the required file and touch *Restore Clone.*

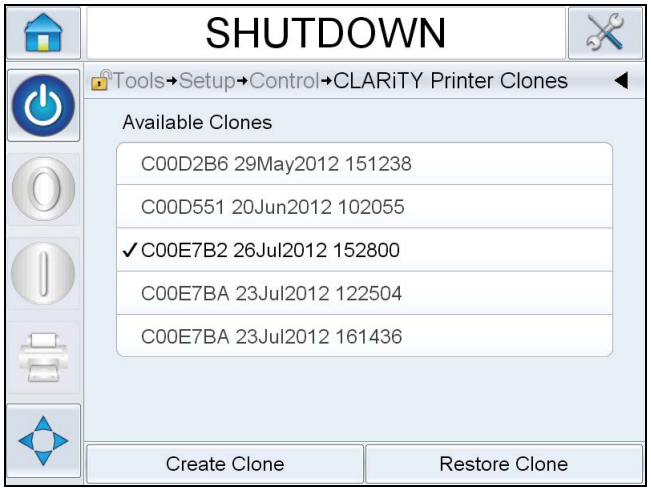


Figure 5-26: Restore Clone

3 The confirmation pages appears. Touch Yes.

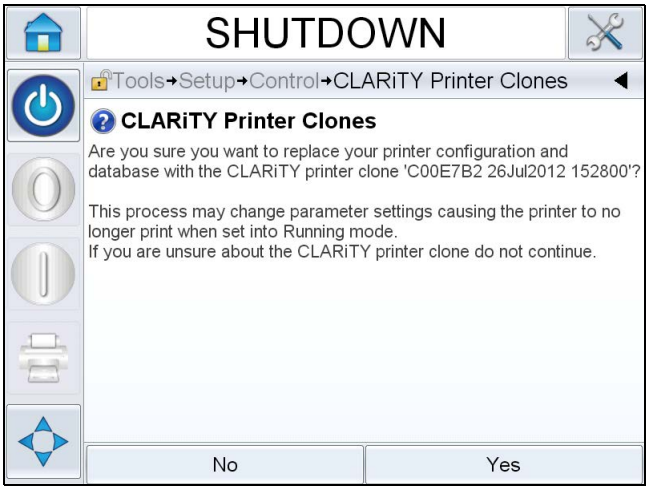


Figure 5-27: Confirmation Message Screen 1

4 Touch *Yes*.

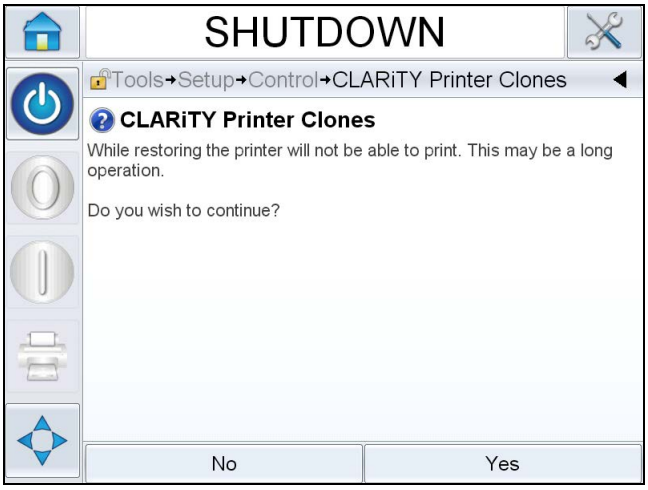


Figure 5-28: Confirmation Message Screen 2

5 Displays the below screen with progress bar while the clone is being restored.

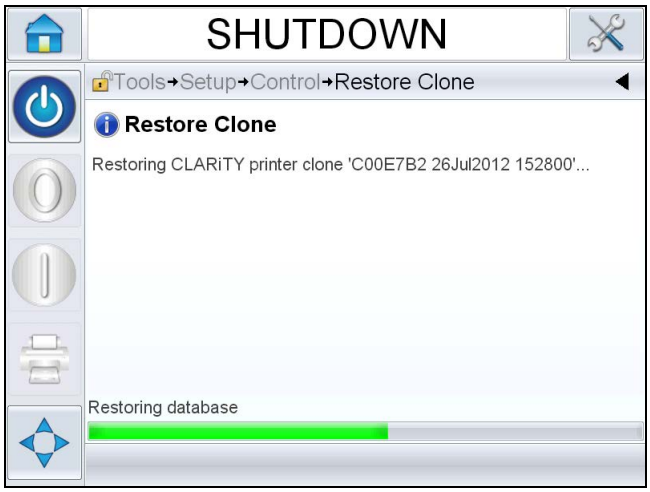


Figure 5-29: Restoring Clone

The clone has been successfully restored.

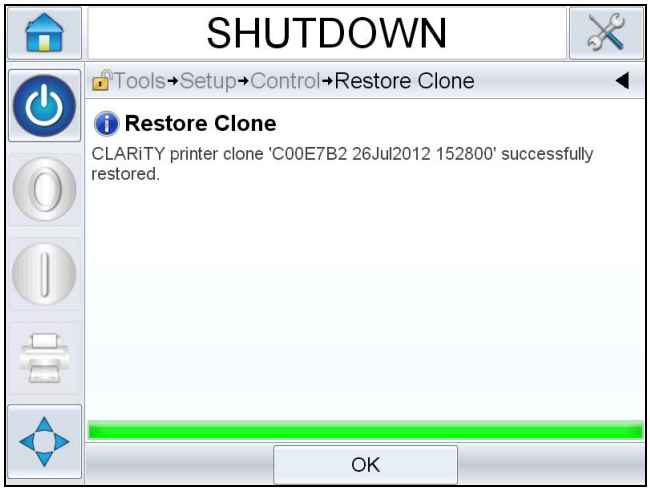


Figure 5-30: Successful Clone Restore Message Screen

Maintenance and Troubleshooting

6

This chapter contains the following topics:

- Maintenance
  - Preventive maintenance schedule
  - Replacement instructions
  - Updating the CLARiTY operating system
- Troubleshooting
  - Diagnostics wizard
  - LED indicator description
  - CLARiTY error messages
  - CLARiTY display faults
  - I/O faults
  - Label web faults

For more information on maintenance, refer to Operator Manual.

Maintenance

Preventive Maintenance Schedule

Maintenance Item	Maintenance Method	Maintenance Interval
Printhead	Clean with minimum 70% Isopropyl alcohol	With every ribbon change
Print roller and ribbon roller	Clean with minimum 70% Isopropyl alcohol	With every ribbon change or when dust/adhesive is present
Peel tip	Clean with minimum 70% Isopropyl alcohol	With every label roll change

Table 6-1: Preventive Maintenance Schedule

Maintenance Item	Maintenance Method	Maintenance Interval
Label sensor	Clean with minimum 70% Isopropyl alocohol	Once monthly or as required
Examine rollers (tamp pad if applicable) for adhesive build-up or excessive dust	Clean with minimum 70% Isopropyl alocohol to remove dust and adhesive buildup. Carefully remove any Labels adhered to web path components.	After every two to three rolls of labels, or more often if required.
Clean external surfaces	Clean with low pressure air or wipe with soft cloth.	Once monthly or as required
Product sensor	Clean lens with soft cloth	Once weekly
Inspect electrical connections	Visual inspection	Once monthly or as required
Inspect for loose screws, covers and other hardware	Visual inspection	Once monthly or as required
Belts	Visual inspection for wear	Every six months/500 Rolls
Clean dust and debris from internal components	Clean with air (canned air only; Do not use high pressure shop air)	As required
Verify that all modules and accessories are securely fastened	Visual inspection	Once monthly
For systems using tamp applicator module		
Check filter/regulator for water or oil collection	Visual Inspection. Drain if necessary. Eliminate source of contamination.	Once weekly
Examine air supply and all connections for leaks	Visual Inspection. Correct if necessary	Once weekly

Table 6-1: Preventive Maintenance Schedule (Continued)

***Note:** Harsh or dirty environments may require shorter intervals between preventive maintenance routines.*

Replacement Instructions

When you order a spare part kit, the replacement instructions of the respective spare part are provided along with the kit. For more information, contact Videojet Technologies Inc. Refer to Chapter, “Support and Training” for the contact information.

The replacement instructions are available for the parts included in the following table:

Spare Part
Printhead Assembly and Printhead Mount Assembly
Print Roller
Ribbon Sensor Roller Assembly
Gap Sensor Assembly
Gap Sensor and Print Roller Sensor PCB
Ribbon and Printhead Sensor PCB
Printhead Cable Guide
Printhead Belt
Printhead Motor
Printhead Cable
Main PCB and SD Card
Label Drive Belt
Label Drive Motor
Label Drive Motor PCB
CLARiTY Display LCD and PCB
Power Supply
Ribbon Drive Motor
Ribbon Mandrel
Brake Belt
Brake Motor
Supply Reel Hall Sensor PCB
Dancer Arm Sensor PCB
Dancer Arm Springs
Rewind Cord and Supply Gripper Flaps
Supply Assembly
Vertical Stand (H Base)
Horizontal Stand (H base)

Table 6-2: Replacement Instructions

Spare Part
Shaft Encoder Assembly
IO Internal Cable
Beacon Assembly
Product Sensor Assembly
Conveyor Assembly
Pack Guidance Assembly
Barcode Scanner
Direct Apply Roller
Mains Inlet Assembly
Label Rewind Mandrel

Table 6-2: Replacement Instructions (Continued)

Motor Calibration Wizard

During the LPA build, the ribbon and the printhead motors are calibrated and the calibration is stored in the PCB. When the PCB or the motors are changed, the calibration data is no longer valid and recalibration is required.

- When the PCB is changed, the installation wizard will start on the LPA power ON and the calibration process is part of this procedure.
- When the printhead or ribbon motors are replaced, it is necessary to carry out the calibration procedure as explained below.

Calibrate Ribbon Motors

Do the following tasks to calibrate ribbon motors:

Note: *Remove the label or ribbon fitted to the mandrels before starting calibration procedure.*

1 Navigate to *Operations* > *CharacterizeRibbonMotors*.

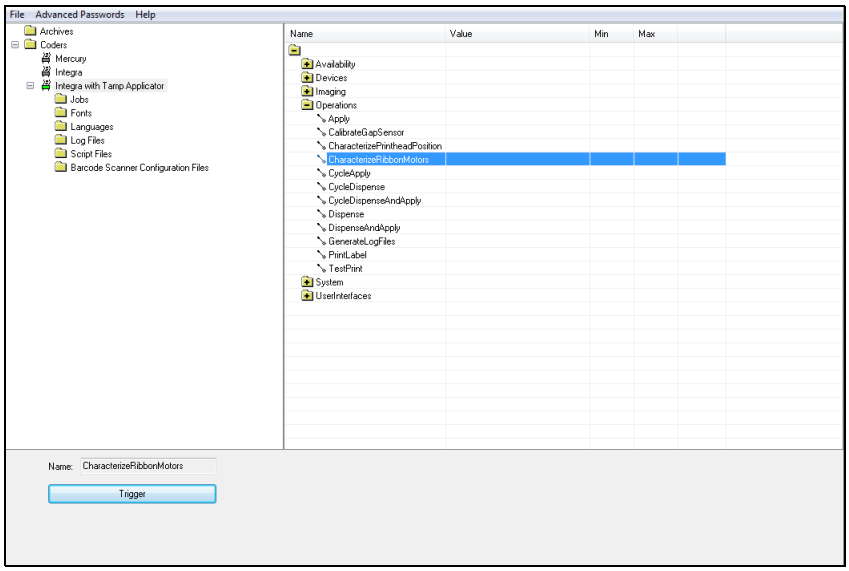


Figure 6-1: Characterize Ribbon Motors

2 Press *Trigger* button. The *CharacterizeRibbonMotors confirmation screen appears.*

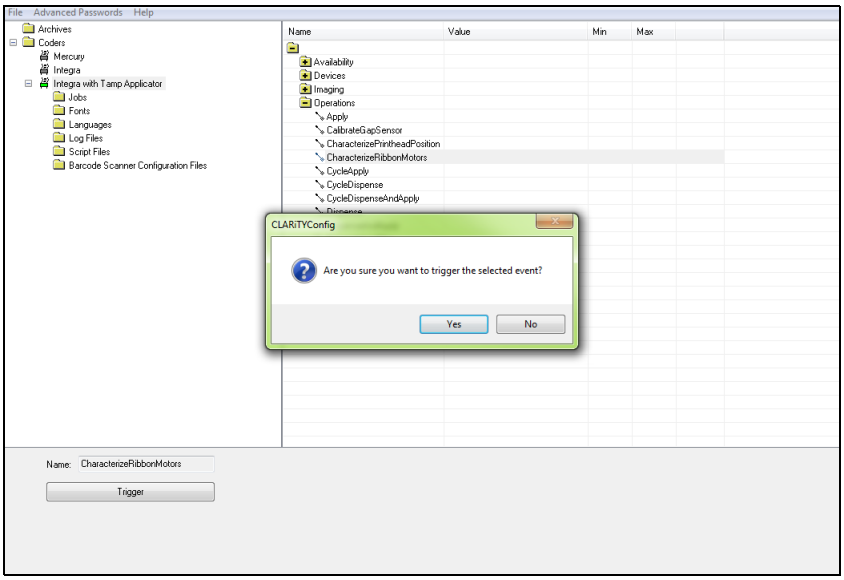


Figure 6-2: Characterize Ribbon Motors Confirmation

3 Select *Yes*.

4 The LPA will begin calibration of the ribbon motor. The mandrels will start to rotate at various speeds during this procedure.

5 The mandrels will stop rotating when the calibration is complete.

Calibrate Printhead Motors

Do the following tasks to calibrate printhead motors:

Note: *Remove the label or ribbon fitted to the mandrels before starting calibration procedure.*

1 Navigate to *Operations* > *CharacterizePrintheadPosition*.

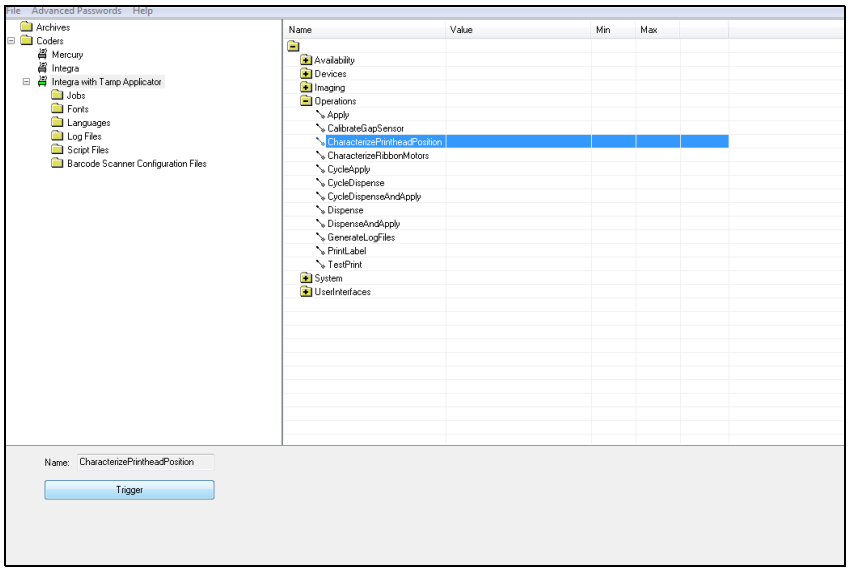


Figure 6-3: Characterize Printhead Position

2 Press *Trigger* button. The *CharacterizePrintheadPosition confirmation screen appears.*

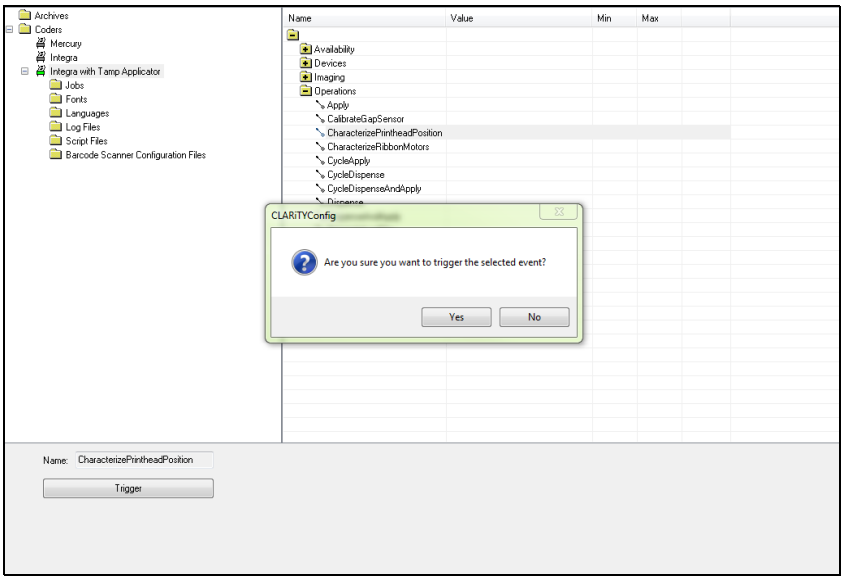


Figure 6-4: Characterize Printhead Position Confirmation

3 Select *Yes*.

4 The LPA will begin calibration of the printhead motor. The mandrels will start to rotate at various speeds during this procedure.

5 The mandrels will stop rotating when the calibration is complete.

Updating the CLARiTY Operating System

The CLARiTY operating system can be upgraded by a process called a ‘CLARiTY Update’.

The current version of the software appears at the page *Tools* > *Diagnostics* > *Control* > *Versions* where the software part number can be read.

The part number has the format:

Part.Version.Service Pack

For example: *404828.r14.SP8* represents part number 404828, Revision 14, Service pack 8.

If the software is corrupted or was not installed correctly, the software part number states “Incompatible Software Versions”. When this message appears, a CLARiTY update must be performed immediately to correct the situation, otherwise it results in unpredictable LPA behavior.

The LPA should be used only when a valid part number appears in the part number window.

There are two ways of performing a CLARiTY Update:

1. Connecting the LPA to a PC, that runs CLARiTY Configuration manager
2. Inserting a USB memory stick containing the update file into the LPA

Before performing a CLARiTY Update it is strongly recommended that a parameter archive is saved using CLARiTY Configuration Manager (Refer “How to Archive the Current Parameters” on page 5-16).

CLARiTY Update via PC

It is recommended that when updating via PC, the PC-LPA connection is done via Ethernet. This process is faster (refer “How to Connect the CLARiTY Configuration Manager to the LPA using an Ethernet cable” on page 5-10 for connecting a PC to the LPA via Ethernet).

You must have the CLARiTY Update CAB file stored on the PC disk. Contact your local service representative to obtain the correct file for your LPA.

Do the following tasks to update the CLARiTY:

1 Connect the LPA to the PC and when the coder icon is green, right click on the icon.

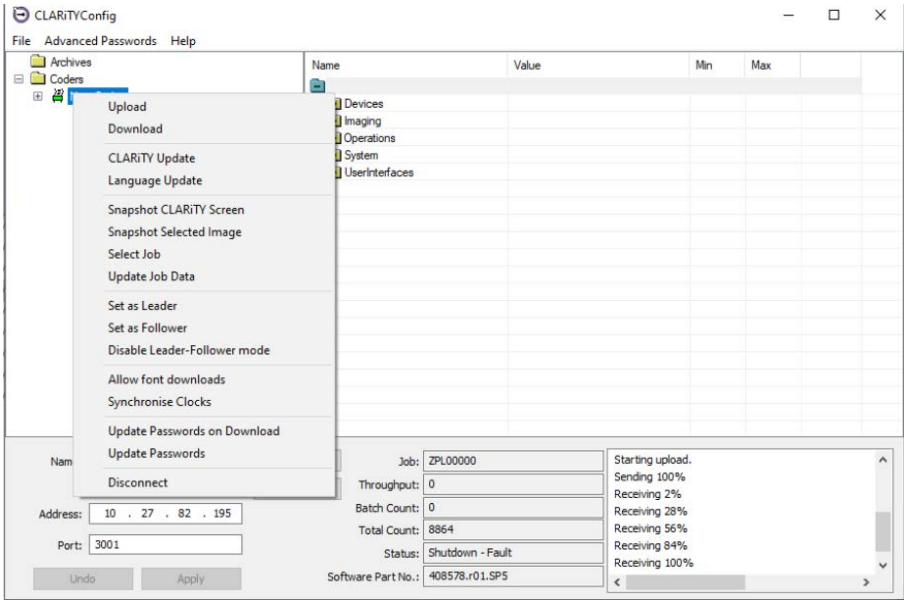


Figure 6-5: CLARiTY Update Window

2 Click on *CLARiTY Update* and navigate to the CAB file stored on the PC disc.

3 Click on the file name and the update process commences.

4 The update file is initially downloaded and the progress of the download can be followed in the Progress pane of the CLARiTY Configuration Manager screen.

5 Once the download is completed the CLARiTY Update of the LPA starts and the CLARiTY screen indicates the progress of the update.

Note: *It is very Important to ensure that the power to the LPA is not removed during the update process, or the flash card in the LPA may get corrupted.*

When the update is finished, CLARiTY automatically re-boots and then the CLARiTY Home page appears.

6 Check the software part number in the *Diagnostics* screen to ensure that the update has been successful.

CLARiTY Update via USB Memory Stick

Updating of LPA software is possible from a USB memory stick as opposed to a PC/Laptop and CLARiTY Configuration Manager.

Do the following tasks to update the CLARiTY using a USB stick:

1 Copy the CLARiTY software onto a USB memory stick.

Note: *The software must be stored in a root directory called '\CLARiTYupdate'.*

2 Connect the stick to the CLARiTY Operator Interface via the USB port (see Figure 6-6).

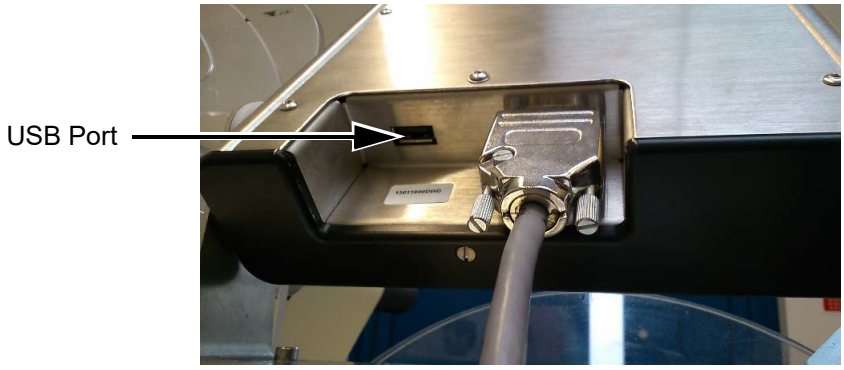


Figure 6-6: USB Location

3 If the CLARiTY Configuration Manager parameter called "Prompt On CLARiTY Update Detect" is set to *Yes*, when the device is connected to the CLARiTY Operator Interface, a confirmation page appears.

4 If the parameter is set to *No*, navigate to *Tools* > *Setup* > *Control* and touch the *CLARiTY Update* button.

5 Select *Yes* to proceed to the next stage of the update or *No* to return to the home page.

Figure 6-7 shows the CLARiTY Update screen with updates applicable to the current model of the LPA.

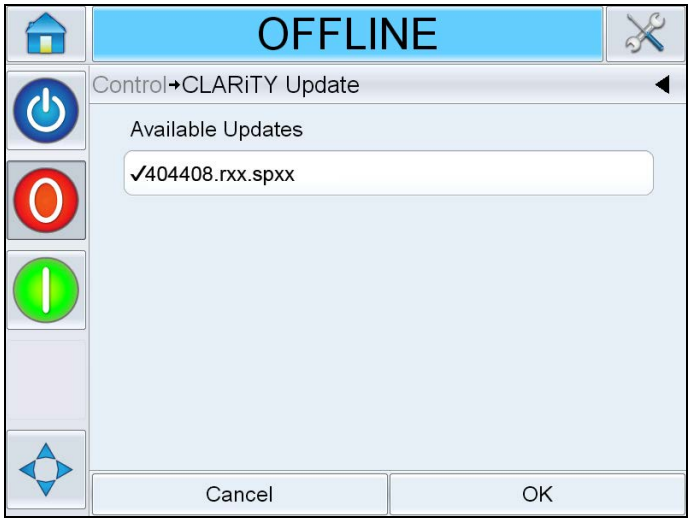


Figure 6-7: CLARiTY Update Page

6 Touch *OK*, a confirmation page appears (Figure 6-8).

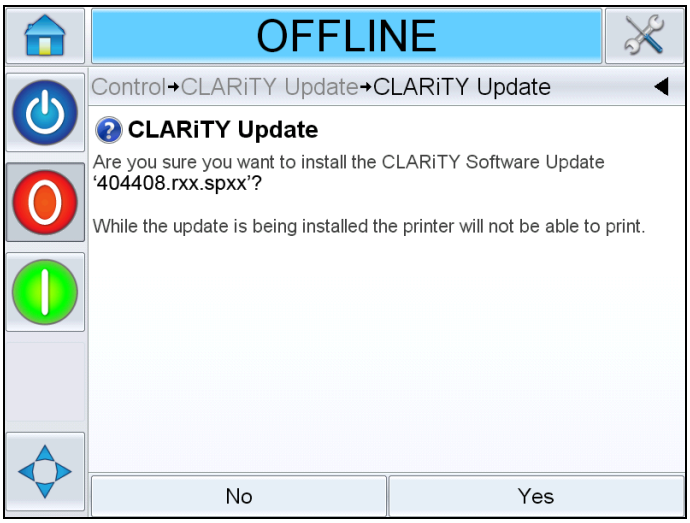


Figure 6-8: CLARiTY Confirmation Page

Caution

EQUIPMENT DAMAGE. Make sure that the equipment is switched ON during the update process. If not, the flash card in the equipment may get corrupted.

7 Touch *Yes* and the LPA starts to update the software.

Once the update is completed, re-power the coder and the CLARiTY Home page appears.

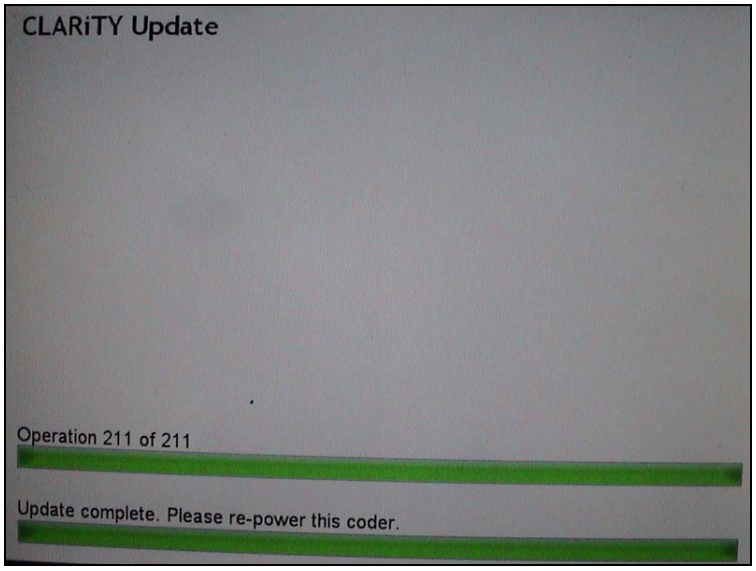


Figure 6-9: CLARiTY Update Complete

8 Check the software part number in the *Diagnostics* screen to check that the update is successful.

Note: *For information on maintaining CLARiTY display, printhead and labeler refer to 'Maintenance' Chapter of Operator Manual.*

Troubleshooting

Diagnostics Wizard

The diagnostics wizard has been created to support the engineers in the diagnosis of the LPA performance.

The machine test wizard will guide the engineer/support personnel through a number of tests for each element of the machine. Follow the on-screen instructions for each of the tests.

Figure 6-10: Machine Test Wizard

Note: *Where a test passes, the next test begins. Where a test fails, recommended remedial actions will be provided. Once resolved, re-run the wizard until all elements have passed each test. A summary of test results will be provided at the end of the wizard.*

To access the machine test wizard, navigate to *Tools* > *Diagnostics* > *Control* > *Diagnostic Wizards.*

Figure 6-11: Diagnostic Wizard

To confirm correct operation of the LPA, perform the following tasks:

1 Run the machine test wizard.

Note: *Ribbon and labels must be removed from the LPA before starting the wizard.*

2 Perform the specific tests for the parts.

Table 6-3 lists the tests included in the wizard in order of execution.

For machine tests that require manually rotating the print and ribbon rollers make sure to stop their rotation with the displayed value as close to 0 as possible before completing the test.

Sl No.	Test Name
1	E-Stop Test
2	Dancer Arm Test
3	Label Supply Brake Test
4	Supply Rotation Sensor Test
5	Gap Sensor Calibration

Table 6-3: List of Tests included in Wizard

Sl No.	Test Name
6	Gap Sensor Test
7	Print Roller Test
8	Ribbon Roller Test
9	Printhead Pivot Sensor Test
10	Label Rewind Test
11	Label Drive Test
12	Label Drive Direction Test
13	Ribbon Supply Mandrel Test
14	Ribbon Supply Test
15	Ribbon Supply Direction Test
16	Ribbon Rewind Mandrel Test
17	Ribbon Rewind Test
18	Ribbon Rewind Direction Test
19	Printhead Pivot Test

Table 6-3: List of Tests included in Wizard (Continued)

3 Follow the on-screen instructions to fix any found issues.

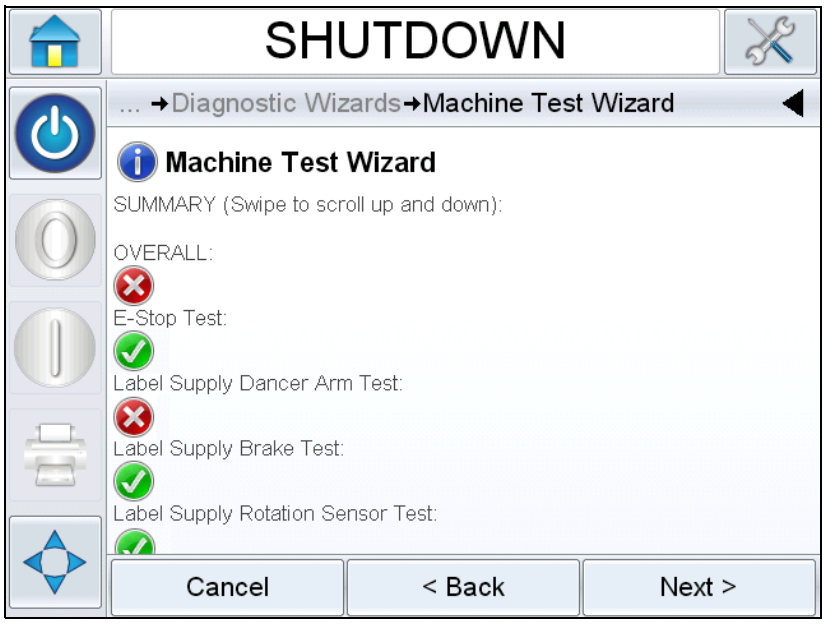


Figure 6-12: Machine Test Wizard

4 Close the machine test wizard.

Printhead

1 To access the printhead troubleshooting menu, navigate to *Tools* > *Diagnostics* > *Printhead* > *Troubleshooting*.

Figure 6-13: Printhead Menu

2 The troubleshooting page lists the printhead parameters.

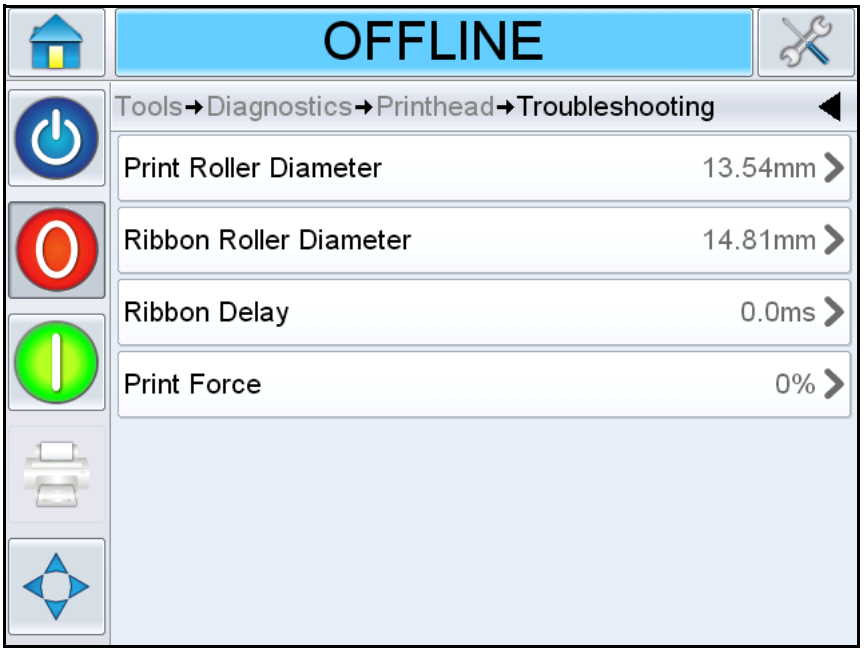


Figure 6-14: Troubleshooting Menu

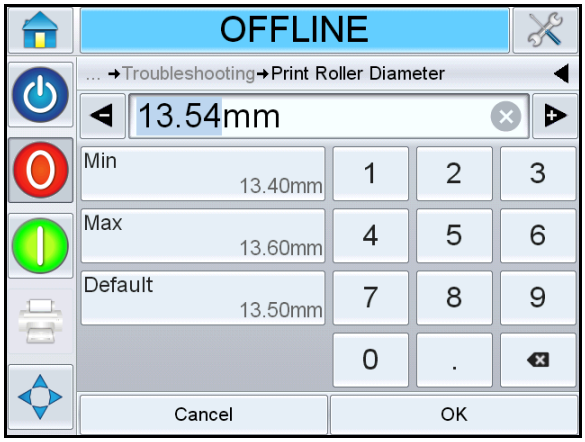
Buttons	Description
Printer Roller Diameter	Permits the user to input the printer roller diameter 
Ribbon Roller Diameter	Permits the user to input the ribbon roller diameter 

Table 6-4: Printhead Troubleshooting

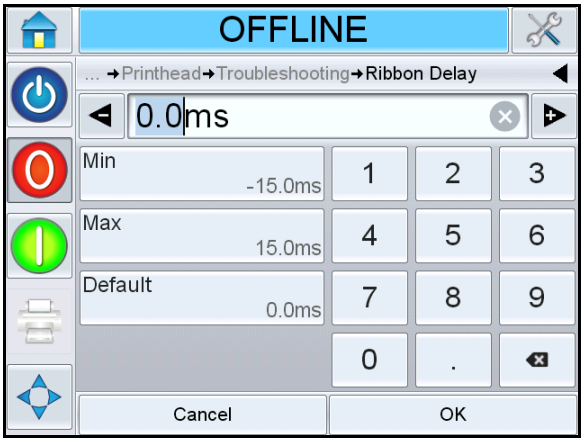
Buttons	Description
Ribbon Delay	Permits the user to input the ribbon delay 
Print Force	Permits the user to input the print force

Table 6-4: Printhead Troubleshooting

LED Indicator Description

LED Color	Status	Action Required
Bright Red 	No Label material is detected	Route the label web correctly
Flashing Red 	Ribbon and Label detected indicating that the ribbon is threaded incorrectly and is detected by the label gap sensor	Route the ribbon web correctly
Green 	Label is detected	No operator action required
Bright Green 	Label gap is detected	No operator action required

Table 6-5: LED Status

CLARiTY Error Messages

Table 6-6 provides the faults and warnings related to job design.

For complete list of faults and warnings refer to Integra Operator Manual.

Error No.	Error Description	Remedial Actions	Status
E5005	SlotSensorDetection ‘Dancer Arm Fault’ - The dancer arm has failed to return to its home position.	• Ensure the dancer arm is free to move. This fault may be caused by an obstructed dancer arm, or a faulty dancer arm home position sensor. You can view the sensor state at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5008	IntegraMotor VoltsOutOfRange ‘Label Drive Fault’ - The label drive motor power safety system has detected that the motor volts are outside the working range.	• Power the machine off and on to see if the problem persists. This error can also be caused by a faulty motor, a faulty main PCB or a faulty power supply. • Please call your local service representative for further support. The machine will not run until this fault is resolved.	Fault
E5009	IntegraPrinthead VoltsOutOfRange ‘Printhead Power Fault’ - The printhead safety system has detected that the printhead power is outside the working range of 18.5 Volts to 32 Volts.	• Power off the machine and check that the printhead cables are not damaged and are firmly plugged into the printhead. Power on to see if the fault has cleared. You can check the printhead volts at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If the problem persists, please call your local service representative for further support. The machine will not run until this fault is resolved.	Fault
E5010	IntegraThermisterFault ‘Printhead Sensor Fault’ - The printhead self-check system has detected that the print-head temperature sen-sor is either disconnected or faulty.	• Power off the machine and check that the printhead cables are not damaged and are firmly plugged into the printhead. • Power on and attempt to resume printing. This fault will only clear when the tempera-ture sensor readings are within the working range (-10 °C to 65 °C). You can check the readings at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If the problem persists, please call your local service representative for further support.	Fault

Table 6-6: CLARiTY Error Messages

Error No.	Error Description	Remedial Actions	Status
E5011	IntegraPrinthead OverTemperature 'Printhead Over Temperature' - The printhead self-check system has detected that the printhead temperature has exceeded 65 °C and is too hot to continue printing.	• This can be caused by loose cables, a faulty printhead or is running outside of the operating specifications. • You can view the printhead temperature at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. When the printhead temperature falls below 65 °C, this error can be cleared. • If this problem persists, please call your local service representative for further support. Once resolved and ready, press the 'Clear' button below.	Fault
E5012	DancingArmPosition 'Dancer Arm Fault' - The dancer arm is not moving freely. This fault may be caused by an obstructed dancer arm, or a faulty dancer arm position sensor.	• You can view the reading of the dancer arm position at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the 'Clear' button below.	Fault
E5013	IntegraLabelDrive 'Label Drive Fault' - The label drive fault may be caused by a faulty main circuit board, or the label drive circuit board, or the connections between the two boards.	• Power off the machine and check the connections between the two boards, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved.	Fault
E5020	IntegraLabelFeed 'Label Feed Fault' - The sensor LED should be RED if no labels present, GREEN if labels are present and BRIGHT GREEN if the gap between labels is at the sensor.	• The sensor LED will be FLASHING RED if the labels and ribbon is detected by the sensor. You can also view the sensor state at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If the problem persists, replace the label sensor or call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the 'Clear' button below.	Fault
E5021	IntegraRibbonDrive-TemperatureShutdown 'Ribbon Drive Fault' - The ribbon drive fault may be caused by a faulty main circuit board, or the ribbon motors, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the 'Clear' button below.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Error No.	Error Description	Remedial Actions	Status
E5023	IntegraRibbonDriveShortToGround 'Ribbon Drive Fault' - The ribbon drive fault may be caused by a faulty main circuit board, or the ribbon motors, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the 'Clear' button below.	Fault
E5024	IntegraRibbonDriveOpenCircuit 'Ribbon Drive Fault' - The ribbon drive fault may be caused by a faulty main circuit board, or the ribbon motors, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the 'Clear' button below.	Fault
E5025	IntegraRibbonPullThrough 'Ribbon Feed Fault' - This fault may be due to momentary adhesion of the ribbon to the label, which can be caused if printhead pressure and darkness are set excessively high.	• In turn, these may have been set too high to overcome print quality problems that may arise from a dirty printhead or an old printhead that is due to be replaced. • Please clean the printhead and check that the darkness and printhead pressure settings are nominal. Once resolved and ready, press 'Clear' button and re-try. • If the problem still persists, please call your local service representative.	Fault
E5026	IntegraRibbonPathInterference 'Ribbon Feed Fault' - This fault may be caused by an object obstructing or changing the ribbon path - check that the ribbon path is correct and that the rollers can rotate freely without obstruction.	• This fault may also be due to a fault with the ribbon roller. Check this fault at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. Once resolved and ready, press 'Clear' button and re-try. • If the problem still persists, please call your local service representative.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Error No.	Error Description	Remedial Actions	Status
E5027	IntegraRibbonRemoval No Ribbon' - If there is no ribbon because you wish to run the machine with direct-thermal labels, please configure the machine for this mode of operation.	• If this fault persists when there is ribbon fitted correctly, it may be due to a ribbon roller fault. Check this fault at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. Once resolved and ready, press 'Clear' button and re-try. • If the problem still persists, please call your local service representative.	Fault
E5028	PrintheadPositionTemperatureShutdown 'Printhead Force Fault' - The printhead force drive has a fault. This may be caused by a faulty main circuit board.	• Power off the machine and replace the main circuit board, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved.	Fault
E5030	PrintheadPositionShortToGround 'Printhead Force Fault' - The printhead force drive has a fault. This may be caused by a faulty main circuit board, or the printhead force motor, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved.	Fault
E5031	PrintheadPositionOpenCircuit 'Printhead Force Fault' - The printhead force drive has a fault. This may be caused by a faulty main circuit board, or the printhead force motor, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved.	Fault
E5032	IntegraPrintheadPosition 'Printhead Position Fault' - This fault may be caused by an object obstructing the printhead pressing onto the print roller, or that the printhead is not mounted correctly.	• This fault may also be due to a fault with the printhead position sensor. Check this sensor at T*ools* > *Diagnostics* > *Printhead* > *Inputs*. • Once resolved and ready, press the 'Clear' button and re-try. If the problem still persists, please call your local service representative.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Error No.	Error Description	Remedial Actions	Status
E5034	IntegraIgnoredPrints 'Unlabelled Product' - The printer is still busy printing and applying the previous label when the next product triggers the product sensor. This has now occurred for more consecutive products than the machine is configured to accept.	• This can be caused by products being too close together, or if the product sensor is faulty or is being falsely triggered by an obstruction or similar. • You can check the product sensor input at *Tools* > *Diagnostics* > *Printhead* >*Inputs*. • If the problem persists, or you wish to purchase a spare product sensor, please call your local service representative. Once resolved and ready, press the 'Clear' button below.	Fault
E5036	IntegraIncorrectPrintRegistration 'Printer Configuration Error' - The printer is configured with conflicting parameters which will result in incorrectly printed labels.	• Go to *Tools* > *Setup* > *Printhead* >*Label Stopping Position* and check this parameters is correct and that there is a label under the printhead, then re-try. • If the problem persists, please call your local service representative. Once resolved and ready, press the 'Clear' button below.	Fault
E5038	CrashStop 'Dancer Arm Fault' - The dancer arm is not moving freely. This fault may be caused by an obstructed dancer arm, or a faulty dancer arm position sensor.	• You can view the reading of the dancer arm position at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the 'Clear' button below.	Fault
E5039	SupplySensor 'Label Supply Sensor Fault' - The label supply sensor is not working. This could be due to a faulty or damaged sensor, or faulty or damaged wiring, or a loose connector.	• Power off the machine and check wiring and connections, then re-try. • You can check the sensor input at *Tools* > *Diagnostics* > *Printhead* >*Inputs*. • If the problem persists, or you wish to purchase a spare label supply sensor, please call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the 'Clear' button below.	Fault
E5040	IntegraPrintheadRatio 'Printhead Positioning Error' - Check that the printhead, print roller and bumpers are fitted.	• If everything is fitted correctly and the problem persists, check the Printhead Position Sensor at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If no input is detected and the problem persists, please call your local service representative. Once resolved and ready, press the 'Clear' button below.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Error No.	Error Description	Remedial Actions	Status
E5041	IntegraLabelDrive TemperatureShutdown ‘Label Drive Fault’ - The label drive fault may be caused by a faulty main circuit board, or the ribbon motors, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5042	BrakeControlTemperatureShutdown ‘Label Supply Brake Fault’- The label supply brake fault may be caused by a faulty circuit board or the brake motor, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved.	Fault
E5043	BrakeControlShortToGround ‘Label Supply Brake Fault’- The label supply brake fault may be caused by a faulty circuit board, or the brake motor, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved.	Fault
E5044	BrakeControlOpenCircuit ‘Label Supply Brake Fault’- The label supply brake fault may be caused by a faulty circuit board, or the brake motor, or the connections between them.	• Power off the machine and check the connections, then re-try. • If the problem persists, please call your local service representative. The machine will not run until this fault is resolved.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Error No.	Error Description	Remedial Actions	Status
E5045	IntegraLabelEncoder ‘Label Feed Fault’- The sensor LED should be RED if no labels present, GREEN if labels are present and BRIGHT GREEN if the gap between labels is at the sensor. The sensor LED will be FLASHING RED if the labels and ribbon is detected by the sensor.	• You can also view the sensor state at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. • If the problem persists, replace the label sensor or call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5046	IntegraLabelCreep ‘Label Feed Fault’	• If the problem persists, replace the print roller sensor or call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5050	LabelStockAbsent ‘No Labels Detected’	• The sensor LED must be RED if no labels present, GREEN if labels are present and BRIGHT GREEN if the gap between labels is at the sensor. The sensor LED will be FLASHING RED if the labels and ribbon is detected by the sensor. • You can also view the sensor state at *Tools* > *Diagnostics* > *Printhead* > *Inputs*. If the problem persists, replace the label sensor or call your local service representative. The machine will not run until this fault is resolved. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5051	IntegraNoPrinthead ‘Incompatible Printhead’- An incompatible printhead has been detected.	• Power off the machine and replace with a compatible printhead. Power on to resume operation. • If the problem persists, or if you wish to purchase spare parts, please call your local service representative for further support. The machine will not run until this fault is resolved.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Error No.	Error Description	Remedial Actions	Status
E5053	IntegraPrintheadNot-Configured ‘Incompatible Print-head’- An incompatible printhead has been detected.	• Power off the machine and replace with a compatible printhead. Power on to resume operation. • If the problem persists, or if you wish to purchase spare parts, please call your local service representative for further support. The machine will not run until this fault is resolved.	Fault
E5054	IntegraAuthentication-Failure ‘Incompatible Print-head’- An incompatible printhead has been detected.	• Power off the machine and replace with a compatible printhead. Power on to resume operation. • If the problem persists, or if you wish to purchase spare parts, please call your local service representative for further support. The machine will not run until this fault is resolved.	Fault
E5055	RewindCalibration ‘Label Waste Mandrel Not Locked’	• If there is a restriction stopping you from fully closing the waste mandrel and this fault persists, please call your local service representative for further support and refer to the Service Manual.	Fault
E5056	Printhead Position Characterization Required	The printhead position system has not been characterized. To characterize the printhead position system: • Ensure that the ribbon mandrels have no ribbon fitted to them. • Ensure that there is no label web between the printhead and print roller. • Ensure that there is a printhead and print roller fitted. • Press the ‘Characterize’ button below. Once the characterization completes, this fault will clear automatically.	Fault
E5059	Machine Orientation Not Set	The Machine Orientation parameter has not been set. To clear this fault press the ‘Configure’ button below or run the system configuration option in *Tools* > *Setup* > *Control*. This fault will automatically clear when this is complete.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Error No.	Error Description	Remedial Actions	Status
E5100	TampNoProductDetected 'No Product Detected' - The applicator reached the end of its stroke without detecting a product.	• This can be caused by false triggering of the product sensor, or by a faulty product sensor, or by a faulty applicator pad sensor, which is mounted inside the applicator pad. • You can check the product sensor input at *Tools* > *Diagnostics* > *Printhead* > *Inputs* and the pad sensor input at *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. • If the problem persists, or you wish to purchase a spare sensor, please call your local service representative. Once resolved and ready, press the 'Clear' button below.	Fault
E5101	TampPadSenseDetected 'Applicator Obstruction' - The applicator's pad sensor - mounted inside the applicator pad, is being falsely triggered by an obstruction or similar, or possibly the sensor is faulty.	• You can check the pad sensor input at *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. • If the problem persists, or you wish to purchase a spare sensor, please call your local service representative. Once resolved and ready, press the 'Clear' button below.	Fault
E5102	TampCylinderPositionError 'Applicator Cylinder Fault' - The applicator air cylinder is either stuck or not travelling correctly during its apply cycle, or has faulty internal sensors.	• This can be caused by physical obstruction, or inadequate air pressure, or physical damage to the cylinder guide rods which prevents the applicator from executing its apply cycle properly. • Check for physical obstructions or damage. Check air supply. • You can also check the cylinder sensors at *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. • If the problem persists, or you wish to purchase spare parts, please call your local service representative. Once resolved and ready, press the 'Clear' button below.	Fault

Table 6-6: CLARiTY Error Messages (Continued)

Front of Pack Applicator Specific Faults

Table 6-7 provides the Front of Pack Applicator Specific Faults and Warnings.

Error No.	Details	Description	Status
E5103	Applicator Obstruction ‘FOP Cylinder Ready Obstruction’	• The arm has failed to reach its ready position within a reasonable amount of time. • Please check that there are no obstructions causing the arms travel to be delayed. If the problem persists, call your maintenance engineer or local service representative. • Press the ‘Detail’ button below for maintenance assistance. • Once resolved and ready, press the ‘Clear’ button below. Detail: The applicator arm is either stuck or not travelling correctly during its apply cycle or has faulty internal sensors. This can be caused by physical obstruction or inadequate air pressure or physical damage to the arm which prevents the applicator from executing its apply cycle properly. Check for physical obstructions or damage. Check air supply. • You can also check the arm sensors at *Tools > Diagnostics > Options > Applicator > Inputs and Outputs*. If the problem persists, or you wish to purchase spare parts, please call your local service representative. Once resolved and ready, press the ‘Clear’ button below.	Fault

Table 6-7: Front of Pack Applicator Specific Faults

Error No.	Details	Description	Status
E5104	Applicator Arm Fault ‘FOP Cylinder Position Error’	• The applicator arm is not operating correctly. Check for obvious obstructions and clear. If problem persists, call your maintenance engineer or local service representative. • Press the ‘Detail’ button below for maintenance assistance. Once resolved and ready, press the Clear button below. Detail: The applicator arm is either stuck or not travelling correctly during its apply cycle, or has faulty internal sensors. This can be caused by physical obstruction, or inadequate air pressure, or physical damage to the applicator arm which prevents the applicator from executing its apply cycle properly. Check for physical obstructions or damage. Check air supply. • You can also check the cylinder sensors at *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. If the problem persists, or you wish to purchase spare parts, please call your local service representative. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5105	Applicator Arm Fault ‘FOP Arm Not Ready’	• The arm was not in its ready to apply position when the apply was triggered. Check for obstructions. Check air pressure. • If problem persists, call your maintenance engineer or local service representative. • Press the ‘Detail’ button below for maintenance assistance. Once resolved and ready, press the ‘Clear’ button below. Detail: The applicator arm wasn't in its ready position when an apply was triggered. Check for physical obstructions or damage. Check air supply. Please check the ready position sensor is working correctly at *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. • If the problem persists, or you wish to purchase spare parts, please call your local service representative. Once resolved and ready, press the Clear button below.	Fault

Table 6-7: Front of Pack Applicator Specific Faults (Continued)

Error No.	Details	Description	Status
E5106	Applicator Obstruction 'FOP Cylinder is Not Detected'	• The applicator arm failed to return to its home position within its normal amount of time. Check for obvious obstructions and clear. • If problem persists, call your maintenance engineer or local service representative. • Press the 'Detail' button below for maintenance assistance. Once resolved and ready, press the 'Clear' button below. Detail: The applicator arm has failed to return to its home position at the end of its cycle. This may be caused by an obstruction or a faulty home position sensor. • Please check the home position sensor is working correctly at *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. • If the problem persists, or you wish to purchase spare parts, please call your local service representative. Once resolved and ready, press the 'Clear' button below.	Fault
E5107	Applicator Arm Timeout	• The Applicator arm has been in its apply position for longer than expected. The label has been ejected and the arm has been returned to its home position ready for the next product. • If this problem persists, check that your product sensors are working correctly and there is nothing blocking the sight of each sensor.	Fault

Table 6-7: Front of Pack Applicator Specific Faults (Continued)

Rear Corner Wrap Applicator Specific Faults

Table 6-8 provides the Rear Corner Wrap Applicator Specific Faults and Warnings.

Error No.	Details	Description	Status
E5108	Applicator Obstruction ‘Ready Sensor Detected’	• The applicator is stuck in its out position. This could be due to an obstruction stopping the applicator returning to its home position. This could also be due to a faulty position sensor • To check the position sensor go to *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. Once resolved and ready, press the Clear button below.	Fault
E5109	Applicator Obstruction	• The applicator arm was not in its home position when the wipe applicator was about to be triggered. This may be due to an obstruction or a faulty home position sensor. • To check the position sensor, go to *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5110	Applicator Obstruction ‘Cylinder Is Not Detected’	• The applicator hasn't returned to its home position within a reasonable amount of time. This could be due to an obstruction or a faulty home position sensor. To check the position sensor, go to *Tools* > *Diagnostics* > *Options* > *Applicator* > *Inputs and Outputs*. Once resolved and ready, press the ‘Clear’ button below.	Fault
E5111	Wipe Ignored ‘Ignored Apply Warning’	• The previous wipe request has been ignored. This is because the machine has determined that the wipe arm would have collided with the product(s). • Please ensure that your product sensor is mounted the correct distance away from the beak. • Please refer to the operator manual for information on product sensor setup.	Fault

Table 6-8: Rear Corner Wrap Applicator Specific Faults

Barcode Scanner Faults and Warnings

Table 6-9 provides the Barcode Scanner Faults and Warnings.

Error No.	Details	Description	Status
E1601	ConsecutiveNoReads ‘Barcode 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 product. • Check that the applied label is not wrinkled on the product. • 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, press the ‘Clear’ button below.	Fault
E1602	ConsecutiveWrongReads ‘Barcode Fault’ - 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 labeler and scanner, then re-try. • If the problem persists, please call your local service representative. Once resolved and ready, press the ‘Clear’ button below.	Fault

Table 6-9: Barcode Scanner Faults and Warnings

Job File Faults and Warnings

Refer to Operator Manual for information on job file faults and warnings.

CLARiTY Display Faults

Fault	Possible Cause	Solution
CLARiTY display fails to respond to touch	Faulty Remote User Interface PCBA	Replace PCBA
	Faulty RUI cable assembly	Replace cable
	Faulty main control board (P/N: 604795)	Replace main control board
	Faulty or damaged touch screen	Replace LCD display
CLARiTY screen not displayed	Faulty Remote User Interface PCBA	Replace PCBA
	Faulty RUI cable assembly	Replace cable
	RUI connectors not inserted correctly	Power off and insert cable correctly
	Faulty main control board (P/N: 604795)	Replace main control board
	Backlight faulty	Replace LCD display
	External I/O supply short circuit	Remove external sensors, encoder etc. When fault is removed, locate short circuit

Table 6-10: CLARiTY Display Faults

I/O Faults

Fault	Possible Cause	Solution
Machine does not respond to print signal	No external 24V supply	Check and attach the cable

Table 6-11: I/O Faults

Label Web Faults

Fault	Possible Cause	Solution
Dancer Arm hits end stops	Brake belt worn or broken	Review error message for further detail. Replace belt
	Brake motor fault	Review error message for further detail. Replace motor
	Brake Motor Drive system fault	Review error message for further detail

Table 6-12: Label Web Faults

Illustrated Parts List

7

The Illustrated Part List (IPL) contains the illustrations and the parts lists for the different assemblies in the system. The parts lists give the part numbers, description and quantity of all the items and the modules in the printer. You can order the items and the modules for which the part numbers are given.

How to Read the IPL

This section describes how the higher assemblies are broken down to their related sub assemblies and other separate parts.

Illustrations

Table 7-1 on page 7-1 shows the symbols used to indicate the different levels of main assemblies in a system, and the sub assemblies under the main assembly.

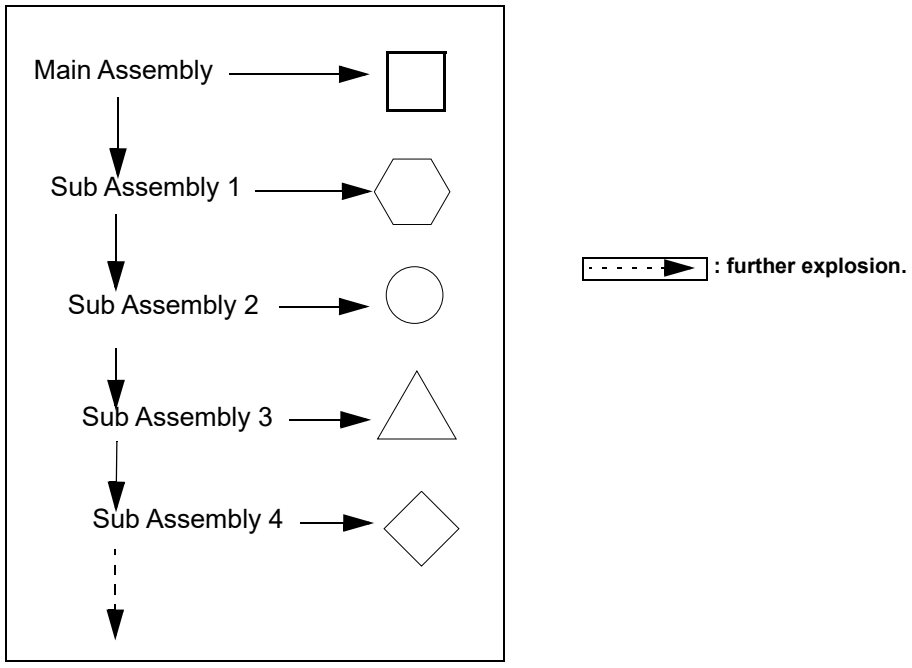


Table 7-1: Symbols Representation - Assemblies

Alphabets

- An alphabet is assigned to the main assemblies of a system and each sub assembly under the main assembly. See Figure 7-1.

  For example: If A, B, C and D identify the main assemblies of a system, then the alphabets E, F, and so on identify sub assemblies below each main assembly in a sequence.

- The alphabets assigned to main assemblies are used only for one time.
- The alphabets “I” and “O” are not used because they look like the numbers 1 and 0.

Numbers

A natural number (1,2,3.....) is assigned to the stand alone parts (in ascending order) through out the breakdown of main assemblies. See Figure 7-1.

Note: *The numbers assigned to main assemblies can be used only for one time.*

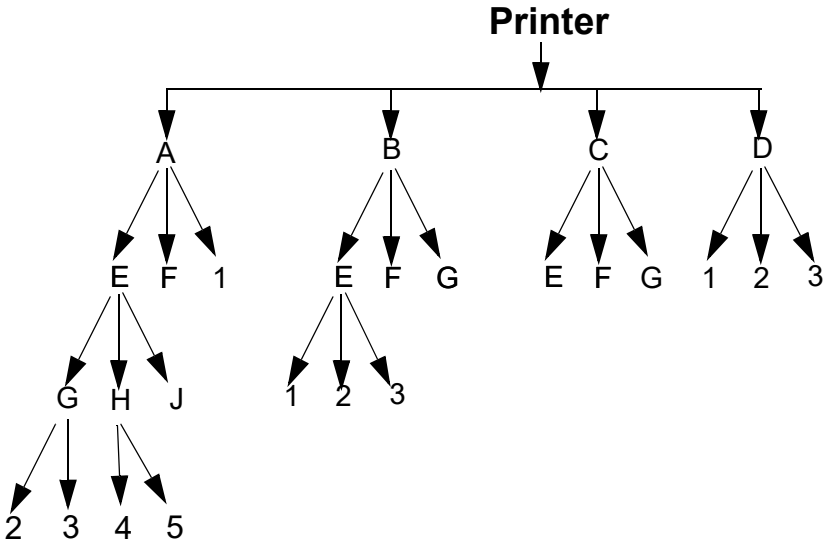


Figure 7-1: Graphical Representation of the Different Subassemblies and

Notes

Notes provide useful information. Some examples for note are as follows:

Note: *To order this item, use part number of item 9 in this table.*

Note: *This screw is a part of printhead.*

Note: *This item can be ordered separately.*

LPA Assembly

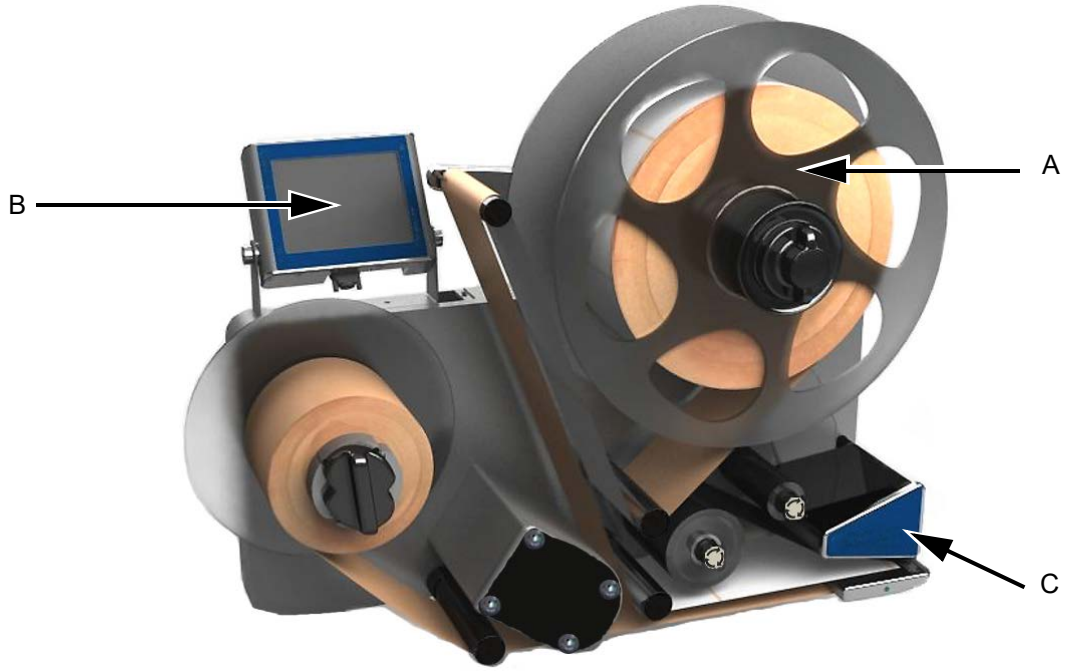


Figure 7-2: LPA Assembly

Table 7-2 shows the assemblies of the Videojet 9550 LPA Assembly.

Item	Description
A	LPA
B	CLARiTY Display
C	Printhead

Table 7-2: LPA Assemblies

LPA

Figure 7-3: LPA

Item No.	Description
A	Labeler

Table 7-3: Labeler

Power Supply Assembly

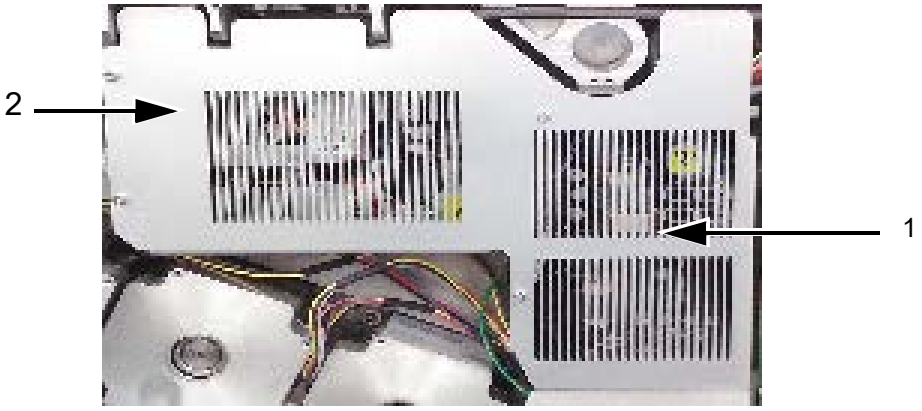


Figure 7-4: Power Supply Assembly

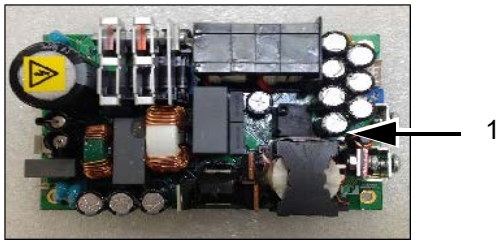


Figure 7-5: 48 V Power Supply Assembly

Item No.	Part Number	Description	Quantity
1	406347	Spare LPA 48V Power Supply Assembly	1

Table 7-4: 48 V Power Supply Assembly

Figure 7-6: 150 V Power Supply Assembly

Item No.	Part Number	Description	Quantity
2	406348	Spare LPA 150V Power Supply Assembly	1

Table 7-5: 150 V Power Supply Assembly

Label Drive Motor

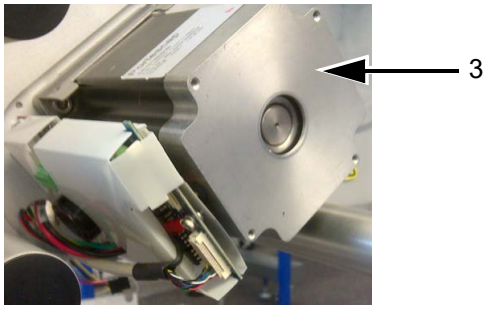


Figure 7-7: Label Drive Motor

Item No.	Part Number	Description	Quantity
3	406349	Spare LPA Label Drive Motor	1

Table 7-6: Label Drive Motor

Brake Motor Assembly

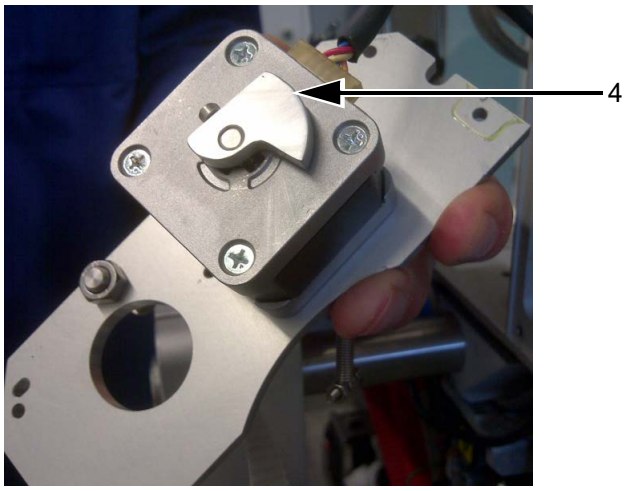


Figure 7-8: Brake Motor Assembly

Item No.	Part Number	Description	Quantity
4	406351	Spare LPA Brake Motor Assembly	1

Table 7-7: Brake Motor Assembly

Additional LPA Spares

Part Number	Description	Quantity
406343	Spare LPA Fuse	Pack of 10
406362	Spare LPA Access Plate	1

Table 7-8: Additional LPA Spares

LPA PCB

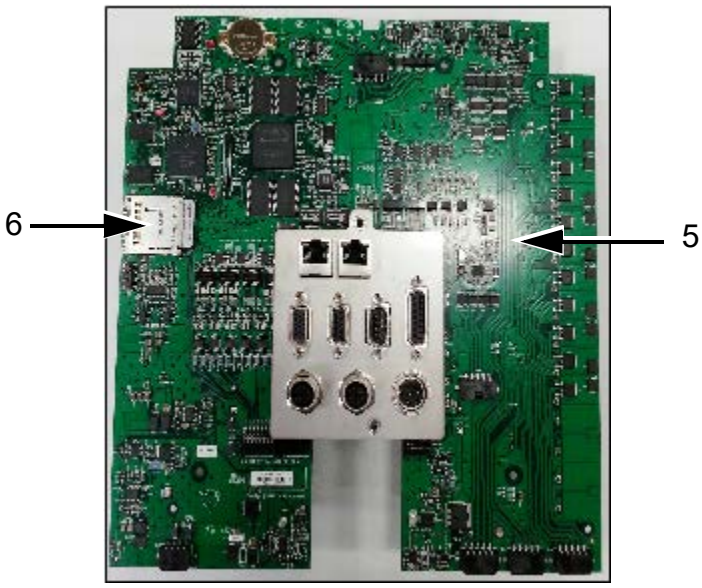


Figure 7-9: LPA PCB

Item No.	Part Number	Description	Quantity
5	406341	Spare LPA Main PCB (including SD Card)	1
	409135	Spare LPA 160mm Main PCB (including SD Card)	
6	406342	Spare LPA SD Card	1

Table 7-9: LPA PCB

Label Web

Brake Belt Assembly

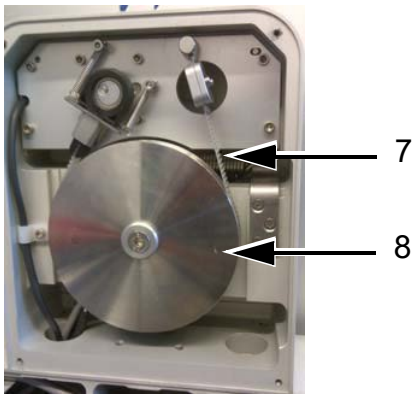


Figure 7-10: Brake Belt Assembly

Item No.	Part Number	Description	Quantity
7	406331	Spare LPA RH Brake Belt Assembly	1
	406332	Spare LPA LH Brake Belt Assembly	
8	407334	Spare LPA Brake Belt Pulley Assembly	1

Table 7-10: Brake Belt Assembly

Label Drive Belt

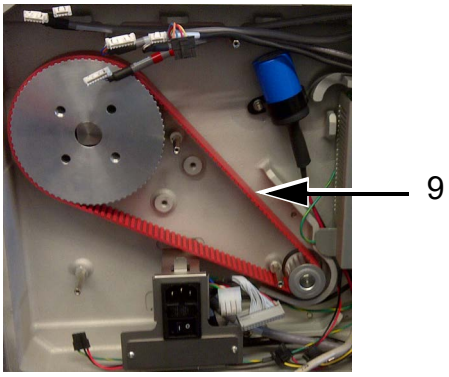


Figure 7-11: Label Drive Belt

Item No.	Part Number	Description	Quantity
9	406334	Spare LPA Label Drive Belt	1

Table 7-11: Label Drive Belt

Supply Disc Assembly

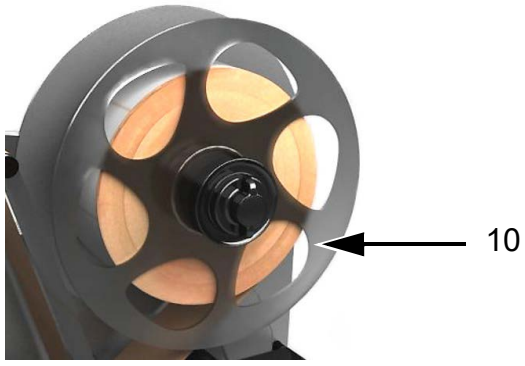


Figure 7-12: Supply Disc Assembly

Item No.	Part Number	Description	Quantity
10	406337	Spare LPA Supply Disc Assembly	1

Table 7-12: Supply Disc Assembly

Supply Assembly

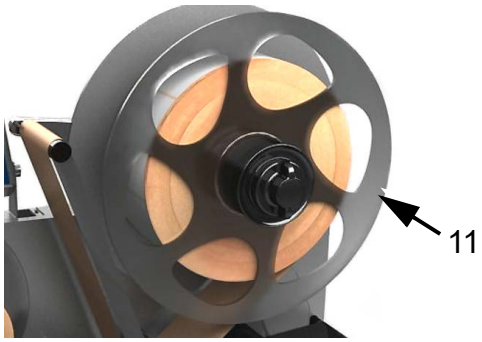


Figure 7-13: Supply Assembly

Item No.	Part Number	Description	Quantity
11	406345	Spare LPA RH Supply Assembly	1
	409152	Spare LPA RH 160mm Supply Assembly	
	406346	Spare LPA LH Supply Assembly	
	409153	Spare LPA LH 160mm Supply Assembly	

Table 7-13: Supply Assembly

Supply Gripper Flaps

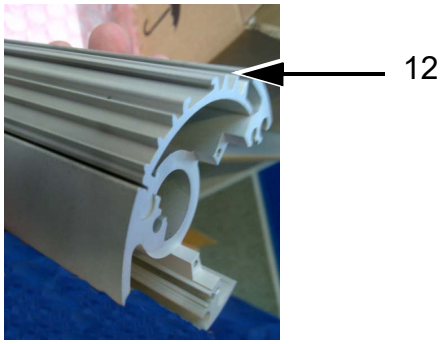


Figure 7-14: Supply Gripper Flaps

Item No.	Part Number	Description	Quantity
12	406353	Spare LPA Supply Gripper Flaps	3 off
	409154	Spare LPA 160mm Supply Gripper Flaps	

Table 7-14: Supply Gripper Flaps

Label Roller

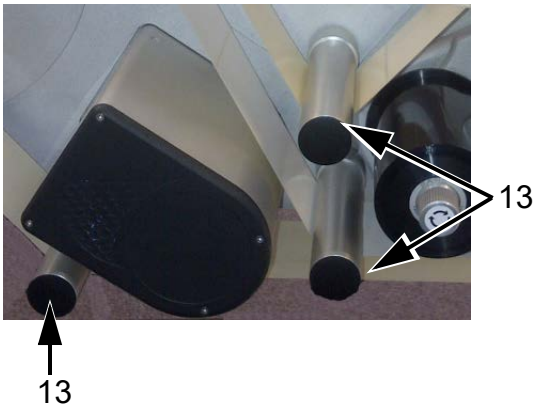


Figure 7-15: Label Roller

Item No.	Part Number	Description	Quantity
13	406354	Spare LPA Label Idler Roller	1
	409136	Spare LPA 160mm Label Idler Roller	

Table 7-15: Label Roller

Rewind Cord

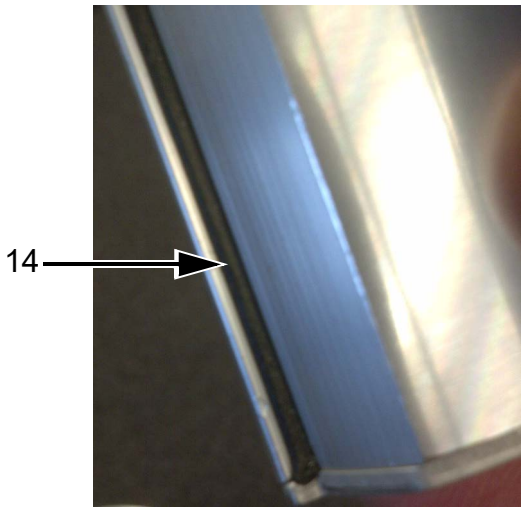


Figure 7-16: Rewind Cord

Item No.	Part Number	Description	Quantity
		Rewind Assembly	
14	406359	Spare LPA Rewind Cord	Pack of 10
	409149	Spare LPA 160mm Rewind Cord	
	407148	Spare Label Rewind End Cap Assembly - RH	1
	407149	Spare Label Rewind End Cap Assembly - LH	
	409150	Spare LPA 160mm Label Rewind Assembly - RH	
	409151	Spare LPA 160mm Label Rewind Assembly - LH	

Table 7-16: Rewind Cord

Dancer Arm Roller

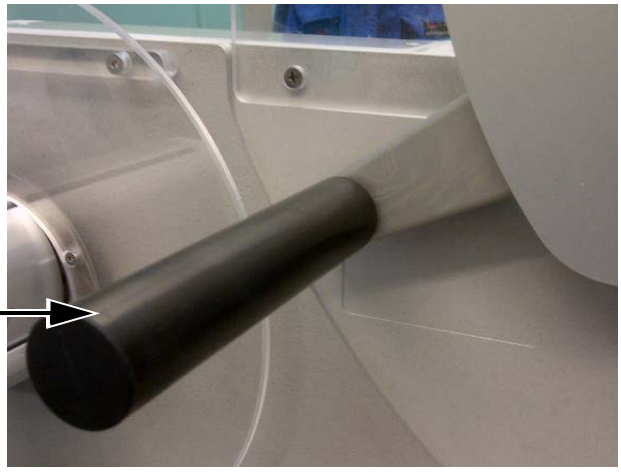


Figure 7-17: Dancer Arm Roller

Item No.	Part Number	Description	Quantity
15	406360	Spare LPA Dancer Arm Roller	Pack of 5
	409155	Spare LPA 160mm Dancer Arm Roller	

Table 7-17: Dancer Arm Roller

Dancer Arm Spring

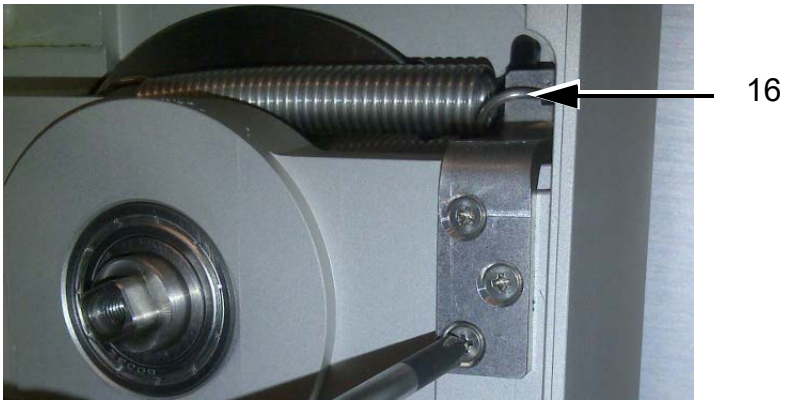


Figure 7-18: Dancer Arm Spring

Item No.	Part Number	Description	Quantity
16	406361	Spare Dancer Arm Spring	Pack of 5
17*	407335	Spare LPA Supply Override Finger - LH	1
	407336	Spare LPA Supply Override Finger - RH	

Table 7-18: Dancer Arm Spring

* Items are not shown

Label Web PCB
Label Drive Stepper PCB

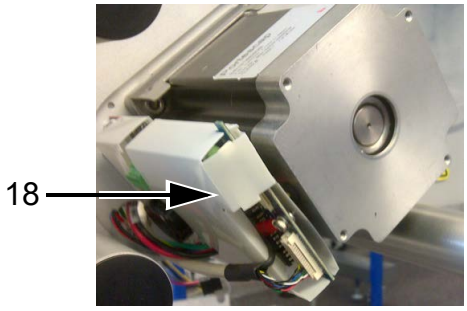


Figure 7-19: Label Drive Stepper PCB

Item No.	Part Number	Description	Quantity
18	406336	Spare LPA Label Drive Stepper PCB	1

Table 7-19: Label Drive Stepper PCB

Dancer Arm Sensor PCB

Figure 7-20: Dancer Arm Sensor PCB

Item No.	Part Number	Description	Quantity
19	406355	Spare LPA Dancer Arm Sensor PCB	1

Table 7-20: Dancer Arm Sensor PCB

Supply Reel Hall Sensor PCB

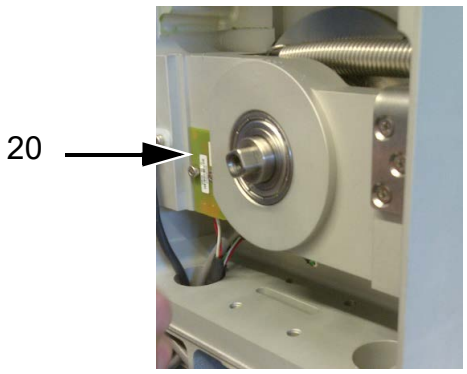


Figure 7-21: Supply Reel Hall Sensor PCB

Item No.	Part Number	Description	Quantity
20	406356	Spare LPA Supply Reel Hall Sensor PCB	1

Table 7-21: Supply Reel Hall Sensor PCB

CLARiTY Display

B

Figure 7-22: CLARiTY Display

Item No.	Part Number	Description
B	406338	Spare 6.5 CLARiTY User Interface incl. - RUI Cable 1m incl. - Yoke Assembly
	407147	Spare LPA Yoke Assembly

Table 7-22: CLARiTY Display

CLARiTY LCD

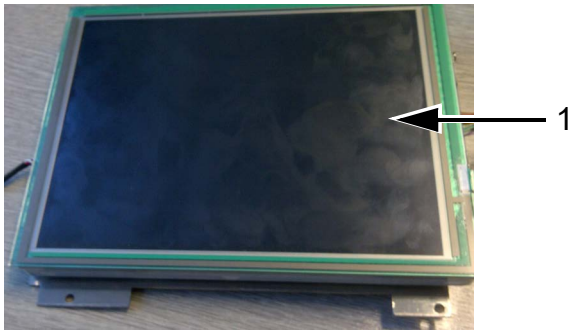


Figure 7-23: CLARiTY LCD

Item No.	Part Number	Description	Quantity
1	404326	Spare 6.5 CLARiTY LCD	1

Table 7-23: CLARiTY LCD

CLARiTY Display PCB

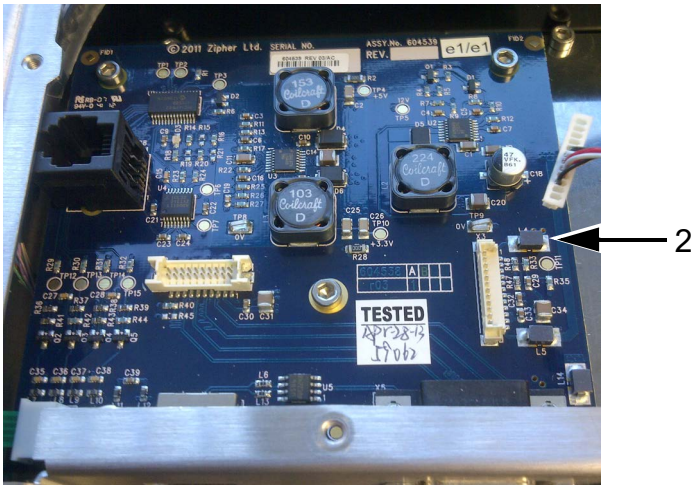


Figure 7-24: CLARiTY Display PCB

Item No.	Part Number	Description	Quantity
2	406340	Spare LPA 6.5 CLARiTY PCB	1

Table 7-24: CLARiTY Display PCB

Printhead Assembly

C

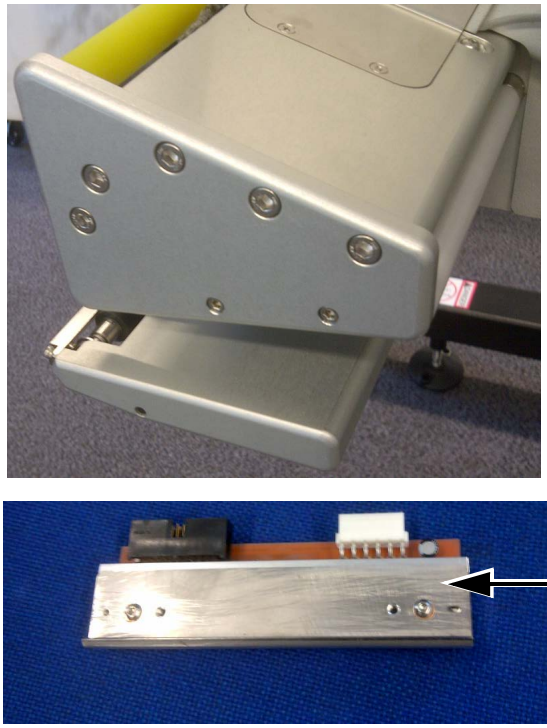


Figure 7-25: Printhead Assembly

Item No.	Part Number	Description	Quantity
C			
1	407064	Spare LPA 53mm Printhead Assembly	1
	406315	Spare LPA 107 (76mm) Printhead Assembly	
	409143	Spare LPA 160mm Printhead Assembly	
2*	406321	Spare LPA Printhead Bumper Assembly	1

Table 7-25: Printhead Assembly

* Items are not shown

Print Roller Assembly

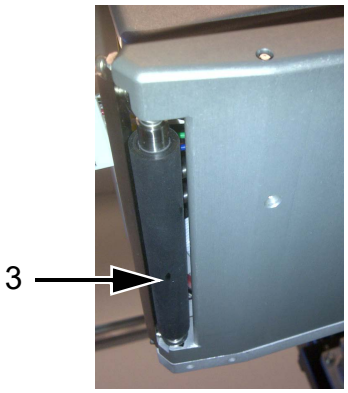


Figure 7-26: Print Roller Assembly

Item No.	Part Number	Description	Quantity
3	406997	LPA 53mm Print Roller Assembly	1
	406108	LPA 76mm Print Roller Assembly	
	406316	LPA 107mm Print Roller Assembly	
	409146	LPA 160mm Print Roller Assembly	

Table 7-26: Print Roller Assembly

Printhead Mount Assembly

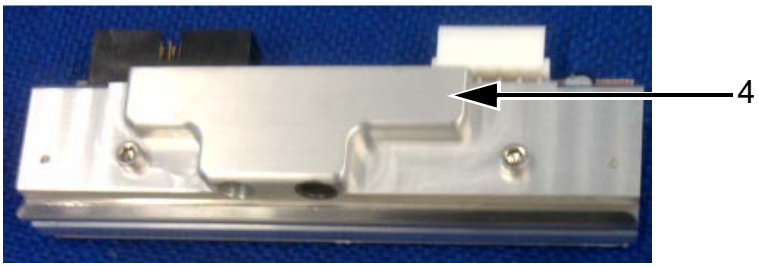


Figure 7-27: Printhead Mount Assembly

Item No.	Part Number	Description	Quantity
4	407065	LPA 53mm Printhead Mount Assembly	1
	406109	LPA RH 76mm Printhead Mount Assembly	
	406110	LPA LH 76mm Printhead Mount Assembly	
	406317	LPA RH 107mm Printhead Mount Assembly	
	406318	LPA LH 107mm Printhead Mount Assembly	
	409144	LPA RH 160mm Printhead Mount Assembly	
	409145	LPA LH 160mm Printhead Mount Assembly	

Table 7-27: Printhead Mount Assembly

Peel Tip Assembly

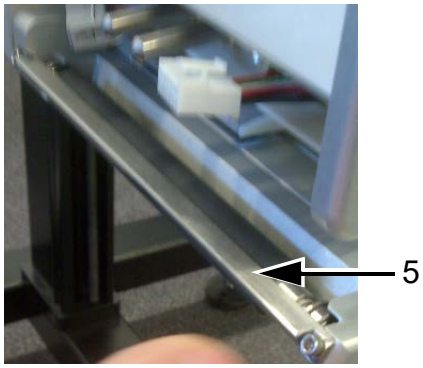


Figure 7-28: Peel Tip Assembly

Item No.	Part Number	Description	Quantity
5	407730	Spare LPA 53mm Peel Tip Assembly	1
	406320	Spare LPA 76mm/107mm Peel Tip Assembly	
	409137	Spare LPA 160mm Peel Tip Assembly	

Table 7-28: Peel Tip Assembly

Ribbon Sensor Roller Assembly

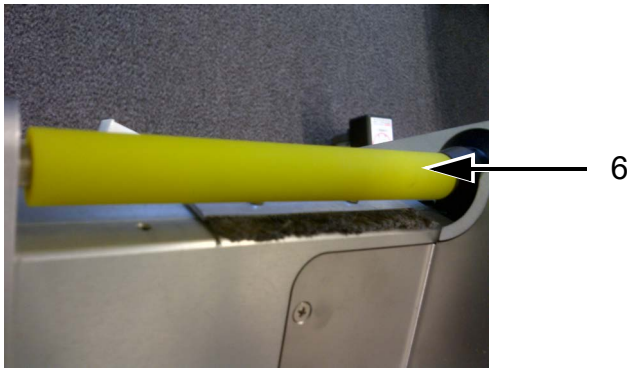


Figure 7-29: Ribbon Sensor Roller Assembly

Item No.	Part Number	Description	Quantity
6	406319	Spare LPA Ribbon Sensor Roller Assembly	1
	409147	Spare LPA 160mm Ribbon Sensor Roller Assembly	

Table 7-29: Ribbon Sensor Roller Assembly

Gap Sensor Assembly

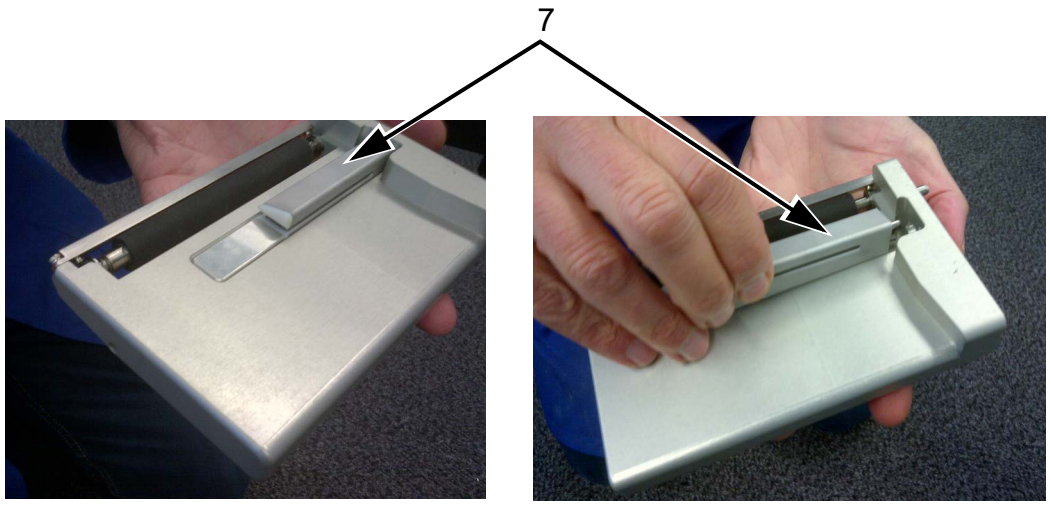


Figure 7-30: Gap Sensor Assembly

Item No.	Part Number	Description	Quantity
7	406322	Spare LPA RH Analogue Gap Sensor Assembly	-
	406323	Spare LPA LH Analogue Gap Sensor Assembly	

Table 7-30: Gap Sensor Assembly

Print Roller Support Plate

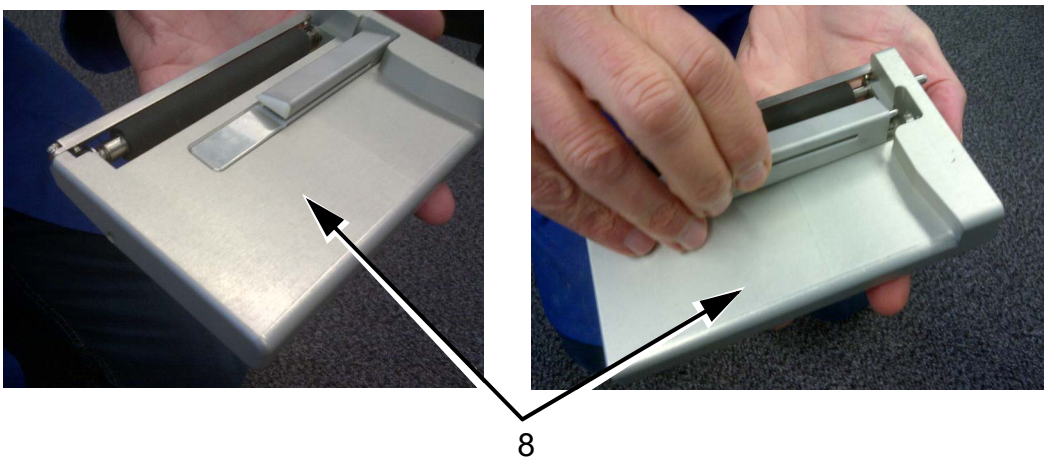


Figure 7-31: Print Roller Support Plate

Item No.	Part Number	Description	Quantity
8	407731	Print Roller Support Plate 53mm RH	1
	407732	Print Roller Support Plate 53mm LH	
	408018	Print Roller Support Plate 76mm-107mm RH	
	408019	Print Roller Support Plate 76mm-107mm LH	
	409141	Print Roller Support Plate 160mm RH	
	409142	Print Roller Support Plate 160mm LH	

Table 7-31: Print Roller Support Plate

Printhead Cable Guide

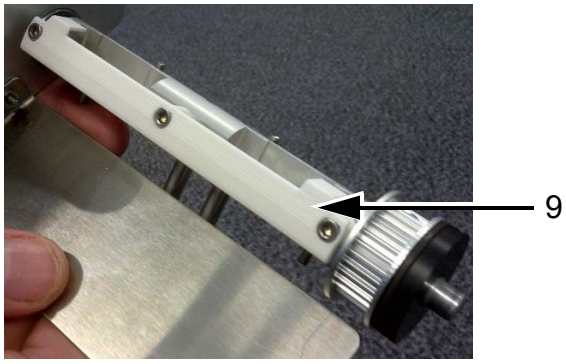


Figure 7-32: Printhead Cable Guide

Item No.	Part Number	Description	Quantity
9	406328	Spare LPA Printhead Cable Guide	1
	409148	Spare LPA 160mm Printhead Cable Guide	

Table 7-32: Printhead Cable Guide

Printhead Belt

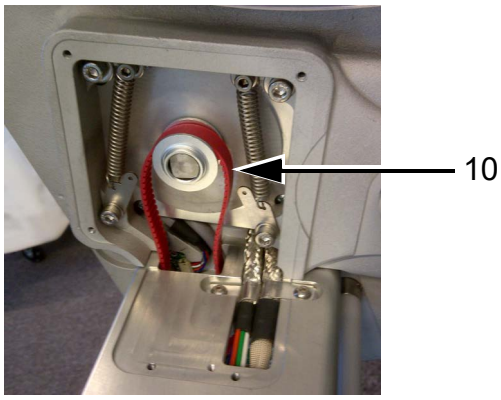


Figure 7-33: Printhead Belt

Item No.	Part Number	Description	Quantity
10	406333	Spare LPA Printhead Belt	1

Table 7-33: Printhead Belt

Printhead Motor Assembly

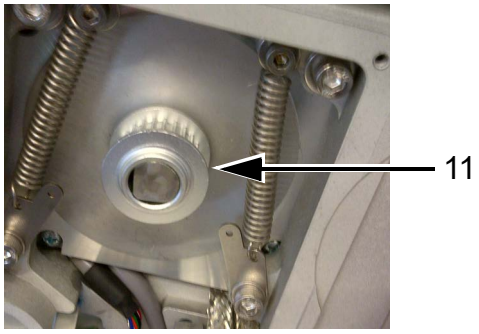


Figure 7-34: Printhead Motor Assembly

Item No.	Part Number	Description	Quantity
11	406352	Spare LPA Printhead Motor Assembly	1

Table 7-34: Printhead Motor

Wipe Down Assembly

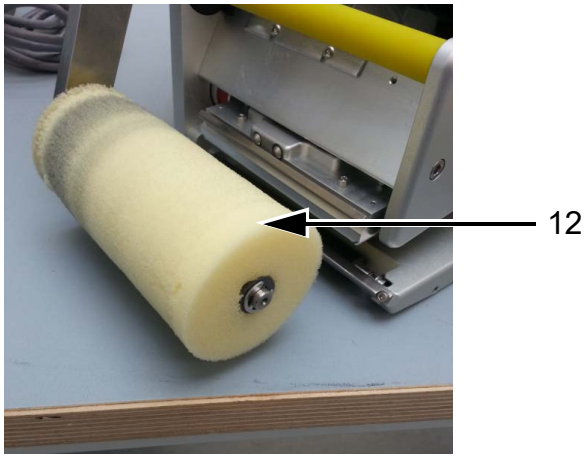


Figure 7-35: Wipe Down Assembly

Item No.	Part Number	Description	Quantity
12	406387	LPA Wipe Down Assembly - RH (including Bracket and 1xWipe Down Roller)	1
	406388	LPA Wipe Down Assembly - LH (including Bracket and 1xWipe Down Roller)	
	406553	LPA Wipe Down Roller, Heavy Duty	Pk 10
	409156	LPA 160mm Wipe Down Roller	

Table 7-35: Wipe Down

Printhead PCB
Gap Sensor and Print Roller Sensor PCB

Figure 7-36: Gap Sensor and Print Roller Sensor PCB

Item No.	Part Number	Description	Quantity
13	406324	Spare LPA RH Gap Sensor and Print Roller Sensor PCB	1
	406325	Spare LPA LH Gap Sensor and Print Roller Sensor PCB	

Table 7-36: Gap Sensor and Print Roller Sensor PCB

Ribbon and Printhead Sensor PCB

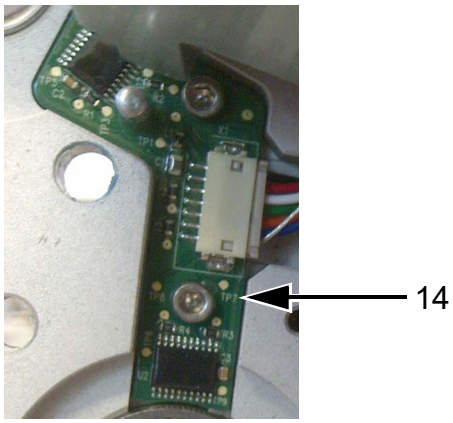


Figure 7-37: Ribbon and Printhead Sensor PCB

Item No.	Part Number	Description	Quantity
14	406326	Spare LPA RH Ribbon and Printhead Sensor PCB	1
	406327	Spare LPA LH Ribbon and Printhead Sensor PCB	

Table 7-37: Ribbon and Printhead Sensor PCB

Printhead Cables

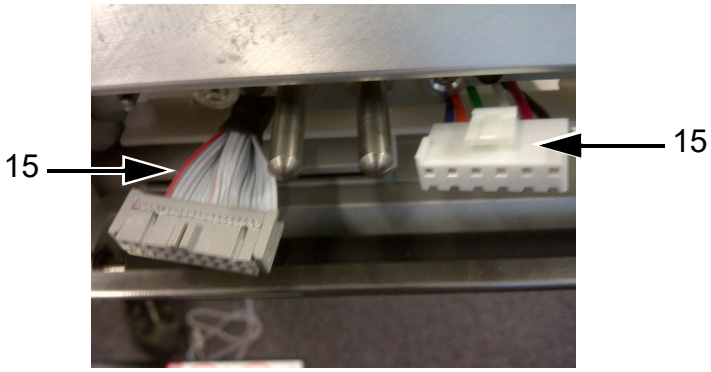


Figure 7-38: Printhead Cables

Item No.	Part Number	Description	Quantity
15	407201	Spare LPA 53mm RH Printhead Cable and PCB	1
	407202	Spare LPA 53mm LH Printhead Cable and PCB	
	406357	Spare LPA 53/76/107 RH Printhead Cable	1
	406358	Spare LPA 53/76/107 LH Printhead Cable	
	409133	Spare LPA 160mm RH Printhead Cable	
	409134	Spare LPA 160mm LH Printhead Cable	

Table 7-38: Printhead Cables

Ribbon

Leaf Springs

Figure 7-39: Leaf Springs

Item No.	Part Number	Description	Quantity
16	406329	Spare LPA Leaf Springs	Pack of 16
17*	406363	Spare LPA Ribbon Guide Roller	Pack of 5
	409139	Spare LPA 160mm Ribbon Guide Roller	

Table 7-39: Ribbon

* Items are not shown

Ribbon Drive Motor

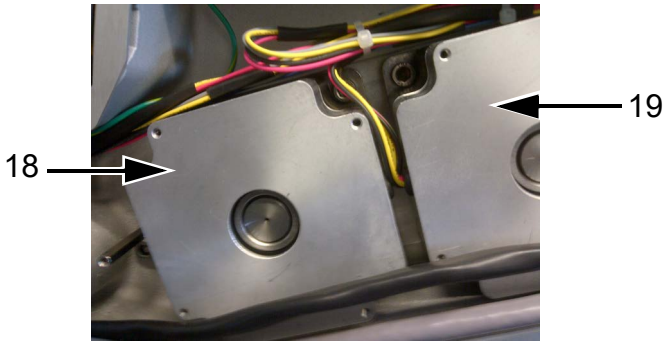


Figure 7-40: Ribbon Drive Motor

Item No.	Part Number	Description	Quantity
18	406350	Spare LPA Ribbon Drive Motor	2

Table 7-40: Ribbon Drive Motor

Black Ribbon Disc

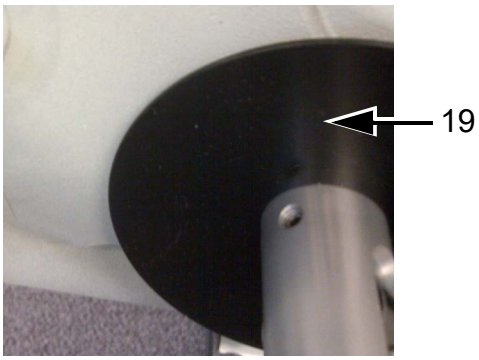


Figure 7-41: Black Ribbon Disc

Item No.	Part Number	Description	Quantity
19	406330	Spare LPA Black Ribbon Disc	Pack of 5

Table 7-41: Black Ribbon Disc

Mandrel

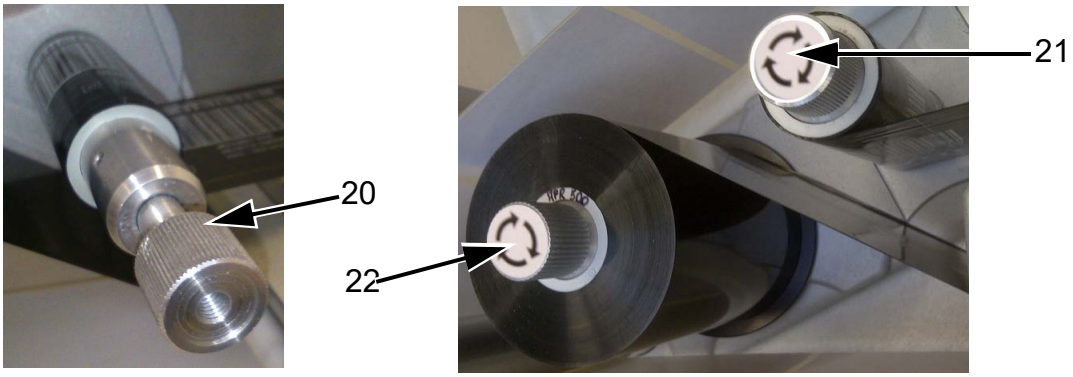


Figure 7-42: Mandrel

Item No.	Part Number	Description	Quantity
20	406376	Mandrel Refurb Kit	1
21	407332	Spare LPA Ribbon Waste Mandrel	
	407734	Spare LPA 53mm Ribbon Waste Mandrel	
22	407333	Spare LPA Ribbon Supply Mandrel	
	407733	Spare LPA 53mm Ribbon Supply Mandrel	
23*	409140	Spare LPA 160mm Ribbon Mandrel Assembly	
24*	409138	Spare LPA 160mm Ribbon Deflection Roller	1

Table 7-42: Mandrel

* Items are not shown

Accessories

Stands

Vertical Stand (H Base)

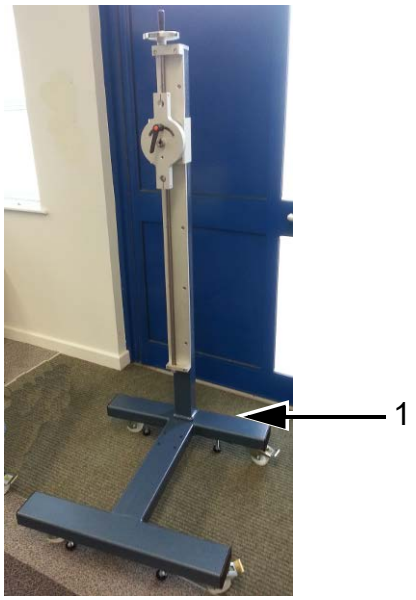


Figure 7-43: Vertical Stand (H Base)

Item No.	Part Number	Description	Quantity
1	397275	LPA Vertical Stand (H Base)	1

Table 7-43: Vertical Stand (H Base)

Horizontal Stand (H Base)

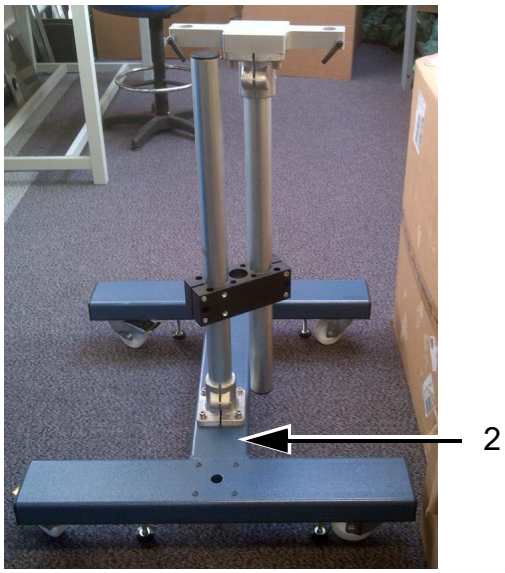


Figure 7-44: Horizontal Stand (Direct Apply)

Item No.	Part Number	Description	Quantity
2	397270	LPA Horizontal Stand (H Base)	1

Table 7-44: Horizontal Stand (H Base)

Additional Accessories

Part Number	Description	Quantity
405450	LPA Encoder Assembly	1
406384	LPA Status Beacon Assembly	1
406386	LPA Product Detect Sensor Assembly (Fiber Optic Prox)	1
406394	LPA Pack Handling Kit	1
406395	LPA Barcode Scanner Kit - Serial	1
406421	LPA Barcode Scanner Kit - PoE	1
406501	CLARiTY Support Tube Assembly	1
408026	LPA EZ-Eye Product Detector Kit	1

Table 7-45: Additional Accessories

Accessories Cables

Part Number	Description	Quantity
406396	PoE Barcode Scanner Cable Assembly	1
506086	High Speed RUI Cable - 3 m	1
506148	High Speed RUI Cable - 1 m	1
506149	High Speed RUI Cable - 5 m	1

Table 7-46: Accessories Cables

Cables

Part Number	Description
406314	Internal I/O Cable Assembly
406374	Spare RH LPA Cable Kit
406375	Spare LH LPA Cable Kit
406379	LPA External I/O Cable, 5m

Table 7-47: Cables

Leader Follower Setup

8

Working with Leader/Follower

Leader/Follower capability is an enhancement that allows you to control up to four LPAs from a single CLARiTY operator interface. In Auto Changeover mode, it is only possible to control two LPA's from a single CLARiTY Operator Interface.

Leader/Follower Benefits

The Leader/Follower usage results in the following benefits:

- Simpler coding system: Simpler setup of multiple LPAs, easier to use coding systems
- Reduced LPA setup time: A single point of setup, reduces the setup time
- Reduced human errors: Only one entry of data rather than several entries reduces the possibility of setup mistakes by human error
- Cost effective: A lower cost coding solution when multiple LPAs are required to fulfil a coding application through the use of the Follower LPA without LCD.
- Cost reduction and effective usage of space: All these things are achieved without an additional controller or PC on the production line.
- Reduced downtime: One unit will continue to run whilst consumables are changed on another
- Reduction in missed labels: One unit will continue to run whilst the other unit is in fault or is placed in OFFLINE mode

Leader/Follower Applications

The Leader/Follower network are typically used under the following circumstances:

- Group Job Select: When two or more printheads are required to code onto the same side packaging film
- Group Control: When control for multiple LPAs is required from a single location.
- Multiple Machine Mode: On high speed production lines where downtime needs to be minimized for consumable changeover.

For more information on multiple machine modes, please contact Videojet technical support or your local Videojet distributor.

Leader/Follower Terminology

The Leader/Follower network uses the following terminology:

- Group Job Select: Allows connection of up to four standard LPAs (with LCD's), with Job selection available only from the LPA configured as the Leader. This mode greatly reduces potential Operator errors when inputting variable data.
  All other functions are performed at each local LPA's LCD panel.
- Group Control: Allows connection of one standard (with LCD) acting as the Leader, to up to three Follower (without LCD) LPAs.
  All Job selection, Setup, Diagnostics and Error reporting are performed at the Leader LPA only.
- Auto Changeover: Allows the connection of two LPAs. Two LPAs are setup in auto changeover mode, one operating as the Leader (1), the other as the Follower (2). Job selection available only from the LPA configured as the Leader (1). All other functions are performed at the local LPA's LCD panel.

LPA Terminology

To avoid confusion to the user, the following terminology is used in this chapter:

- Standard LPA: A LPA installed with CLARiTY Operator Interface
- Follower LPA: A LPA without the CLARiTY Operator Interface
- Leader or Leader LPA: A LPA that has been designated to act as the Leader member of a Leader/Follower group

Auto Changeover mode:

- Leader or Printer 1: A LPA that has been designated to act as the Leader member or Printer 1 in auto-changeover mode
- Follower or Printer 2/3: A LPA that has been designated to act as the Follower member or Printer 2/3 in auto-changeover mode

Physical Installation

When only two LPAs (one Leader, one Follower) are required and there is no requirement to connect the Leader/Follower group to an external network, a two LPA interconnection cable may be used to connect directly between the Ethernet ports of the two LPAs.

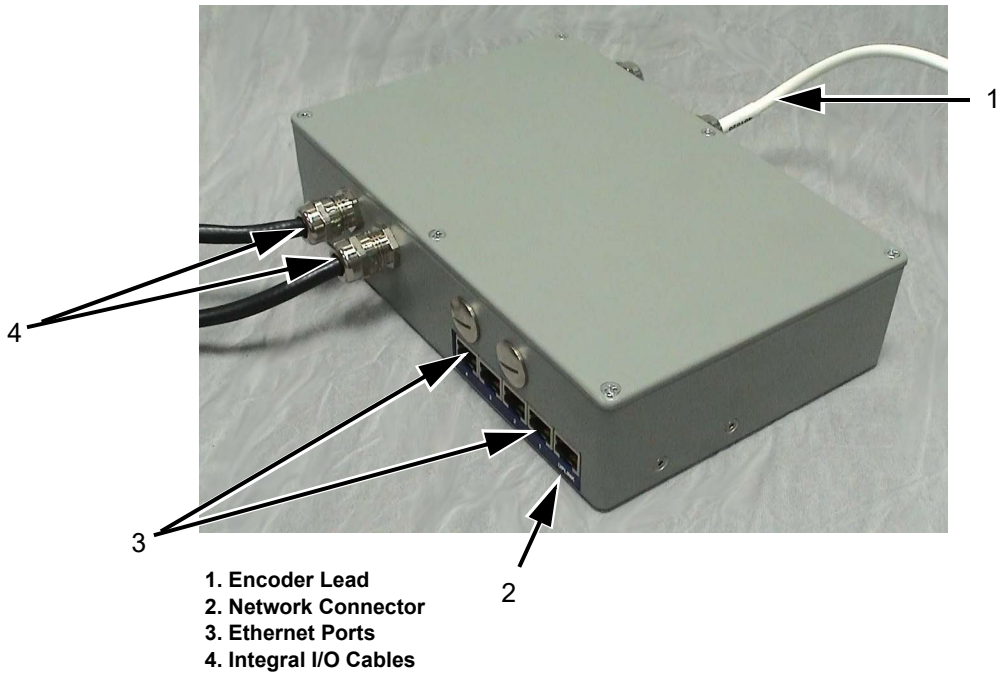
All other cables (e.g. I/O cable) must be connected in the same way as the standalone LPAs.

When more than two LPAs are to be connected together or connection to a network is required, a Printer Connection Box complete with ethernet patch cables is required.

The Connection Box allows up to four LPAs (one Leader and three Followers) to be connected together, allowing them to share common encoder and print signals as well as providing ethernet connectivity via the integral network switch (hub).

In addition to this, the connection box also allows the group of LPAs to be connected to a wider Ethernet network.

Figure 8-1 shows a two printer connection box, indicating the five port connections for the network switch, integral I/O cables (2 numbers) and encoder lead.



1. Encoder Lead
2. Network Connector
3. Ethernet Ports
4. Integral I/O Cables

Figure 8-1: Printer Connection Box

Software Configuration

To configure Leader/Follower mode, CLARiTY Configuration Manager is required.

The LPAs may be configured using a serial cable or a network connection. However, this manual assumes that a standard Null Modem cable (part number - 400720) is being used.

Leader/Follower Basic and Advanced Configuration

The following section describes the modes of operation for a Leader/ Follower group of LPAs.

- Basic Configuration: This configuration is used if the group is to be used as a 'standalone group'.
- Advanced Configuration: This configuration is used if the group is to be connected to a wider area network.
- Multiple Machine Mode: This configuration is used if the group is to be connected to a wider area network.

Note: *If a LPA has previously been configured to Advanced Configuration mode, this setting is saved as the standard default configuration for the LPA.*

Basic Configuration - Configuring the Follower LPAs

To configure the Follower LPA proceed as follows:

1. Establish communications between CLARiTY Configuration Manager and the first Follower LPA (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).
2. Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Set as Follower', from the list as shown in Figure 8-2.

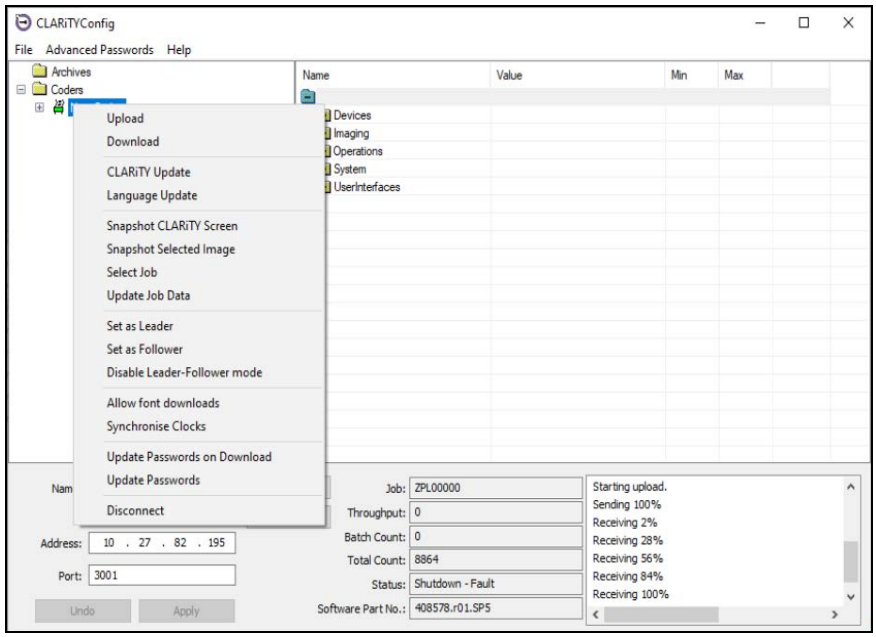


Figure 8-2: CLARiTY Config - Follower Setup

A configure Follower printer dialog box appears (Figure 8-3).

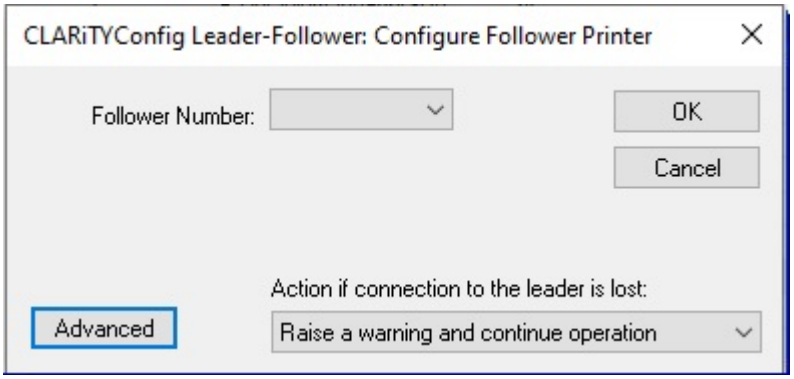


Figure 8-3: Configure Follower LPA

3 Select the Follower number (One, Two or Three) from the drop-down list (Figure 8-3).

Note: *If less than three Followers are to be used, they must be numbered consecutively starting with 'One' (it is not permissible to have two Follower LPAs numbered One and Three).*

Follower LPAs connected to the same network require individual Follower numbers.

4 Select the option to be taken in the event of communication failure between the Leader LPA and Follower LPA from the drop-down list.

The three options available are:

- No Action (ignore the condition)
- Raise a Warning message and continue operation
- Raise a Fault message and suspend operation (stop printing)

5 Touch OK to configure the Follower LPA.

Once the Follower LPA is configured, on a Standard LPA, the 'JOB' button on the screen of CLARiTY is disabled (greyed out) as shown in Figure 8-4.

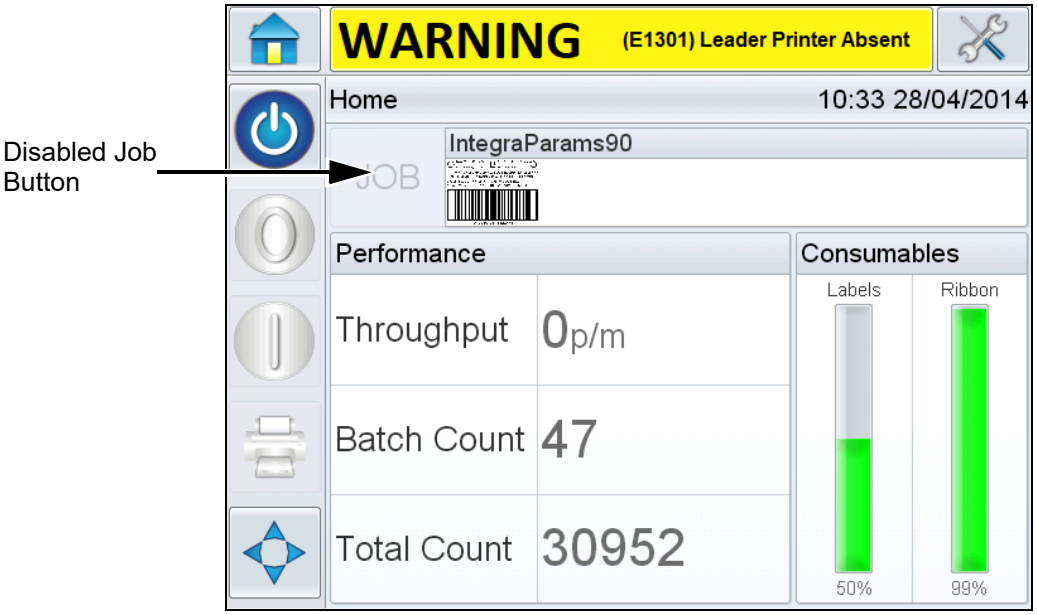


Figure 8-4: CLARiTY Home page

After a short period of time the Follower LPA may raise a Warning or Fault message (depending on the setting you chosen in 'Action if connection to the Leader is lost') to indicate that the Leader LPA is absent, as shown in Figure 8-5 and Figure 8-6.

Figure 8-5: Warning Message

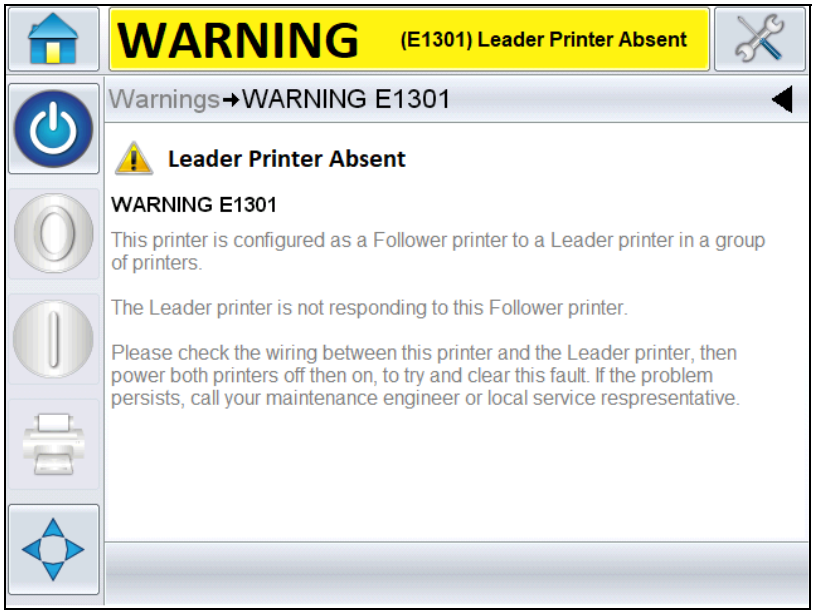


Figure 8-6: Warning Message - Detail

Once the Leader has been configured and communication established between LPAs, the warning message can be cleared from the Follower LPA screen.

Repeat the above steps to install the remaining Follower LPAs in the group.

Basic Configuration - Configuring the Leader LPA

To configure the Leader LPA proceed as follows:

1 Establish communications between CLARiTY Configuration Manager and the Leader LPA (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Set as Leader', from the list as shown in Figure 8-7.

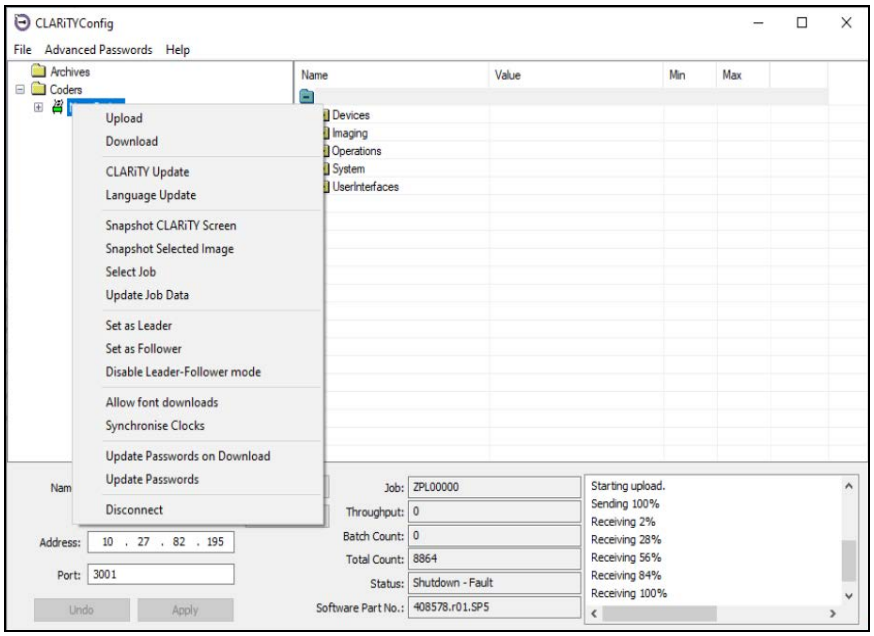
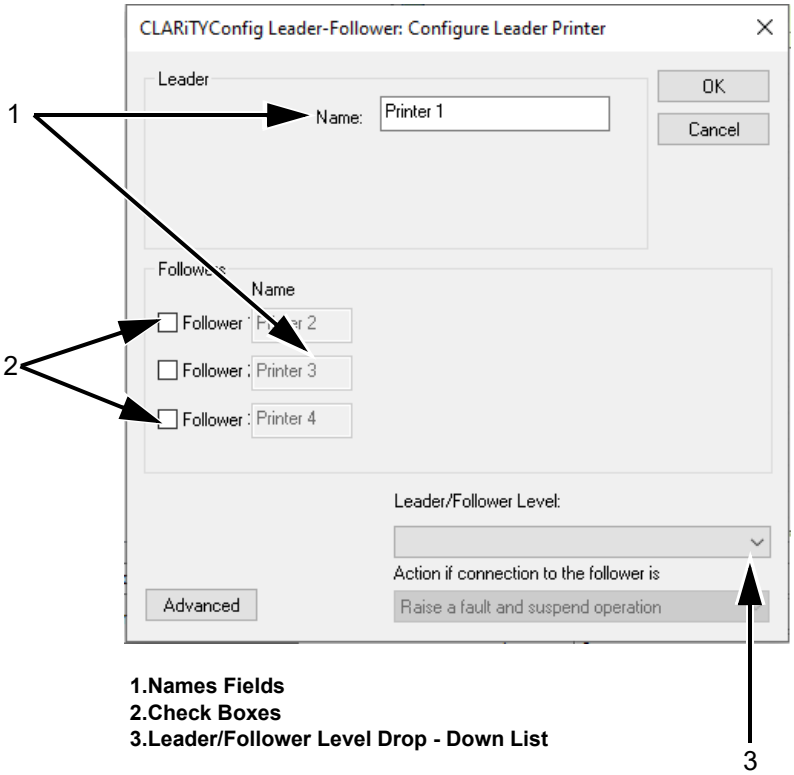


Figure 8-7: CLARiTY Config - Leader Setup

A configure Leader printer dialog box appears (Figure 8-8).



1.Names Fields
2.Check Boxes
3.Leader/Follower Level Drop - Down List

Figure 8-8: Configure Leader LPA Dialog Box

3 Enter an identification name for the LPA in the name field.

These names can be viewed on the screen of the Leader LPA user interface and are useful for identification purposes. Names can be edited from the default values of 'LPA 1… LPA 4', if required e.g. 'Leader…. Follower 1'

Note: *The 'Check boxes' on the left hand side of the dialog box indicate how many Followers are to be connected.*

4 Click on the check boxes to select the Follower LPAs. The dialog box allows only the selection of consecutively-numbered Followers starting with Follower 1.

5 Select either Group Job Select or Group Control from the Leader/ Follower level drop -down box (refer “Leader/Follower Terminology” on page 8-2).

When at least one Follower is enabled and a Leader/Follower level has been selected, the 'OK' button becomes available.

6 Click OK button, to program the LPA with the selected configuration.

Connecting the LPAs Together

To connect the LPAs proceed as follows:

1 If the LPAs are not already connected, they may be connected together as described “Physical Installation” on page 8-3.

After a few seconds any Faults and/or Warnings messages on the Leader and Follower LPAs becomes 'clearable' indicating that all connections have been successfully made.

2 If any Faults/Warnings can not be cleared, switch off and on the Follower LPA concerned.

3 If a problem persists, repeat the previous configuration steps to ensure the Leader has been configured with the correct number of Followers and that no Followers have been assigned with the same LPA number.

4 If operating under 'Group Control' mode, any Faults and/or Warnings present on the Follower LPAs is reported on the Leader LPA user interface screen, then they must be cleared at the Leader LPA.

Advanced Configuration

Advanced configuration is designed for situations where the group is to be connected to a wider area TCP/IP network and allows the use of IP addresses instead of simple numbers to identify the LPAs.

In order to configure the LPAs correctly you must obtain one IP address from the IT department for each LPA. These must be static IP addresses, not dynamically-assigned addresses. The 'Subnet Mask' used on the network and port number for Leader/Follower communications is also required.

The default port number is 3002 and in most situations it is not necessary to change this number.

Change it only if you are instructed to do so by the IT department.

To avoid confusion, the same port number should be used for all Follower LPAs.

Advanced Configuration - Configuring the Follower LPAs

To configure the Follower LPA, proceed as follows:

1 Establish communications between CLARiTY Configuration Manager and the first Follower LPA (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Set as Follower', from the list as shown in Figure 8-9.

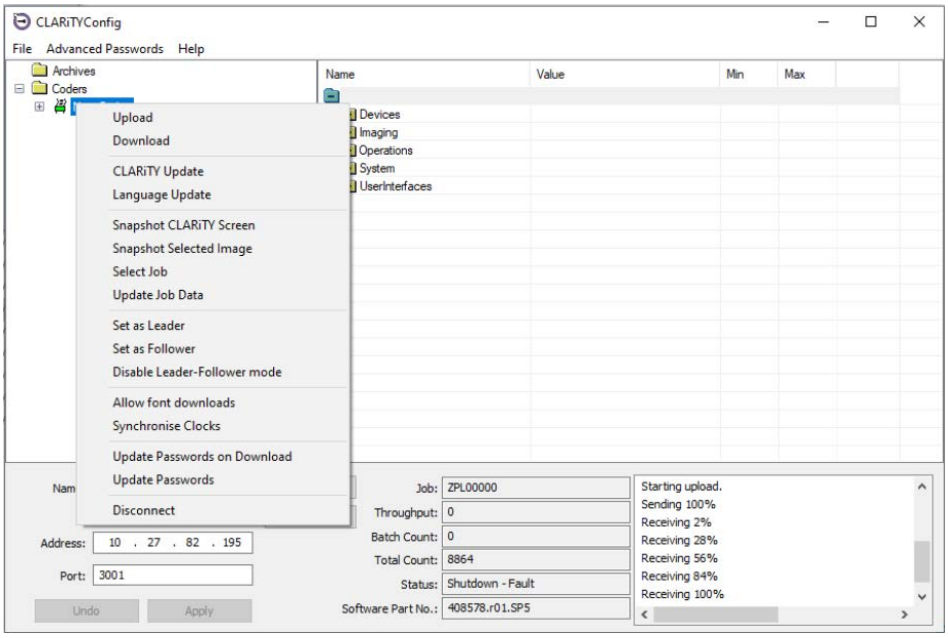


Figure 8-9: CLARiTY Config - Follower Setup

If the LPA has not been assigned an IP address or configured in advanced mode previously, a configure Follower printer dialog box appears (Figure 8-10).

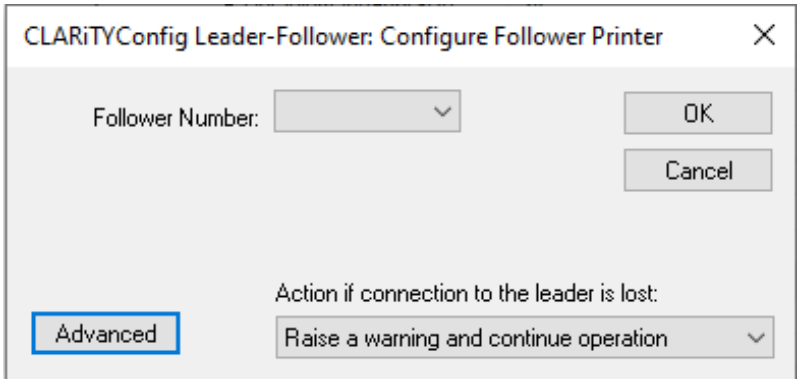


Figure 8-10: Configure Follower LPA Dialog Box

3 Click on the Advanced button, to change to advanced configuration. The advance configure Follower printer dialog box appears (Figure 8-11).

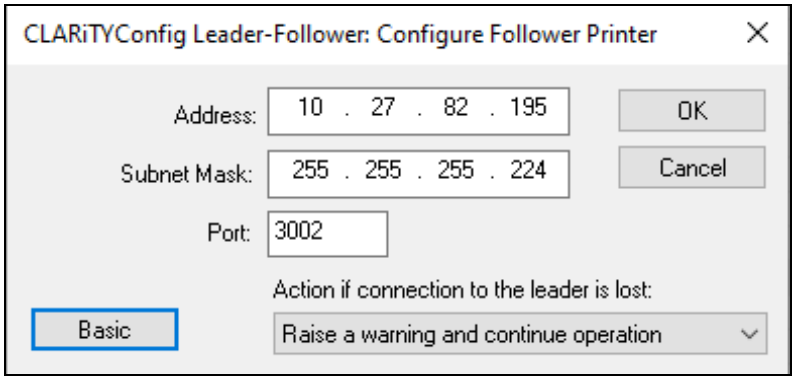


Figure 8-11: Advanced Configure Follower LPA Dialog Box

4 Enter the IP address, network subnet mask, and the port number of the Follower LPA in the in Address field, Subnet Mask field, and Port field respectively.

5 Select the option to be taken in the event of communication failure between the Leader LPA and Follower LPA from the drop-down list.

The three options available are:

- No Action (ignore the condition)
- Raise a Warning message and continue operation
- Raise a Fault message and suspend operation (stop printing)

6 Touch OK to configure the Follower LPA.

Once the Follower LPA is configured, on a Standard LPA, the 'JOB' button on the screen of CLARiTY is disabled (greyed out) as shown in Figure 8-4 on page 8-7.

After a short period of time the Follower LPA may raise a Warning or Fault message (depending on the setting you chosen in 'Action if connection to the Leader is lost') to indicate that the Leader LPA is absent, as shown in Figure 8-5 on page 8-7 and Figure 8-6 on page 8-8.

Once the Leader has been configured and communication established between LPAs, the warning message can be cleared from the Follower LPA screen.

Repeat the above steps to install the remaining Follower LPAs in the group.

Advanced Configuration - Configuring the Leader LPA

To configure the Leader LPA proceed as follows:

1 Establish communications between CLARiTY Configuration Manager and the Leader LPA (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Set as Leader', from the list as shown in Figure 8-12.

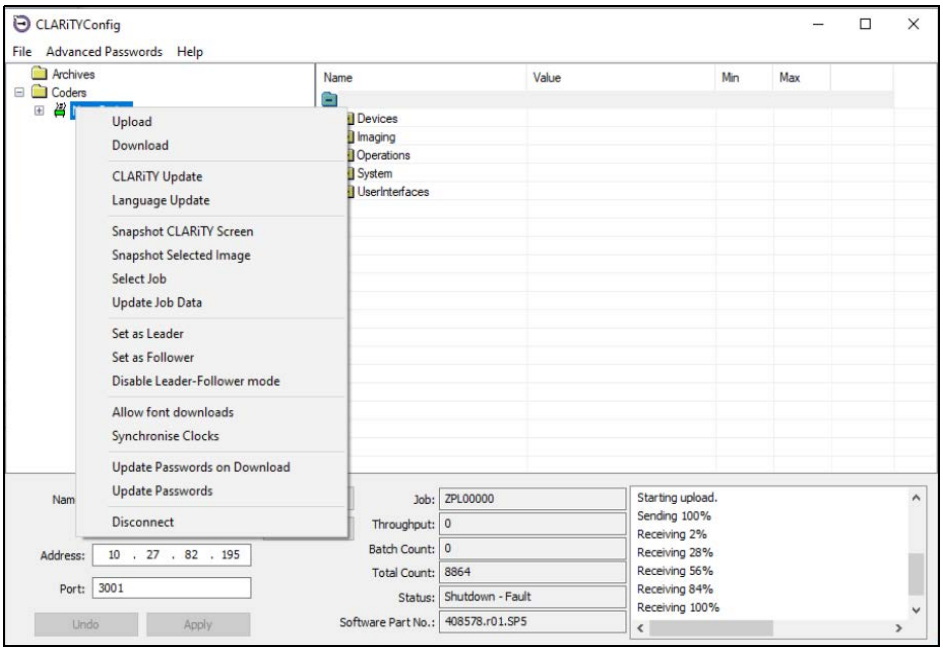
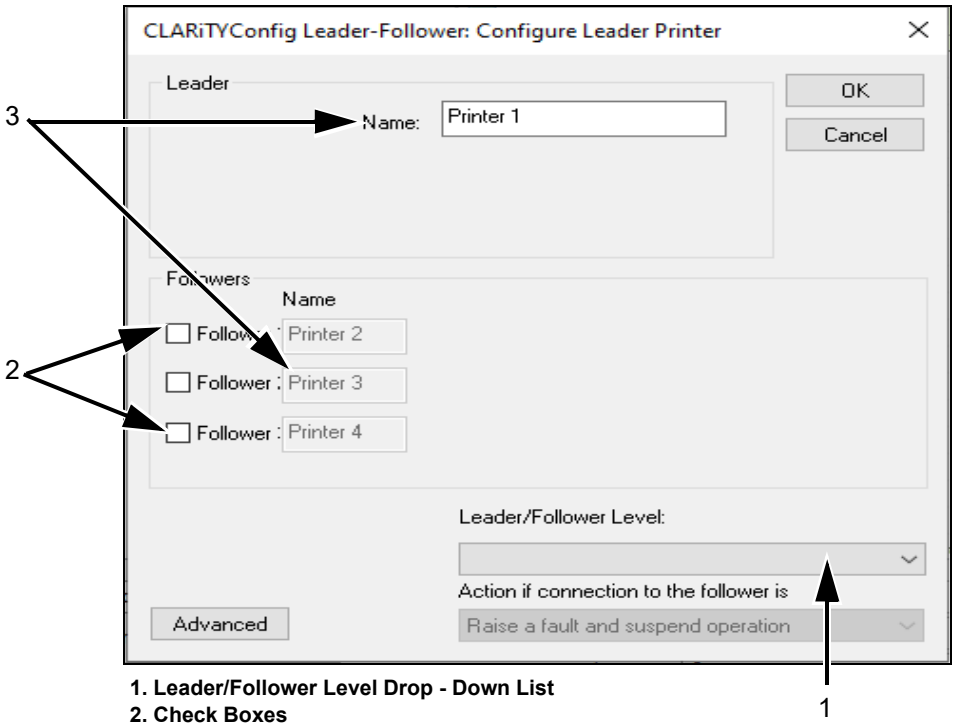


Figure 8-12: CLARiTY Config - Leader Setup

A configure Leader printer dialog box appears (Figure 8-13).

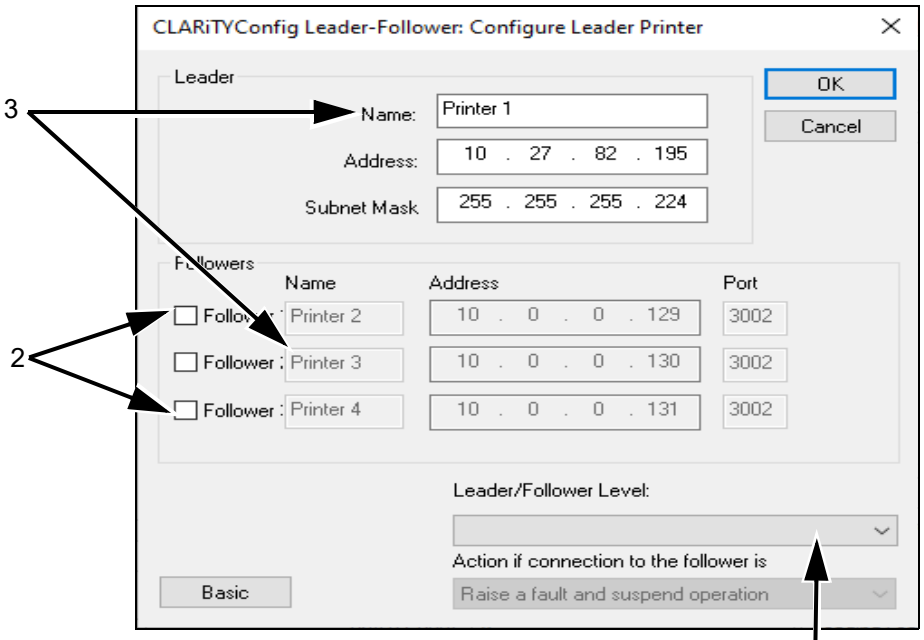


1. Leader/Follower Level Drop - Down List
2. Check Boxes
3. Names Fields

Figure 8-13: Configure Leader LPA Dialog Box

3 Click on the Advanced button, to change to advanced configuration.

The advance configure Leader printer dialog box appears (Figure 8-11).



1. Leader/Follower Level Drop - Down List
2. Check Boxes
3. Names Fields

Figure 8-14: Advanced Configure Leader LPA Dialog Box

4 Enter a identification name for the LPA in the name field.

These names can be viewed on the screen of the Leader LPA CLARiTY and are useful for identification purposes. Names can be edited from the default values of 'LPA 1… LPA 4', if required e.g. 'Leader…. Follower 1'

Note: *The 'Check boxes' on the left hand side of the dialog box indicate how many Followers are to be connected.*

5 Click on the check boxes to select the Follower LPAs. The dialog box allows only the selection of consecutively-numbered Followers starting with Follower 1.

6 Enter the IP address, network subnet mask, and the port number of the Follower LPA and the Leader in their Address field, Subnet Mask field, and Port field respectively.

7 Select either Group Job Select or Group Control from the Leader/ Follower level drop -down box (refer “Leader/Follower Terminology” on page 8-2).
When at least one Follower is enabled and a Leader/Follower level has been selected, the 'OK' button is become available.

8 Click OK button, to program the LPA with the selected configuration.

Auto-Changeover Mode

Configuring LPA 2/3

To configure LPA 2/3, proceed as follows:

1 Establish communications between CLARiTY Configuration Manager and LPA 2/3 (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select ‘Multiple Machine Modes > Set as Machine 2/3’ from the list as shown in Figure 8-15.

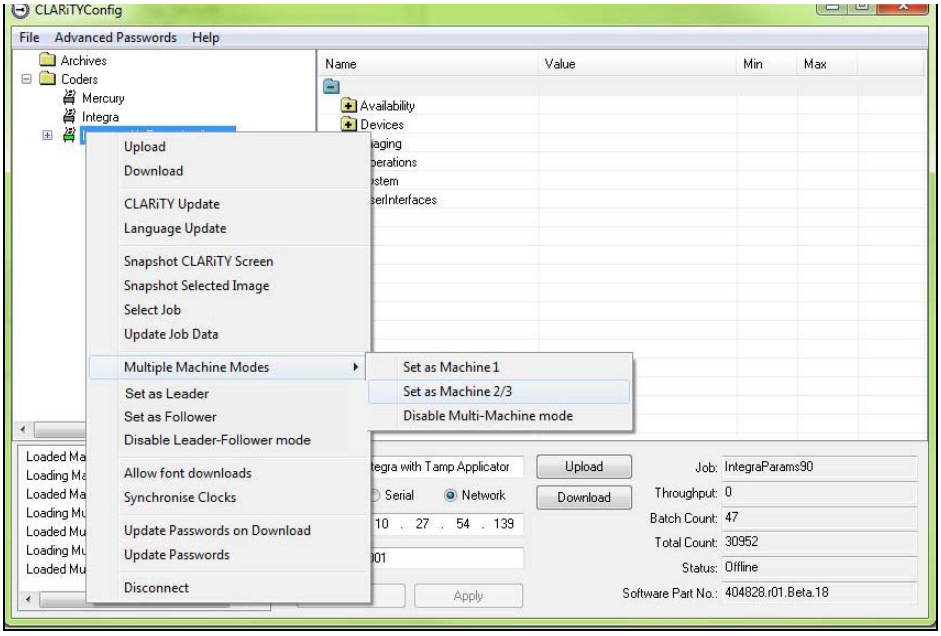


Figure 8-15: Set as Machine 2/3

3 Select *Auto-Changeover* mode from the drop down list (see Figure 8-16).

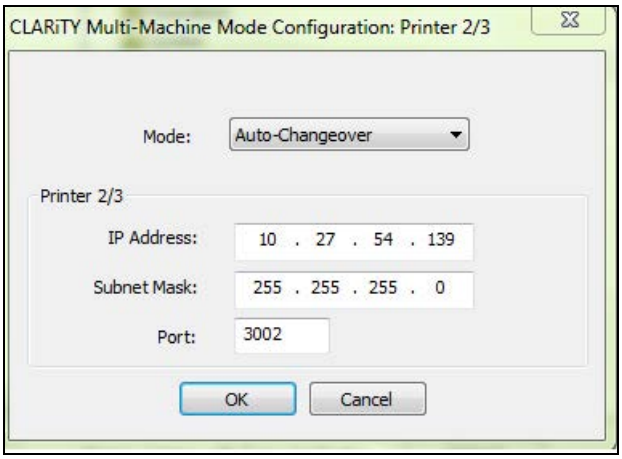


Figure 8-16: Auto-Changeover Mode

4 Enter the IP address, network subnet mask, and the port number of LPA 2/3 in the in IP Address field, Subnet Mask field, and Port field respectively (see Figure 8-16).

5 Touch OK to configure the LPA 2/3.

Once LPA 2/3 is configured, on LPA 1, the 'JOB' button on the screen of CLARiTY is disabled (greyed out) as shown in Figure 8-4 on page 8-7.

After a short period of time LPA 2/3 may raise a Warning or Fault message (depending on the setting you chosen in 'Action if connection to the Leader is lost') to indicate that LPA 1 is absent, as shown in Figure 8-5 on page 8-7 and Figure 8-6 on page 8-8.

Once LPA 1 has been configured and communication established between LPAs, the warning message can be cleared from LPA 2/3 screen.

Note: *Only one LPA can be set as Follower in auto-changeover mode.*

Configuring the Leader LPA

To configure the Leader LPA proceed as follows:

1 Establish communications between CLARiTY Configuration Manager and the Leader LPA (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select ‘Multiple Machine Modes > Set as Machine 1’ from the list as shown in Figure 8-17.

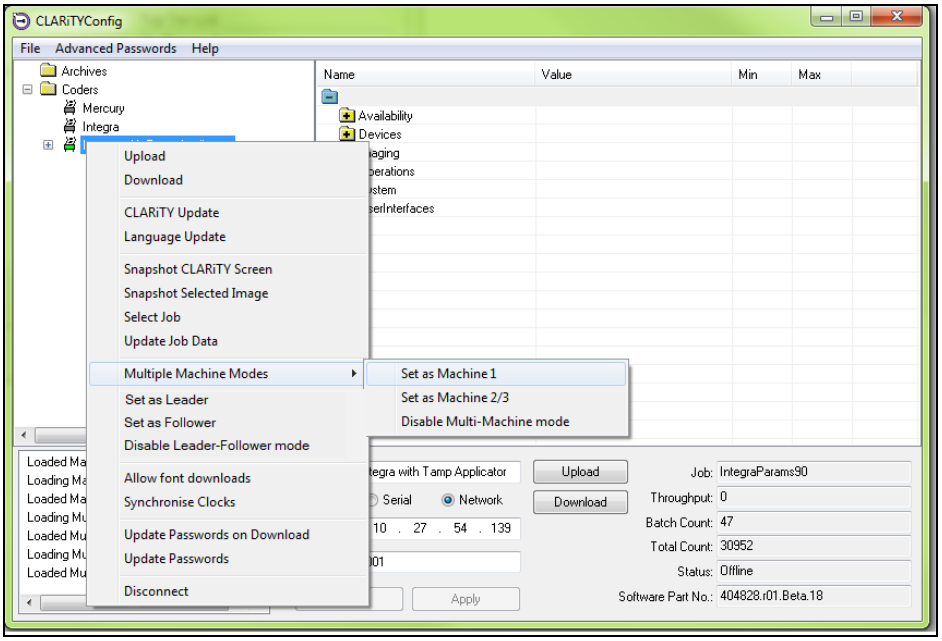


Figure 8-17: Set as Machine 1

3 Select auto-changeover mode from the drop down list (see Figure 8-18)

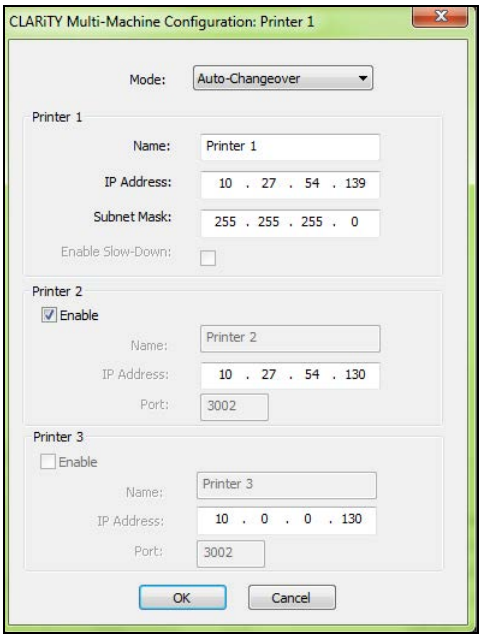


Figure 8-18: Auto-Changeover Mode

4 Enter a identification name for the LPA in the name field (Printer 1).

These names can be viewed on the screen of the LPA 1 CLARiTY and are useful for identification purposes. Names can be edited from the default values of 'Printer 1, Printer 2 and Printer 3', if required.

Note: *The 'Check boxes' on the left hand side of the dialog box indicate how many Followers are to be connected.*

5 Click on the check boxes to select LPA 2/3. The dialog box allows only the selection of consecutively-numbered Followers starting with Follower 1.

6 Enter the IP address, network subnet mask, and the port number of the LPA 2/3 and LPA 1 in their IP Address field, Subnet Mask field, and Port field respectively.

Note: *Only one LPA can be set as Follower in auto-changeover mode.*

7 Click OK button, to program the LPA with the selected configuration.

Connecting the LPAs Together

To connect the LPAs proceed as follows:

1. If the LPAs are not already connected, they may be connected together as described “Physical Installation” on page 8-3.

   After a few seconds any Faults and/or Warnings messages on the Leader and Follower LPAs becomes 'clearable' indicating that all connections have been successfully made.

2. If any Faults/Warnings can not be cleared, switch off and on the Follower LPA concerned.

3. If the problem persists, repeat the configuration steps to ensure that the Leader and Followers LPAs have been configured with the correct IP addresses, subnet masks and port numbers.

4. If operating under 'Group Control' mode, any Faults and/or Warnings present on the Follower LPAs is reported on the Leader LPA CLARiTY screen, then they must be cleared at the Leader LPA.

Using Leader/Follower Mode - Group Job Select Mode

The primary function of this mode is to ensure that all LPAs in the group are printing the same (image) 'Job'.

Job are selected from the Leader LPA only and automatically sent to the Follower LPAs connected.

The Leader LPA

In 'Group Job Select' mode, the CLARiTY Operator interface acts differently to that of a standalone LPA.

If a Follower LPA enters a Fault state, the error is reported on the Leader LPA's CLARiTY, as shown in Figure 8-19 and Figure 8-20.

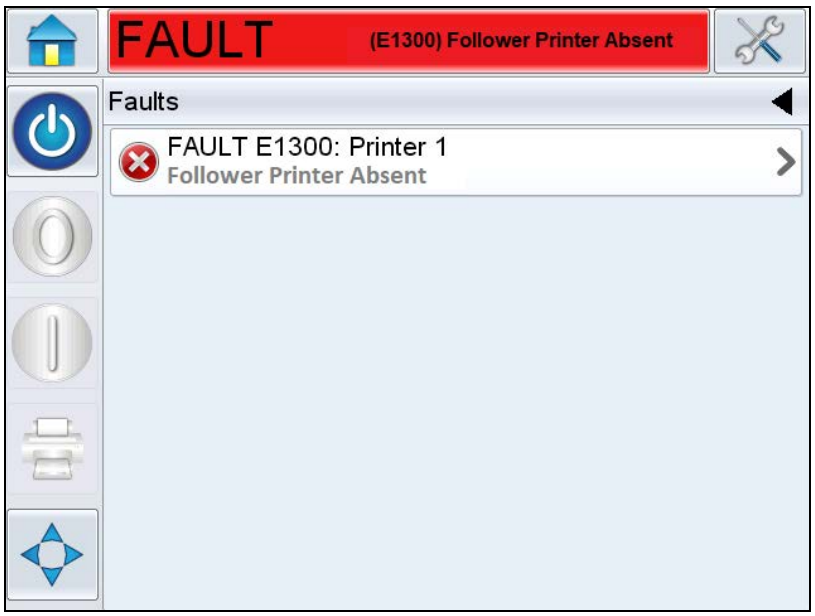


Figure 8-19: Fault State

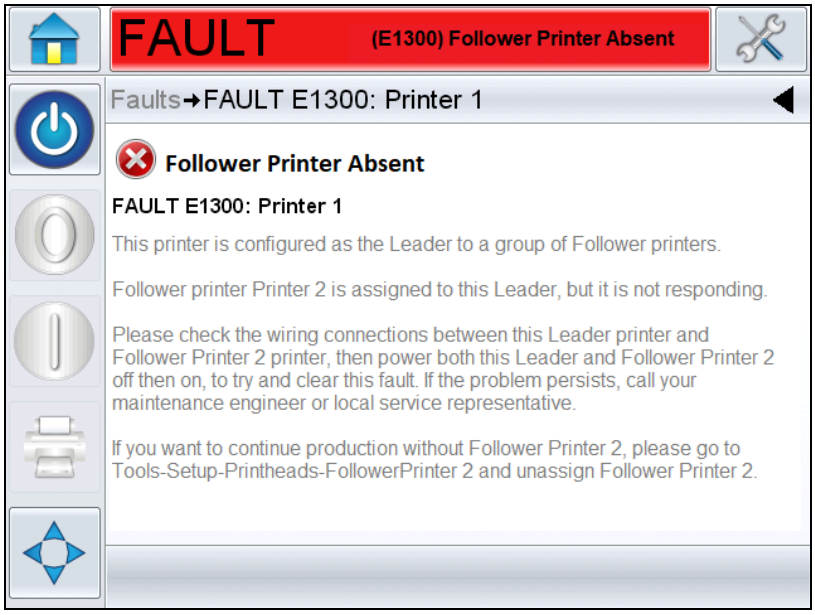


Figure 8-20: Fault State - Details

In the example shown (Figure 8-19 and Figure 8-20), communication has been lost between the Leader and Follower LPA.

This fault can be cleared, when the communications are re-established or when the Follower LPA is 'unassigned'.

Touch *Tools* > *Set Up* > *Printhead*, or via *Tools* > *Diagnostics* > *Printhead*, to access the printhead page.

You can see the list of LPAs connected to the Leader, as shown in Figure 8-21.

Note: *The Leader LPA is always listed first, followed by the Followers.*

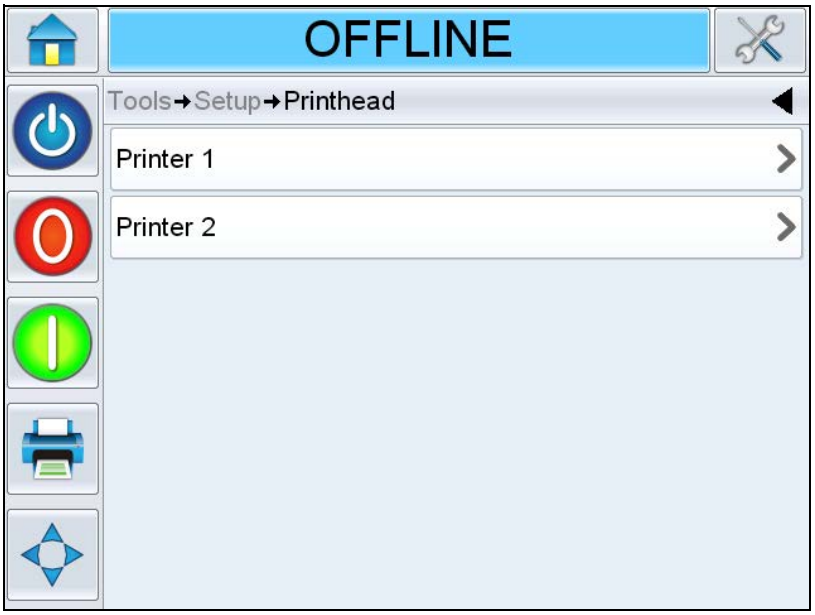


Figure 8-21: Printhead Diagnostics

Note: *If the Leader and Follower LPAs have been given a Name, as described in 'Configure the Leader LPA', CLARiTY reflects these changes as in Figure 8-21.*

Assigned LPA Parameter

You can view the assigned LPAs to the Leader LPA in this parameter.

Touch *Tools* > *Diagnostics* > *Printhead* and select the required LPA to view this parameter.

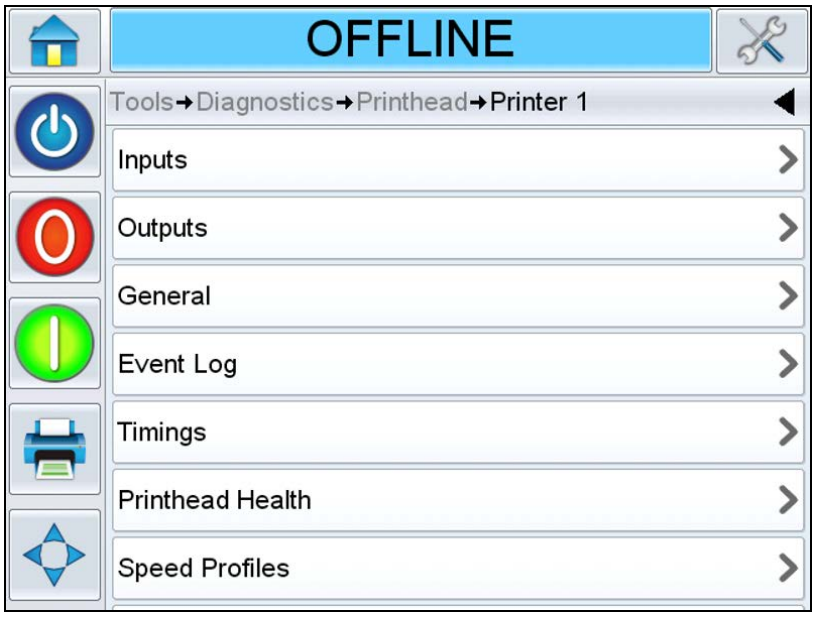


Figure 8-22: Assign Parameter

This LPA can be disabled (unassigned) via the software. Touch the parameter and set the value to No on the chosen LPA.

This allows a Follower Absent fault to be cleared at the Leader CLARiTY, so that the Leader and other Follower LPAs can continue operation.

Note: *When a Follower LPA is unassigned, the Leader is unable to send commands to the Follower LPA and ignores any information sent from the Follower LPA.*

Un-assigning a Follower LPA is a useful when a LPA is removed from the production line for maintenance and the rest of the LPAs in the group needs to continue operation.

If a LPA is to be permanently removed, reconfigure all LPA numbers affected, as described previously in the Configuration of Leader/Follower LPAs.

The Follower LPAs

In Group Job Select mode only the JOB button on the home screen of CLARiTY is disabled, as job selection can only be initiated from the Leader LPA, as shown in Figure 8-23.

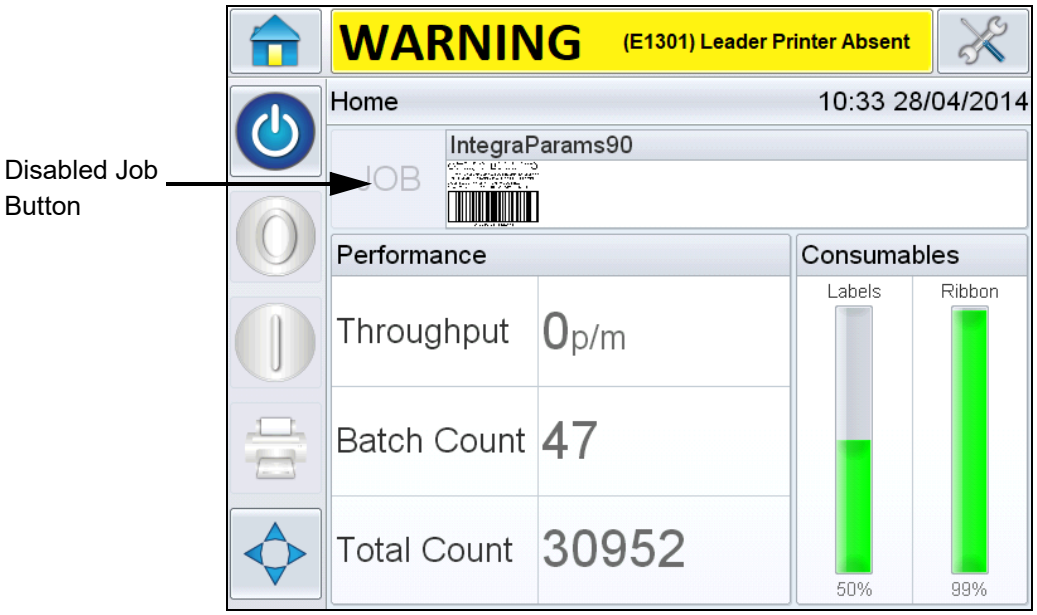


Figure 8-23: CLARiTY Home page

Note: *Standard LPAs in Follower mode and Follower LPAs (No CLARiTY LCD) accepts communications from CLARiTY Configuration Manager and other software packages, e.g. CLARiSOFT.*

Using Leader/Follower Mode - Group Control Mode

Group Control mode allows Follower LPAs to be controlled from the Leader LPA CLARiTY interface.

In addition to the parameters available in Group Job Select mode, additional Setup and Diagnostics CLARiTY pages are available for setup and diagnostics information.

The Leader LPA

In Group Control mode, the CLARiTY Operator interface acts differently to that of a standalone LPA.

Using only the screen of the Leader LPA it is possible to view Diagnostic and edit Set Up information on the Leader and any chosen Follower LPA, as shown in the example below.

Touch *Tools* > *Diagnostics* > *Printhead* > *Printer 1* > *Inputs*, there is a short delay whilst the Leader LPA retrieves the parameters from the Follower 1 LPA. These parameters are displayed on the CLARiTY screen of the Leader, as shown in Figure 8-24.

Figure 8-24: Follower Parameters

If Set up information is selected, any parameters edited would be saved in the selected Follower LPA.

If a Follower LPA raises a Fault or Warning, the message is displayed on the Leader LPA CLARiTY.

The Fault is also displayed on the Follower CLARiTY, if it is a Standard LPA.

When viewing the details of the error screen on the Leader CLARiTY, the name of the Follower LPA raising the error is displayed, e.g. LPA 2.

Error messages may be cleared in the normal way or, if desired, the LPA may be unassigned to ignore the error (see “Assigned LPA Parameter” on page 8-24).

Figure 8-25 shows a Leader LPA has been assigned a single Follower LPA. The Consumables bar for each LPA assigned is displayed on the screen of the Leader LPA.

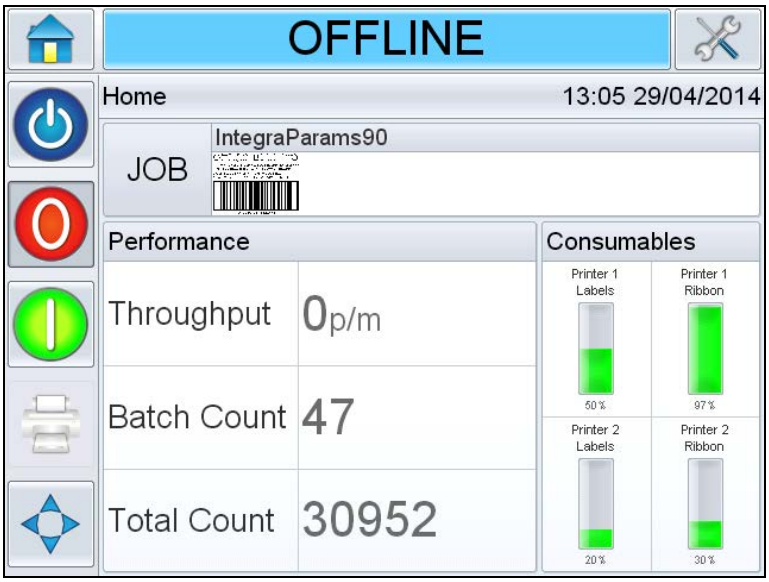


Figure 8-25: Leader and Follower Consumables

Consumables information on an individual LPA can be viewed further by pressing the chosen LPAs consumable bar.

In the same manner, all diagnostic information can also be viewed on the Leader LPAs operator interface, as shown in Figure 8-26.

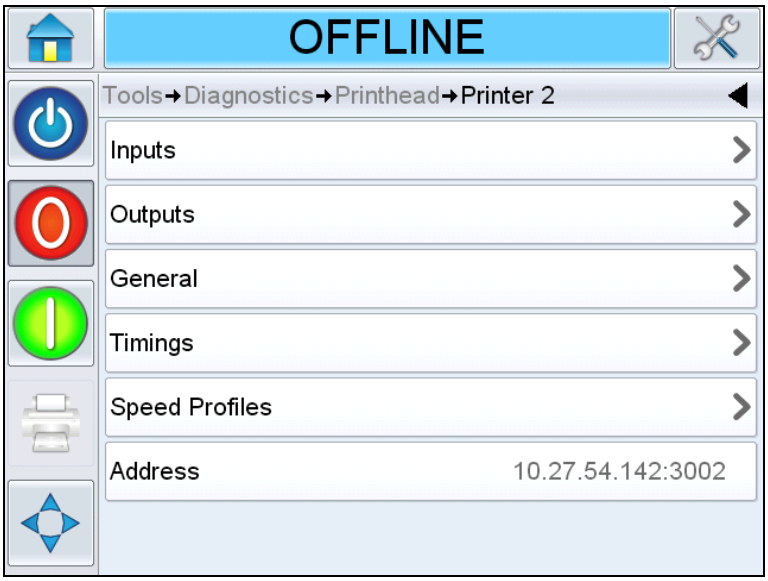


Figure 8-26: Leader and Follower Diagnostics

The Follower LPAs

Follower LPAs in Group Control mode are typically Follower LPAs (no CLARiTY Operator Interface) and therefore have no direct interaction with the user.

However, if a Standard LPA is used as a Follower in Group Control mode, the JOB, Online/Offline and Print Position buttons are disabled.

Job selection and Online/Offline changes may only be initiated at the Leader LPA.

Standard LPAs in Follower mode accepts communications from CLARiTY Configuration Manager and other packages, e.g. CLARiSOFT. All other operations are initiated from the Leader LPA.

Follower LPAs (no CLARiTY) accepts communications from CLARiTY Configuration Manager and other packages, e.g. CLARiSOFT.

Disabling Leader/Follower Mode

If a Follower LPA has to be temporarily removed from a Leader/Follower group, the LPA can be unassigned from the Leader (Refer “Assigned LPA Parameter” on page 8-24).

If a LPA is to be permanently removed from a Leader/Follower group, proceed as follows:

Disabling a Follower LPA

1 Establish communications between CLARiTY Configuration Manager and the first Follower LPA (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Disable Leader/Follower mode', from the list as shown in Figure 8-27.

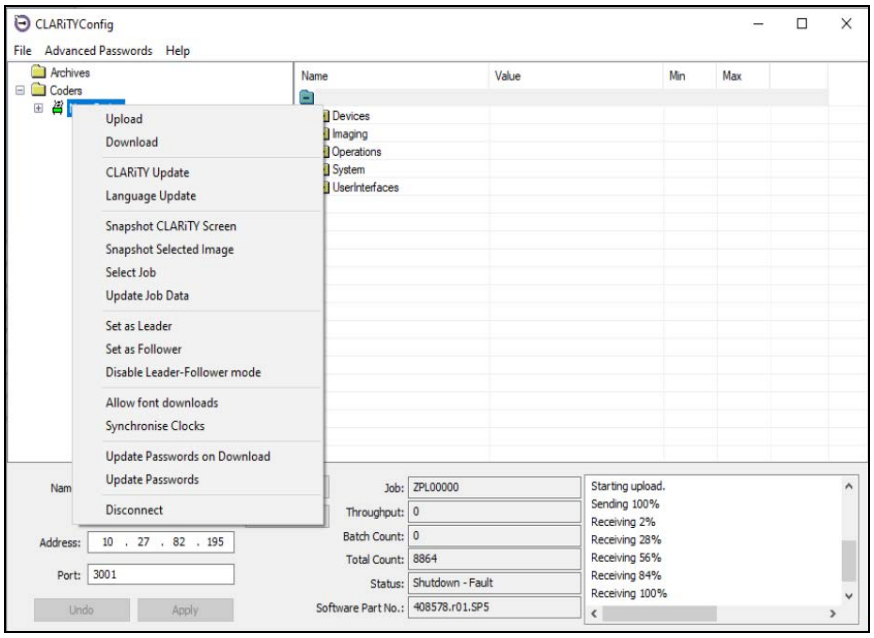


Figure 8-27: CLARiTY Config - Follower Disabling

A confirmation box appears asking you to confirm this action.

3 Click Yes and the Follower LPA is deleted from the Leader/Follower group and begins to function as a standalone LPA.

Note: *If the Follower LPAs are Standard LPAs, the 'JOB' button is enabled and the Follower's 'Job' database is empty or contains only the last Job selected.*

The Leader/Follower group database is held by the Leader LPA. Therefore, if a LPA is disabled from the Leader/Follower network and becomes a stand alone unit, any additional Jobs required have to be downloaded from CLARiSOFT®.

Note: *If you are intending to replace the Follower, it is advisable to configure the new Follower LPA, before disabling the currently activated Follower.*

If using basic configuration, ensure the old Follower has been disconnected from the network and configure the new Follower with the previous Follower network number.

If using advanced configuration you need to configure the new Follower with a fresh IP address and configure the Leader to communicate with this new address.

If the Follower is not being replaced, configure the Leader to only connect to the remaining Followers.

Disabling the Leader LPA

1 Establish communications between CLARiTY Configuration Manager and the Leader LPA (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Disable Leader/Follower mode', from the list as shown in Figure 8-27.

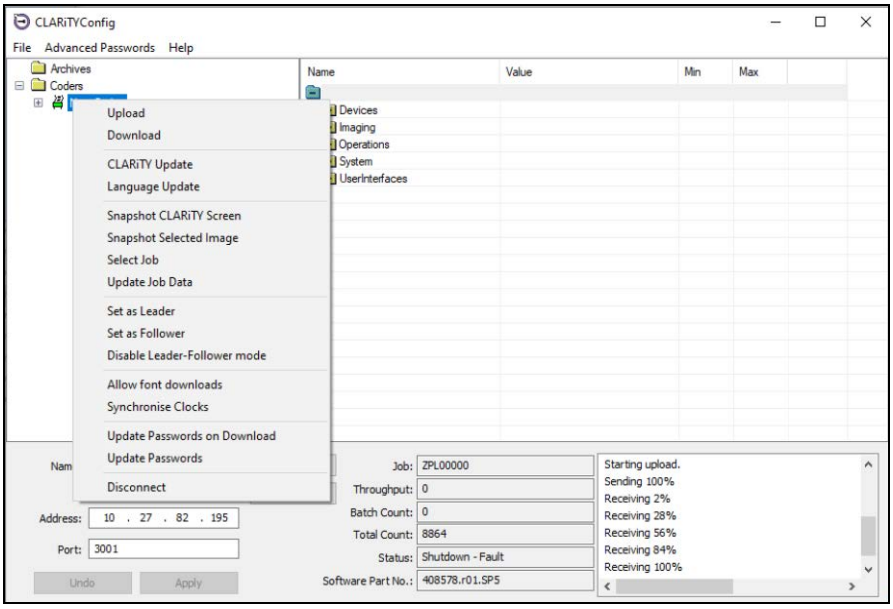


Figure 8-28: CLARiTY Config - Leader Disabling

A confirmation box appears asking you to confirm this action.

3 Click Yes do one of the following:

- Replace the Leader LPA with a new LPA containing identical configuration parameters and ensure the old Leader LPA has been removed from the network.
- If using advanced configuration, replace the Leader LPA with a new LPA containing identical configuration parameters, but with a new IP address.

- Disable Leader/Follower mode for one Follower LPA, then configure it to be the new Leader and connect the remaining Followers.
- Disable Leader/Follower mode for all Followers and use as standalone LPAs only.

Disabling Auto-Changeover Mode

Do the following to disable auto-changeover mode:

Disabling LPA 2/3

1 Establish communications between CLARiTY Configuration Manager and LPA 2/3 (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Multiple Machine Modes > Disable Multiple Machine Mode', from the list as shown in Figure 8-29.

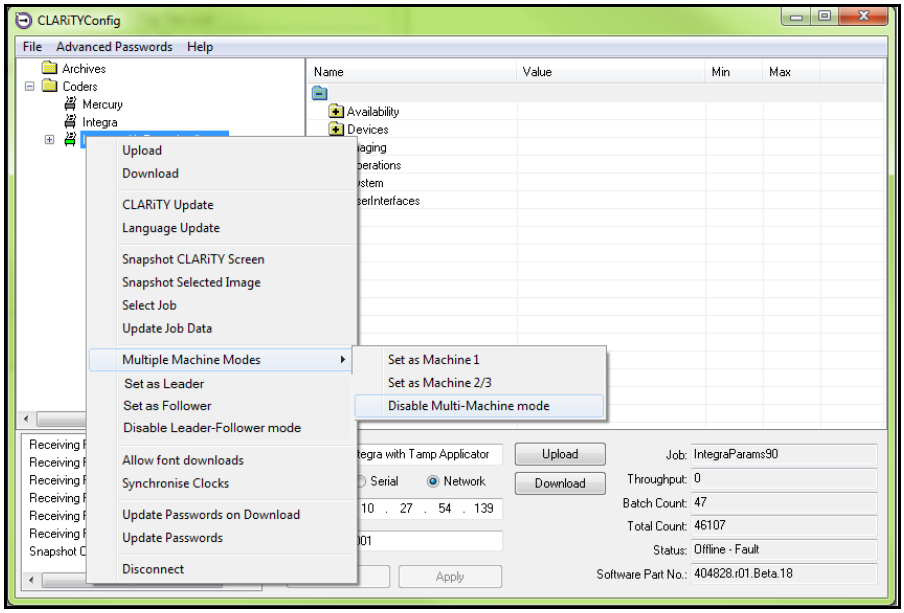


Figure 8-29: CLARiTY Config - LPA 2/3 Disabling

A confirmation box appears asking you to confirm this action.

3 Click Yes and LPA 2/3 is deleted from the Auto-Changeover group and begins to function as a standalone LPA.

Note: *If LPA 2/3 is Standard LPA, the 'JOB' button is enabled and LPA 2/3's 'Job' database is empty or contains only the last Job selected.*

The Auto-Changeover group database is held by LPA 1. Therefore, if a LPA is disabled from the Auto-Changeover network and becomes a

standalone unit, any additional Jobs required have to be downloaded from CLARiSOFT.

Note: *If you are intending to replace LPA 2/3, it is advisable to configure the new LPA 2/3, before disabling the currently activated LPA 2/3.*

Disabling LPA 1

1 Establish communications between CLARiTY Configuration Manager and LPA 1 (“How to Connect the CLARiTY Configuration Manager to the LPA using an RS232 connection” on page 5-8).

2 Right click on the 'New Printer' icon when the icon turns 'green' and Select 'Multiple Machine Modes > Disable Multiple Machine Mode', from the list as shown in Figure 8-27.

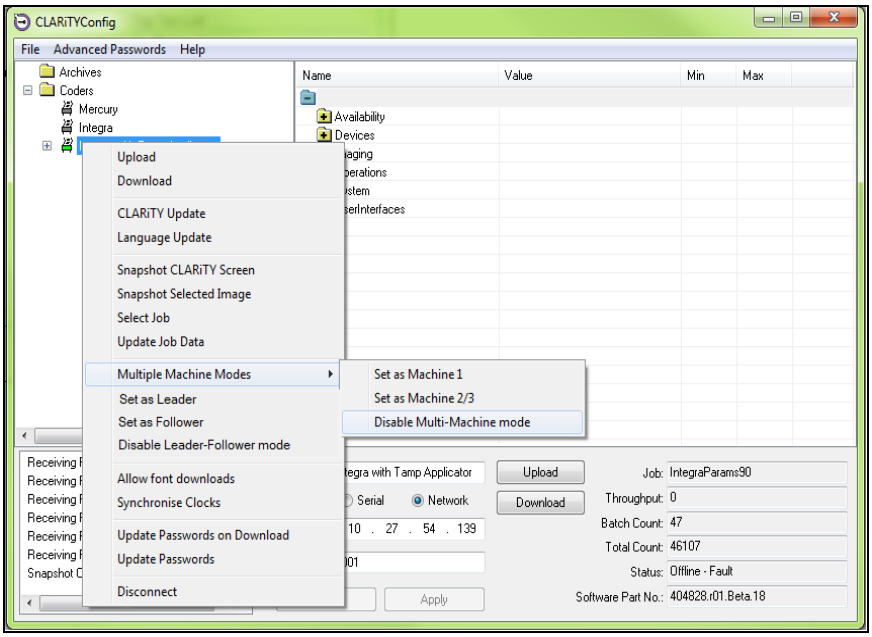


Figure 8-30: CLARiTY Config - LPA 1 Disabling

A confirmation box appears asking you to confirm this action.

3 Click Yes.

4 Replace LPA 1 with a new LPA containing identical configuration parameters, but with a new IP address and ensure the old LPA 1 has been removed from the network.

Specifications

A

This chapter contains information about the following topics:

- Technical drawings
- Technical specifications
- Electrical specifications
- System specifications

Technical Drawings

CLARiTY Display

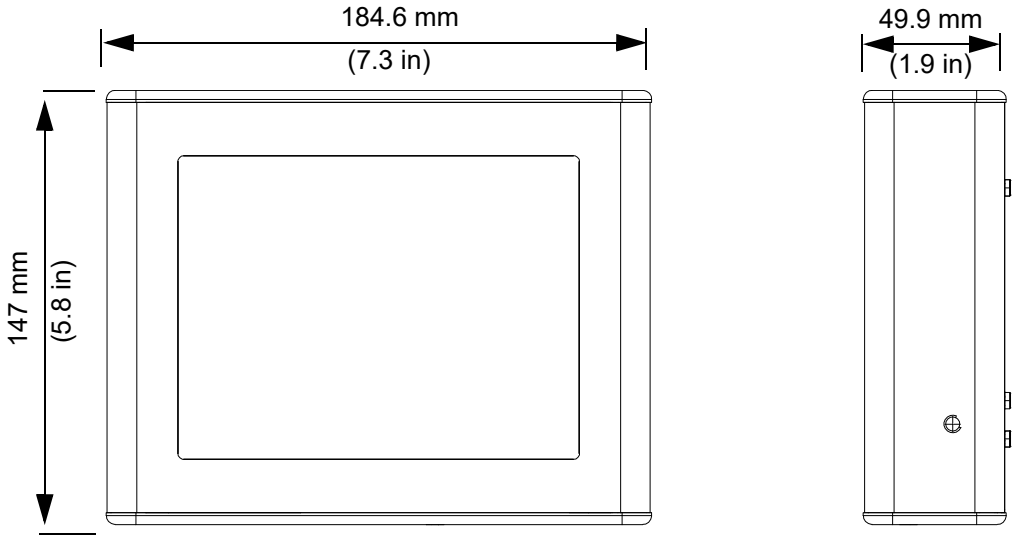


Figure A-1. CLARiTY Display Dimensions

Labeler

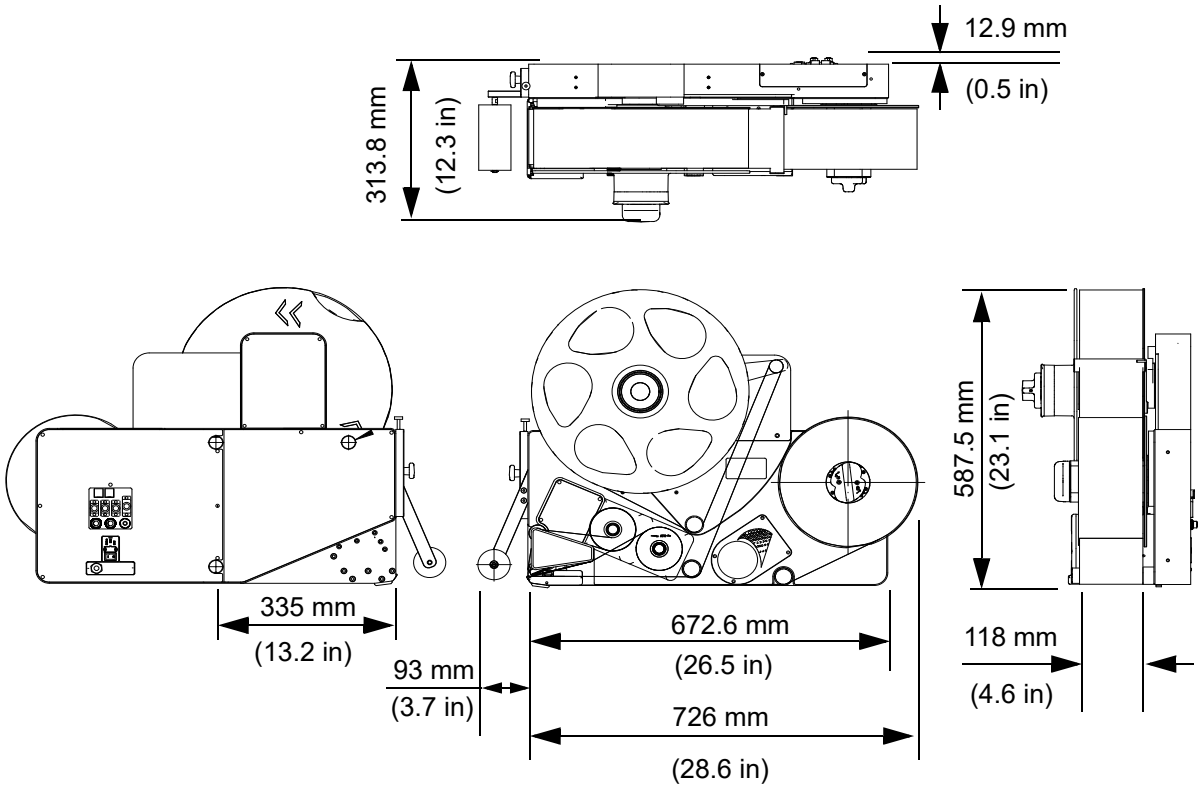


Figure A-2. LPA (RH) with Direct Apply

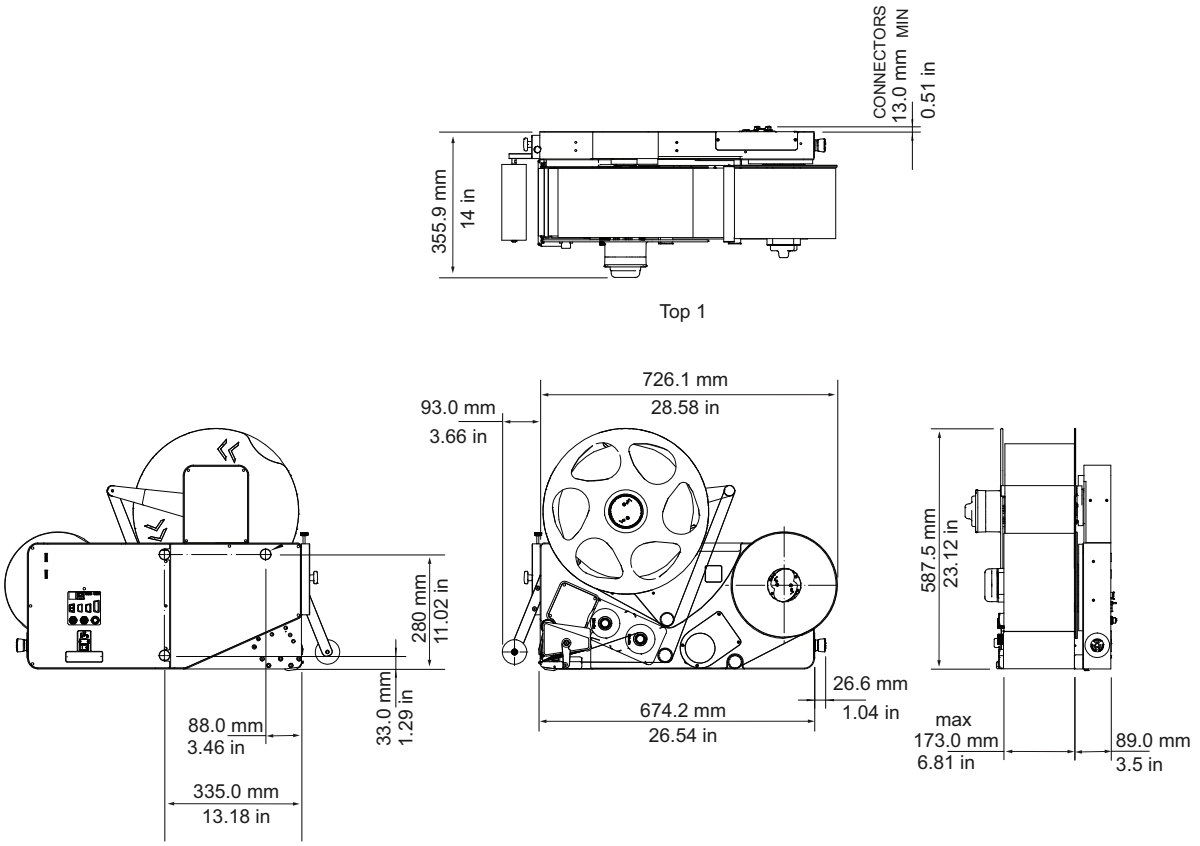


Figure A-3. LPA (RH) 160mm with Direct Apply

Technical Specifications

Table A-1 lists the technical specifications.

Product	User Interface	Length (L) in mm	Width (W) in mm	Height (H) in mm	Weight	Screen
CLARiTY Display	CLARiTY Operating System	184.6	49.9	147	1 kg	8.4” TFT SVGA
LPA with Direct Apply	-	819	313.8	587.5	40 kg (with a roll of labels)	-
LPA 160mm, with Direct Apply	-	819	355.9	587.5	40 kg (with a roll of labels)	-

Table A-1: Technical Specification

Electrical Specifications

Voltage	100 - 240 VAC (90 – 264 V max.)
Current	3.85-1.6 A
Frequency	50/60 Hz
Power	48V @ 250W (Control board + TTO power) 48V @ 350W (160W) 150V @ 175 W (Main drive power)
Fuse	2 x T10AH250V

Table A-2: Electrical Specifications

System Specifications

Table A-1 lists the system specifications.

System Specifications	Description
Data Interface	RS232, ethernet, USB memory stick support, text communications protocols
Operating Temperature	5 ºC to 40 ºC (41 ºF to 104 ºF)
Humidity	20 to 85% relative, non condensing
Print Speed	40 to 500 mm/s 40 to 400 mm/s (160W)
Throughput	Up to 350 packs per minute depending upon line speed and pack size.

Table A-1: System Specifications

External Connectors and Interface Specifications

Connector	Specification
Product Sensor 1 and 2	M12 (A-coding) 4POS female
IO	D-Sub 15POS Female
Encoder	D-Sub 9POS Female
Beacon	M16 DIN 6POS Female (LED based beacon)
RS232 Serial	D-Sub 9POS male
Ethernet	RJ45
Ethernet PoE	RJ45
Remote CLARiTY Pod	D-Sub 15POS HDD Female
USB	Connector on the remote CLARiTY user interface

Table A-2: External Connectors and Interface Specifications

CLARiTY Configuration Manager

B

Introduction

CLARiTY Configuration Manager lists all the configurable parameters of the LPA.

CLARiTY Configuration Manager

Menu						Options	Value	Min	Max	Unit	Comments	Setting
Availability	ParetoCollection	SortBy				0: Sort By Downtime 1: Sort By Frequency			1			
Devices	BarcodeScanner	Config File					Default_Code_Types.txt	0	260			Available when barcode scanner attached
		Config File(NoBarcode)						0	260			
		ConsecutiveNoReadLimit					3	0	2147483647			
		ConsecutiveWrongReadLimit					1		2147483647			
		DelayBeforeGate					0	0	1000			
		DelayType				0: Time in ms 1: Distance in mm			1			
		GateTimeout					500	0	5000			
		ScannerNo Read FaultMode				0: Ignore 1: Raise Fault 2: Raise Warning			2			
		ScannerNo ReadReject Type				0: Reject None 1: Reject All			1			
		Scanner RejectDelay					0	0	1000			
		ScannerWrongReadFaultMode				0: Ignore 1: Raise Fault 2: Raise Warning			2			
		ScannerWrongReadReject Type				0: Reject None 1: Reject All			1			

Table B-1: CLARiTY Configuration Manager

Menu						Options	Value	Min	Max	Unit	Comments	Setting
Devices	PHds	ScanningMode				0: Scan All Barcodes 1: Scan First Barcode 2:Scan Last Barcode			2			
		1	Consumables	Labels	Encoder	PrintRoller Diameter	1350	1340	1365			
					LabelFinish	0: Rough 1: Standard 2: Smooth			2			
					LabelStock Type	0: Blank Labels Only 1: Some Preprinted Labels			1			
				Ribbon	Encoder	PrintRoller Diameter	1501	1475	1530			
					RibbonColour	0: Black 1: White 2: Other			2			
					RibbonWidth		165	110	165		min/max values depend on prinhead width	
			Image Information	Mirrored Image		0: No 1: Yes			1		Select if image is be reversed	
				Print Orientation		0: 0 degree 1: 180 degree			1		Set Orientation of the print	
				Reset Image Sequence-OnOffline		0: No 1: Yes			1			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
			Inputs	AutoFixFeed-forCreep		0: No 1: Yes			1			
				Encoder	EncoderMode	0: Quadtrature			1		Select the required Encoder Mode	
						1: Single Phase						
					EncoderNum-berOfLines		3600	200	5000	No. of Lines		
					Encoder-WheelDiame-terHMM		10610	2500	25000	Hundredths of mm	Enter the encoder whell diameter in hundredths of a mm	
					FixedProduct-Speed		225	10	400	units	If there is no encoder, enter fixed product (or line) speed in mm/sec or ft/sec	
					FixedSpeed-Products	0: External Encoder 1: Fixed Speed Printing 2: Automati-cally Detected			2		Select Fixed Speed Printing if no encoder avaiable	
					Speed FineAdjust		0	-50	50			
				GapSensor	GapSensor-ToBeakDis-tance		400	100	5000		distance in mm	
					GapSensor-Type	0: Array			2			
						1: Auxiliary						
						2: Point						
				Ignored-PrintsBe-haviour		0: Ignore			2		Select the required printer behaviour when prints are missed	
						1: Raise Warn-ing						
						2: Raise Fault						
				IgnoredPrint-sThreshold			3	1	20		The number of ignored prints required before action above warning or fault raised	

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
			Inputs	LabelRepeat-Count			2	1	100			
				LabelRepeat-Distance			500	5	5000			
				LabelRepeat-Mode		0: No 1: Yes			1			
				PostiveEdge-LineSelect		0: No 1: Yes			1			
				PrintTigger-Mode		0: External Print Sensor 1: Automatic Print Triggering			1		Select external or internal print sensor	
				ProductSen-sor1Trigger		0: Positive Edge Trigger 1: Negative Edge Trigger			1		Select either the positive or negatitive edge that is used for the print trigger	
				ProductSen-sor2Trigger		0: Positive Edge Trigger 1: Negative Edge Trigger			1		Select either the positive or negatitive edge that is used for the print trigger	
				ProductSen-sor2TriggerD-istance			0	0	3000	mm/inches	Distance between prod-uct sensor and specific appli-cator (i.e. to label applicator or barcode reader)	
				ProductSen-sor2Usage		0: None 1: Apply Label 2: Scan Bar-code			2		Is print repeat mode on?	
				ProducttSen-sorDe-bounceDistan ce			1	1	25	mm/inches		
				Product SensorDe-bounceTime			10	1	100	s		

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
			MachineConfig-uration	BackFeed		0: No 1: Yes			1			
				BackfeedDis-tanceTmm			0	0	130			
				LabelStop-pingPosition			0	-110	250			
				MachineHand		0: Left 1: Right 2: Requires Set-ting			2			
				Machine Orientation		0:Horizontal 1:Vertical Label-ling Down 2: Vertical Labelling Up 3: Requires Setting			3			
				Maximum LabelLength			300	10	500			
			OutputConfigu-ration	Output1 Config		see Table 5-2	0	-21474….	21474….		Set up the external output 1	
				Output2 Config		see Table 5-2	1	-21474….	21474….		Set up the external output 2	
				Output3 Config		see Table 5-2	2	-21474….	21474….		Set up the external output 3	
				Output3-PulseWidth Override			100	0	3000			
			Print Information	Ribbon Delay			0	-150	150			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
			PrinterConfiguration	High Throughput-Mode	0: No 1:Yes		1					
				Horizontal-PrintRegistration			0	-1000	3000			
				Maximum-LineSpeed			400	300	400			
				PrintDarkness			75	0	100			
				PrintForce			50	0	100			
				PrintRollerWidth		0: 110mm 1: 76mm 2: 55mm 3: 162mm 4: 130mm 5:Requires Setting			5			
				PrintSensor-ToApplicatorDistance			0	0	3000			
				PrintingMode		0: Thermal Transfer 1: Direct Thermal			1			
				Registration Delay			15	0	3000			
				TrailingEdge-Darkness			100	0	100			
				VerticalPrintRegistration			0	-1500	1500			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
			QA	Manual	Label DriveTest	0: None 1: Enabled 2: Step			2			
					LabelEncoder State	0: Spin roller a minimum of 10 rotations 1: Spin roller back to approxi-mate starting position 2: Align roller with original mark 3: Pass; 4: Fail			4			
					Printhead MotorTest	0: None 1: Enabled 2: Step			2			
					Ribbon EncoderState	0: Spin roller a minimum of 10 rotations 1: Spin roller back to approxi-mate starting position 2: Align roller with original mark 3: Pass 4: Fail			4			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
Imaging	CLARiTY Data File	CharacterSet				0: ASCII 1: UTF8 2: Unicode			2			
	DateCodes	Day Of Month Codes					<1>,<2>,<3>,<4>,<5>, …..	0	2048		Set up required date and time codes	
		Day of Week Codes					<A>,<B>,<C>,<D>,<E>, ….	0	512			
		Hour Codes					<A>,<B>,<C>,<D>,<E>, ….	0	1024			
		Minute Codes					<AG>,<AH>,<AI>,<AJ>, …	0	4096			
		Month Codes					<JA>,<FE>,<MR>,<AL>,<MA>, …	0	512			
		Week Of Year Codes					<1>,<2>,<3>,<4>,<5>, …..	0	4096			
		Year of Decade Codes					<A>,<B>,<C>,<D>,<E>, ….	0	512			
	ImageData Serialisation	ImageDataSerialisationEnabled				0: No 1: Yes			1			
		RecordBufferHigh					80	60	100			
		RecordBufferLow					20	0	40			
		RecordBufferMaximum					1000	0	10000			
	Job Orientation					0: 0deg 1: 90deg 2: 180deg 4: 270deg			3			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
	Line Selection	EnableLineSelection				0: No 1: Yes			1			
		LineSelectionMode				0: Communications 1: Binary Inputs 2: Binary Hot Bit Inputs			2			
		Number of Lines					2	2	16	No. of lines		
	PrintHeadMapping	Printhead1					1	1	4			
		Printhead2					2	1	4			
		Printhead3					3	1	4			
		Printhead4					4	1	4			
	Printer Codes	Equipment Reference					1	0	255			
		Factory Reference					1	0	255			
		Line Reference					1	0	255			
	Shift Codes	Number of Exceptions					0	0	168			
		Number Of Shifts					0	0	168	Number	Set up shift requirement	
	Start Of Day						+00:00:00	-23:59:59	+23:59:59			
	Start Of Hour Of Week						+00:00:00	-167:00:00	+167:00:00			
	TimerCodeEncryption						ABCDEFGHIJ	10	10			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
	TransmittedField	CharacterSet				0: ASCII 1: UTF8 2: Unicode			2			
		ParseEscape-Sequences				0: No 1: Yes			1			
		TriggerMode				0: Disabled 1: Transmit on Job Select/ Update 2: Transmit on Print			2			
	Update Queue	Max-QueueLength					1	1	20	Number		
	UserEnteredPrint-LimitOnJobSelect					0: No 1:Yes			1			
Operations	Apply					Trigger						
	CalibrateGapSen-sor					Trigger						
	CharacterizePrint-headPosition					Trigger						
	CharacterizeRib-bonMotors					Trigger						
	CycleApply					Trigger						
	CycleDispense					Trigger						
	CycleDispenseAn-dApply					Trigger						
	CycleTamp					Trigger						
	Dispense					Trigger						
	DispenseAndApply					Trigger						
	GenerateLogFiles					Trigger						
	PrintLabel					Trigger						
	Tamp					Trigger						
	TestPrint					Trigger						

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
System	BarcodeSelect-Mode					0: Job Name 1: Primary Packaging Code			1			
	ComPort1	BaudRate				0: 110			12		Baud rate selection	
						1: 300						
						2: 600						
						3: 1200						
						4: 2400						
						5: 4800						
						6: 9600						
						7: 14400						
						8: 19200						
						9: 38400						
						10: 56000						
						11: 57600						
						12: 115200						
		FlowControl				0: None			2			
						1: Software						
						2: Hardware						
		Usage				0: None			7			
						1: Text Communications						
						2: CLARiSUITE						
						3: ZPL Emulation						
						4: SATO Emulation						
						5. Transmitted Field						
						6: Barcode Scanner						
						7: CimComms						

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
	Database Location					0: Local 1: Remote			1		Select the required location for the job files	
	EnableTestPrint-LastImage					0: No 1: Yes			1			
	EnableUserTest-Print					0: No 1: Yes			1			
	Job Selection Mode					0: Product Code 1: Tiered			1			
	Logging	IncludeJobEvents				0: No 1: Yes			1			
		LoggingMode				0: None 1: Normal 2: Advanced			2			
	PackagingChecks	TimedCheck-Enabled				0: No 1: Yes			1			
		TimedCheck-RepeatSeconds					1800	30	3600			
		TimedCheck-TimeoutSeconds					6	30	3600			
	PowerSaving	Mode				0:None 1: Minimal 2: High 3: Full			3			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
	SATO	BarcodeSizing				0: Favour Smaller Bar-codes			2			
						1: Balanced						
						2: Favour Larger Bar-codes						
		DeleteCRLF				0: No			1			
						1: Yes						
		Resolution				0: 203 dpi			2			
						1: 300 dpi						
						2: 600 dpi						
		FontCodePage				0…..			22			
						…22						
		FontSpaceDe-fault				0			1			
						1						

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
		Label Configu-ration	Label Length	Length			107	1	9999			
				UseSA-TOValue		0: Emulation Value 1: Use Printer Value			1			
			Label Origin	UseSA-TOValue		0: Emulation Value 1: Use Printer Value			1			
				XOrigin			0	-9999	9999			
				YOrigin			0	-9999	9999			
			Label Width	UseSA-TOValue		0: Emulation Value 1: Use Printer Value			1			
				Width			107	1	9999			
		PrintLimitMode				0: Unlimited Prints 1: Use SATO supplied print limit			1			
		PrintMode				0: Download Only 1: Download & Select 2: Download, Select & Delete after use 3: Select Only (don't use Data-base)			3			
		ProtocolCom-mandCodes				0: Standard 1: Alternate			1			
	ServiceInformation	AddressLine1						0	255			
		AddressLine2						0	255			
		AddressLine3						0	255			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
		AddressLine4						0	255			
		Email						0	255			
		Name						0	255			
		PrinterLocation						0	255			
		SerialNumber						0	255			
		Tele-phoneNumber						0	255			
		WebSite						0	255			
	ShowJobDescrip-tionOnHomeS-creen					0: No			1		Select yes to show the job description if provided for the print job	
						1: Yes						

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
	TCPIP	BarcodeScanner	IPAddress				0.0.0.0	7	15			
			Network Port				2111	1	65535			
			Protocol			0: Disabled 1: Enabled - Receive 2: Enabled - Transmit			2			
			Response Port				1025	1	65535			
		BinaryCommsNetworkPort					3001	0	256000			
		BinaryCommsNetworkPort2					0	0	256000			
		CimCommsCommunications	NetworkPort				0	0	256000			
		DefaultGateway						0	15			
		IPAddress					0.0.0.0	7	15			
		RemoteService	Enabled			0: No 1: Yes			1			
			FriendlyNameDW					0	32			
			IpAddress					0	32			
			Serial NumberDW					0	32			
		SATOEmulation	NetworkPort				1024	1	65535			
			Protocol			0: None 1: Status 3 2: Status 4			2			
			ResponsePort				1025	1	65535			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
			StatusReplyMode			0: ENQ 1: Cycle			1			
			StatusReplayTime				500	10	10000			
		SubnetMask					255.255.255.0	7	15			
		TextCommunications	JobSelectionMode			0: Normal 1: Selection per print			1			
			NetworkPort				0	0	256000			
		WolkeCommunications	NetworkPort				0	0	256000			
		ZPLEmulation	NetworkPort				0	0	256000			
	TextCommsAsyncNotificationsEnabled					-Overall State Change -Print Start -Print Complete -Error State Change -Current Job Changed -Enable I/O Outputs - Queue Empty - Queue Full - Queue High - Queue Low	0	0	214783647			
	TextCommsParameterFile						ZipherASCIICommsProtocol.xml	0	260			

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
	USB	PromptOn-CLARiTYData-FileDetect				0: No 1: Yes			1		Select yes to prompt if printer detects a CLARiTY Data file on the usb	
		PromptOn-CLARiTYPa-rameterArchiv eDetect				0: No 1: Yes			1		Select yes to prompt if printer detects a CLARiTY archive file on the usb	
		PromptOn-CLARiTYPrint-erCloneDetect				0: No 1: Yes			1		Select yes to prompt if printer detects a CLARiTY printer clone file on the usb	
		PromptOn-CLARiTYUp-dateDetect				0: No 1: Yes			1		Select yes to prompt if printer detects a CLARiTY soft-ware update file on the usb	

Table B-1: CLARiTY Configuration Manager (Continued)

Menu						Options	Value	Min	Max	Unit	Comments	Setting
User Interfaces	CLARiTY	HomeScreen-Preview				0: No 1: Yes			1			
		Language					English	0	100		Enter the required language	
		Measurementunits				0: Metric 1: Inches			1		Select units - inches or mm	
		Passwords	Enable Passwords			0: Disabled 1: Normal 2: Advanced			2		Select the preferred password level	
		Recalibrate Touchscreen										
		ShowJobDescriptionOnJobList				0: Yes 1: No			1			
		TouchToEdit	Enabled			0: Disable 1: Enable			1			
	CLARiTYConfig	Archive					Not Archived	0	100			
		LastUpdated					05/30/2012 10:02:37	0	100			
	WebServer	Enabled				0: No 1: Yes			1		Select yes to enable Web Server	

Table B-1: CLARiTY Configuration Manager (Continued)

Main Board Test Points

C

Main Board Test Points

Note: *All references are made as viewed from the front side of the PCB unless mentioned.*

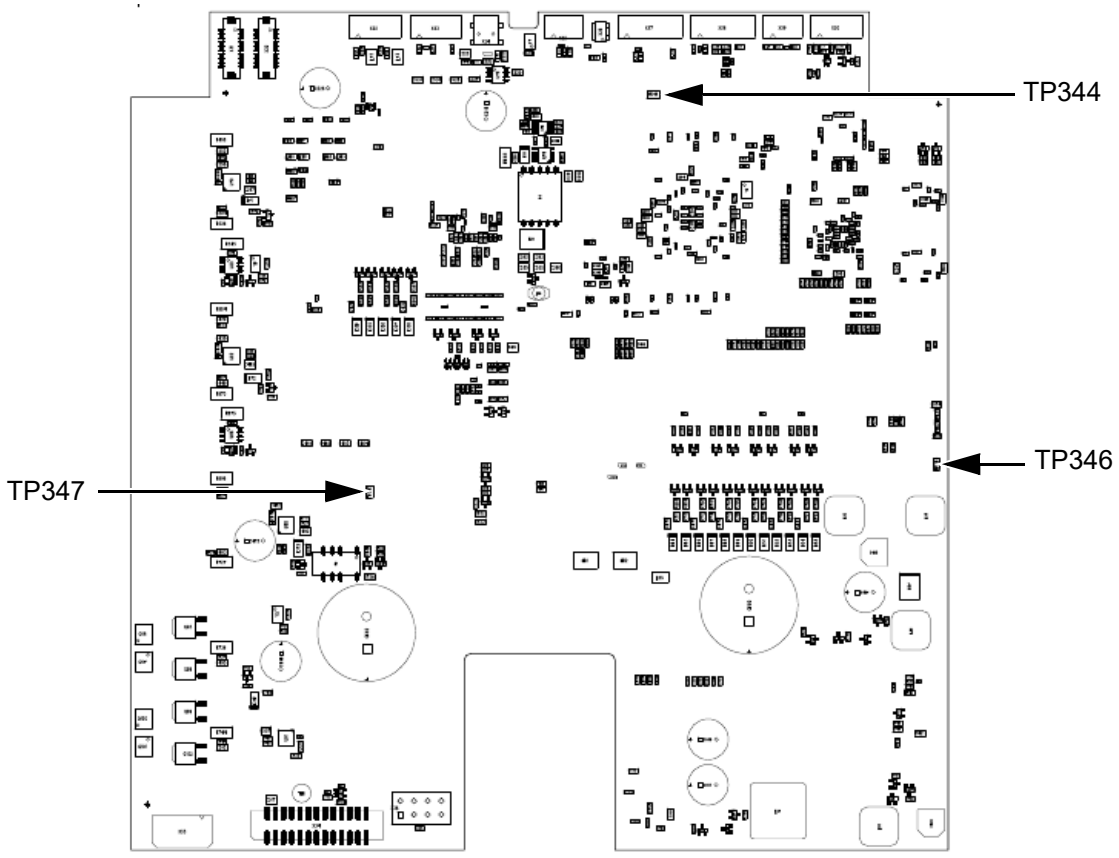


Figure C-1: Main Board Test Points (Rear View)

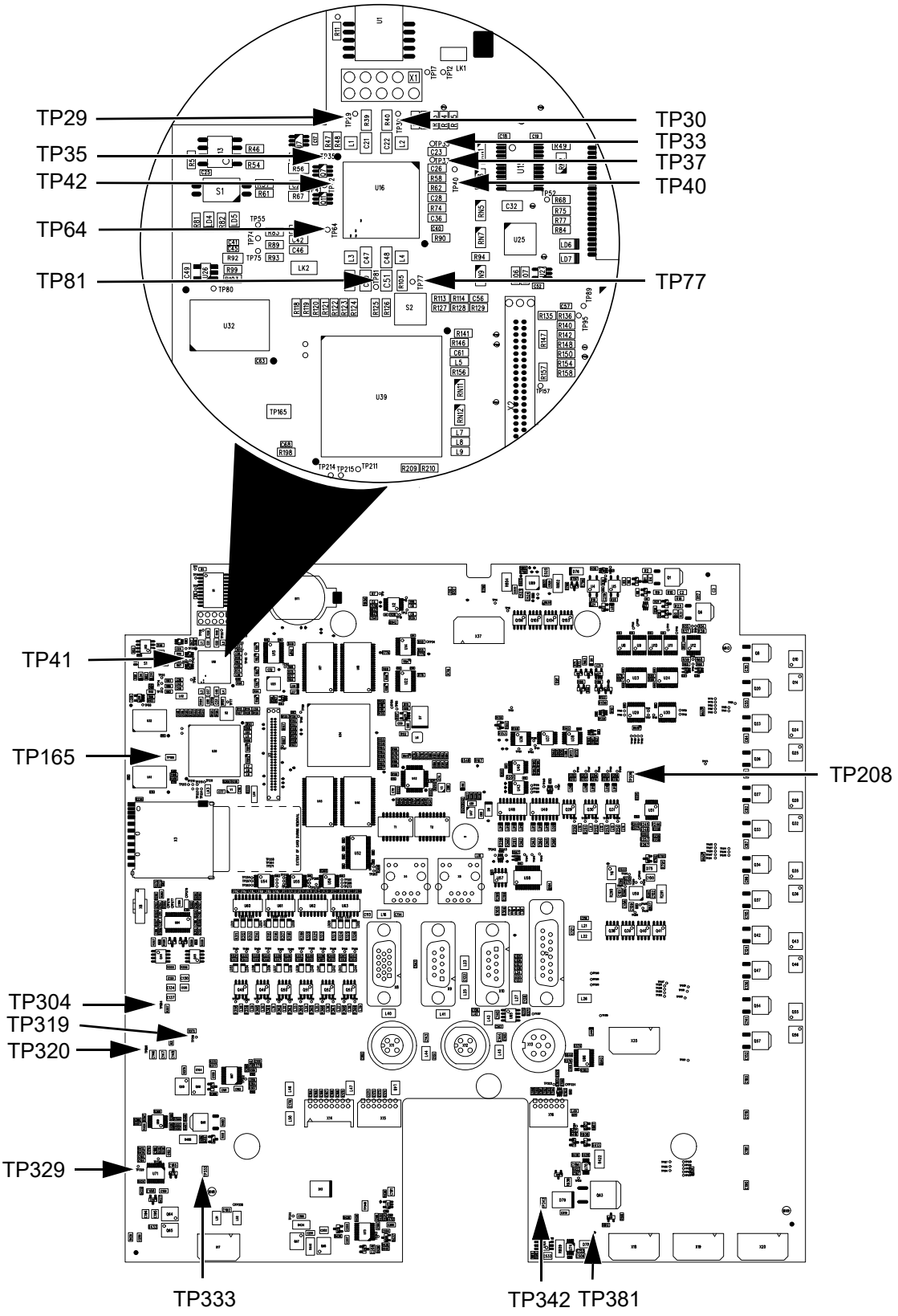


Figure C-2: Main Board Test Points (Front View)

Note: *U16 is a chip located in the upper left corner of the PCB.*

Test Points	Voltage/PCB Label	Acceptable Voltage Range
TP165	DGRND (top left segment of PCB)	Ground 0 V
TP208	DGRND (top right segment of PCB)	Ground 0 V
TP333	DGRND (bottom left segment of PCB)	Ground 0 V
TP342	DGRND (bottom center segment of PCB)	Ground 0 V
TP344	DGRND (top right segment of rear side)	Ground 0 V
TP346	DGRND (far right segment of rear side)	Ground 0 V
TP347	DGRND (center left segment of rear side)	Ground 0 V
TP319	+3V3 (bottom left segment of PCB)	3.25 – 3.35 V
TP304	+5V (bottom left segment of PCB)	4.75 – 5.25 V
TP320	+12V (bottom left segment of PCB)	11.75 – 12.25 V
TP329	+24V (bottom left segment of PCB)	23.5 – 24.5 V
TP40	+2V6 (just to right of U16)	2.45 – 2.75 V
TP37	+1Y8A (just to top right of U16)	1.75 – 1.95 V
TP33	+3V3U (just to top right of U16)	3.15 – 3.45 V
TP30	+1Y2D (just above L2)	1.15 – 1.35 V
TP29	+1Y8 (just to top left of U16)	1.70 – 1.90 V
TP35	+3Y15	3.10 – 3.20 V
TP42	+1Y2R (just to left of U16)	1.10 – 1.30 V
TP41	+2Y5 * (just to left of U16)	0 V *
TP64	+2Y775 (just to left of U16)	2.55 – 3.00 V
TP81	+1Y225 (just below U16)	1.18 – 1.27 V
TP77	+1Y1 (just below U16)	1.00 – 1.15 V
TP381	19.5V PHDYS	19.0 - 20.0 V

Table C-1: Main Board Test Points

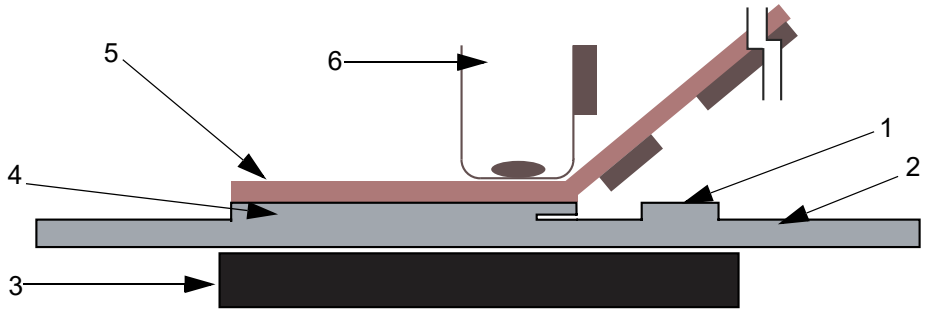
**** -*** *2Y5 test point will remain at 0 V until after the unit under test is programmed.*

Theory Of Printing

D

The following section explains the theory of printing of the thermal transfer printer (Figure D-1):

- The printhead (item 6, Figure D-1) contains miniature heating elements under a glass coating (300 dpi - 12 dots/mm)
- A carrier ribbon (item 5), with ink bonded to one side is used as the printing media
- The printhead presses the thermal transfer ribbon onto the substrate (item 2), with the ink side of ribbon in contact with the substrate
- Print elements heat small areas of the ribbon and this transfers the ink to the target substrate
- The ribbon moves relative to the substrate.
- The print elements are programmable and controlled to create an image



1. Transferred Ink
2. Substrate
3. Platten
4. Ink
5. Base Film
6. Thermal Printhead

Figure D-1: Printing Process

Availability

E

Overall Equipment Effectiveness - Availability Tools

Introduction

The ‘Availability’ tool helps to isolate operational versus equipment issues and allows the user to track the equipment downtime and view the downtime statistics.

The pareto of faults that allows the analysis of runtime measurement data, helps the user to understand and eliminate the more frequent causes of both equipment and operational downtime.

The availability shows two basic availability metrics simultaneously:

- Equipment Availability
- Operational Availability

Equipment availability is the same and equal or more than operational availability.

Note: *Operational Availability can be changed between two separate production time proxies as required by the user: "Power On" and "Running" mode. Please see “Operational Availability” on page E-2 for further details*

Equipment Availability

$$\textit{Equipment Availability} = 1 - \frac{\textit{Equipment Downtime}}{\textit{Equipment Total Time}}$$

Where,

‘Equipment Total Time’ is the total amount of time for which the equipment is turned On (has power applied). If the equipment is powered down when a fault is active, the equipment total time also includes the amount of time for which the equipment is off.

Equipment Total Time = ('Power On' time) + ('Power Off' time in fault state)

'Equipment Downtime' is the amount of 'Equipment Total Time' the equipment has spent in a 'Equipment Fault State'. 'Equipment Fault State' is defined as the period where the equipment is not available due to a fault, identified as a equipment fault.

Equipment Downtime = Equipment Total time in a fault state

When the equipment enters a equipment fault state, the downtime counter starts. The equipment remains in this equipment fault state until the fault is cleared. If the equipment is powered down in a equipment fault state, the downtime counter continues until equipment is powered on and the fault is cleared.

Operational Availability

$$\textit{Operational Availability} = 1 - \frac{\textit{Operation Downtime}}{\textit{Production Time}}$$

The Production Time Proxy allows the availability calculation to change between customer selected operating modes, either 'Running' or 'Power On'. The production time is defined based on the production time proxy chosen:

- Running: If both equipment and printer are switched ON.
- Power On: If the equipment is switched ON irrespective of the status of the printer.

If the equipment is powered down when a fault is active, the amount of time that the equipment is off is also included in the production time.

Production Time Running = ('Running' time) + ('Power Off' time in fault state)

Where,

‘Running' time is the time when equipment is ON or requested to be turned ON.

Production Time Power ON = ***(Power 'ON' time)*** + ***('Power Off' time in fault state)***

Where,

Power ‘ON’ time is the time for which the equipment is switched ON irrespective of the status of the printhead.

‘Operation Downtime’ is the amount of ‘Production Time’ the equipment has spent in an ‘Operation Fault State’. ‘Operational Fault State’ is defined as the period where the equipment is not available due to a fault identified as a operational fault.

Operation Downtime = ***Total time in a fault state***

Operation Downtime
When the equipment enters a printer fault state, the downtime counter starts. The equipment remains in this operation fault state until the fault is cleared. If the equipment is powered down in a operation fault state, the downtime counter continues until equipment is powered on and the fault is cleared.

Availability Page

Access the Availability page by navigating to *Home* > *Performance* > *Availability*. The availability page displays the equipment availability and operational availability data against the time frame (see Figure E-1: on page E-4).

Each screen allows you to interrogate the availability data and fault pareto to understand each cause of non-availability.

Availability menu allows you to interrogate equipment availability and operational availability data for the life of the equipment. The detailed event log of the equipment events will contain six months of data. You can select a time period for further detail on faults causing a drop in equipment or operational availability.

This data can be exported to USB for further interrogation.

See “Export to USB” on page E-9 section for information on how to export to USB stick.

All data can be exported to USB for further interrogation.

Refer to the Operator Manual for complete information on *How to use Availability tools*.

Figure E-1: Availability

Touch  to view the Fault Pareto page for the selected availability data. The page displays the fault type, downtime and fault frequency (see Figure E-2 and Figure E-3: on page E-5).

Production Time Proxy: Allows the user to toggle between power on and running time operational availability values.

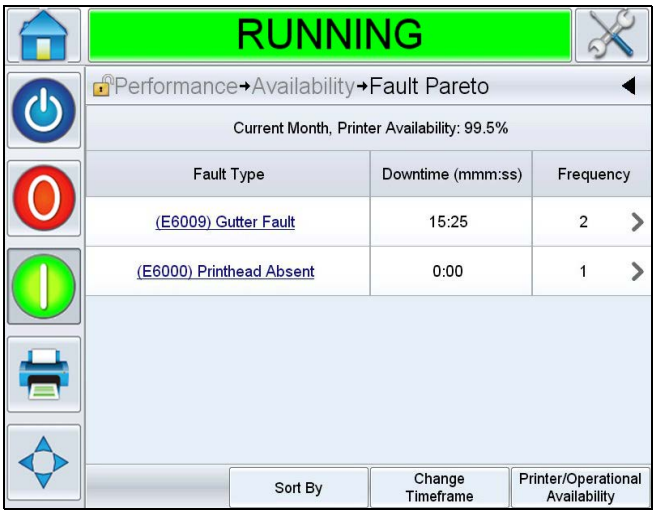


Figure E-2: Fault Pareto For Equipment Availability

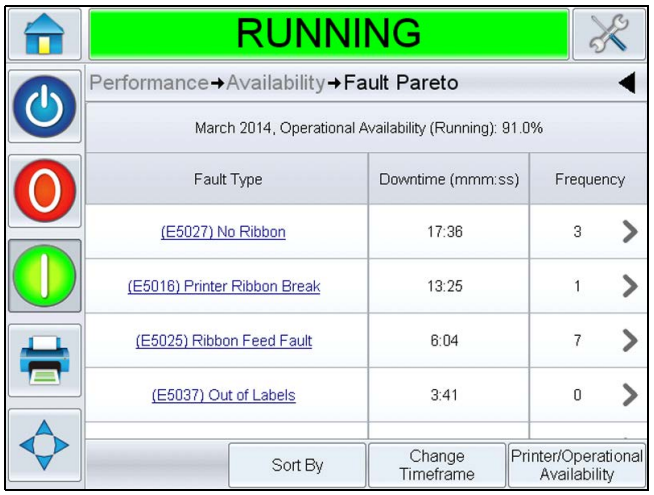


Figure E-3: Fault Pareto for Operational Availability

The Fault pareto screens show all faults, their duration and the frequencies for the period being viewed. This will help to identify any ongoing issues that might indicate a training issue or bad performer.

Each fault can be selected for further detail on the fault time and also on when each event occurred.

Touch  to view the Event page (see Figure E-4: on page E-6). Event page displays the date, time and duration of the fault.

Figure E-4: Event

The Event page will show for each fault, the date, time and duration of that fault for the time period selected.

Each event can be selected for further detail.

Touch  to view the Parameters page (see Figure E-5). Parameters page displays the values of each parameter for the particular downtime.

Figure E-5: Parameters Page

The parameters page shows the equipment parameters for the time of the event, 1 minute before the event and 5 minutes before the event to fully describe and facilitate a diagnosis of the fault and equipment state, at and just before the fault.

From this page, the event log can be selected that shows all alarms, warnings and status indicators of the equipment. Selecting event log from this page will show the event log for the event time.

Touch Go to Event Log to view Event log page (see Figure E-6: on page E-7). You can also view this page by navigating through *Tools > Diagnostics > Printhead.*

The Event log retains all activities happening for a six month period. It can be useful to check other equipment activities occurring at the same time as a fault to understand the fault context.

You can filter to remove status, warnings, alarms as required.

Figure E-6: Event log

Touch on the *Event* message for detailed description of the fault and where available, the parameter page can be selected.

Each fault description takes the user to a more detailed of the fault, likely causes and correction actions.

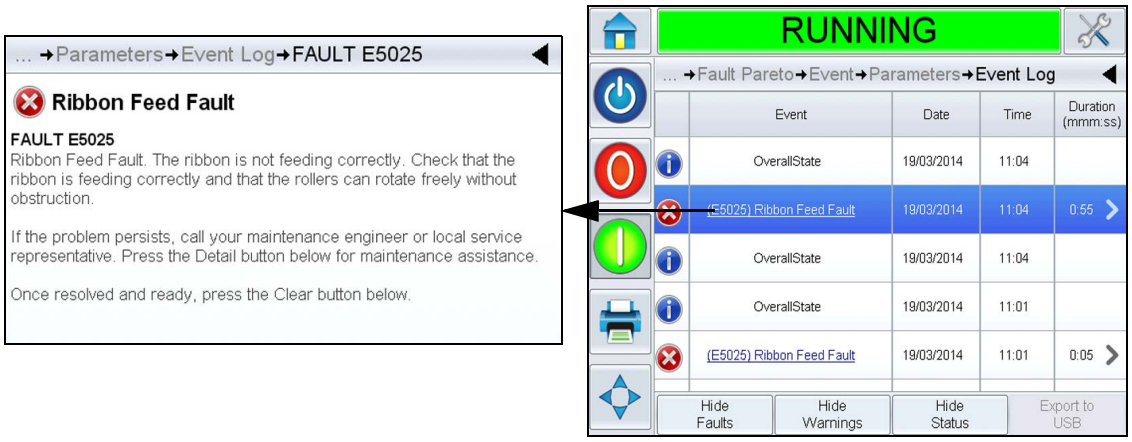


Figure E-7: Event log diagnostics

Export to USB

The following information can be exported to an external USB stick in a .csv format:

- Availability Metrics
- Event Log

Do the following tasks to export the data to the USB stick:

1 Insert USB stick to the external USB connector.

Note: *'Export To USB' button is activated only when a USB stick is inserted.*

Note: *Ensure that the USB stick does not have any previous exported data as you will be asked to overwrite the files (see Figure E-8).*

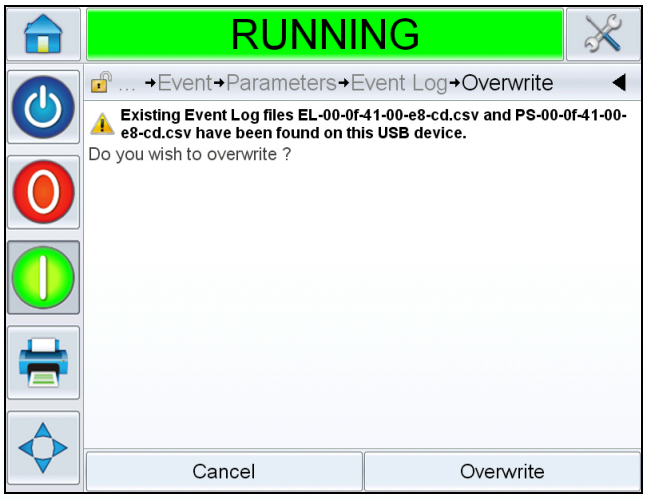


Figure E-8: Overwrite Files

2 Export to USB

To export Availability Metrics

a. From Home page, navigate to *Performance* > *Availability* (see Figure E-1: on page E-4).

b. Select *Export to USB*.

c. Confirmation page will be displayed (see Figure E-9).

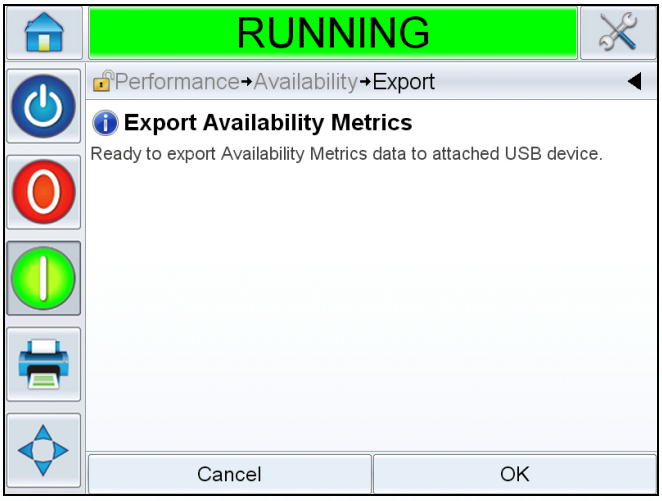


Figure E-9: Export Availability Metrics Confirmation

d. Select *OK*.

e. On completion, success page will be displayed.

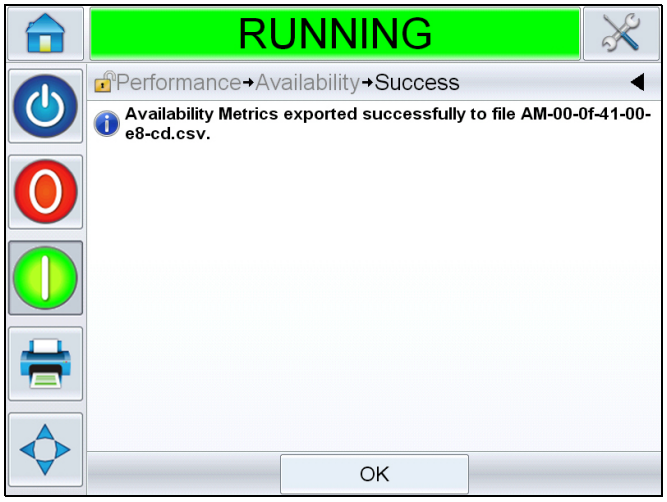


Figure E-10: Export Success

f. Select *OK* and remove the USB stick.

To export Event Log

a. Navigate to *Tools* > *Diagnostics* > *Printhead* > *Event Log* (see Figure E-6: on page E-7).

b. Select *Export to USB*.

c. Confirmation page will be displayed (see Figure E-11).

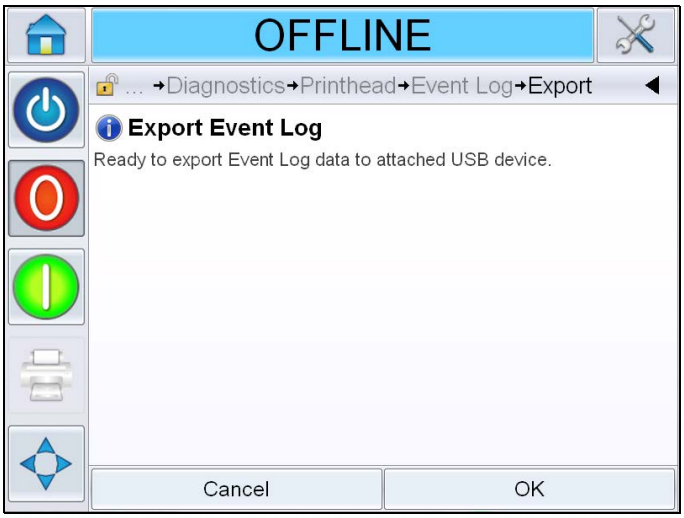


Figure E-11: Export Event Log Confirmation

d. Select *OK.*

e. On completion, success page will be displayed.

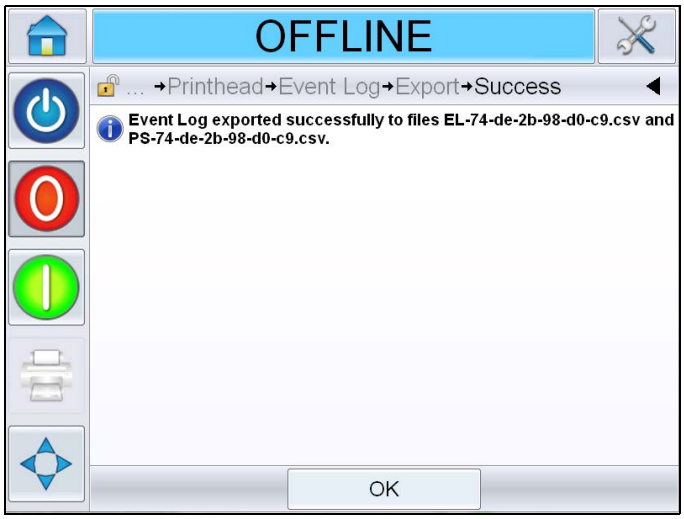


Figure E-12: Export Success

f. Select *OK* and remove the USB stick.

3 The files can be exported into Microsoft EXCEL, or other spreadsheet tools and can be used to create graphs and logs for use in monitoring the equipment performance (see Figure E-13).

Event ID	Date	Time	Event Type	Event	Duration (minutes)
4	4/1/2014	12:07:00	INFO	Message Select	
3	4/1/2014	12:05:10	WARNING	(E5000) Label Feed Required	1.5
2	4/1/2014	12:00:10	FAULT	(E5004) Label Web Break	5.1
1	4/1/2014	12:00:01	INFO	Power On	

Figure E-13: Exported Data in Microsoft EXCEL

Glossary

Adjustable Swing Arm Tamp Application Module

The adjustable swing arm tamp uses a similar principle as tamp. However, the tamp pad, fitted on an adjustable length arm is swung out to the side, about a 40 mm bore diameter, equivalent to a rotary cylinder, to apply labels to the product in a similar manner to the tamp. It can be equipped with a choice of dampers allowing controlled operation at low speeds, and as well as at higher speeds.

Availability

The amount of time that an equipment is ready to run when required for production.

Dancer Arm Spring

This spring provides tension for the dancer arm.

Drive Roller

The roller provides the force for advancing the label liner. It is a part of the print engine and is electronically controlled by the control card inside the back cover.

Idler Roller

These are the rollers that guide the label liner along its thread path.

Job or Image

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

Label: Job or Image

Label Length

This is the overall length of the label from leading edge to trailing edge.

Label Peel Plate/Peel Tip/Beak

This plate/tip is designed and positioned to separate labels (peel off) from the label liner when the label liner is pulled around it. Labels can be applied only after they are peeled. Label peel plate/tip is a part of the print engine. This part is also known as the beak, peeler plate, peel tip, peel edge, peeler bar, or demand plate.

Labeler

Any device designed to print information on a label, and later, apply the label to an object.

Label Sensor

This infra-red, thru-beam detector senses the opacity of the label liner before the label is removed. In doing so, it also senses the spaces between the labels and provides label stop control. The sensitivity of this sensor is adjustable, and the stopping position of the label, which is relative to the peel edge, is adjusted electronically.

Label Size

This is the dimension of the label (width x length).

Label Unwind

This is the subsystem that unwinds the label supply roll to facilitate label application.

LCD

LCD is a thin, flat display device made up of any number of color or monochrome pixels arrayed in front of a light source or reflector.

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 marking. Line selection mode allows up to 16 jobs to be configured on the laser system.

BCD mode: Line Select

Refresh the Print Memory

The print memory is updated automatically within CLARiTY.

Rewind Roll

This is the mandrel provided to store the spent label web.

Tamp Application Module

This is a label applicator that uses an air cylinder that extends to apply the label on to the object and retracts to its home position. The label is dispensed onto a tamp pad (through the air assist mechanism) and is held in place by vacuum created within the tamp (by the pneumatic module). When the product moves under the tamp, the tamp assembly extends and applies the label to the product. Immediately the tamp retracts and is ready for another extension.

Tamp Pad

Tamp pad is a part of the tamp applicator that holds the label during the application process. There are holes in the pad through which the air is sucked, creating vacuum inside the tamp. The vacuum helps the tamp to hold the label till the air cylinder extends the tamp and affixes the label on to the object. Each tamp pad is manufactured for a specific label size and should not be used for a label size that does not match.