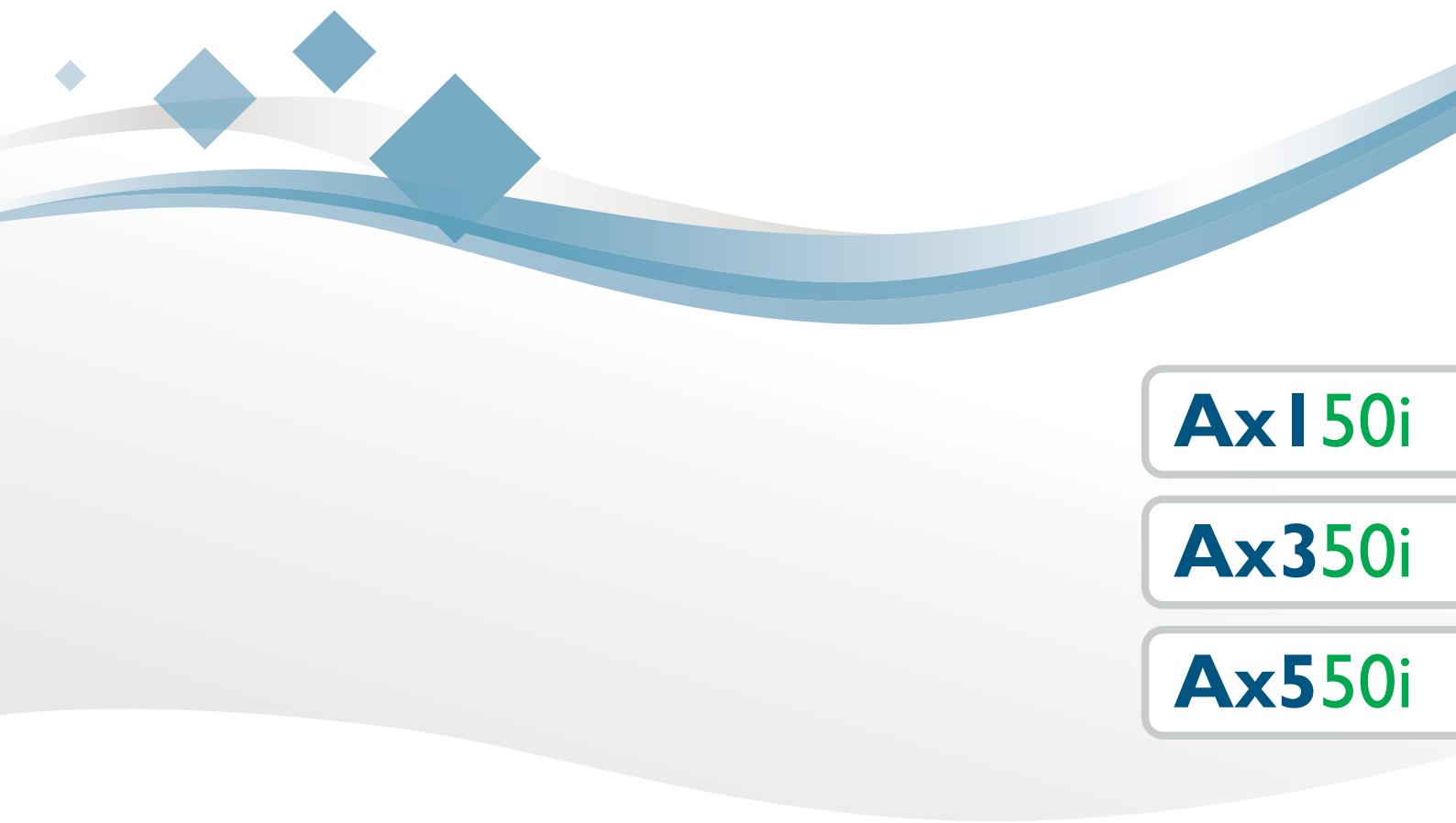




Domino Ax-Series

User Documentation



Ax150i

Ax350i

Ax550i

THIS PAGE INTENTIONALLY LEFT BLANK

DOMINO Ax-SERIES USER DOCUMENTATION

This user documentation, Domino Part No. EPT019297, is for use in the operation and maintenance of Domino Ax-Series printers.

This user documentation is the official authority for the operation and maintenance of the Domino Ax-Series range of printers. It is the source document for all translated versions. It is the "Original Instructions" for the purposes of the Machinery Directive.

This user documentation is based on software version 01.00.15.

Users of this printer are warned that it is essential to read, understand and act according to the information given in Part 1: Health and Safety. This part of the user documentation also specifies a set of symbols which are used elsewhere in the user documentation to convey special warnings or requirements. It is, therefore, essential that users are also familiar with these symbols and act accordingly.

All rights reserved. No part of this publication may be reproduced, stored on a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of Domino Printing Sciences plc.

Domino Printing Sciences plc. has a policy of continuous product improvement, the company therefore reserves the right to modify the specification contained in this user documentation without notice.

© Domino Printing Sciences plc. 2016.

For sales, service and inks please contact:

www.buydomino.com

www.domino-printing.com

Domino UK Ltd.

Bar Hill
Cambridge CB23 8TU
England
Tel: 01954 782551
Fax: 01954 782874

Domino North America

1290 Lakeside Drive
Gurnee IL.60031
U.S.A.
Tel: 847 244 2501
Fax: 847 244 1421

End User License Agreement

You have acquired a device ("DEVICE") that includes software licensed by Domino UK Ltd from Microsoft Licensing Inc. or its affiliates ("MS"). Those installed software products of MS origin, as well as associated media, printed materials, and "online" or electronic documentation ("SOFTWARE") are protected by international intellectual property laws and treaties. The SOFTWARE is licensed, not sold. All rights reserved.

IF YOU DO NOT AGREE TO THIS END USER LICENSE AGREEMENT ("EULA"), DO NOT USE THE DEVICE OR COPY THE SOFTWARE. INSTEAD, PROMPTLY CONTACT DOMINO UK LTD FOR INSTRUCTIONS ON RETURN OF THE UNUSED DEVICE(S) FOR A REFUND. ANY USE OF THE SOFTWARE, INCLUDING BUT NOT LIMITED TO USE ON THE DEVICE, WILL CONSTITUTE YOUR AGREEMENT TO THIS EULA (OR RATIFICATION OF ANY PREVIOUS CONSENT).

GRANT OF SOFTWARE LICENSE. This EULA grants you the following license:

- You may use the SOFTWARE only on the DEVICE.
- NOT FAULT TOLERANT. THE SOFTWARE IS NOT FAULT TOLERANT. DOMINO UK LTD HAS INDEPENDENTLY DETERMINED HOW TO USE THE SOFTWARE IN THE DEVICE, AND MS HAS RELIED UPON DOMINO UK LTD TO CONDUCT SUFFICIENT TESTING TO DETERMINE THAT THE SOFTWARE IS SUITABLE FOR SUCH USE.
- NO WARRANTIES FOR THE SOFTWARE. THE SOFTWARE is provided "AS IS" and with all faults. THE ENTIRE RISK AS TO SATISFACTORY QUALITY, PERFORMANCE, ACCURACY, AND EFFORT (INCLUDING LACK OF NEGLIGENCE) IS WITH YOU. ALSO, THERE IS NO WARRANTY AGAINST INTERFERENCE WITH YOUR ENJOYMENT OF THE SOFTWARE OR AGAINST INFRINGEMENT. IF YOU HAVE RECEIVED ANY WARRANTIES REGARDING THE DEVICE OR THE SOFTWARE, THOSE WARRANTIES DO NOT ORIGINATE FROM, AND ARE NOT BINDING ON, MS.
- Note on Java Support. The SOFTWARE may contain support for programs written in Java. Java technology is not fault tolerant and is not designed, manufactured, or intended for use or resale as online control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of Java technology could lead directly to death, personal injury, or severe physical or environmental damage. Sun Microsystems, Inc. has contractually obligated MS to make this disclaimer.
- No Liability for Certain Damages. EXCEPT AS PROHIBITED BY LAW, MS SHALL HAVE NO LIABILITY FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING FROM OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE SOFTWARE. THIS LIMITATION SHALL APPLY EVEN IF ANY REMEDY FAILS OF ITS ESSENTIAL PURPOSE. IN NO EVENT SHALL MS BE LIABLE FOR ANY AMOUNT IN EXCESS OF U.S. TWO HUNDRED FIFTY DOLLARS (U.S.\$250.00).
- Limitations on Reverse Engineering, Decompilation, and Disassembly. You may not reverse engineer, decompile, or disassemble the SOFTWARE, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation.
- SOFTWARE TRANSFER ALLOWED BUT WITH RESTRICTIONS. You may permanently transfer rights under this EULA only as part of a permanent sale or transfer of the Device, and only if the recipient agrees to this EULA. If the SOFTWARE is an upgrade, any transfer must also include all prior versions of the SOFTWARE.

EXPORT RESTRICTIONS. You acknowledge that SOFTWARE is of US-origin. You agree to comply with all applicable international and national laws that apply to the SOFTWARE, including the U.S. Export Administration Regulations, as well as end-user, end-use and country destination restrictions issued by U.S. and other governments. For additional information on exporting the SOFTWARE, see <http://www.microsoft.com/exporting/>.

THIS PAGE INTENTIONALLY LEFT BLANK

CONTENTS OF EU DECLARATION OF CONFORMITY

No. Doc-0010447_R02

Manufacturers name: Domino UK Limited

Manufacturers address: Bar Hill, Cambridge CB23 8TU.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Object of the declaration: Domino Ax150i, Ax350i and Ax550i Printer, from serial number AX0000001000

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2011/65/EU : RoHS Directive

2014/53/EU : RED Directive

EN 300 330-2 V1.6.1

Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

EN 61000-6-2:2005

Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments

EN 61000-6-4:2007/A1:2011

Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emissions standard for industrial environments

EN 60950-1:2006/A2:2013

Information technology equipment – safety – Part 1: General requirements.



EU DECLARATION OF CONFORMITY

No. Doc-0010447_R02

Manufacturers name: Domino UK Limited
Manufacturers address: Bar Hill, Cambridge CB23 8TU.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Object of the declaration: Domino Ax150i, Ax350i and Ax550i Printer, from serial number AX0000001000

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2011/65/EU : RoHS Directive
2014/53/EU : RED Directive

EN 300 330-2 VI.6.1

Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

EN 61000-6-2:2005

Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments

EN 61000-6-4:2007/A1:2011

Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emissions standard for industrial environments

EN 60950-1:2006/A2:2013

Information technology equipment – safety – Part I: General requirements.

Signed for and on behalf of
Domino UK Limited.
Bar Hill,
Cambridge,

Date:

28th September 2016

Signature:

Name and Job title: Carl Reynaud, Group Chief Engineer

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

European EMC Statement

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

CONTENTS

- PART 1 HEALTH AND SAFETY**
- PART 2 SYSTEM DESCRIPTION**
- PART 3 INSTALLATION**
- PART 4 OPERATION**
- PART 5 MAINTENANCE**

AMENDMENT RECORD

Amendment

All parts at Issue 1

Date

November 2016

PART 1 : HEALTH AND SAFETY

CONTENTS

	Page
WARNINGS, CAUTIONS AND NOTES	1-3
Symbols	1-3
INKS AND FLUIDS INFORMATION	1-4
Basic Requirements	1-4
Storage	1-4
Fire Risk	1-5
Spillages and Disposal	1-5
ELECTRO-STATIC DISCHARGE	1-6
OPERATION	1-6

HEALTH AND SAFETY

THIS PAGE INTENTIONALLY LEFT BLANK

WARNINGS, CAUTIONS AND NOTES

The warnings, cautions and notes used throughout this manual are highlighted by the use of international hazard symbols. The following definitions for all three of these notices are described below in the format they are presented in this user documentation.

WARNING: **A warning is used to alert the reader to possible hazards which may cause loss of life, physical injury or ill health.**

CAUTION: **A caution is used to alert the reader to possible hazards which may cause damage to equipment.**

Note: **A note is used to alert the reader to important information.**

Symbols

The following symbols are used in this user documentation to highlight specific warnings and cautions used in the procedure below the symbols.



Eye protection must be worn.



Protective clothing must be worn. Use adequate protective gloves. Consult the relevant Safety Data Sheet (SDS).



Disconnect power before carrying out maintenance or repair.



Connect an earth terminal from the product to an appropriate ground source.



Only trained personnel should carry out this procedure.



Risk of fire by igniting flammable material.



Risk of coming into contact with electricity.



Risk of an explosion.



Beware of Electrostatic Discharge (ESD). Electrostatic precautions must be used:

- Switch off machine first.
- Wear a wristband connected to the ESD connector provided.
- Avoid wearing clothing which can build up electrostatic voltages.
- Use ESD protective bags to transport PCBs.
- Only place PCBs on a mat made from a material which will dissipate electrostatic voltages and which is connected to ground.

INKS AND FLUIDS INFORMATION

Domino supplies Safety Data Sheets (SDS) giving specific safety information with each of its ink, make-up and wash fluids. There are also warnings on each container. The following are general basic requirements:



WARNING: **Do not install or operate the printer in closed or sealed rooms or cabinets. The printer must be installed and operated in a well ventilated environment. Insufficient ventilation may result in an accumulation of vapour which can present a risk of explosion.**

Basic Requirements

When used correctly, printing inks do not cause problems. However, everybody using them should be familiar with the appropriate safety standards and be aware of the precautions that should be taken. The following are basic requirements:

- Proper standards of industrial practice relating to cleanliness and tidiness must be maintained.
- Inks and their containers must be stored and handled with care.
- Do not smoke or allow naked flames (or other sources of ignition) in the vicinity of any inks or solvents as this is highly dangerous.
- All who come into contact with inks must be properly instructed in their use.

Directions for safe working practices vary according to the environment. The following are broad principles so that necessary precautions may be taken:

- Contact with the mouth must be avoided. Therefore eating, drinking or smoking, or any personal habits or actions which may transfer ink to the mouth, must be avoided.
- Contact with the eyes must be avoided. Suitable eye protection must always be worn whenever there is any risk of splashing or misting. If ink does get into the eyes, first aid treatment is to flood the affected eye for 15 minutes with saline solution, (or clean water if saline solution is not available), taking care not to allow the water to run into an unaffected eye. Medical aid must be obtained immediately.
- Most inks contain solvents which may injure the skin. Good working practice must always be employed and risk assessments carried out. Safety Data Sheets are available that give advice on personal protective equipment. Most gloves only offer limited and short term exposure protection and must be changed after any splashing and on a frequent basis.
- Many inks contain materials which vaporise easily and can be inhaled. Good ventilation is necessary.
- Any used cleaning materials, e.g. rags, paper wipes, are a potential fire hazard. They must be collected for safe disposal after use. After exposure to ink, all possible traces must be washed off as soon as possible at the nearest washing facility.
- It is possible to control the printer remotely. If operated in this manner it is vital that the remote UI is disconnected before carrying out any cleaning or maintenance on the printer.

Storage

Printing inks must be stored in well ventilated buildings, in areas set aside for the purpose and chosen for safety in case of fire. All fluids must be stored in accordance with local regulations.

Fire Risk

For an electrical fire, do not use water. If water must be used, such as in the case of a Nitro-cellulose ink fire (see below) the power MUST BE REMOVED first.

Some inks contain Nitro-cellulose as the binder and remain highly flammable when dry. Observe all warnings given on the machine and the following safety instructions:

- If there has been an accumulation of dried ink, do not use metal scrapers to remove it, as they can produce sparks.
- If dry Nitro-cellulose based ink ignites, it will generate its own oxygen and can only be extinguished by lowering the temperature with water.
- If a Nitro-cellulose fire occurs, ENSURE THAT THE ELECTRICAL POWER IS IMMEDIATELY REMOVED FROM THE PRINTER BEFORE water is used to extinguish the fire.

Fire risk is a most important consideration where printing inks are stored and used. The degree of fire hazard will vary considerably from one type of ink or wash to another.

Water-based inks will not burn, although inks based on water-alcohol mixtures may burn if there is sufficient alcohol present.

Prolonged exposure of water-based systems to high temperatures may evaporate the water to give a flammable residue.

Solvent-based inks offer a greater degree of hazard depending on the particular solvent or solvent combination. When there is a particular hazard the appropriate information is given on the SDS.

The printers place small electrostatic charges on the ink drops used for printing. In most circumstances, such as when they arrive at the print surface, these electrostatic charges are either conducted away or cannot accumulate. However, during maintenance, print drops may be collected in a container, such as a beaker. It is essential that this container is made of conducting material and is securely connected to ground/earth. The electrostatic charges will then be safely conducted to ground/earth.

If there is a fire, there is a likelihood that dangerous fumes will arise from printing inks. For this reason ink must be stored where it can be reached quickly by the fire fighting service, and where it will not spread beyond the store.

Spillages and Disposal



WARNING:

**Do not allow the ink to dry or allow any build-up of dried ink spills.
Some dried inks are highly flammable. Clean up all ink spillages immediately.**

Spillages must be cleaned up as soon as possible with the appropriate solvent materials and with regard to the safety of personnel. Care must be taken to prevent spillages or residue from cleaning up entering drains or sewage systems.

Inks and associated fluids are materials which conduct electricity. Therefore, power to the printer must be switched off while spillages inside the printer cabinet are being cleaned up.

Printing inks and associated fluids must not be treated as ordinary waste. They must be disposed of using approved methods according to local regulations.

ELECTRO-STATIC DISCHARGE

To avoid static discharge from production line equipment, the equipment and everything on it must be grounded correctly. While it is not Domino's responsibility to maintain the customer's equipment, the customer must be aware of the importance of grounding. At the time of installation of the printer the Domino (or Domino distributor) technician should ensure that the line the printer is installed on is appropriately grounded. This means that all metallic items within 12 inches (300mm) of the print head location must be securely grounded. This should be checked with respect to the print head chassis ground using an Ohm Meter, DVM or other suitable device. It is essential that grounding is checked periodically and that if the printer is relocated to a different production line, then the new production line is properly grounded. Additional static dissipating devices, such as static brushes on the line, etc. are recommended.

OPERATION

For safe operation of the printer, follow all instructions given in this user documentation.



- WARNINGS:**
- (1) **The printer must be shut down and the power cable must be disconnected before the ITM can be removed. The ink system is pressurised. If the printer is not shut down ink will spray out of the ITM manifold over the person removing the ITM.**
 - (2) **Do not access the electronics enclosure when the printer is powered on. When powered on, the electronics enclosure contains live electrical components. Physical contact with live electrical components may result in an electric shock.**

PART 2 : SYSTEM DESCRIPTION

CONTENTS

	Page
GENERAL	2-3
Description	2-3
Ax150i Printer	2-4
Ax350i Printer	2-5
Ax550i Printer	2-5
Printer Configuration Labels	2-6
External Printer Configuration Label	2-6
Internal Printer Configuration Label	2-7
PRINTER SPECIFICATION	2-8
Cabinet	2-8
Ax150i	2-8
Ax350i/Ax550i	2-8
External Connections	2-9
Ink System	2-9
Environment	2-10
Print Head	2-11
i-Pulse	2-11
i-Pulse Duo (Ax350i/Ax550i only)	2-12
User Interface	2-13
TouchPanel Type 3 (Ax350i/Ax550i Only)	2-13
TouchPanel Type 4 (Ax350i/Ax550i Only)	2-13
Printer Control	2-14
Cabinet Buttons	2-14
Cabinet Status Lights	2-15
QMM (Quality Management Module) Status Lights	2-17
QuickStep	2-18

SYSTEM DESCRIPTION

THIS PAGE INTENTIONALLY LEFT BLANK

GENERAL

This document contains operating instructions for the Domino Ax-Series continuous ink jet printer range.

Only engineers trained and certified by Domino should carry out repairs. Genuine Domino parts should always be used to ensure quality and performance.

Description

The Domino Ax-Series is a range of industrial ink jet printers, intended for printing fixed and variable data on products on manufacturing production lines.

Each printer uses a continuous ink jet of either 1 or 2 jets (depending on configuration) for printing on a user supplied substrate.

Each printer consists of:

- A print head and flexible conduit connecting it to a cabinet.
- A cabinet containing the ink supply and electronic control systems.
- A user interface for operator interaction.

Ax150i Printer



Ax150i Cabinet

The Ax150i is the smallest of the Ax-Series range. It features an IP55 cabinet with integrated TouchPanel, i-Techx ink and electronics system and i-Pulse print head.

To maintain optimum performance the Ax150i only requires the colour coded consumables to be replenished. Consumables such as the air and make-up filter, ink and make-up cartridges, make-up module and ITM are colour coded yellow for easy identification and user convenience.

The i-Techx system monitors ink and make-up consumption to calculate when consumables are due for replacement. This is then indicated on both the TouchPanel user interface and on LEDs on the front of the cabinet.

Note: *ITM replacement intervals will vary according to use and ink type. Contact Domino for details.*



WARNING:

The printer must be shut down and the power cable must be disconnected before the ITM can be removed. The ink system is pressurised. If the printer is not shut down ink will spray out of the ITM manifold over the person removing the ITM.

Ax350i Printer



Ax350i Printer Cabinet with Type 4 TouchPanel

The Ax350i is a highly configurable printer featuring a stackable IP55 cabinet design with an IP66 electronics enclosure. A range of TouchPanel options, i-Techx ink and electronics system and i-Pulse print head.

The Ax350i can be controlled using a 10.4 inch Domino Type 3 TouchPanel or a 7 inch Domino Type 4 TouchPanel. The TouchPanel can be mounted on top of the stainless steel cabinet. The TouchPanel can also be mounted using a VESA 75 standard mounting, anywhere within range of the connecting cable.

Additional printer cabinets may be stacked and controlled via one TouchPanel.

The Ax350i printer can use a wide variety of inks. This gives the Ax350i flexibility to print on a wide range of print surfaces. Where appropriate, a heavy duty ink system is fitted which is constructed of materials resilient to inks with corrosive properties, this enables reliable operation and minimal down time.

To maintain optimum performance the Ax350i only requires the colour coded consumables to be replenished. Consumables such as the air and make-up filter, ink and make-up cartridges, make-up module and ITM are colour coded yellow for easy identification and user convenience.

The i-Techx system monitors ink and make-up consumption to calculate when consumables are due for replacement. This is then indicated on both the TouchPanel user interface and on the cabinet status lights.

Note: ITM replacement will vary according to the type specified. Contact Domino for details.



WARNING:

The printer must be shut down and the power cable must be disconnected before the ITM can be removed. The ink system is pressurised. If the printer is not shut down ink will spray out of the ITM manifold over the person removing the ITM.

Ax550i Printer

The Ax550i is visually similar to the Ax350i. However, the cabinet of the Ax550i is constructed from a higher grade of stainless steel (316 Grade) for use in more corrosive operating environments.

Printer Configuration Labels

External Printer Configuration Label

The label illustrated below is an example of the configuration label which is located on the rear of all Ax-Series printers.



Printer Configuration Label

The external configuration label contains the following information:

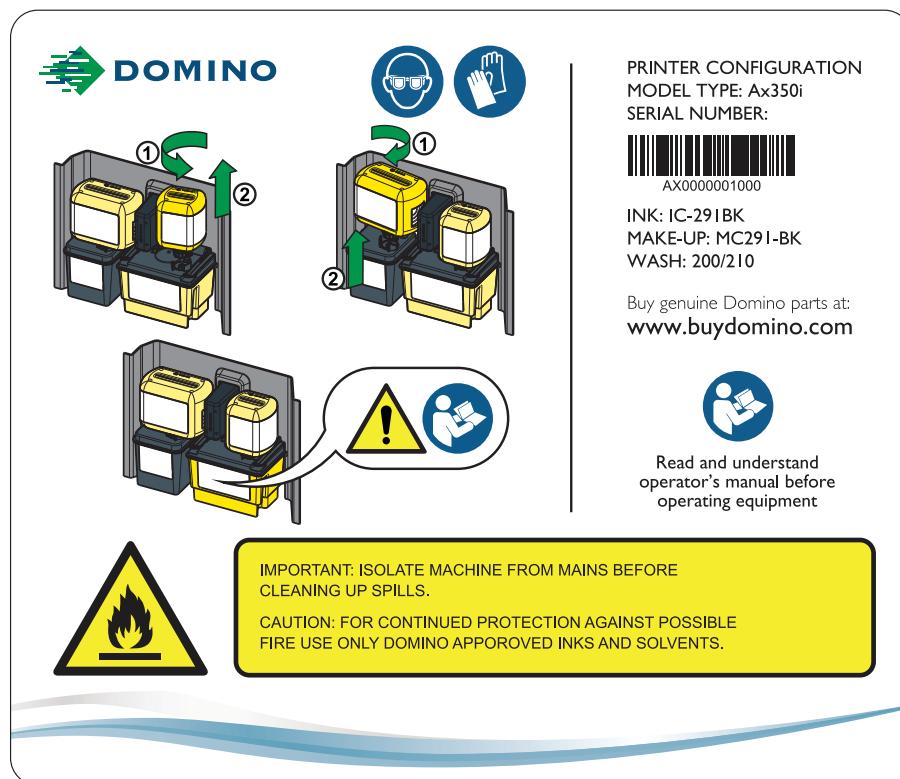
- The product model name
- The product serial number
- The name, address and contact details of the manufacturer
- IP rating of the product
- IP rating of the electronics compartment
- Power supply requirements
- FCC notice
- Air filter removal instructions
- Warning information.

Internal Printer Configuration Label



- WARNINGS:**
- (1) Protective equipment such as gloves and glasses must be worn when opening the printer's ink compartment to access the internal configuration label. The ink compartment contains printer ink and make-up. Physical contact with printer ink or make-up can cause skin or eye damage.
 - (2) Read the procedure on [page 5-10](#) before removing the ITM. The ink system is pressurised. If the correct procedure is not followed, ink will spray out of the ITM manifold over the person removing the ITM.

The label illustrated below is an example of the internal configuration label which is located inside the front door of all Ax-Series printers.



Internal Printer Configuration Label

The internal configuration label contains the following information:

- The product model name
- The product serial number
- The ink type which the printer is configured to use
- The make-up type which the printer is configured to use
- The wash type which should be used when cleaning the print head
- The address of the BuyDomino website
- Ink and make-up cartridge removal instructions
- Warning information.

PRINTER SPECIFICATION

Cabinet

Ax150i

Standard Finish:	GRP front panel, brushed stainless steel cabinet.
IP Rating:	Designed to IP55
Dimensions:	Width: 400mm (15.75") Depth: 394mm (15.50") Height: 373mm (14.70")
Weight (dry):	16kg (35.3lb)
Control Panel:	7 inch TouchPanel and polyester membrane touch buttons.

Ax350i/Ax550i

Standard Finish:	Ax350i: Standard grade stainless steel Ax550i: High grade stainless steel
IP Rating:	IP55 (electronics enclosure to IP66)
Dimensions:	Width: 430mm (16.9") Depth: 381mm (15.0") Height: 411mm (16.2") Height (with TouchPanel): 643mm (25.3")
Cabinet Controls:	Buttons for Power, Start/Stop, Single print and Alerts
Weight (dry):	22kg (48.5lb)
Weight (dry with Duo print head):	23kg (50.7lb)

External Connections

Interface communication:	1 x non standard DVI connection providing 24V DC, 500 mA
Product Detect / Shaft Encoder Connector:	8-Way Socket
Power connector:	3-Way Plug, cable supplied
Hardware Pack Options:	
Extended Comms Pack: (P/N EPT022070)	Powered HMI Port USB Port
Extended IO Pack: (P/N EPT022071)	User Port: 25-Way D-Sub Socket User Port: 37-Way D-Sub Socket
Status Pack: (P/N EPT022072)	Beacon Connector: 5-Way Socket Alarm Connector: 7-Way Socket, 1A, 30V maximum
RS232 Pack: (P/N EPT022073)	Serial (RS232) Port: 8-Way Socket
GPIO Pack: (P/N EPT022074)	Basic GPIO Port
Comms Pack: (P/N EPT022075)	Ethernet Port USB Port

Ink System

ITM Type 2 Capacity:	1222ml maximum
ITM Type 3 (for heavy duty ink system) Capacity:	1118ml maximum
Make-up Module Capacity:	888ml maximum
Ink Cartridge Capacity:	825ml
Ink Cartridge (for heavy duty ink system) Capacity:	555ml
Make-up Cartridge Capacity:	1200ml
Ink Viscosity Control:	Automatic Viscometer
Ink Bleed Control:	Automatic Start-Up/Shut-Down

Environment

Temperature Range (working)*:	+5° to +45°C (42°F to 112°F)
Temperature Range (Storage):	-20° to +60°C (-4°F to +140°F) (machine dry - storage, wet dependent upon fluids)
Humidity:	10 - 90% RH (non-condensing)
Electrical Supply:	100-240V 50-60Hz (nominal), 4A, single phase Auto ranging, 100W
Acoustic Noise Level:	Not more than 70 dBA

*Model dependent.

Print Head

i-Pulse

Standard Finish:	Chassis: Stainless steel Wire box: Acetal Holster: Polymer (PTFE) coated aluminium		
Dimensions:	Width: 50.3mm (1.98") Depth: 50.3mm (1.98") Height including conduit retaining nut: 243mm (9.57") Operating height with conduit at 90 degrees: 320mm (12.6") Weight including 3m conduit: 1.8kg (4lbs)		
Printer type, conduit length and nozzle size options:	Printer Type	Conduit Length	Nozzle Size
	Ax150i	3m (10ft)	60 micron
	Ax350i/Ax550i	3m (10ft)	60 or 75 micron
	Ax350i/Ax550i	6m (20ft)	60 or 75 micron
Recommended distance from print surface:	75 micron nozzle: 12mm (0.47") 60 micron nozzle: 8mm (0.31")		
Working height relative to cabinet base:	3m conduit: ±1m 6m conduit: ±3m		

SYSTEM DESCRIPTION

i-Pulse Duo (Ax350i/Ax550i only)

Standard Finish:	Chassis: Stainless steel Wire box: Acetal Holster: Black anodised aluminium		
Dimensions:	Width: 57mm (2.24") Depth (Max): 53mm (2.01") Height: 255mm (10") Weight: 2.8kg including 3m conduit (6.17lbs)		
Printer type, conduit length and nozzle size options:	Printer Type	Conduit Length	Nozzle Size
	Ax350i/Ax550i	3m (10ft)	60 or 75 micron
	Ax350i/Ax550i	6m (20ft)	60 or 75 micron
Recommended distance from print surface:	75 micron nozzle: 12mm (0.47") 60 micron nozzle: 8mm (0.31")		
Working height relative to cabinet base:	3m conduit: ±1m 6m conduit: ±3m		

User Interface

TouchPanel Type 3 (Ax350i/Ax550i Only)

Standard Finish:	Cast aluminium (rear), nylon plastic (front)
Mounting:	Via angled bracket to cabinet top. VESA 75 standard mounting.
Display:	10.4 inch SVGA full colour touch screen
Dimensions:	Width: 307mm (12.1") Height: 232mm (9.1") Depth: 75mm (3")
Weight:	2.5Kg (5.5lb)
IP Rating:	IP65
Temperature:	5 - 45°C
Humidity:	10 - 90% non-condensing
Power Supply:	24Vdc, 15W, 625mA over non standard DVI
Connectivity:	Non standard DVI cable to rear of printer
Data Transfer:	2 x USB Type A

TouchPanel Type 4 (Ax350i/Ax550i Only)

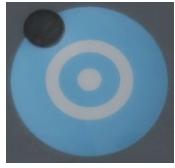
Standard Finish:	Nylon plastic
Mounting:	Via angled bracket to cabinet top. VESA 75 standard mounting.
Display:	7 inch WVGA full colour touch screen
Dimensions:	Width: 245mm (9.6") Height: 160mm (6.3") Depth: 50mm (2")
Weight:	0.75Kg (1.65lbs)
IP Rating:	IP55
Temperature:	5 - 45°C
Humidity:	10 - 90% non-condensing
Power Supply:	24Vdc, 12W, 500mA over non standard DVI
Connectivity:	Non standard DVI cable to rear of printer
Data Transfer:	2 x USB Type A

Printer Control

Cabinet Buttons

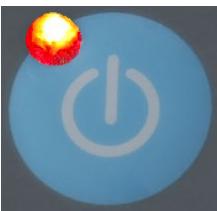
There are four hardware buttons on the printer cabinet as illustrated below. It is necessary to press the buttons for at least 2-3 seconds as a precaution against accidental use. The cabinet buttons also carry an indicator light.

All other functions are available using the QuickStep interface on the TouchPanel.

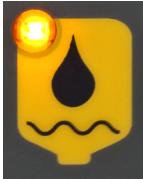
Cabinet Button	Explanation
Power Button 	<p>The power button is pressed to start up the printer and enter the Off state. In the Off state the printer's ink jet is off and the printer will not print. However, the user interface can still be used.</p> <p>The power button can also be pressed to shut down the printer.</p> <p>If a fast shut down is required the power button can be pressed for 10 seconds to shut the printer down immediately. However, the flush sequence will not be carried out. This will cause ink to dry and block the nozzle and gutter.</p> <p>See "Start-Up and Shut Down" on page 4-16.</p>
Start/Stop Button 	<p>The start/stop button is pressed to start up the printer and enter the Ready state. in the Ready state the printer is ready to print. If a label is on-line, it will print on receiving a product detect signal.</p> <p>If the button is pressed when in a Ready state, the printer will enter the Off state. In the Off state the printer's ink jet is off and the printer will not print. However, the user interface can still be used.</p> <p>See "Start-Up and Shut Down" on page 4-16..</p>
Single Print Button 	<p>The single print button is pressed to produce a single test print of the current label. Typically used to identify what label is being printed when a UI is not present.</p>
Alert Button 	<p>The alert button is pressed to acknowledge and clear alerts. The alert button also carries two status lights described on page 2-15.</p>

Cabinet Status Lights

There are a number of status lights on the printer cabinet as illustrated below.

Cabinet Status Light	Explanation
Printer Off, Power Connected 	The red light on the power button will illuminate to indicate that the printer is connected to a power supply but the printer is not turned on.
Start Up 	The red light on the power button will illuminate, and the green light on the power button will flash to indicate that the printer is starting up.
Printer On / Shut Down 	The green light on the power button will illuminate to indicate that the printer is on. The light will flash on and off to indicate that the printer is shutting down.
Red Alert 	The red alert light will illuminate to indicate a red alert. A red alert occurs when the printer has a fault which causes printing to stop. If a TouchPanel is connected to the printer, a description of the alert will be displayed on the TouchPanel's status tab.
Amber Alert 	The amber alert light will illuminate to indicate an amber alert. An amber alert occurs when the printer has a fault which requires attention. If a TouchPanel is connected to the printer, a description of the alert will be displayed on the TouchPanel's status tab.
Make-up Level Alert 	If the make-up level is ok, the light will be off. The make-up light will illuminate to indicate when the make-up level is low and the cartridge requires replacement. The make-up light will flash on and off to indicate when the make-up level is empty and the cartridge requires immediate replacement.

SYSTEM DESCRIPTION

Cabinet Status Light	Explanation
Ink Level Alert 	If the ink level is ok, the light will be off. The ink light will illuminate to indicate when the ink level is low and the cartridge requires replacement. The ink light will flash on and off to indicate when the ink level is empty and the cartridge requires immediate replacement.

QMM (Quality Management Module) Status Lights

Ax-Series printers contain a QMM (Quality Management Module) to read and write data to RFID (Radio Frequency IDentification) tags on the make-up cartridge, ink cartridge and ITM. This enables the printer to alert the user when the ITM, ink or make-up cartridge need to be replaced to maintain reliable and efficient printer operation. The printer will also display an alert if the wrong ink or make-up or ITM type is inserted.

In addition, there are 3 status lights on the QMM inside the printer cabinet. The colour of each light indicates whether the RFID tags on the consumables have been correctly read and identified.

The QMM status lights are shown below.

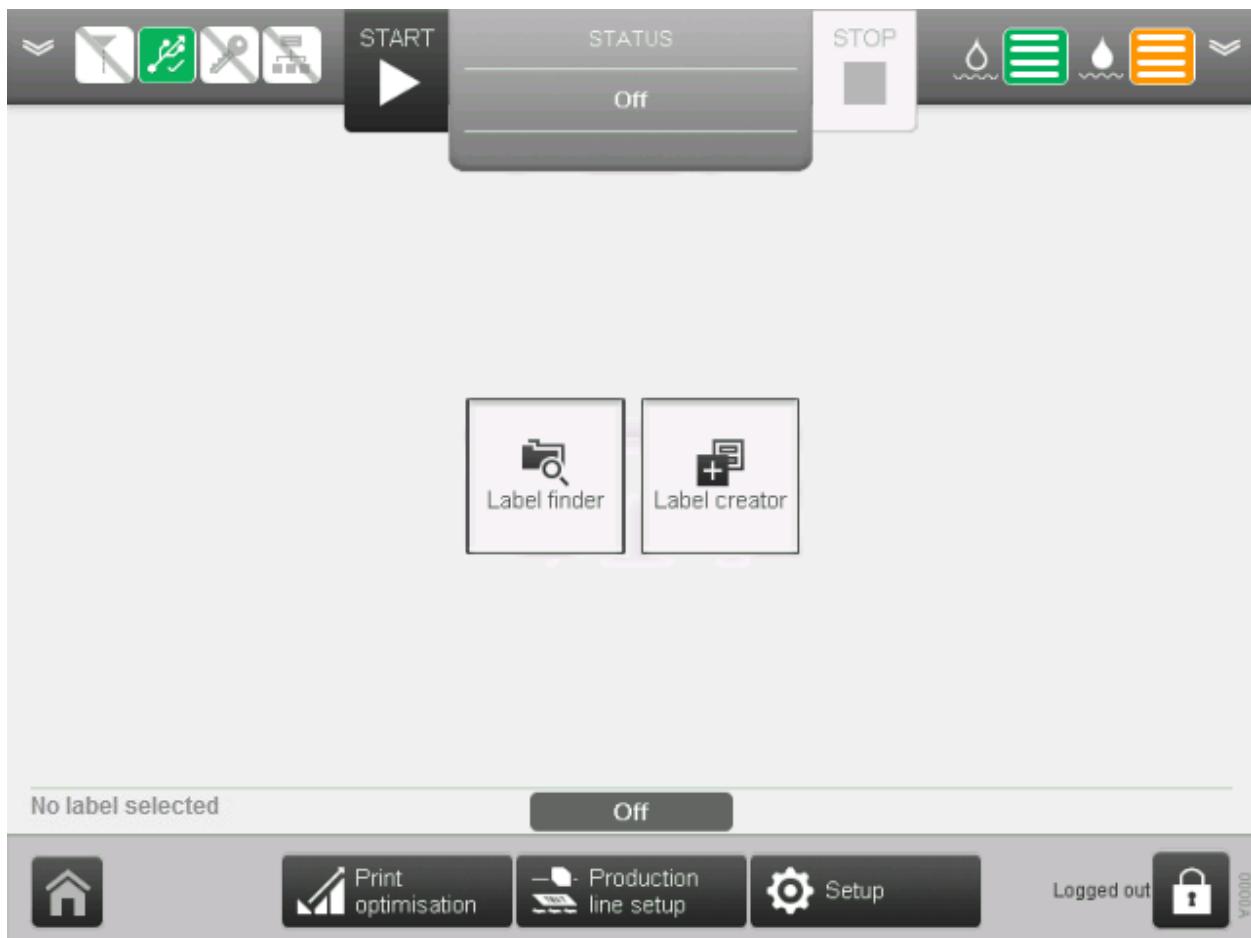


Quality Management Module Status Lights

RFID Light Colour	Explanation
Red	The RFID tag has been read and a fault has been detected. Information about the fault will be displayed on the QuickStep status tab on the TouchPanel.
Amber	The RFID tag has not been read, either because an RFID tag is not present or the RFID tag is faulty.
Flashing Amber	The QMM is in the process of reading the RFID tag.
Green	The RFID tag has been correctly read and identified.

QuickStep

The QuickStep interface as displayed on the TouchPanel is shown below:



QuickStep Interface

Domino has developed QuickStep to be easy and intuitive to use. Training times, set up times and coding errors are all reduced with QuickStep.

The operation of the printer using QuickStep is described in [Part 4 : OPERATION](#).

PART 3 : INSTALLATION

CONTENTS

PRINTER INSTALLATION	3-3
Cabinet Positioning	3-3
Installation Dimensions	3-4
Ax150i	3-4
Ax350i/Ax550i	3-4
Ventilation	3-5
Cabinet Mounting	3-5
Electrical Supply	3-5
External Connections	3-6
Ax150i	3-6
Ax350i/Ax550i	3-7
Product Sensor / Shaft Encoder PNP and NPN Selection	3-8
TOUCHPANEL INSTALLATION (Ax350i/Ax550i)	3-9
TouchPanel Type 3	3-9
TouchPanel Type 4	3-10
TouchPanel Mounting	3-11
TouchPanel Connectivity	3-12
NETWORK SETUP	3-13
Network Connectivity Diagrams	3-13
PC to Networked Printer Settings	3-16
TouchPanel to Networked Printers	3-18
Create a List of Favourite Printers	3-18
Connect to a Different Printer in the Network	3-19
PREPARING THE INK SYSTEM	3-20
ITM Installation	3-21
Ink and Make-up Cartridge Installation	3-24
Prime Ink System	3-28
INSTALLATION WIZARD	3-29
PRODUCTION LINE SETUP	3-30
Line Movement	3-30
Internal Encoder (Fixed Printing Speed) Setup	3-31
External Single Ended Shaft Encoder Setup	3-32
External Quadrature Shaft Encoder Setup	3-34
Print Trigger	3-37
Internal Print Trigger Setup	3-37
External Print Trigger Setup	3-38
Ink Jet Throw Distance Setup	3-39
Ink Jet Velocity Setup	3-39
PRINT HEIGHT CALIBRATION WIZARD	3-40

INSTALLATION

THIS PAGE INTENTIONALLY LEFT BLANK

PRINTER INSTALLATION

Cabinet Positioning

**WARNING:**

Care must be taken when moving the printer to avoid injury. Only personnel who have completed manual handling training and have the appropriate equipment should carry out this task.

Note: For printer dry weight, see the specification on [page 2-8](#).

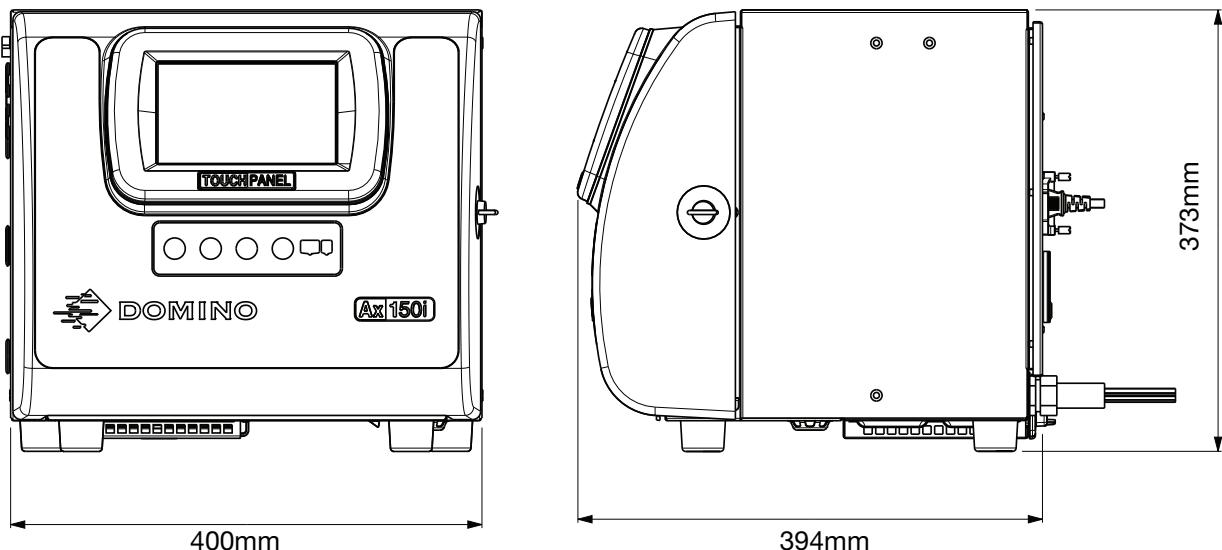
The cabinet must be positioned in a location with enough clearance to open the doors and give access to the cabinet's front and rear. The cabinet must also be positioned on a level surface and electrically isolated from other equipment, except for a normal data interface.

The printer must be positioned in an area where the temperatures will remain within +5°C and +45°C (42°F to 112°F) and the relative humidity must remain within 10% to 90% (non-condensing).

The printer draws in and expels cooling air through vents underneath of the cabinet. The air vents must not be obstructed.

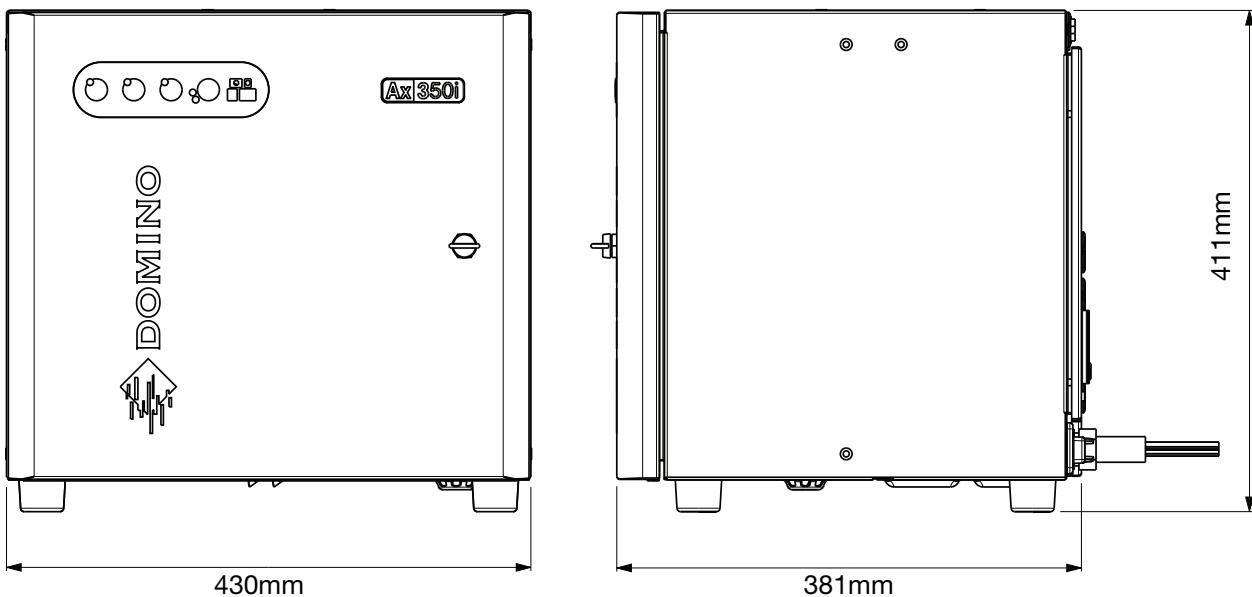
Installation Dimensions

Ax150i



Ax150i Cabinet

Ax350i/Ax550i



Ax350i/Ax550i Cabinet

Ventilation


WARNING:

Do not install or operate the printer in closed or sealed rooms or cabinets. Insufficient ventilation may result in an accumulation of vapour which can present a risk of explosion. The printer must be installed and operated in a well ventilated environment.

Solvent based printing inks and their vapours are flammable. As well as ensuring that all equipment is earthed, and that anti-static precautions are followed, an extraction system must be provided to remove fumes and vapours from the production line and anywhere else that the printer may be operated.

The ventilation system must achieve a minimum of 10 air changes per hour (20 air changes per hour recommended).

Cabinet Mounting

For total stability and to minimise vibration, the printer should be mounted on a Domino Cabinet Stand (P/N EPT024014) with the Stacking Kit (P/N EPT011760). If a Domino Cabinet Stand is not used, then the printer base must be secured using M6 mounting bolts. Spacers must be used to ensure the mounting bushes are flush with the mounting surface.

The Ax350i/Ax550i cabinets can be stacked (maximum of 3 units high) with the Stacking Kit (P/N EPT011760) to ensure stability.

Electrical Supply


WARNING:

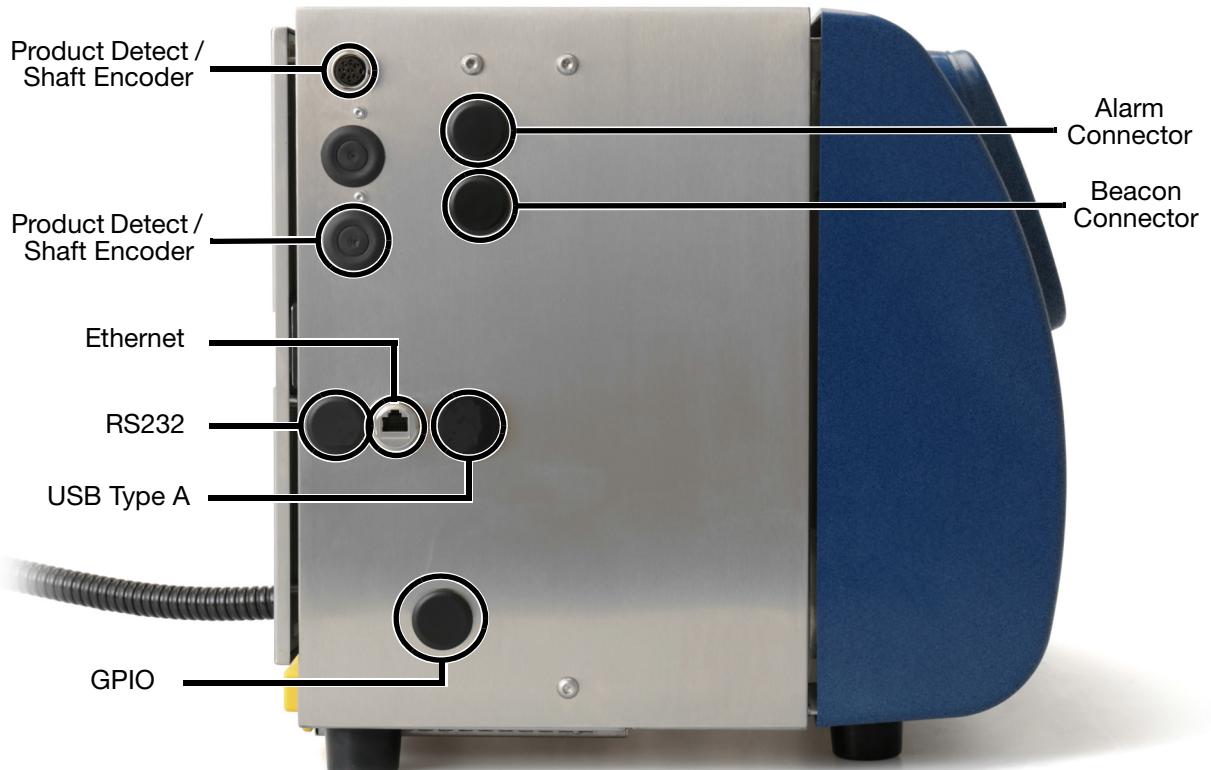
The cabinet must be properly earthed for the safety of personnel working on the printer.

The printer should be connected using a suitable plug and socket outlet which is accessible and close to the equipment so that power can be quickly disconnected. If a fused power connector is used, it should be fitted with a 5A fuse. If a fused power connector is not used, then the supply circuit should have a circuit breaker or fuse rated at 5A.

The supply must be free from electrical noise. Domino can give advice on suitable devices to ensure trouble-free operation.

External Connections

Ax150i



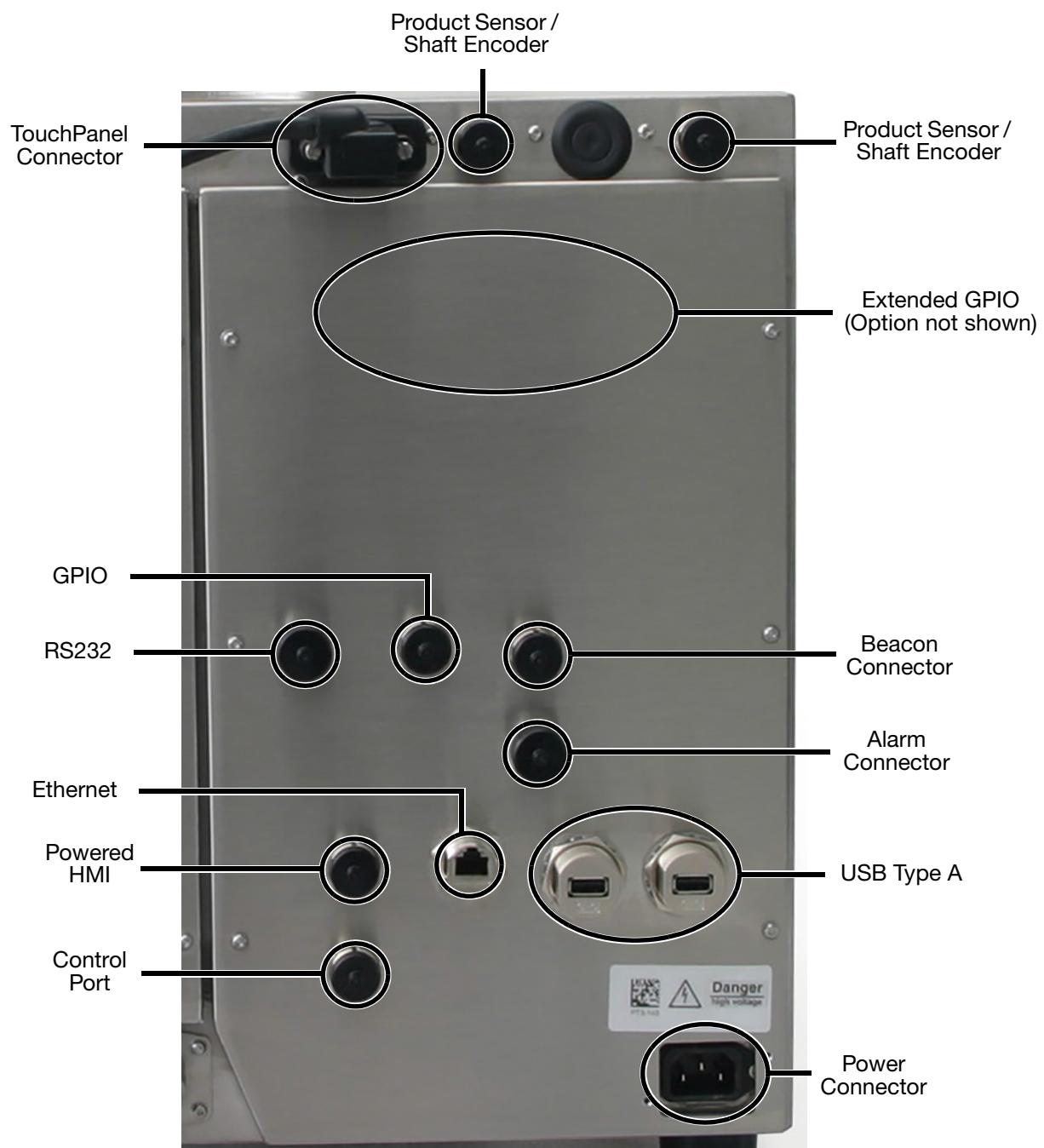
Ax150i External Connections Left View



Ax150i External Connections Rear View

INSTALLATION

Ax350i/Ax550i



Ax350i/Ax550i External Connections

Product Sensor / Shaft Encoder PNP and NPN Selection

The picture below shows the PD/SE Printed Circuit Board with Lumberg connector and the PNP/NPN switches. The configuration of these switches will set the product sensor and shaft encoder inputs to either PNP or NPN. There are LED's on the PCB to indicate that the signal is correct.

The board is located at the rear of the Ax350i/Ax550i printer cabinet or on the left side of the Ax150i printer cabinet. The switches are accessed by removing the rubber grommet shown below.

Note: *The rubber grommet must be replaced to maintain the printer cabinet's IP rating.*

Normally a single channel shaft encoder is used, using Channel A.

When a quadrature shaft encoder is used the Channels SE-A + SE-B can be utilised.

For information on the settings:

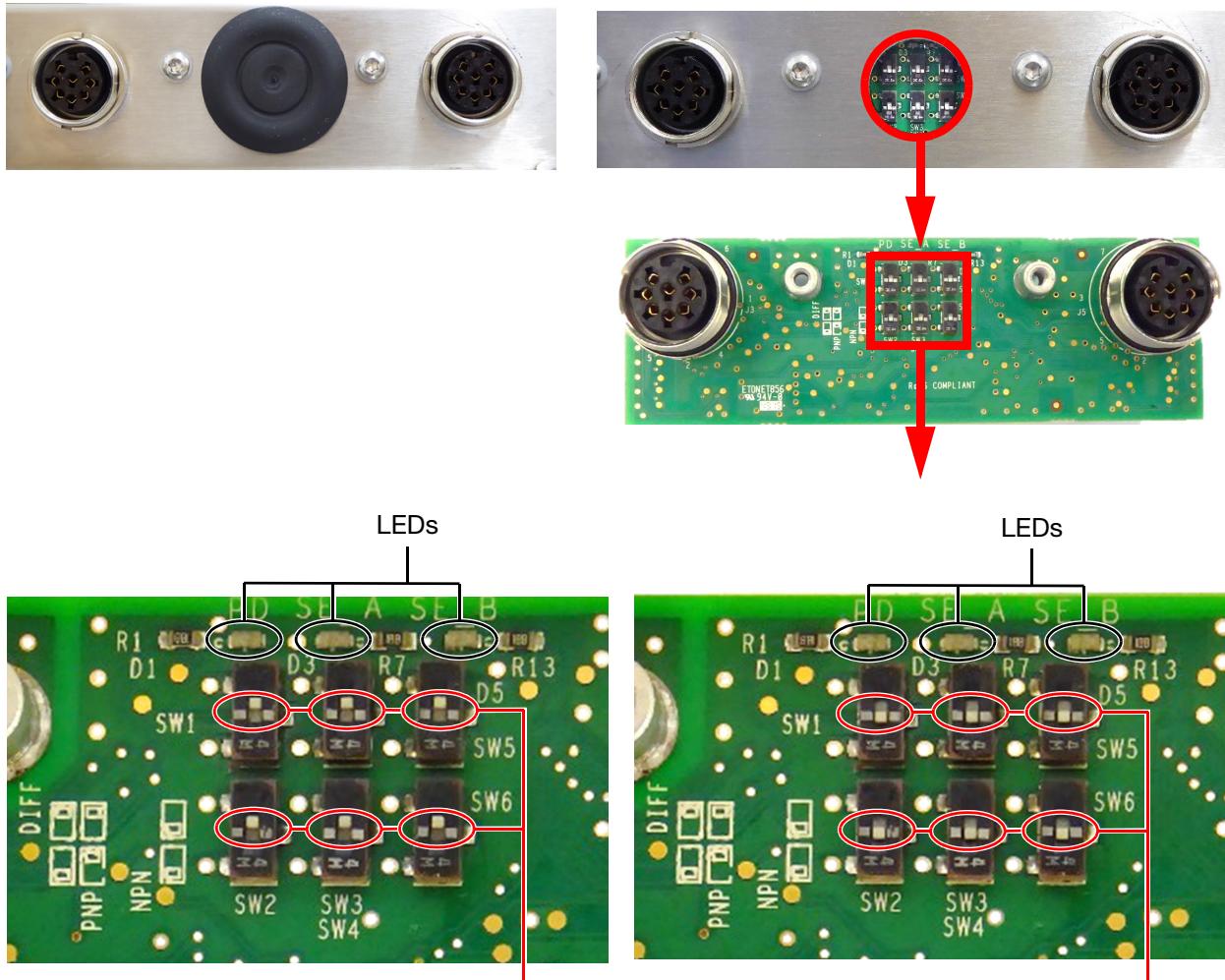
PD = Product Detect

Sourcing = NPN Configuration

SE A = Shaft Encoder 1

Sinking = PNP Configuration

SE B = Shaft Encoder 2



TOUCHPANEL INSTALLATION (Ax350i/Ax550i)

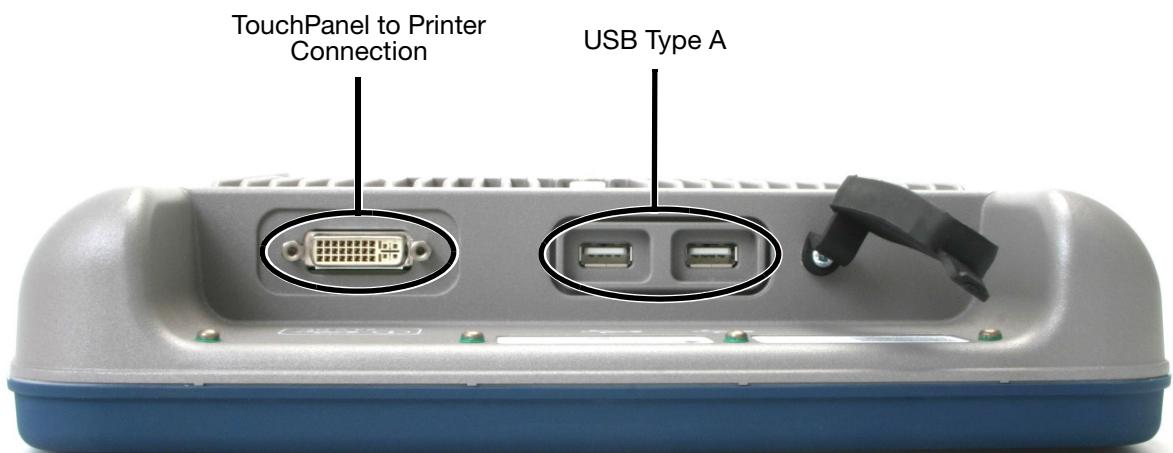
Ax350i and Ax550i printers are operated either via a remote TouchPanel Type 3 or 4, or via a PC.

TouchPanel Type 3

The TouchPanel Type 3 is a user interface with a 10.4 inch touch screen. The TouchPanel Type 3 has 2 USB ports and a connector to provide control of the Ax350i/Ax550i printers.



TouchPanel Type 3 Front View



TouchPanel to Printer Connection

USB Type A

TouchPanel Type 3 Connections

TouchPanel Type 4

The TouchPanel Type 4 is a user interface with a 7 inch touch screen. The TouchPanel Type 4 has 2 USB ports and a connector to provide control of the Ax350i/Ax550i printers.



TouchPanel Type 4 Front View



TouchPanel Type 4 Connections

TouchPanel Mounting

The TouchPanel Type 3 and Type 4 can be mounted to the top of the cabinet using the angled bracket and 8 screws provided.

TouchPanels can also be mounted elsewhere on the production line using a VESA 75 bracket.

CAUTION: *To reduce the risk of damaging cables or equipment, securely route the TouchPanel cable away from moving equipment and other hazards.*

Tools required: 4mm hex key.



TouchPanel Bracket

TouchPanel Connectivity

The TouchPanel Type 3 and 4 are connected to the TouchPanel connector on the rear of the Ax350i/Ax550i printer. The TouchPanel will then display the user interface relating to that printer when the printer is turned on.

CAUTION: *To reduce the risk of damaging cables or equipment, securely route the TouchPanel cable away from moving equipment and other hazards.*



TouchPanel Connection

NETWORK SETUP

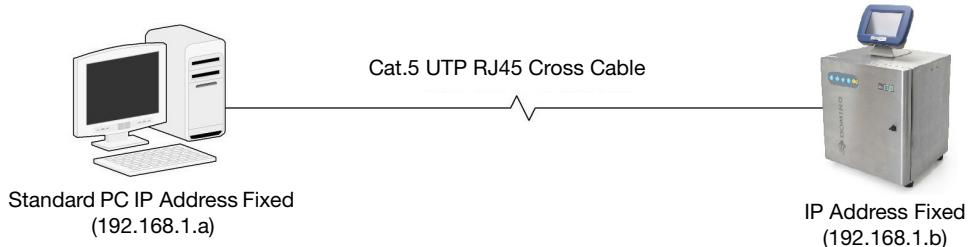
Ax-Series printers can be fully controlled over a network connection using a PC which has Domino QuickStep software installed.

TouchPanel's can also be used to control other printers on the same network.

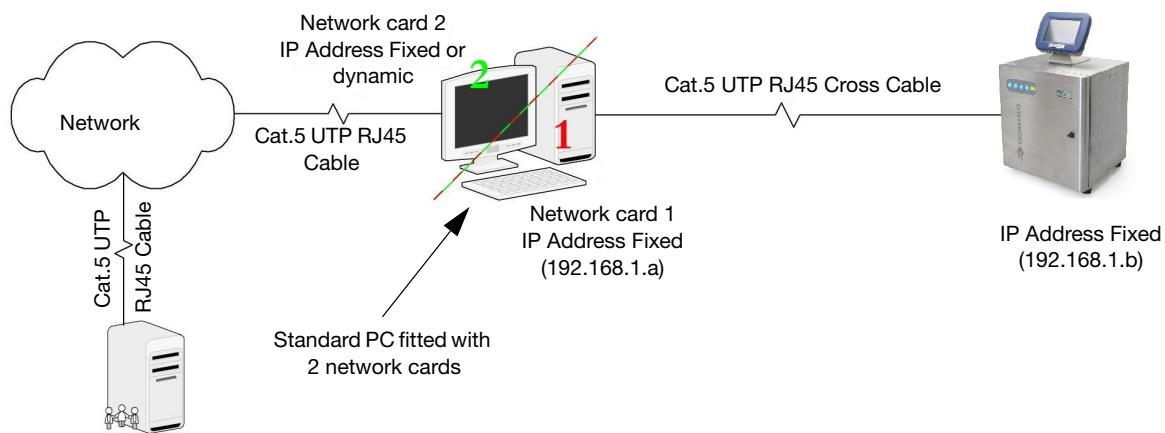
Only 1 printer can be controlled at the same time.

Network Connectivity Diagrams

Ax-Series printers can be connected to a network as illustrated in the diagrams below.

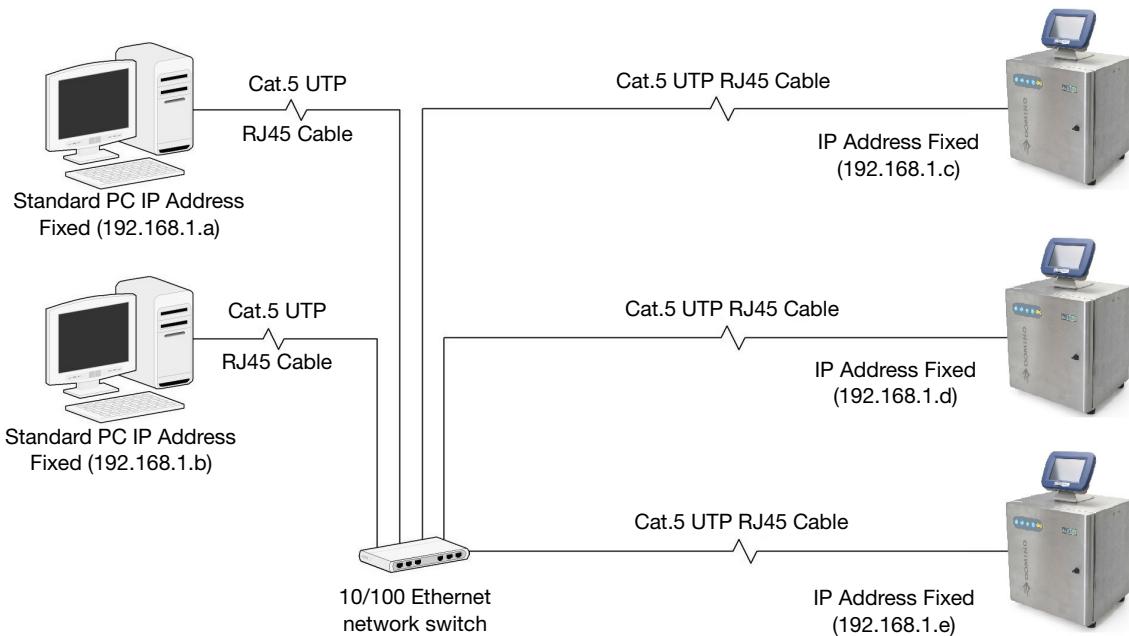


Single printer to single PC (max 1 printer) PC not connected to network

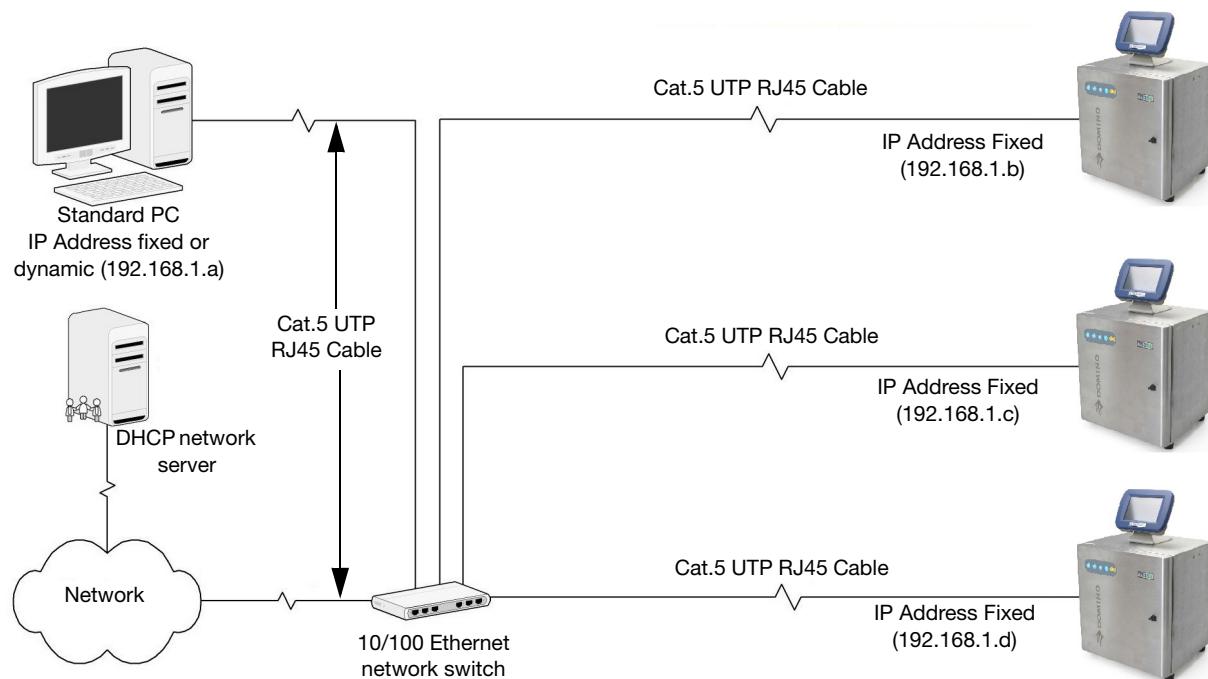


Single printer to single PC (max 1 printer) PC connected to network

INSTALLATION

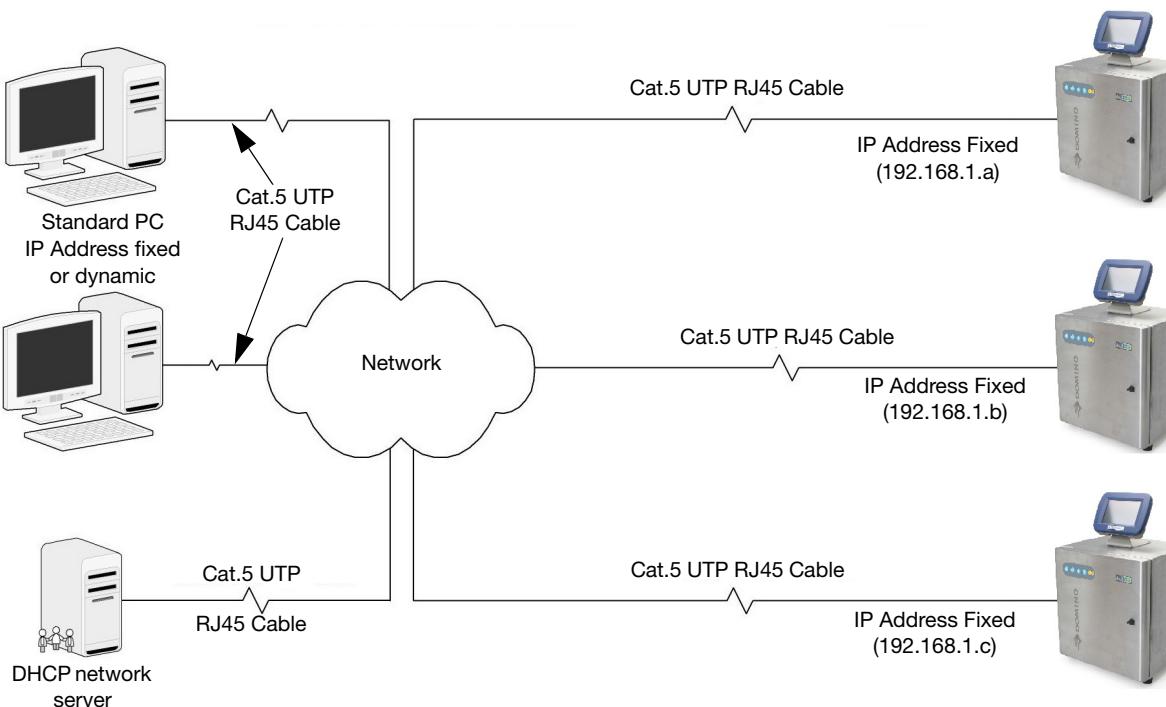


Multiple printers to PC through switch. PC not connected to network



Multiple printers to PC through switch. PC connected to network

INSTALLATION



Multiple printers to PC through network

PC to Networked Printer Settings

To setup the PC to Printer network settings:

- (1) Install the QuickStep programme on the PC which will be used to control the printer.
- (2) Ensure the printer is correctly connected to the network.
- (3) On the printer's TouchPanel, select *Home > Setup > Printer network*.
- (4) Tick the *Enable Ethernet* tick box.
- (5) Select *Edit...*
- (6) Ensure the *Enable DHCP* tick box is selected.
- (7) If required, change the IP address of the printer so that it is in the same range as the PC. For example, if the PC's IP address is 192.168.1.5 change the printers IP address to 192.168.1.55.
- (8) Select the green *Tick* icon.
- (9) Make a note of the *Host name* and *IP address*.
- (10) Start the QuickStep programme on the PC.
- (11) Select the *Lock* icon.



- (12) Select *Unlock UI settings*.
- (13) Enter the UI password (Default password: QS).
- (14) Select the green *Tick* icon.
- (15) Select *OK*.
- (16) Select the *UI Settings* icon.
- (17) Select the *Connection Method* drop down setting and select one of the options described below:

Connection Method	Explanation
Broadcast	This feature is currently not available
Favourite	Create a list of favourite printers if there are multiple Ax-Series printers available in the network.
Direct	Connect to a single printer on the network.

- (18) Depending on the option selected at the previous step, select either *Add direct...* or *Add favourite...*

INSTALLATION

(19) Enter the following information:

Setting Name	Explanation
Name	Enter the name of the printer.
Type	Select the type of printer which the QuickStep emulator is connecting to. In this case, select <i>C/J</i> .
IP address	Enter the IP address of the printer.
Host	Enter the host name.

(20) Select the green Tick icon.

(21) Details of the printer will now appear on the screen.

(22) Select the *Network* icon in the bottom left corner of the PC's QuickStep programme.



(23) Select the *Connect* to connect to a printer.

End of procedure.

TouchPanel to Networked Printers

One TouchPanel can control multiple printers in the same network if required. However, the TouchPanel can only connect to 1 printer at a time.

Create a List of Favourite Printers

It is recommended to create a list of favourite printers in the TouchPanel if there is more than 1 printer on the same network which the TouchPanel can connect to.

To create a favourite list of the printers:

- (1) Select the *Lock* icon on the bottom right corner of the TouchPanel screen.



- (2) Select *Disconnect from printer*.
- (3) Select the *Lock* icon on the bottom right corner of the TouchPanel screen.
- (4) Select *Unlock UI settings*.
- (5) Enter the UI password (Default password: QS).
- (6) Select the green *Tick* icon.
- (7) Select *OK*.
- (8) Select *UI Settings*.
- (9) Select the *Connection Method* drop down setting and select *Favourite*.
- (10) Select *Add favourite...*
- (11) Enter the following information:

Setting Name	Explanation
Name	Enter the name of the printer.
Type	Select the type of printer which the TouchPanel is connecting to. For an Ax-Series printer, select <i>C/J</i> .
IP address	Enter the IP address of the printer.
Host	Enter the host name.

- (12) Select the green *Tick* icon.
- (13) The details of the printer will now appear on the screen. Select the printer to connect to it.
- (14) Either select *Add favourite...* to add another printer, or select the *Network* icon in the bottom left of the TouchPanel screen.



- (15) Select a printer from the favourite list to connect to.

End of procedure.

Connect to a Different Printer in the Network

Details about the printer being controlled can be viewed by selecting *Home > Setup > System Information*.

If a favourite list of printers has been set up, follow the procedure below to connect the TouchPanel to a different printer in the network.

- (1) Select the *Lock* button.
- (2) Select *Disconnect from printer*.
- (3) Select the required printer.

End of procedure.

PREPARING THE INK SYSTEM



Ax-Series Ink System

The procedures described in this section must be followed when the ITM, ink and make-up cartridges are installed for the first time or following a long shut-down after ITM removal.

ITM Installation

**WARNING:**

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with ink or make-up can cause skin or eye damage.

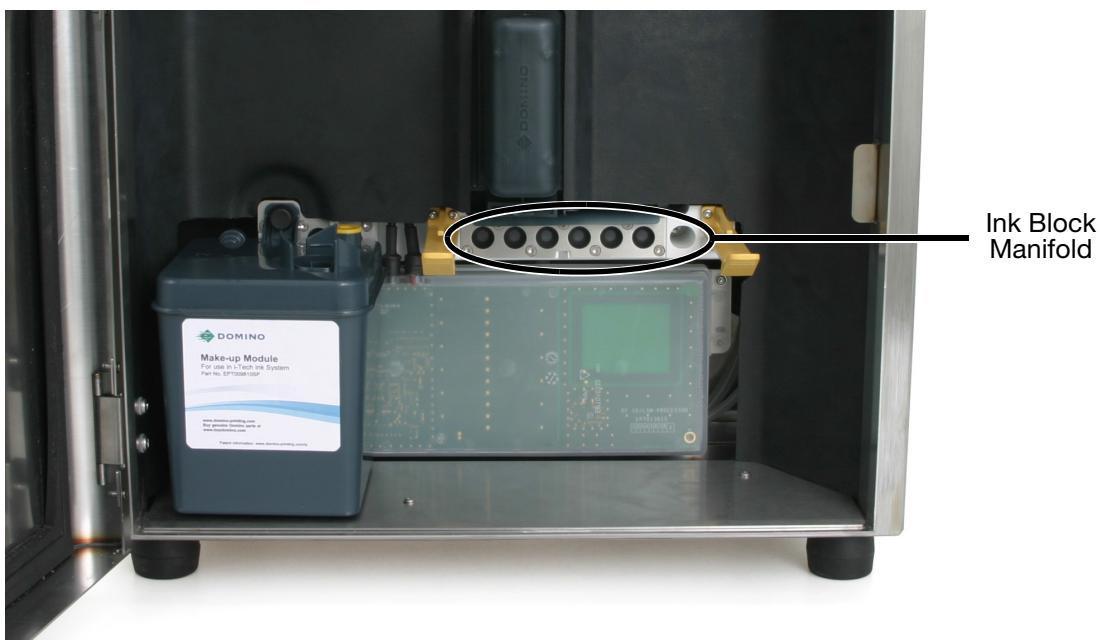
Notes: (1) Paper towels (or similar) and wash are required for this procedure.

(2) Waste paper towels will be contaminated with chemicals which are hazardous to the environment. Local waste disposal regulations must be followed to safely dispose of used paper towels.

This procedure should be followed when installing the ITM for the first time, or following long shut down after ITM removal. If replacing an old ITM, the procedure described on [page 5-10](#) must be followed.

To install the ITM:

- (1) Unpack the ITM.
- (2) Open the printer ink cabinet.
- (3) Remove the manifold sealing strip that protects the ink block manifold.



Ink Block Manifold

INSTALLATION

- (4) Place paper towel (or similar) on top of the level sensor modules to catch excess fluid. Use the correct wash to remove any dried residual ink from the ink block valve face.



Washing the ink block valve face

- (5) Place paper towel (or similar) under the ITM manifold pipes and lubricate the pipes with wash.



Washing the ITM manifold pipes

INSTALLATION

- (6) Insert the ITM between the retaining clips and firmly push the ITM manifold pipes into the ink block.



Inserting the ITM

- (7) Continue pushing until the retaining clips engage with a click.

Note: Ensure clips are fully engaged.



ITM Clip Engagement

- (8) Close the printer ink cabinet.
 - (9) Dispose of used paper towels by following local waste disposal regulations.
- End of procedure.

Ink and Make-up Cartridge Installation



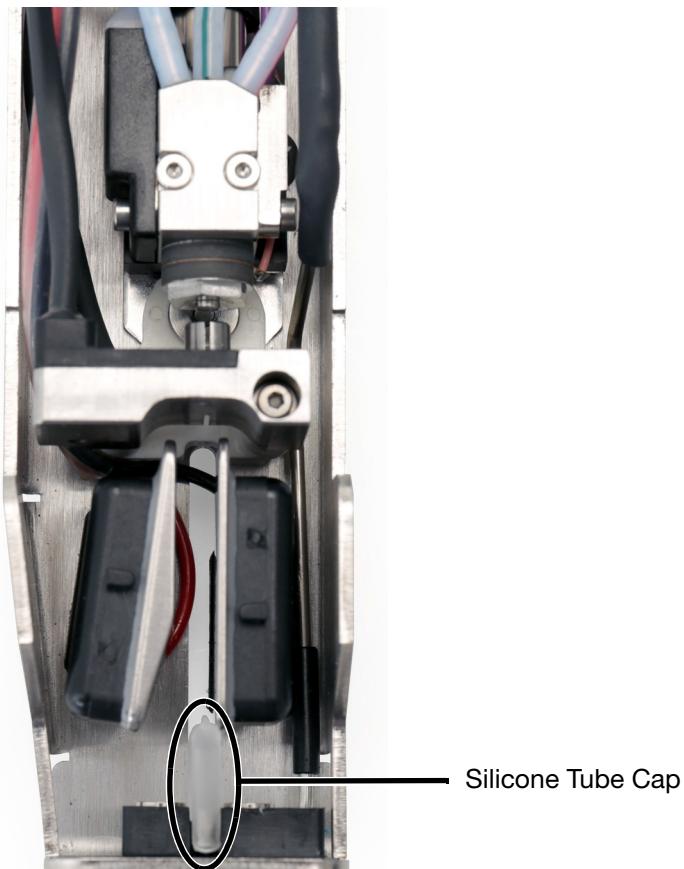
- WARNINGS:**
- (1) Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.
 - (2) The print head must be placed in a wash station, or positioned over a beaker made of a conducting material and securely connected to earth (ground) in case the jet is misaligned out of the gutter. The electrostatic charges on the ink drops used for printing can cause a fire hazard.

This procedure should be followed when installing the ink and make-up cartridge for the first time. If replacing an old or empty cartridge, follow the procedure described on [page 5-4](#).

Tools required: 6mm Hex Key.

To install the Ink and Make-up cartridges:

- (1) At the print head, remove the holster by pressing in the two holster retaining clips on the sides of the print head.
- (2) Fit the print head into a wash station, or place a beaker made of a conducting material and connected to earth (ground) underneath the print head.
- (3) Remove the silicone tube cap over the gutter. Check that the print head is clean and dry.



Silicone Tube Cap Removal

INSTALLATION

- (4) If the printer is not already on, press and hold the power button  for 2 seconds to switch the printer on.
- (5) Before inserting the cartridges in the printer, hold the cartridges near the Quality Management Module (QMM) to check that the ink and make-up type is correct. The lights on the QMM will flash amber to indicate that the RFID tags are being read. When the RFID tags have successfully been read and validated, the lights will turn green. See “[QMM \(Quality Management Module\) Status Lights](#)” on page 2-17.

Notes: (1) *If a fault is detected, the QMM lights will turn red and an alert will be displayed on the Status tab.*

(2) *If the RFID tag cannot be read, or an RFID tag is not present, the QMM lights will turn solid amber.*

- (6) Insert a 6mm hex key into the top of the cartridges and twist to break the sealing tabs. Remove the sealing tab.



Breaking the Seal on the Make-up Cartridge



Breaking the Seal on the Ink Cartridge

INSTALLATION

- (7) Push the make-up cartridge onto the make-up module manifold and push the ink cartridge onto the ITM.



Make-up Cartridge Installation



Ink Cartridge Installation

INSTALLATION

- (8) Rotate the ink cartridge clockwise and the make-up cartridge anti-clockwise, ensuring that the label is facing towards you.



Ink and Make-up Cartridge Replacement

- (9) Check inside the printer for leaks.
(10) Shut the ink compartment access door.
(11) The ink system must now be primed, follow the procedure on [page 3-28](#).

End of procedure.

Prime Ink System



- WARNINGS:**
- (1) **Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.**
 - (2) **The print head must be placed in a wash station, or positioned over a beaker made of a conducting material and securely connected to earth (ground) in case the jet is misaligned out of the gutter. The electrostatic charges on the ink drops used for printing can cause a fire hazard.**

The ink system must be primed before the printer can be used for the first time.

Before starting this procedure, ensure that the ink and make-up levels are at least half full. This will be indicated by yellow or green make-up and ink level icons on the information bar on the TouchPanel screen, see [page 4-5](#).

To run the ink priming wizard:

- (1) Fit the print head into a wash station, or place a beaker made of a conducting material and connected to earth (ground) underneath the print head.
- (2) On the TouchPanel, select *Home > Setup > Wizards > Ink priming wizard*.
- (3) Select *Start*.
- (4) Follow the on screen instructions.
- (5) The ink jet alignment must now be checked. For an i-Pulse or i-Pulse Duo print head follow the procedure on [page 5-19](#).

End of procedure.

INSTALLATION WIZARD

The Installation Wizard configures the language of the user interface, system pre-sets and basic settings and for the printer to operate.

Note: *The correct System Date and System Time values must be entered to print accurate date or time elements within labels.*

To start the printer and use the Installation Wizard:

- (1) If the printer is not already on, press and hold the power button  for 2 seconds and wait for the printer to start up.
- (2) Select *Setup > Wizards > Installation wizard*.
- (3) Use the drop down settings to select the required *Language, Keyboard layout and Primary currency*.
- (4) Select the *Next Screen* icon.



- (5) Select the *System date* and enter the current date.
- (6) Select *Save*.
- (7) Select the *System time* and enter the current time.
- (8) Select *Save*.
- (9) Select *Complete*.

End of procedure.

PRODUCTION LINE SETUP

The following settings should be configured to set the printer up on a production line.

Line Movement

Home > Production line setup > Line movement

The settings shown on the *Line movement* screen configure how the printing speed is set or measured. There are 2 different encoder input methods available which are described in the table below.

- Notes:* (1) *It is recommended to use an external shaft encoder if the speed of the production line varies or there is a requirement to print barcodes or images.*
- (2) *Connect a quadrature shaft encoder if there is a requirement to detect changes in the production line's direction.*

Encoder Input Method	Explanation
Internal	<p>If a shaft encoder is not connected to the printer, a simulated encoder signal will be internally generated to set a fixed printing speed. To setup an internal encoder, follow the procedure described on page 3-31.</p>
External	<p>Use an external shaft encoder to measure the production line speed in real time. To setup an external shaft encoder, follow the procedure described on page 3-32.</p> <p>If a quadrature shaft encoder is connected to the printer, the encoder mode can also be set to detect changes in the production line's direction. To setup an quadrature shaft encoder, follow the procedure described on page 3-34.</p>

Internal Encoder (Fixed Printing Speed) Setup

Tools required: Metric ruler.

To setup an internal encoder with a fixed printing speed:

- (1) Create a test label.
- (2) Select the *Label* tab in the label creator side menu and select *Settings*.
- (3) Scroll down to the *Width* setting and make a note of the value.
- (4) Select the *Print* icon to send the label to print.



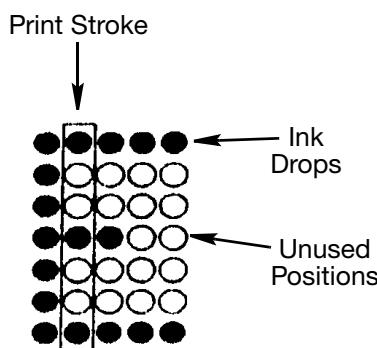
- (5) Select *Home > Production line setup > Line movement*.
- (6) Select the *Encoder input* drop down setting and select *Internal*.
- (7) Select the *Speed (mm/s)* setting and enter the print speed in millimetres per second.
- (8) Run the production line to make a test print.
- (9) Measure the width of the test print.
- (10) If the width of the test print is not equal to the width noted at [step \(3\)](#), adjust the *Speed (mm/s)* setting and make another test print. Repeat this step until the width of the test print is equal to the width setting to ensure that the internal encoder is correctly calibrated. The equation below can be used to calculate the correct *Speed (mm/s)* value.

$$N = O \times (P/E)$$

New speed (mm/s) value = N
Old speed (mm/s) value = O
Printed label width = P
Label width value = E

- (11) If the label width needs to be adjusted after the *Speed (mm/s)* setting has been set, adjust the *Global stroke pitch goal (mm/stroke)* setting to change the distance between print strokes (Default value: 0.43mm).

Note: A *print stroke* is the line of ink drops which make up each printed character as shown in the illustration below.



End of procedure.

External Single Ended Shaft Encoder Setup

Tools required: Metric ruler.

To setup an external single ended shaft encoder to measure the speed of the production line:

- (1) Create a test label.
- (2) Select the *Label* tab in the label creator side menu and select *Settings*.
- (3) Scroll down to the *Width* setting and make a note of the value.
- (4) Select the *Print* icon to send the label to print.



- (5) Select *Home > Production line setup > Line movement*.
- (6) Select the *Encoder input* drop down setting and select *External*.
- (7) Scroll to the bottom of the *Line movement* menu, select the *Encoder mode* setting and select *Single mode*.
- (8) Select *Set calibration settings*.
- (9) To calibrate the shaft encoder, the production line will need to run for a measured distance. Enter the distance that the production line will run for in the *Calibration distance (mm)* setting.
- (10) Select Start.
- (11) Run the production line over the distance that was set at [step \(9\)](#).
- (12) Select Stop.
- (13) Copy the *Velocity encoder pulse count* value and enter it into the *Calibration pulse count (pulses)* setting.
- (14) Select Save.
- (15) Run the production line to make another test print.
- (16) Measure the width of the test print, the test print should be equal to the *Width* setting noted at [step \(3\)](#). If not, the *Calibration distance (mm)* value may be inaccurate. Or, the encoder may have stopped at a position where the pulse signal is generated. This may cause the encoder to send false pulse signals to the printer. The equation below can be used to calculate the correct *Calibration pulse count (pulses)* value.

$$N = O \times (E/P)$$

New pulse count (pulses) value = N
 Old pulse count (pulses) value = O
 Label width value = E
 Printed label width = P

- (17) If the label width needs to be adjusted after the *Calibration pulse count (pulses)* setting has been set, adjust the *Global stroke pitch goal (mm/stroke)* setting to change the distance between print strokes (Default value: 0.43mm).

Note: A *print stroke* is the line of ink drops which make up each printed character.

INSTALLATION

- (18) If missing strokes appear in the test print change the *Stroke go multiplier* setting to x2. This will increase the *Encoder stroke resolution (pulses/stroke)* by detecting a pulse on both the rising and falling edge of the shaft encoder input signal.
- (19) If missing strokes continue to appear in the test print, the *Encoder stroke resolution (pulses/stroke)* can be accurately set using the *Digital gearbox multiplier* and *Digital gearbox divider* settings. It is recommended to set *Encoder stroke resolution (pulses/stroke)* value between 20 to 40 using the lowest possible *Digital gearbox multiplier* value. The *Encoder stroke resolution (pulses/stroke)* value can be set higher if required for printing 2D barcodes.

Note: *The Save button will not be available for selection if the Encoder stroke resolution (pulses/stroke) is set too high. The Encoder stroke resolution (pulses/stroke) range is 1 - 100.*

- (20) If there is noise on the shaft encoder input causing a false signal, change the *Encoder persistence (ms)* value. This value sets the length of time the shaft encoder signal must be active for before the printer recognises the signal as valid (Default value: 0.001).

Note: *Set the persistence value as low as possible. If a high value is set then the accuracy of the shaft encoder will be affected.*

End of procedure.

External Quadrature Shaft Encoder Setup

If the production line can change direction, a quadrature shaft encoder can be used to measure the production line's speed and detect the direction of travel. Four different encoder modes are available to define the printers behaviour when the direction changes.

To setup a quadrature shaft encoder:

- (1) Create a test label.
- (2) Select the *Label* tab in the label creator side menu and select *Settings*.
- (3) Scroll down to the *Width* setting and make a note of the value.
- (4) Select the *Print* icon to send the label to print.



- (5) Select *Home > Production line setup > Line movement*.
- (6) Select the *Encoder input* drop down setting and select *External*.
- (7) Select *Set calibration settings*.
- (8) To calibrate the shaft encoder, the production line will need to run for a measured distance. Enter the distance that the production line will run for in the *Calibration distance (mm)* setting.
- (9) Select Start.
- (10) Run the production line over the distance that was set at [step \(8\)](#).
- (11) Select Stop.
- (12) Copy the *Velocity encoder pulse count* value and enter it into the *Calibration pulse count (pulses)* setting.
- (13) Select Save.
- (14) Run the production line to make another test print.
- (15) Measure the width of the test print, the test print should be equal to the *Width* setting noted at [step \(3\)](#). If not, the *Calibration distance (mm)* value may be inaccurate. Or, the encoder may have stopped at a position where the pulse signal is generated. This may cause the encoder to send false pulse signals to the printer. The equation below can be used to calculate the correct *Calibration pulse count (pulses)* value.

$$N = O \times (E/P)$$

New pulse count (pulses) value = N

Old pulse count (pulses) value = O

Label width value = E

Printed label width = P

- (16) If the label width needs to be adjusted after the *Calibration pulse count (pulses)* setting has been set, adjust the *Global stroke pitch goal (mm/stroke)* setting to change the distance between print strokes (Default value: 0.43mm).

Note: A *print stroke* is the line of ink drops which make up each printed character.

(17) If missing strokes appear in the test print change the *Stroke go multiplier* setting to x4. This will increase the shaft encoder resolution by detecting a pulse on both the rising and falling edge of the two shaft encoder input signal.

(18) If missing strokes continue to appear in the test print, the *Encoder stroke resolution (pulses/stroke)* can be accurately set using the *Digital gearbox multiplier* and *Digital gearbox divider* settings. It is recommended to set *Encoder stroke resolution (pulses/stroke)* value between 20 to 40 using the lowest possible *Digital gearbox multiplier* value. The *Encoder stroke resolution (pulses/stroke)* value can be set higher if required for printing 2D barcodes.

Note: *The Save button will not be available for selection if the Encoder stroke resolution (pulses/stroke) is set too high. The Encoder stroke resolution (pulses/stroke) range is 1 - 100.*

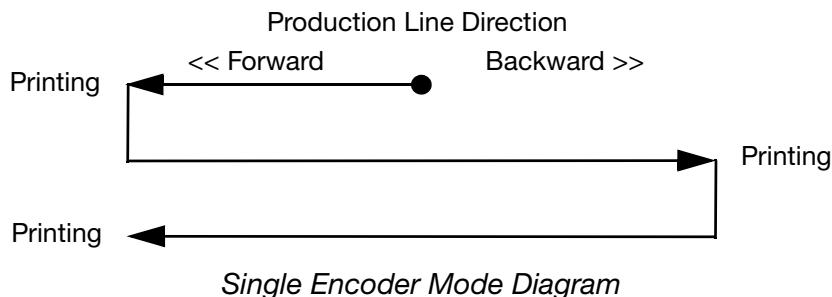
(19) If there is noise on the shaft encoder input causing a false signal, change the *Encoder persistence (ms)* value. This value sets the length of time the shaft encoder signal must be active for before the printer recognises the signal as valid (Default value: 0.001).

Note: *Set the persistence value as low as possible. If a high value is set then the accuracy of the shaft encoder will be affected.*

(20) Select the *Encoder mode* drop down setting and select one of the following options to define the printers behaviour when the production line direction changes:

Single Mode

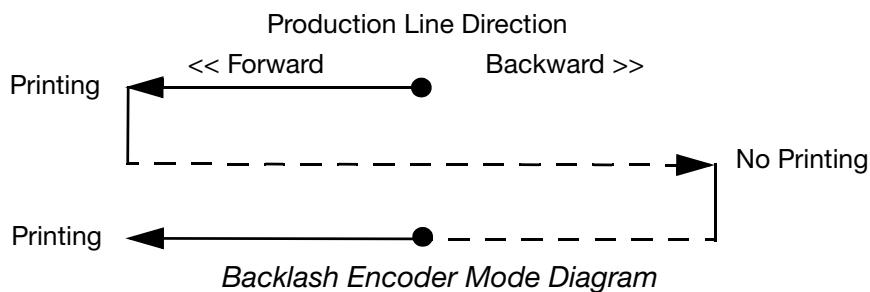
This mode should be used when a single ended shaft encoder is connected to the printer. The printer will be unable to detect the production line direction and printing will occur in both directions. If a quadrature shaft encoder is connected, the second input signal will be ignored.



Backlash Mode

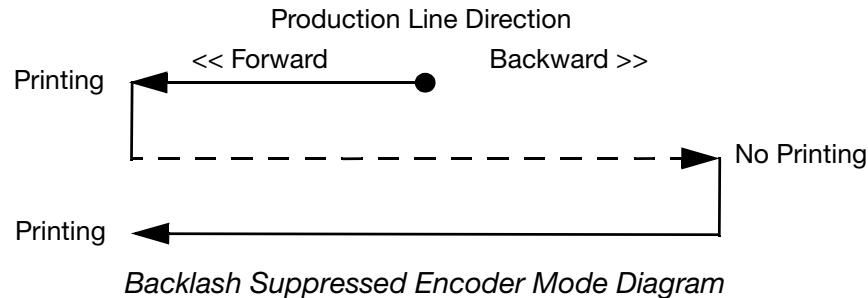
Printing will only occur when the production line moves in the forward direction. When the production line moves backward, printing is paused and a count of backward strokes (Current backlash count) will begin. When forward motion is resumed, the backlash count will count down until it reaches zero. Printing will resume at this point. This enables printing to resume at the exact point it was paused.

Note: *Printing will not occur in the forward direction if the current backlash count is positive. If required, select Reset to reset the backlash count to zero.*



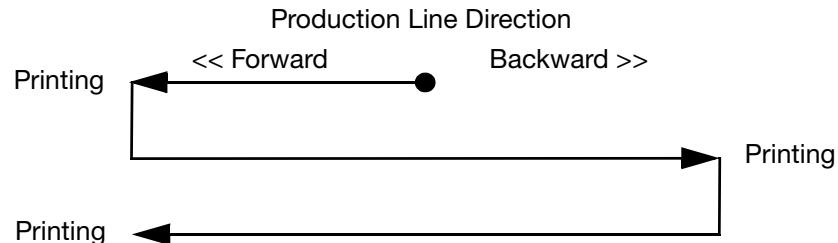
Backlash suppressed

Printing will only occur when the production line moves in the forward direction. When the production line moves backward, printing is paused. Printing will resume as soon the production line moves in the forward direction.



Backlash Forward

This setting is similar to single mode, however both input signals from the quadrature shaft encoder will be read. Backward movement will be treated the same as forward movement, printing will occur in both directions.



Backlash Forward Encoder Mode Diagram

- (21) Select *Backlash direction* drop down setting and choose which direction the shaft encoder will detect as forward.

Backlash direction options	Explanation
A leads B	Forward movement will be detected when the shaft encoder turns clockwise.
B leads A	Forward movement will be detected when the shaft encoder turns anti-clockwise.

End of procedure.

Print Trigger

Home > Setup > Production Line Setup > Print Trigger

Printing can be triggered by one of two different methods which are described in the table below.

Note: *It is recommended to use the external print trigger if the space between products varies on the production line.*

Print Trigger Method	Explanation
Internal	Generate a simulated print trigger signal internally at fixed distance intervals. To setup an internal print trigger, follow the procedure described on page 3-37 .
External	Use an external product sensor to generate a print trigger signal. To setup an external print trigger, follow the procedure described on page 3-38 .

Internal Print Trigger Setup

To setup a simulated print trigger signal internally at fixed distance intervals:

- (1) On the TouchPanel, select *Home > Setup > Production line setup > Print trigger*.
- (2) Select the *Trigger* by drop down setting and select *Internal*.
- (3) Select the *Print delay (mm)* setting and set the delay for the first label after a production run begins.
- (4) Select the *Distance interval (mm)* setting and set the distance between each printed label.

Note: *If the “Print trigger occurred while printing” alert is displayed, increase the Print delay (mm) value so that it is larger than the width of the label.*

End of procedure.

External Print Trigger Setup

To setup an external print trigger:

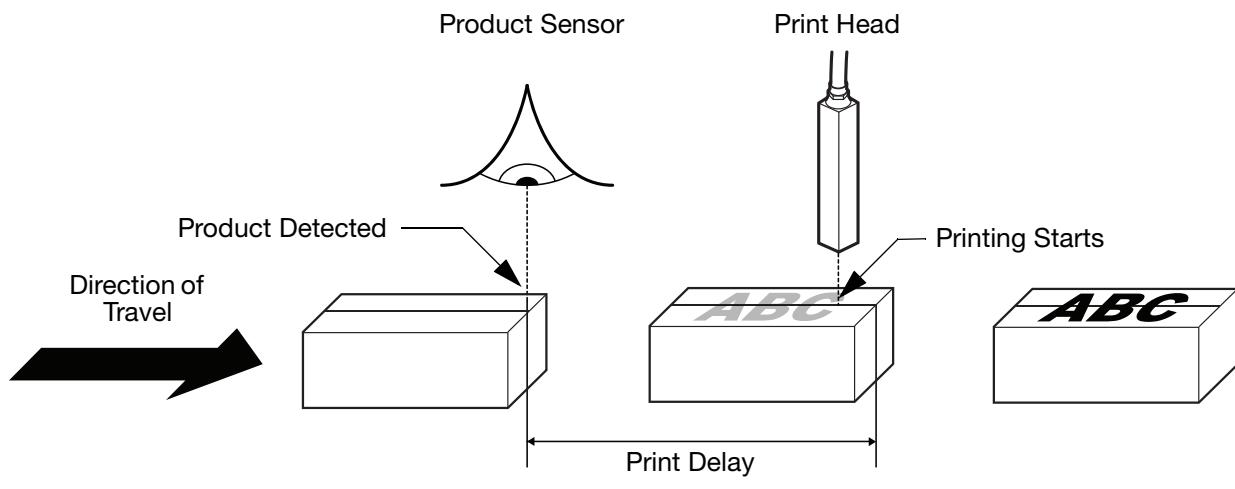
- (1) On the TouchPanel, select *Home > Setup > Production line setup > Print trigger*.
- (2) Select the *Trigger* by drop down setting and select *External*.
- (3) Select the *Active level* drop down setting and select whether a *High* or *Low* input signal will trigger a print.

Note: *Current level displays the current print trigger input signal level, either high or low.*

- (4) Select the *Print delay (mm)* setting and set the distance between where the product sensor detects the product and the point where the label is printed.

Notes: (1) *The Print delay (mm) range depends on the printer configuration.*

- (2) *If the “Print trigger occurred while printing” error occurs, increase the Print delay (mm) value. Or move the product sensor further away from the print head.*



Print Delay Diagram

- (5) If required, select *Product queue depth* setting and enter the number of print trigger signals which can be queued in advance of printing (Default value: 256).
- (6) If required, the *Product detect persistence (mm)* setting can be set to ensure that any noise on the product detect input signal does not create false product detect triggers. The product detect signal must be active longer than the *Product detect persistence* value before the signal is recognised as valid (Default value: 1mm).

Notes: (1) *Set the Product detect persistence value as low as possible. If a high value is set then the accuracy of Print delay setting will be affected.*

(2) *If the print trigger signal is generated by an external machine, for example: An extrusion line set to generate a print trigger after every meter of material has been extruded. It is recommended to change the unit of measurement for Product detect persistence value to time. The unit of measurement can be changed by a certified engineer with a USB key.*

(3) *If the print trigger signal is generated by a product sensor detecting physical products. It is recommended to set the unit of measurement for the Product detect persistence value by distance.*

End of procedure.

Ink Jet Throw Distance Setup



WARNING: Protective equipment such as gloves and glasses must be worn when working on or near the printer. Physical contact with ink or make-up can cause skin or eye damage.

The throw distance setting is used to define the distance between the bottom of the print head and the print surface.

Tools required: Metric ruler.

To setup the throw distance:

- (1) Measure the distance between the bottom of the print head and the print surface.
- (2) If it is possible, position the print head to the recommended distance away from the print surface as described in the table below.

Note: The nozzle diameter of the printer can be found on the TouchPanel by selecting Home > Setup > System information and viewing the Nozzle diameter (μm) value.

Nozzle Diameter	Recommended Throw Distance
75 micron	12mm
60 micron	8mm

- (3) On the TouchPanel, select Home > Setup > Production line setup > Print trigger.
- (4) Scroll down to the *Throw distance (mm)* setting and select it.
- (5) Enter the actual distance between the bottom of the print head and the print surface.
- (3) Select the green *Tick* icon.

End of Procedure.

Ink Jet Velocity Setup

The Jet velocity (mm/s) setting is used to define the velocity of the ink drops between the nozzle and the print surface. However, it is recommended to leave this value at the default setting.

To setup the ink jet velocity:

- (1) On the TouchPanel, select Home > Setup > Production line setup > Print trigger.
- (2) Scroll down to the *Jet velocity (mm/s)* setting and select it.
- (3) Enter a jet velocity value (Range: 15000 - 30000).
- (4) Select the green *Tick* icon.

End of Procedure.

PRINT HEIGHT CALIBRATION WIZARD


WARNING:

Protective equipment such as gloves and glasses must be worn when working on or near the printer. Physical contact with ink or make-up can cause skin or eye damage.

The print height calibration wizard is a tool which is used to set the optimum default print height.

Tools required: Metric ruler.

To run the print height calibration wizard:

- (1) Check that the print head is set to the correct distance away from the print surface. The print head distance can be set by following the Ink Jet Throw Distance procedure on [page 3-39](#).
- (2) If the ink jet is not already running, press the *Start/Stop* button on the printer cabinet and wait for the ink jet to sequence on.
- (3) On the TouchPanel, select *Home > Setup > Wizards > Print height calibration wizard*.
- (4) Check that the print quality metrics listed on the TouchPanel screen have green ticks next to them. If any of the items are marked with a red cross, wait a few minutes to see if the ink system stabilises and a green tick appears. If the red cross remains, an engineer certified by Domino can investigate the fault.
- (5) Select the *Next Screen* icon.



- (6) Select *Testing raster* and select a suitable raster to test.
- (7) Select *Test print*, and run the production line to make a test print.
- (8) The printer will print the letter H. Measure the height of the printed letter H in millimetres.
- (9) Enter the measured height of the printed letter H in the *Measured print height (mm)* setting.
- (10) If the measured print height is different from the expected height, the printer will recommend a different charge scaling (%) value. Select *Apply* to apply the recommended value and double check the print height by repeating [step \(7\)](#) to [step \(10\)](#).
- (11) Select *Complete*.

End of procedure.

PART 4 : OPERATION

CONTENTS

	Page
QUICKSTEP INTERFACE	4-5
Home Screen	4-5
Setup Screen	4-7
Production Line Setup Screen	4-8
Print Optimisation Screen	4-9
Label Creator Screen	4-10
Information Screens	4-12
Connection and Consumable Screen	4-13
Live Status Screen	4-14
Overall Equipment Efficiency Screen	4-15
START-UP AND SHUT DOWN	4-16
Start-up	4-16
Start-up From Power Off to the Ready State	4-16
Start-up From Power Off to the Off (Standby) State	4-16
Switch Between the Ready State and Off (Standby) State	4-16
Shut Down	4-17
Controlled Shut Down	4-17
Fast Shut Down	4-17
Recommendations for a Long Shut Down (Dye Ink System)	4-18
Recommendations for a Long Shut Down (Heavy Duty Ink System)	4-19
CREATING AND EDITING A LABEL	4-20
Create a New Label	4-20
Edit a Label Layout	4-21
Label Settings	4-22
Forward and Reverse Offset	4-23
Inverse Mode	4-24
Reverse Mode	4-25
Repeat Mode	4-26
Shift Codes	4-28
Label Elements	4-29
Add a Text Element	4-29
Edit a Text Element	4-29
Unicode	4-31
Input Method Editor (IME)	4-31
Add a Barcode Element	4-32
Add a Graphic Element	4-34
Create a Logo	4-34
Edit a Logo	4-35
Variable Label Elements	4-36
Add a Clock Element	4-36

OPERATION

Add a Counter Element	4-38
Add a Prompted Field Element	4-40
Add a Link Element	4-41
Add a Link Element	4-42
Add a Script Element	4-43
Add a Shift Code Element	4-44
Label Segments	4-45
Add a Segment	4-46
Lock Label Elements	4-47
Calculate Print Time	4-47
Preview Label	4-47
Open and Edit a Label	4-48
Copy a Label Element	4-48
Copy Multiple Label Elements	4-48
Delete a Label Element	4-49
Delete Multiple Label Elements	4-49
Move a Label Element	4-50
Zoom	4-50
Save Label	4-50
LABEL STORE AND FILE MANAGEMENT	4-51
Selecting an Existing Label	4-51
File Manager	4-51
Import Label(s)	4-52
Import Single Jet Labels into Duo Printers	4-52
Export a Label(s)	4-53
BACKUP PRINTER	4-54
Create a Backup	4-54
Restore from a Backup	4-55
EDITOR DEFAULTS	4-56
Print Offset	4-56
Repeat Print	4-57
Counted	4-58
Continuous	4-59
Clocks/Dates	4-60
REGIONAL SETTINGS	4-61
Set the Language and Keyboard	4-61
Set the Master Clock	4-61
GLOBAL PRINT SETTINGS	4-62
Position / Orientation	4-62
Appearance	4-63
Content	4-63
Behavioural Configuration	4-63
STATUSES, ALERTS AND FAULT FINDING	4-64
Statuses	4-64
Alerts	4-65

OPERATION

Alert ID Codes	4-66
Fault Finding	4-72

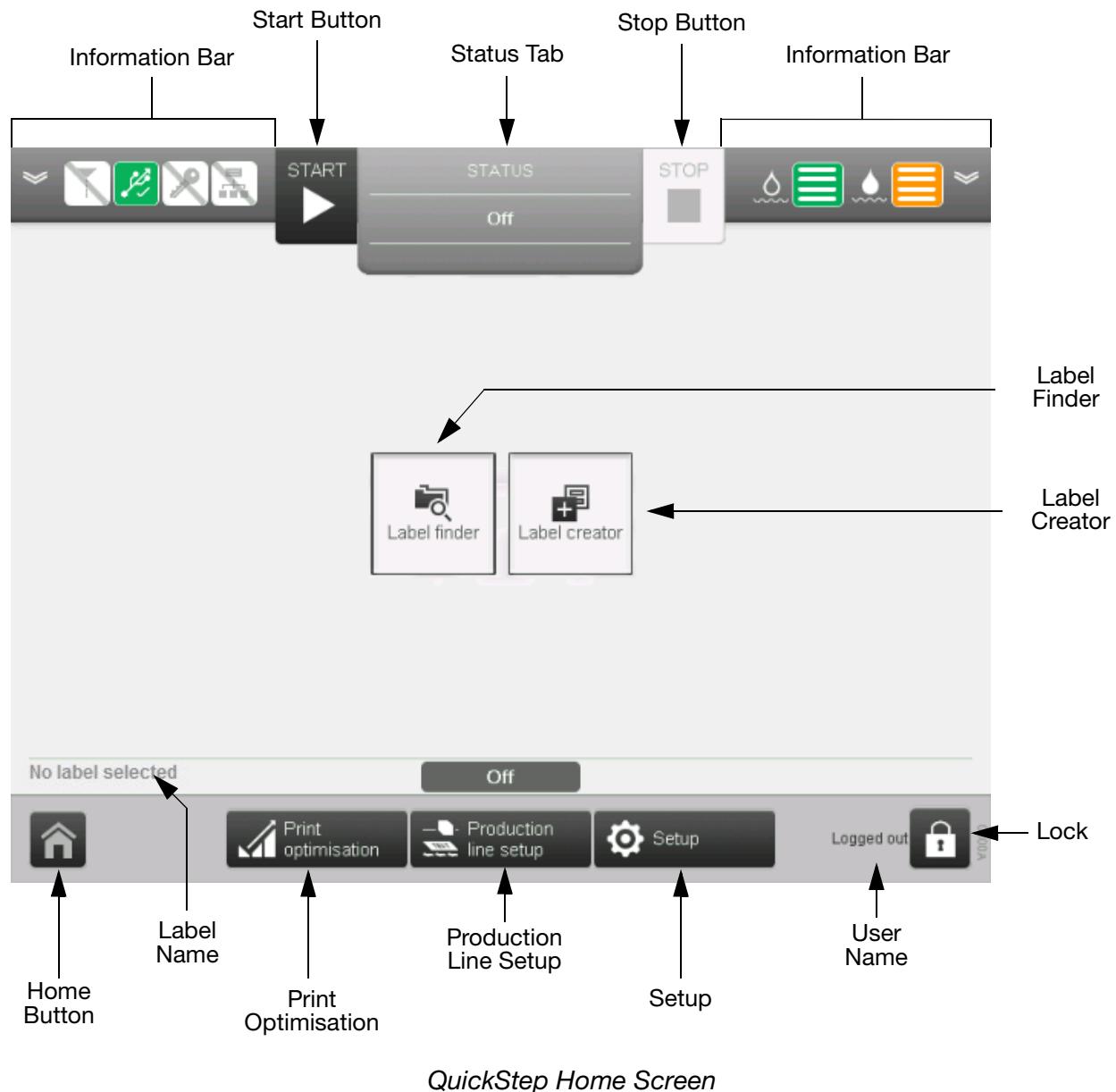
OPERATION

THIS PAGE INTENTIONALLY LEFT BLANK

QUICKSTEP INTERFACE

Home Screen

When starting the printer, the following *Home Screen* is displayed.



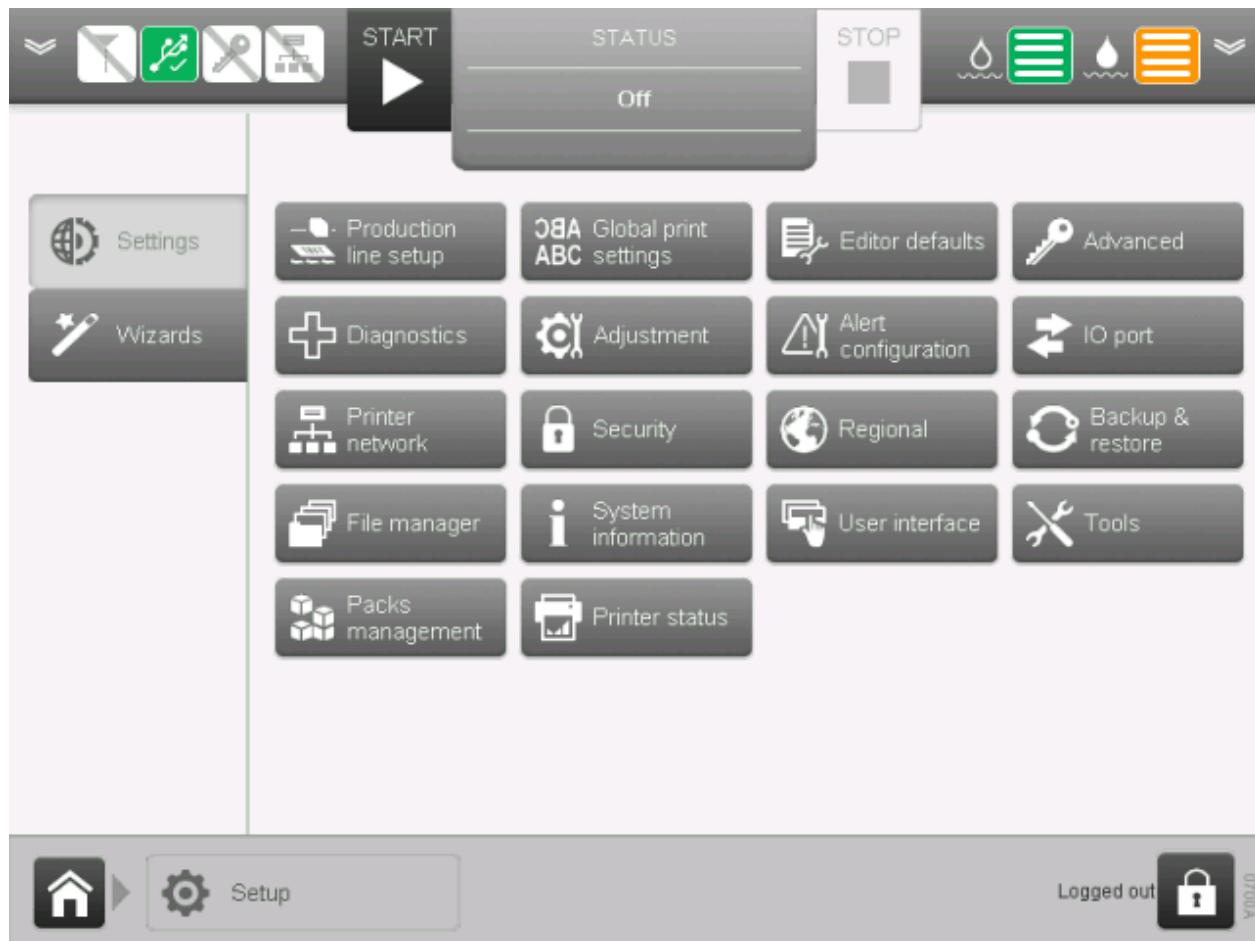
Setting Name	Explanation
Information Bar	Displays printer information. See "Information Screens" on page 4-12.
Status Tab	Displays printer status and alerts. If more than one alert is present, the highest priority alert is displayed. If an alert is displayed, select the Status Tab to show more information and to clear the alert. See "Statuses, Alerts and Fault Finding" on page 4-64.
Start/Stop Button	Toggle jet sequences (On/Off)
Label Finder	Find a saved label from the printer's label store to preview, print or edit.
Label Creator	Open the Label Creator to create a new label.
Lock	Log the user out from the printer. Disconnect the TouchPanel from the printer. Change the user's password. Lock the screen to prevent accidental changes.
User Name	The name of the user who is currently logged onto the printer.
Setup	Open the Setup screen. See "Setup Screen" on page 4-7.
Production Line Setup	Open the Production Line Setup screen. See "Production Line Setup Screen" on page 4-8.
Print Optimisation	Open the Print Optimisation screen. See "Print Optimisation Screen" on page 4-9.
Label Name	Displays the name of the label which is currently loaded.
Home Button	Press the Home Button at any time to return to this Home Screen.

Setup Screen

The Setup screen contains advanced printer settings, diagnostic tools and wizards.

This screen is accessed by selecting **Setup** on the Home screen.

The following illustration shows the Setup screen.



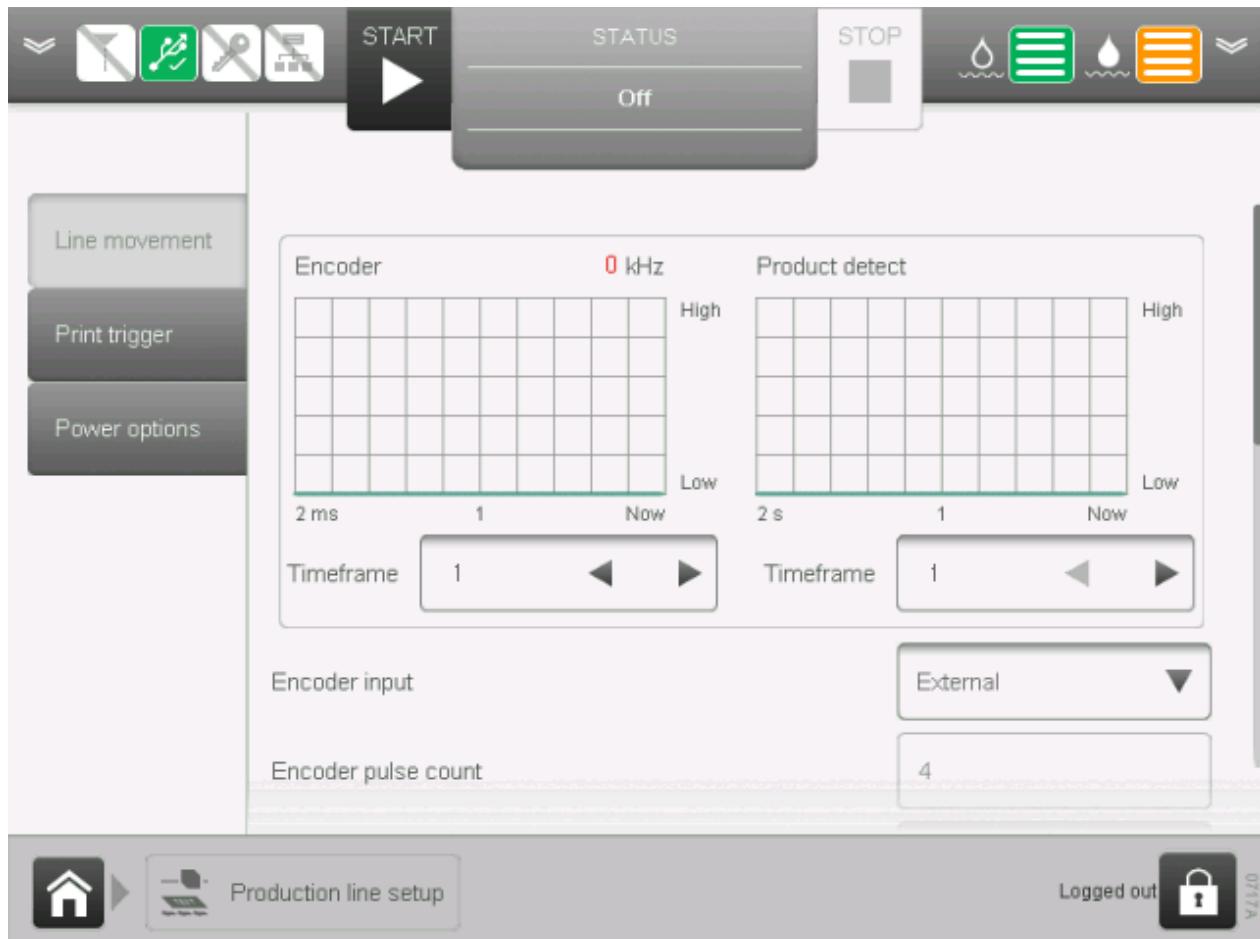
Setup Screen

Production Line Setup Screen

The Production Line Setup screen contains print trigger, encoder and power settings which should be configured during printer installation. See “Production Line Setup” on page 3-30.

This screen is accessed by selecting *Production Line Setup* on the Home screen.

The following illustration shows the Production Line Setup screen.



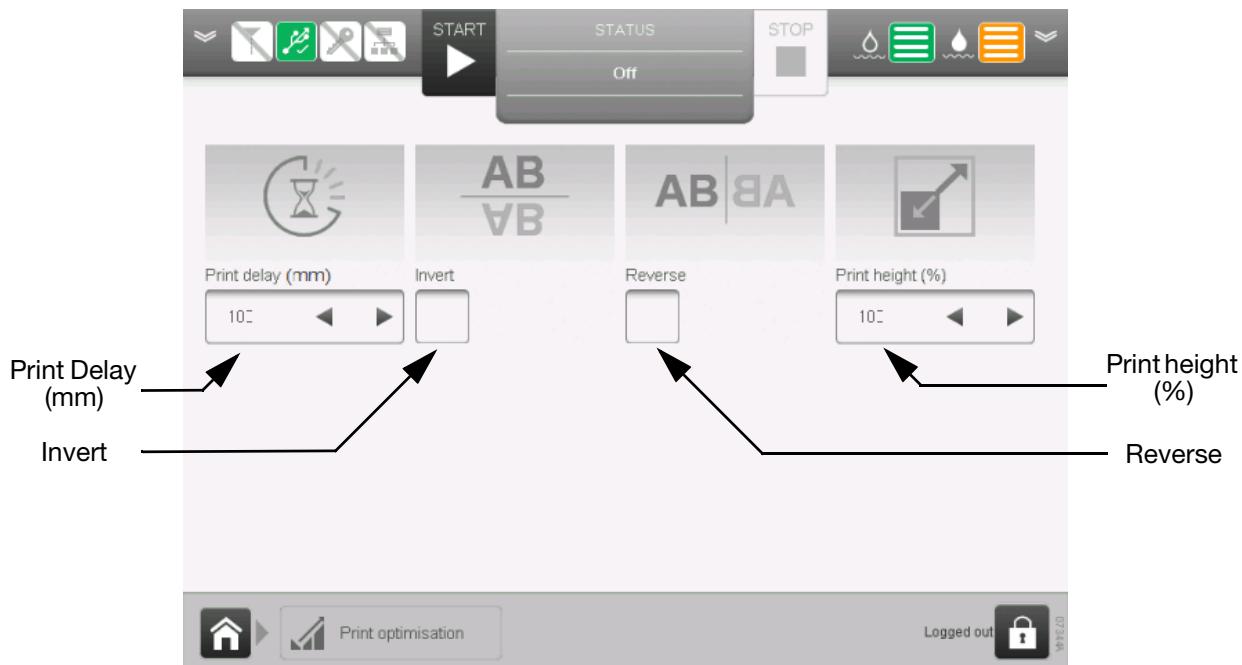
Production Line Setup Screen

Print Optimisation Screen

The Print Optimisation screen contains settings which are used to make everyday adjustments to label appearance.

This screen is accessed by selecting *Print Optimisation* on the *Home Screen*.

The following illustration shows the Print Optimisation screen.



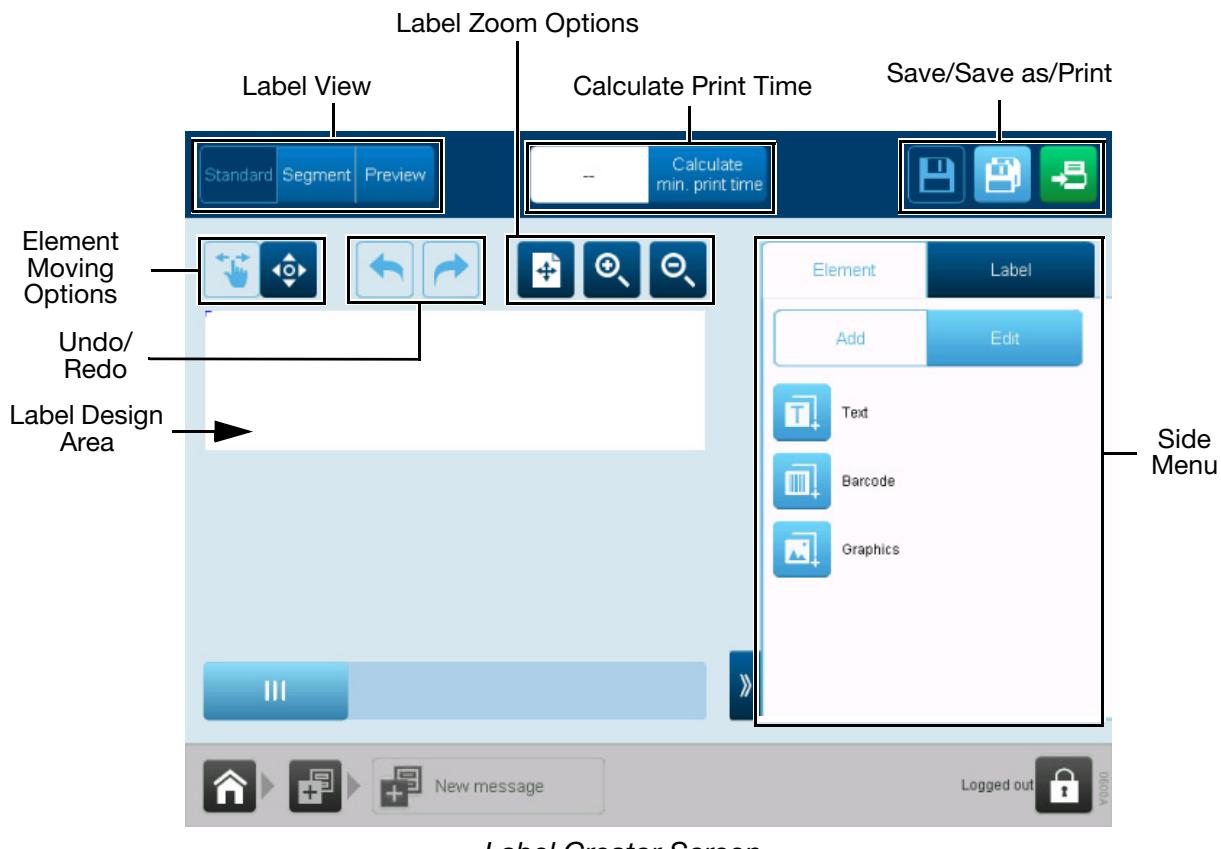
Print Optimisation Screen

Setting Name	Explanation
Print Delay (mm)	Set the delay in print strokes between a product sensor detecting a product and the label being printed.
Invert	Invert the label. 
Reverse	Reverse the label. 
Print Height (%)	Adjust the print height percentage.

Label Creator Screen

The Label Creator screen is used in label creation and label editing.

Refer to “[Creating and Editing a Label](#)” on page 4-20.



Setting Name	Explanation
Label View Options	The Label Creator contains three different viewing options: Standard - View, add and edit label elements. Segment - View, add and edit label segments. Preview - Preview how the label will look when printed.
Label Zoom Options	Zoom in and out of the label design, or fit the label design to the design area.
Calculate Print Time	Press to calculate how long it will take to print the current label design.
Save/Save As/Print	Save the label design or send it to print.
Side Menu	The Side Menu contains two tabs: Element - Add and edit label elements such as text, barcode and graphics. Label - Edit the label layout. Edit label print settings such as the label offset and label repeat. Manage label elements by locking them.

OPERATION

Setting Name	Explanation
Element Moving Options	Choose to move elements in the label design area by dragging them. Or, choose to display arrow buttons to move elements more precisely.
Undo/Redo	Undo or redo the previous action.

Information Screens

The Information Screens display detailed live information about the printer's performance.

To open the Information Screens:

- (1) Press the  icon on the Information Bar.
- (2) Swipe the screen left, or right to go to the next or previous screen.
- (3) Press the  icon to close the Information Screen.

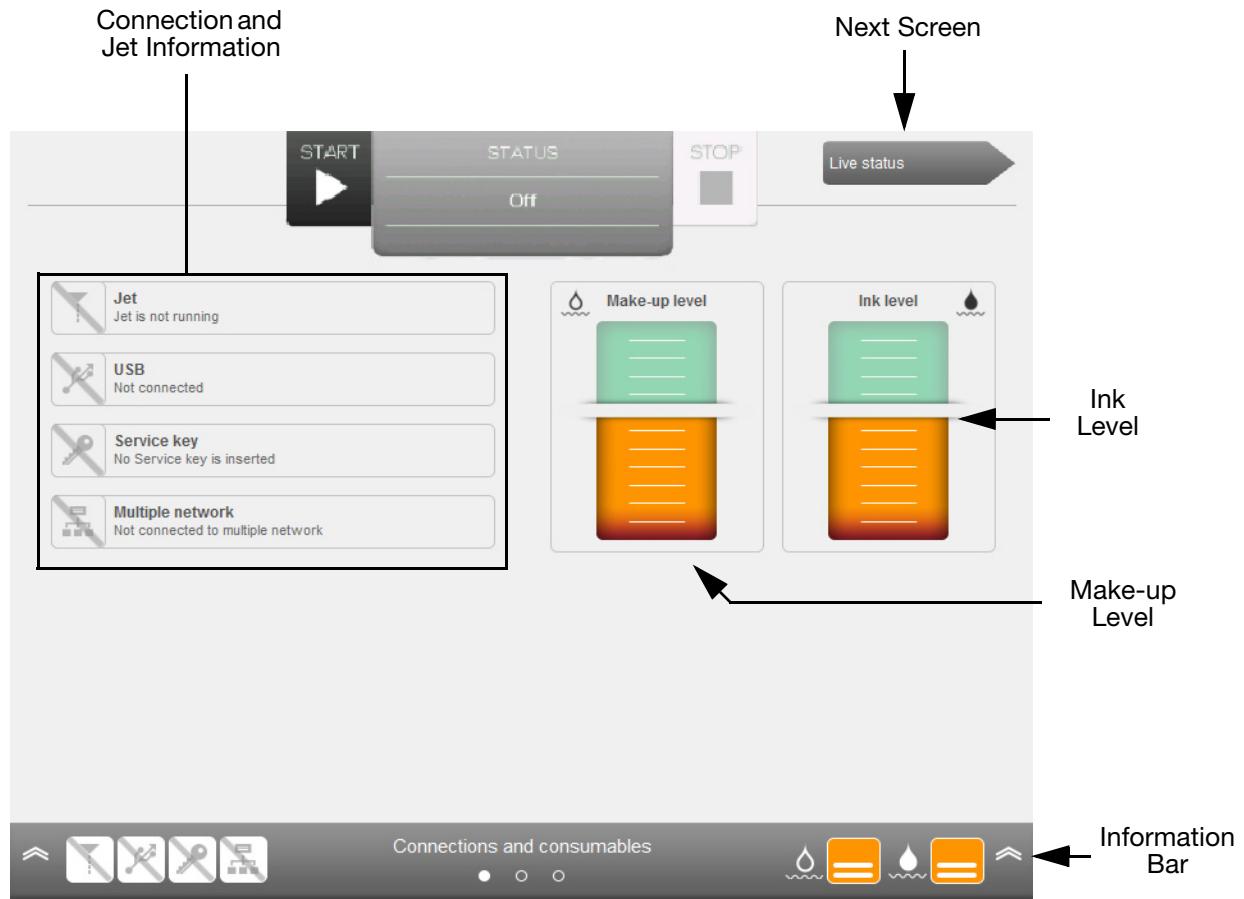
Note: The Information Bar on the Home Screen will display summarised information from the Information Screen which was closed.

The following Information Screens are available:

- Connection and Consumable, see [page 4-13](#).
- Live Status, see [page 4-14](#).
- Overall Equipment Efficiency, see [page 4-15](#).

Connection and Consumable Screen

The following illustration shows the Connection and Consumable screen.

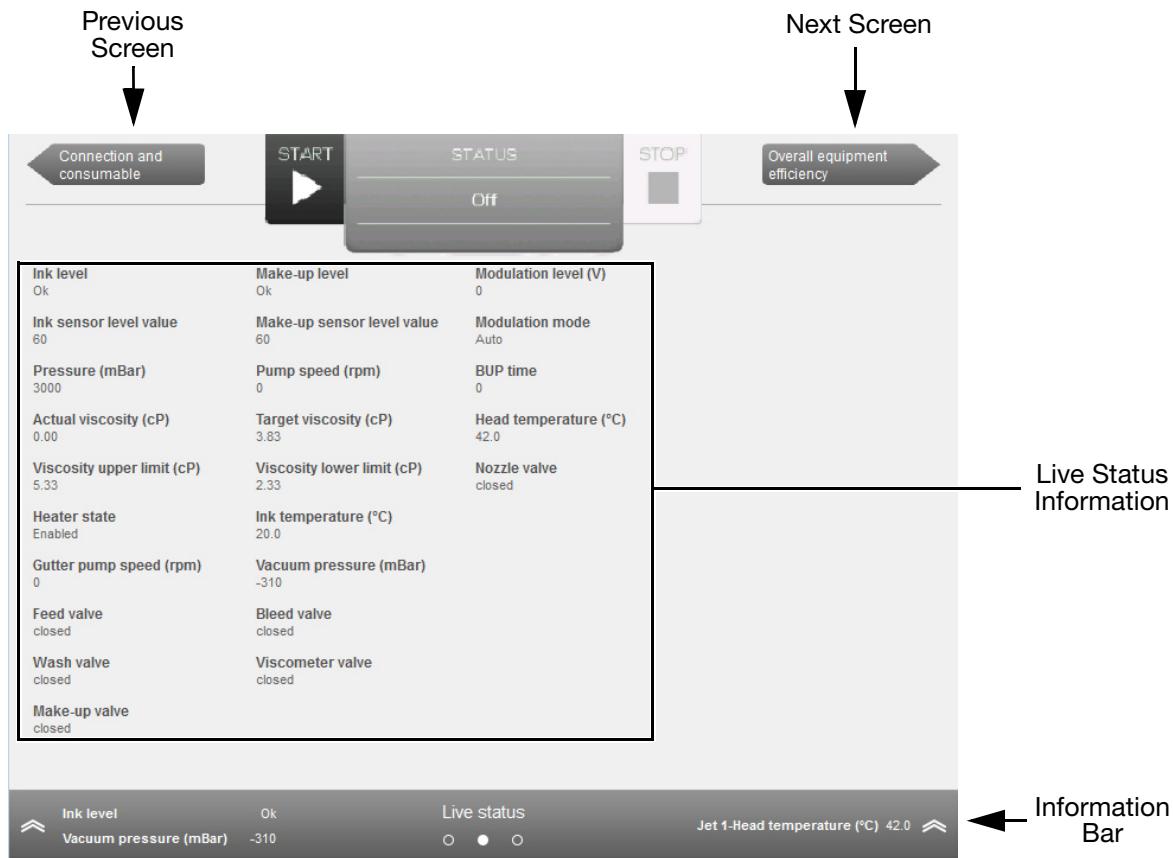


Connection and Consumable Screen

Setting Name	Explanation
Next Screen	Proceed to the Live Status screen.
Connection and Consumable Information	Shows connection and jet information about the printer: <ul style="list-style-type: none"> • Jet running/stopped. • USB device connected. • Service key connected. • Multiple network connected.
Ink Level	Shows the fluid level in the ink cartridge and ITM. The indicator moves to amber when the ink cartridge is empty and the printer is using only the fluid in the ITM.
Make-up Level	Shows the fluid level in the make-up cartridge and MUM. The indicator moves to amber when the make-up cartridge is empty and the printer is using only the fluid in the MUM.
Information Bar	Shows status icons which will be displayed on the Home Screen when the Connection and Consumable screen is closed.

Live Status Screen

The following illustration shows the Live Status screen.

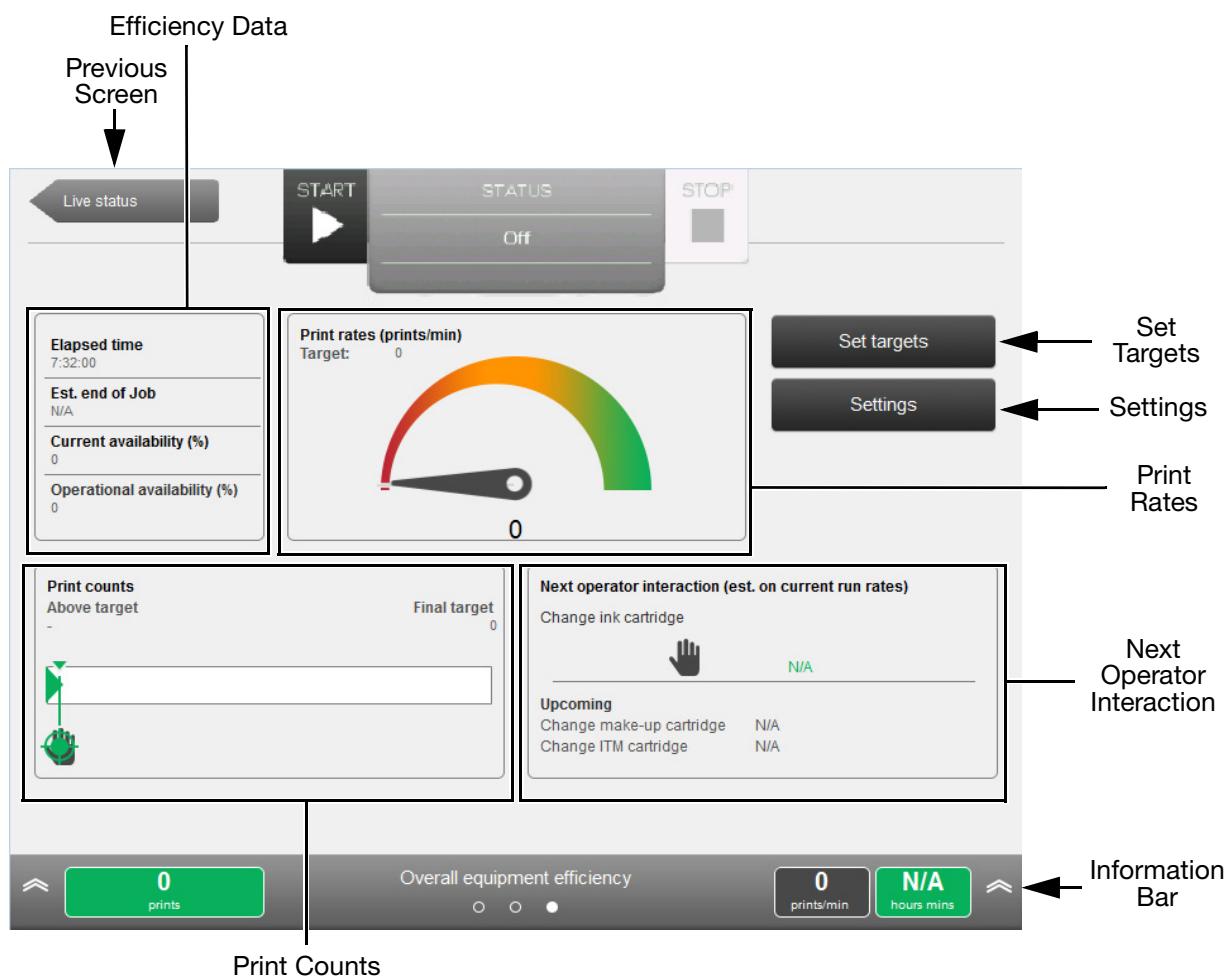


Live Status Screen

Setting Name	Explanation
Next Screen	Proceed to the Overall Equipment Efficiency screen.
Previous Screen	Go back to the Connection and Consumable screen.
Live Status Information	Displays live status information about the printer.
Information Bar	Shows status icons which will be displayed on the Home Screen when the Live Status screen is closed.

Overall Equipment Efficiency Screen

The following illustration shows the Overall Equipment and Efficiency screen.



Setting Name	Explanation
Previous Screen	Go back to the Live Status screen.
Set Targets	Set print rate and print count targets.
Settings	Choose when to reset the OEE targets.
Print Rates	Shows the targeted number of prints per minute against the current number of prints per minute.
Next Operator Interaction	Shows the estimated time of future operator interactions.
Efficiency Data	Printer efficiency data including elapsed time, estimated time to end of job etc.
Print Counts	The targeted number of prints shown against the actual number of prints.
Information Bar	Shows status icons which will be displayed on the Home Screen when the Overall Equipment Efficiency screen is closed.

START-UP AND SHUT DOWN

Start-up

Start-up From Power Off to the Ready State

To start-up the printer from power off to the Ready state:

- (1) Ensure the power connector at the rear of the printer is connected to a power source.

Note: The red status light on the power button will illuminate to indicate that the printer is connected to a power source.

- (2) Press and hold the *Start/Stop* button on the printer cabinet for 2 seconds.



- (3) The printer will now sequence on in the follow order, this may take several minutes:
 - (a) The green indicator lights on the power button and start/stop button will begin flashing to indicate that the printer is starting up.
 - (b) The TouchPanel screen will display the QuickStep start-up progress log.
 - (c) The red indicator light on the power button will turn off
 - (d) The status tab will display the printer status and any faults that require attention.
 - (e) The printer is now ready to print labels.

End of procedure.

Start-up From Power Off to the Off (Standby) State

To start-up the printer from power off to the Off (standby) state:

- (1) Ensure the power connector at the rear of the printer is connected to a power source.

Note: The red status light on the power button will illuminate to indicate that the printer is connected to a power source.

- (2) Press and hold the *Power* button on the printer cabinet for 2 seconds.

- (3) The printer will now sequence on in the follow order, this may take several minutes:

- (a) The green indicator light on the power button will begin flashing to indicate that the printer is starting up.
- (b) The TouchPanel screen will display the QuickStep start-up progress log.
- (c) The red indicator light on the power button will turn off
- (d) The status tab will display the printer status and any faults that require attention.
- (e) The printer is now ready perform non-printing functions such as creating a message.

End of procedure.

Switch Between the Ready State and Off (Standby) State

To switch the printer between the Ready state and Off (Standby) state:

- (1) Press the *Start/Stop* button .

- (2) Depending on the current printer status, the printer will enter one of the following two states:
 - From the Ready state, the printer will enter the Off state.
 - From the Off state, the printer will enter the Ready state.

End of procedure.

Shut Down

Controlled Shut Down

To shut down the printer in a controlled manner:

- (1) Press and hold the *Power* button  for 2 seconds.
- (2) The printer will now begin shutting down in the following sequence:
 - (a) A progress bar will be displayed on the TouchPanel screen.
 - (b) The green indicator light on the power button will begin flashing.
 - (c) The print head will run an auto-flush cycle to prevent ink from drying and blocking inside the ink jet nozzle and print head gutter.
 - (d) The printer will shut down.
 - (e) The red status light on the power button will illuminate to indicate that the printer is connected to a power source.
- (3) If required, the power cable can be removed from the rear of the printer.

End of procedure.

Fast Shut Down

CAUTION: *When this procedure is followed, the printer will shut down immediately without completing a flush sequence. If the printer is left for a long period of time, this will cause ink to dry and block the ink jet nozzle and gutter. Restart the printer as soon as possible to prevent the nozzle and gutter becoming blocked.*

To perform a fast shut down:

- (1) Press and hold the *Power* button  for 10 seconds.
- (2) The printer will now shut down in the following sequence:
 - (a) The printer will shut down immediately.
 - (b) The red status light on the power button will illuminate to indicate that the printer is connected to a power source.
- (3) If required, the power cable can be removed from the rear of the printer.

End of procedure.

Recommendations for a Long Shut Down (Dye Ink System)

The recommended procedure to prepare a printer with a dye ink system for a long shut down depends on the length of time the printer will be shut down for as explained below.

Less Than 14 Days

**WARNING:**

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

If the printer is to be shut down for up to 14 days:

- (1) flush the gutter with the correct wash during the gutter clearing cycle to ensure the gutter is completely clean.
- (2) Clean the print head by following the print head cleaning procedure on [page 5-17](#).

End of procedure.

Longer Than 14 Days

**WARNING:**

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

If the printer is to be shut down for longer than 14 days, stored, moved around or used infrequently, the following steps will keep the ink system sealed and the printer in good condition while not in use.

- (1) Flush the gutter with the correct wash during the gutter clearing cycle to ensure the gutter is completely clean.
- (2) Clean the print head by following the print head cleaning procedure on [page 5-17](#).
- (3) Cap the gutter using a gutter plug (P/N 01599).
- (4) Replace the ink and make-up cartridges with clean, empty cartridges.
- (5) Wipe clean the seals on the removed cartridges and store for future use.
- (6) For Duo printers cover the gutters with masking tape or similar.
- (7) Remove any factory air supply (if fitted).

End of procedure.

Recommendations for a Long Shut Down (Heavy Duty Ink System)

The recommended procedure to prepare a printer with a heavy duty ink system for a long shut down depends on the length of time the printer will be shut down for as explained below.

Less Than 7 Days



WARNING:

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

If the printer is to be shut down for up to 7 days:

- (1) flush the gutter with the correct wash during the gutter clearing cycle to ensure the gutter is completely clean.
- (2) Clean the print head by following the print head cleaning procedure on [page 5-17](#).

End of procedure.

Longer Than 7 Days



WARNING:

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

If the printer is to be shut down for longer than 7 days, stored, moved around or used infrequently, the following steps will keep the ink system sealed and the printer in good condition while not in use.

- (1) Flush the gutter with the correct wash during the gutter clearing cycle to ensure the gutter is completely clean.
- (2) Clean the print head by following the print head cleaning procedure on [page 5-17](#).
- (3) Cap the gutter using a gutter plug (P/N 01599).
- (4) Replace the ink and make-up cartridges with clean, empty cartridges.
- (5) Wipe clean the seals on the removed cartridges and store for future use.
- (6) For Duo printers cover the gutters with masking tape or similar.
- (7) Remove any factory air supply (if fitted).

End of procedure.

CREATING AND EDITING A LABEL

Create a New Label

To create a new label:

- (1) From the TouchPanel's Home Screen, select *Label creator*.
- (2) Select *Blank*.
- (3) Select the *Label name* text box.
- (4) Use the on screen keyboard to enter a name which the label design will be saved as.
- (5) Select the green *Tick* icon.
- (6) Select the  icon to configure the label layout as described in the table below:

Setting Name	Explanation
Number of lines	Select the required number of lines, 1, 2, 3 or 5.
Line height (drops)	Select the required height for each line in ink drops.
Type	Select the required label quality.
Use default height (%)	<p>Tick the tick box to use the default print height setting.</p> <p>Untick the tick box to display the <i>Height (%)</i> setting.</p>
Height (%)	<p><i>Note:</i> This setting is only valid if the Use default height (%) tick box is not ticked.</p> <p>Set the print height percentage.</p>
Use default stroke pitch	<p>Tick the tick box to use the default stroke pitch setting.</p> <p>Untick the tick box to display the <i>stroke pitch (mm)</i> setting.</p>
Stroke pitch (mm)	<p><i>Note:</i> This setting is only valid if the Use default stroke pitch tick box is not ticked.</p> <p>Set the distance between print strokes. A stroke is the line of ink drops which is used to make up each printed character.</p>

- (7) Select *Create label*.

End of procedure.

Edit a Label Layout

To edit a label layout:

- (1) Open the label which requires editing.
- (2) In the side menu, select the *Label* tab.
- (3) Select the *Edit* menu.
- (4) The layout settings as described in the table below can now be edited.

Setting Name	Explanation
Number of lines	Select the required number of lines, 1, 2, 3 or 5.
Line height (drops)	Select the required height for each line in ink drops.
Type	Select the required label quality.
Use default height (%)	Tick the tick box to use the default print height setting. Untick the tick box to display the <i>Height (%)</i> setting.
Height (%)	<i>Note:</i> <i>This setting is only valid if the Use default height (%) tick box is not ticked.</i> Set the print height percentage.
Use default stroke pitch	Tick the tick box to use the default stroke pitch setting. Untick the tick box to display the <i>stroke pitch (mm)</i> setting.
Stroke pitch (mm)	<i>Note:</i> <i>This setting is only valid if the Use default stroke pitch tick box is not ticked.</i> Set the distance between print strokes. A stroke is the line of ink drops which is used to make up each printed character.

- (5) Select the Save icon to save the label layout.



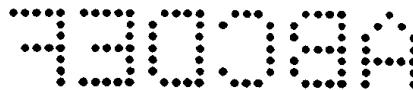
End of procedure.

Label Settings

Each individual label design can be created and saved with its own custom print settings.

The label settings can be accessed in the label creator's side menu by selecting the *Label* tab and selecting the *Settings* menu.

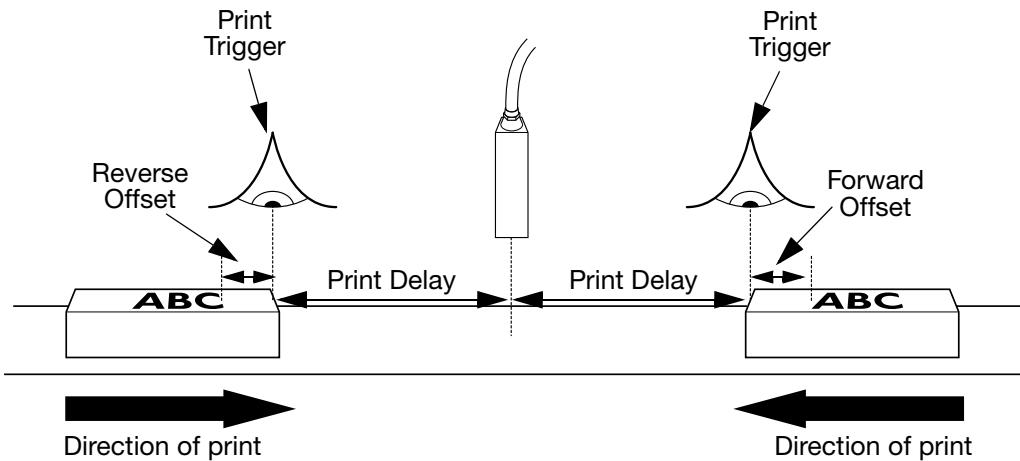
The available settings are described in the table below. Procedures describing how to configure each setting are explained by following the appropriate reference:

Setting Name	Explanation
Forward and Reverse offset	Adjust the position of the label on the print surface in millimetres, see page 4-23 .
Inverse mode	Invert the label design, see page 4-24 . 
Reverse mode	Reverse the label design, see page 4-25 . 
Repeat mode	Set the label design to print repeatedly, see page 4-26 .

Forward and Reverse Offset

Forward offset is used to adjust the position of the label on the print surface. If the print head is on a traversing line the Reverse offset can also be set.

Note: A global offset setting is also available to adjust the offset for all label designs, see [page 4-56](#).



Print Offset Diagram

To adjust the offset for an individual label design:

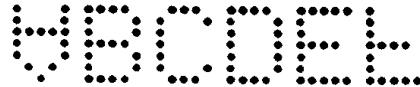
- (1) In the label creator's side menu, select the *Label* tab.
- (2) Select the *Settings* menu.
- (3) Adjust the *Forward offset (mm)* or *Reverse offset (mm)* setting.
- (4) Select the Save icon to save the setting.



End of procedure.

Inverse Mode

Inverse mode is used to invert an individual label design as shown in the illustration below.



This setting can also be used on a traversing line to invert the label design for a specified number of times before inverting the label back. Furthermore, this setting can be configured to invert the label when the printer's user port is activated.

- Notes:*
- (1) A global invert setting is available to invert all label designs. However, the global setting does not allow the number of inverted prints to be counted. Also, the global setting does not allow inverted prints to be triggered by a user port, see [page 4-62](#).
 - (2) If required, the label can also be inverted on the Print optimisation screen, see [page 4-9](#).

To setup inverse mode for an individual label design:

- (1) In the label creator's side menu, select the *Label* tab.
- (2) Select the *Settings* menu.
- (3) Select the *Inverse mode* drop down setting.
- (4) Select and configure one of the options described in the table below:

Setting Name	Explanation
On - Always	The label design will be inverted at all times.
On - Counted	<p>The label design will be inverted for a specified number of prints. When this option is selected, the settings described below will also be displayed:</p> <p>Inverse: Initial orientation - Select the orientation of the first label print.</p> <p>Inverse repeat count - Select the number of times the label will be printed in an inverted orientation.</p>
On User port	The label design will be inverted when the user port is activated.
Off	The label design will not be inverted.

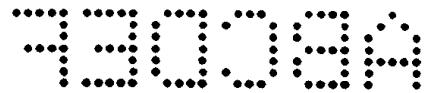
- (5) Select the Save icon to save the setting.



End of procedure.

Reverse Mode

Reverse mode is used to reverse an individual label design as shown in the illustration below.



This setting can be configured to reverse the label design for a specified number of times, before reversing the label back for the same number of times. Furthermore, this setting can be configured to reverse the label when the printer's user port is activated.

- Notes:*
- (1) A global reverse setting is available to reverse all label designs. However, the global setting does not allow the number of reversed prints to be counted. Also, the global setting does not allow reversed prints to be triggered by a user port, see [page 4-62](#).
 - (2) If required, the label can also be inverted on the Print optimisation screen, see [page 4-9](#).

To setup reverse mode for an individual label design:

- (1) In the label creator's side menu, select the *Label* tab.
- (2) Select the *Settings* menu.
- (3) Select the *Reverse mode* drop down setting.
- (4) Select and configure one of the options described in the table below:

Setting Name	Explanation
On - Always	The label design will be reversed at all times.
On - Counted	<p>The label design will be reversed for a specified number of prints. When this option is selected, the settings described below will also be displayed:</p> <p>Reverse: Initial orientation - Select the orientation of the first label print.</p> <p>Reverse repeat count - Select the number of times the label will be printed in a reversed orientation.</p>
On User port	The label design will be reversed when the user port is activated.
Off	The label design will not be reversed.

- (5) Select the Save icon to save the setting.



End of procedure.

Repeat Mode

Repeat mode can be configured to repeatedly print an individual label design for a specified number of times after a single print trigger signal is received. Repeat mode can also be configured to repeatedly print the label design when a continuous print trigger signal is received.

Note: A global repeat setting is available to repeat print all label designs, see [page 4-57](#).

To setup repeat mode for an individual label design:

- (1) In the label creator's side menu, select the *Label* tab.
- (2) Select the *Settings* menu.
- (3) Select the *Repeat mode* drop down setting.
- (4) Select and configure one of the options described in the table below:

Setting Name	Explanation
Off	The label design will not be repeated.
Counted	<p>The label design will be repeated for a specified number of prints. When this option is selected, the settings described below will also be displayed:</p> <p>Repeat count - Enter the number of times to repeat the current label. The number of repeat counts is extra to the initial print, i.e. 6 will print 6 extra prints (7 in total).</p> <p>Repeat spacing mode - Select how the distance between each print is measured. Select, <i>Space by pitch</i> to measure the distance in print strokes. Or, select <i>Space by gap</i> to measure the distance using the gap between characters.</p> <p>Repeat spacing - Set the distance from the start of one print to the start of the next.</p> <p>Repeat: Update each print - Tick to update clock and counter information each print. Or, Untick to keep the same information on each print.</p> <p>Repeat: End of product - Define when and how to stop repeat printing. Select <i>Ignore</i> to ignore the print trigger signal and continue printing. Select <i>Complete</i> to complete the next print. Select <i>Cancel</i> to stop before the next print.</p>

Setting Name	Explanation
Continuous	<p>Continuously repeat print the label when a constant print trigger signal is received by the printer. The printer will stop printing when the print trigger signal stops. When this option is selected, the settings described below will also be displayed:</p> <p>Repeat spacing mode - Select how the distance between each print is measured. Select, <i>Space by pitch</i> to measure the distance in print strokes. Or, select <i>Space by gap</i> to measure the distance using the gap between characters.</p> <p>Repeat spacing - Set the distance from the start of one print to the start of the next.</p> <p>Repeat: Update each print - Tick to update clock and counter information each print. Or, Untick to keep the same information on each print.</p> <p>Repeat: End of product - Define when and how to stop continuous print. Select <i>Complete</i> to complete the next print. Select <i>Cancel</i> to stop before the next print.</p>

(5) Select the Save icon to save the setting.



End of procedure.

Shift Codes

Shift codes is used to create a shift code table which can be inserted into the label design.

To create a shift code table

- (1) In the label creator's side menu, select the *Label* tab.
- (2) Select the *Settings* menu.
- (3) Select *Shift codes*.
- (4) Select the *Name* setting and enter the name of the shift code table
- (5) Select *View...*
- (6) Select *+Add row...*
- (7) Enter a *Start time* and a *Code* for the first shift.
- (8) To add more shifts select *+Add row...*
- (9) Select *Save* to confirm the shift codes.
- (10) Select the green *Tick* icon to save the shift code table.
- (11) To add the shift code table into the label design, see [page 4-44](#).

End of procedure.

Label Elements

The text, barcode and graphic items which make up label designs are known as elements.

The following pages explain how to add and edit different label elements.

Add a Text Element

To add a text element into a label design:

- (1) In the label creator's side menu select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Enter the required text using the on screen keyboard.

Note: The keyboard type and language can be changed by selecting the appropriate icon at the bottom of the text entry screen.

- (5) Select the green *Tick* icon to add the text element to the label design.
- (6) Select the *Save* icon to save the label design.



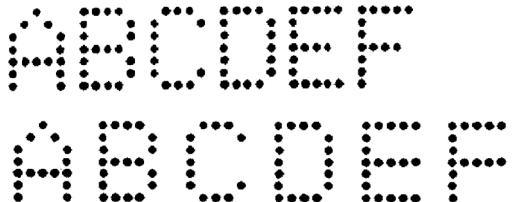
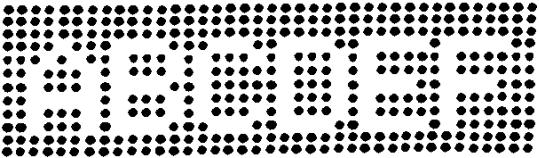
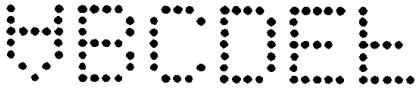
End of procedure.

Edit a Text Element

To edit a text element in the label design:

- (1) Select the text element that requires editing.
- (2) In the label creator's side menu select the *Element* tab.
- (3) Select the *Edit* menu.
- (4) The following settings can now be used to edit the text element:

Setting Name	Explanation
Name	Edit the name of the element.
Font type	Select either: <i>Fixed</i> - Each character will take up an equal amount of horizontal space. <i>Proportional</i> - Each character will take up the amount of horizontal space required for that specific character only.
Font	Change the height of the text in ink drops.
Bold	Print text in bold. Range: 0-3 Set to 1 in the example below. 

Setting Name	Explanation
Inter-character gap (strokes)	Vary the gap between text characters. Range: 1-50 
Invert black/white	Invert the printed and unprinted parts of the text element. 
Invert	Invert the text element. 
Reverse	Reverse the text element. 
	Open the keyboard to edit the text. <p><i>Note: The keyboard type and language can be changed by selecting the appropriate icon at the bottom of the text entry screen.</i></p>
	Copy the text element.
	Delete the text element.

- (5) Select the Save icon to save the change.



End of procedure.

Unicode

To add a Unicode character into a text element:

- (1) When editing or creating a new text element, select the *Unicode* icon in the text entry screen.



- (2) Enter the Unicode value:

Common Unicode Characters			
00A3	Pound (Sterling)	20AA	Shekel (Israel)
0024	Dollar (US)	20AB	Dong (Vietnam)
00A2	Cent (US)	20A2	Cruzerio (Brazil)
00A5	Yen (Japan)	20A6	Naira (Nigeria)
20AC	Euro	20A8	Rupee
20A1	Colon (Costa Rica)	20A9	Won (South Korea)

- (3) Select the green *Tick* icon to enter the Unicode character into the text element.
- (4) Select the Save icon to save the label design.



End of procedure.

Input Method Editor (IME)

Entered in a similar manner to entering Unicode characters.

- (1) When editing or creating a new text element, select the *IME* icon in the text entry screen.



- (2) Enter the required characters.
- (3) Select the green *Tick* icon to enter the IME character into the text element.
- (4) Select the Save icon to save the label design.



End of procedure.

Add a Barcode Element

Notes: (1) The printer can currently print 10x10, 12x12, 14x14, 16x16, 18x18, 20x20, 22x22, 24x24, 26x26, 32x32, 8x18, 8x32, 12x26, 12x36, 16x36, and 16x48 data matrix symbols. The amount of data that can be contained within a data matrix symbol is dependant on the data matrix size.

(2) The printer applies a limit of 64 characters to unrestricted codes.

To add a barcode element into the label design:

- (1) In the label creator's side menu, select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Barcode*.
- (4) Enter the required barcode data using the keyboard.

Note: The keyboard type can be changed by selecting the appropriate icon at the bottom of the data entry screen.

- (5) Select the green *Tick* icon to add the barcode data to the label design.
- (6) In the label design area, select the barcode.
- (7) In the side menu, select the *Element* tab.
- (8) Select the *Edit* menu.
- (9) The following barcode settings can now be defined:

Setting Name	Explanation
Name	Enter the name of the barcode element.
Type	Select the barcode type: Code 39, Code 93, Code 128, Code 2 of 5 standard, Code 2 of 5 industrial, Code 2 of 5 interleaved, ITF 14, EAN 8, EAN 13, UPC A, UPC E, EAN 128, USPS intelligent mail package, Postnet 5 Postnet 6, Postnet 9, Postnet 10, Postnet 11, Postnet 12, Data Matrix, QRCode, ISSN Dotcode, Han Xin.
Height (drops)	Specify the height of the barcode in ink drops.
Module width	Specify the barcode module width. Range: 1-10
Show human readable code	Tick the <i>Show human readable code</i> tick box to display the barcode data in human readable text underneath the barcode.
Bearer bars	Tick the <i>Bearer bars</i> tick box to add bearer bars above and below the barcode.
Bearer box	Tick the <i>Bearer box</i> tick box to add a bearer box around the barcode.
Bar width ratios	Specify the width ratio between the widest and thinnest bar in the barcode.
Space width ratios	Specify the width ratio between the widest and thinnest space in the barcode.
Invert black/white	Invert the printed and unprinted parts of the barcode element.

Setting Name	Explanation
Invert	Flip the barcode upside down.
Reverse	Reverse the barcode.
Rotation	Rotate the barcode by 0° 90° 180° or 270°.
Check digit algorithm	If required, select a check digit algorithm. Default setting: None
Quite zone: Left	Add an empty area to the left of the barcode.
Quite zone: Right	Add an empty area to the right of the barcode.

(10) Select the Save icon to save the change.



End of procedure.

Add a Graphic Element

To insert a graphic element into the label:

- (1) In the label creator's side menu, select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Graphics*.
- (4) Select the required graphic from the *Images* folder.
- (5) Select the Save icon to save the change.



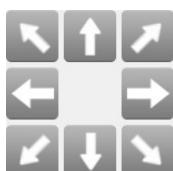
End of procedure.

Create a Logo

Logos are created and stored in the *Images* folder.

To create a logo:

- (1) Select *Home > Setup > Tools*.
 - (2) Use the *Width* and *Height* settings to specify the width and height of the logo design area.
- Note:** *This will define the size occupied by the logo even if the content is smaller than this size.*
- (3) Use the Arrow icons to place the cursor in the required position.



- (4) Click on the *Paint Brush* icon and draw the logo by moving the brush using the Arrow icons.



- (5) Click on the *Eraser* icon to remove pixels where required.



- (6) Select the *Save As* icon to save the image to the *Images* folder.



- (7) Enter a filename for the logo in the *Name* text box.
- (8) Select *Save*.

End of procedure.

Edit a Logo

To edit a logo:

- (1) Select *Home > Setup > Tools.*
- (2) Select the *Folder* icon.



- (3) Select the logo which requires editing.
- (4) Edit the logo as required.
- (5) Save the logo using the Save or Save As icons.



End of procedure.

Variable Label Elements

Variable label elements are elements which contain variable data such as clocks, counters and shift codes.

The following pages explain how to add and edit different variable label elements.

Add a Clock Element

To add a clock element into the label design:

- (1) In the Side-menu, select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Select *+Variable* at the top of the screen.
- (5) Select *+Create new...*
- (6) Select *Clock*.
- (7) The following clock settings can now be defined:

Setting Name	Explanation
Format	<p>Input the required date format:</p> <p>HH - Hour with leading zero, 24 hour clock (00-23) hh - Hour with leading zero, 12 hour clock (01-12) H - Hour code QQ - Quarter hour code (00-95) mm - Minute with leading zero (00-59) ss - (Second with leading zero (00-59) AMPM - AM or PM AP - A or P DD - Day of the month with leading zero (01-31) JJJ - Julian day of the year (0001-366) Y - Julian year of the decade (0-9) YY - 2 digit year (00-99) YYYY - 4 digit year (0000-9999) MM - Month number with leading zero (01-12) PGMM - Month name (January-December) M - Month code Q - Quarter year code (five year cycle) QD - Day in the quarter PGDDD - Day name (Monday-Sunday) WW - Calendar week number (01-53) D - Day of the week (1-7) A7 - Day of week code A31 - Day of month code</p>
Calendar	Select the calendar type: <ul style="list-style-type: none"> • Gregorian • Jalali • Hijri

Setting Name	Explanation
Offset	If required, an offset value can be set in years, months, days, hours, minutes and seconds.
Language	Select the language: <ul style="list-style-type: none">• Western• Arabic• Farsi

- (8) Select the green *Tick* icon to confirm the clock settings.
- (9) Select the green *Tick* icon to add the clock element to the label design.
- (10) Select the Save icon to save the change.



End of procedure.

Add a Counter Element

To add a counter element to the label design:

- (1) In the label creator's side menu, select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Select *+Variable* at the top of the screen.
- (5) Select *+Create new...*
- (6) Select *Counter*.
- (7) The following counter settings can now be defined:

Setting Name	Explanation
Name	Enter the name of the counter element.
Format	<p>Input the required counter format:</p> <p>0 - Mandatory numeric character (0-9) L - Mandatory alpha character (A-Z or a-z)</p>
Start Value / Prompt	Input the counter start value, or tick the <i>Prompt</i> tick box to prompt the user to input a counter start value when printing starts.
Repeat count	Enter the number of times the same counter value will be repeated.
Show additional properties	Tick the <i>Show additional properties</i> tick box to show more counter settings.
Step	<p>Enter the number of steps the counter should count in. For example, if the Step value is set to 5, the counter will count in the sequence: 5, 10, 15, 20, etc.</p>
Lower limit	Enter the minimum counter value.
Upper limit	Enter the maximum counter value.
Leading zeros	Tick the <i>Leading zeros</i> tick box to add padding characters to the counter.
Padding character	If the <i>Leading zeros</i> tick box has been ticked, this setting is used to define the padding character that will be used in the counter.
Trigger	<p>Specify what method will trigger the counter value to increase:</p> <p>Product Detect - The counter will be triggered each time a product detect signal is received.</p> <p>User Port - The counter will be triggered by an external device connected to the printers user port.</p> <p>Another Counter - The counter will be triggered by another counter element within the label design.</p>

Setting Name	Explanation
Language	Select the language: <ul style="list-style-type: none"> • Western • Arabic • Farsi
Store persistent counter value	Select when the counter value is saved: <ul style="list-style-type: none"> • never • on print start • on print complete

- (8) Select the green *Tick* icon to confirm the counter settings.
- (9) Select the green *Tick* icon to add the counter element to the label design.
- (10) Select the Save icon to save the change.



End of procedure.

Add a Prompted Field Element

When a label containing a prompted field element is sent to print, the operator will be prompted to update data in the prompted field element before printing can start.

The type of data that can be entered into a prompted field element can be Time, Date or Text.

To add a prompted field element into the label design:

- (1) In the *Side* menu select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Select *+Variable* at the top of the screen.
- (5) Select *+Create new...*
- (6) Select *Prompted field*.
- (7) The following prompted field settings can now be defined:

Setting Name	Explanation
Name	Enter the name of the prompted field element.
Type	Select the type of prompted field: None - The user will be prompted to enter standard text. Clock - The user will be prompted to enter a date. Time Conditional - The user will be prompted to enter a time.
Prompt	Enter a prompt message which will be displayed to the operator to prompt when the label is sent to print.
Input mask	If Type is set to None, enter the number and type of characters which the operator must input. If Type is set to Clock or Time Conditional, enter the format the operator must use to input the date or time.
Output format	Enter the format which the clock or time will be printed in. <i>Note:</i> This setting is only valid if Type is set to Clock or Time Conditional.
Language	Select the clock or date language. <i>Note:</i> This setting is only valid if Type is set to Clock or Time Conditional.

- (8) Select the green *Tick* icon to confirm the prompted field settings.
- (9) Select the green *Tick* icon to add the prompted field element to the label design.
- (10) Select the Save icon to save the change.



End of procedure.

Add a Link Element

A link element can be used to print data contained within another label element. For example, the data contained within a barcode can be linked and printed as human readable text elsewhere in the same label design.

To add a link element into the label design:

- (1) In the *Side* menu select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Select *+Variable* at the top of the screen.
- (5) Select *+Create new...*
- (6) Select *Link*.
- (7) The following link settings can now be defined:

Setting Name	Explanation
Source ID	Select the name of the element that will be linked.
Source length	Set the maximum length of the linked data.
Source offset	Add an offset to the linked data.

- (8) Select the green *Tick* icon to confirm the link settings.
- (9) Select the green *Tick* icon to add the link element to the label design.
- (10) Select the Save icon to save the change.



End of procedure.

Add a Link Element

A link element can be used to print data contained within another label element. For example, the data contained within a barcode can be linked and printed as human readable text elsewhere in the same label design.

To add a link element into the label design:

- (1) In the *Side* menu select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Select *+Variable* at the top of the screen.
- (5) Select *+Create new...*
- (6) Select *Link*.
- (7) The following link settings can now be defined:

Setting Name	Explanation
Source ID	Select the name of the element that will be linked.
Source length	Set the maximum length of the linked data.
Source offset	Add an offset to the linked data.

- (8) Select the green *Tick* icon to confirm the link settings.
- (9) Select the green *Tick* icon to add the link element to the label design.
- (10) Select the Save icon to save the change.



End of procedure.

Add a Script Element

The script element can be used to add a custom script into the label design.

To add a script element into the label design:

- (1) In the Side menu select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Select *+Variable* at the top of the screen.
- (5) Select *+Create new...*
- (6) Select *Script*.
- (7) Select *Source*.
- (8) Navigate to the location of the script file and select it.
- (9) Select the green *Tick* icon to confirm the correct script file has been selected.
- (10) Select the green *Tick* icon to add the script element to the label design.
- (11) Select the *Save* icon to save the change.



End of procedure.

Add a Shift Code Element

A shift code element can be used to print data from a shift code table.

Note: A shift code table must be created before a shift code element can be added to the label design. To create a shift code table see [page 4-28](#).

To add an shift code element into the label design:

- (1) In the Side menu select the *Element* tab.
- (2) Select the *Add* menu.
- (3) Select *Text*.
- (4) Select *+Variable* at the top of the screen.
- (5) Select *+Create new...*
- (6) Select *Shift code*.
- (7) Select the *Shift-code table* drop down menu.
- (8) Select the required shift code table.
- (9) Select the green *Tick* icon to confirm the shift code table selection.
- (10) Select the green *Tick* icon to add the shift code element to the label design.
- (11) Select the Save icon to save the change.



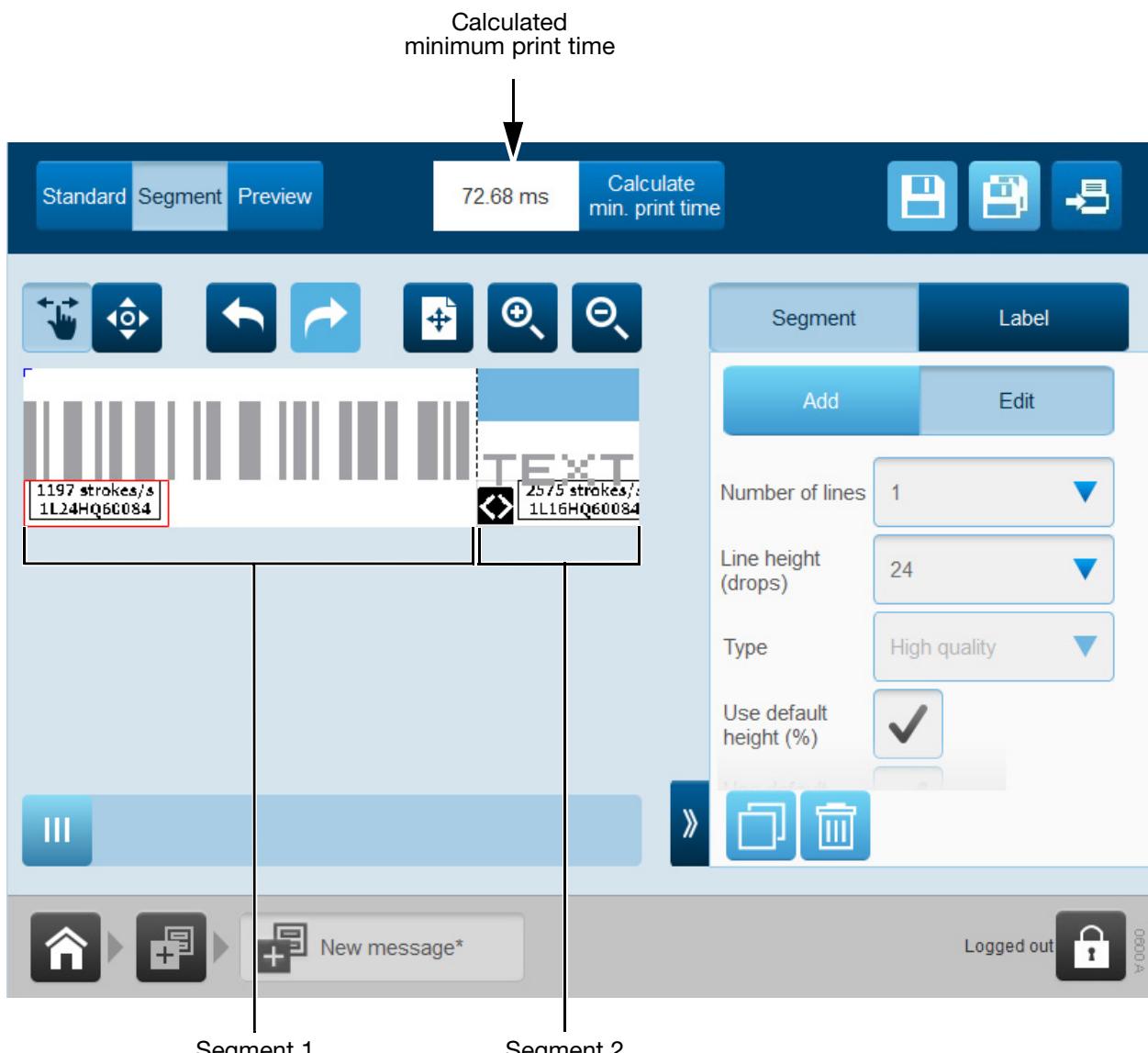
End of procedure.

Label Segments

The label design can be split into segments. Each segment can be customised to improve print quality, lower ink consumption or to decrease the print time. The 3 settings available to customise each segment are *Number of lines*, *Line height* and *Quality*.

The illustration below shows an example of a label design with a barcode element and a text element in 2 different segments. In this example, the first element contains a barcode that requires a high quality print to ensure it can be properly scanned. To achieve this, the *Quality* setting for this segment has been set to *High*.

The text element of the label design has been placed in the second segment. In this example, it is not essential for the quality of the text element to be high. Therefore, the *Quality* setting in the second segment has been set to *Medium*. This enables a faster print time, lower ink consumption and a high quality barcode.



Segment Example

Add a Segment

To add a segment into a label design:

- (1) In the *Label Creator*, select *Segment* at the top of the screen.
- (2) In the side menu, select the *Segment* tab.
- (3) Select the *Add* menu.
- (4) Select the *Add Segment* icon.



- (5) The following segment settings can now be defined:

Setting Name	Explanation
Number of lines	Select the required number of lines, 1, 2, 3 or 5.
Line height (drops)	Select the required height for each line in ink drops.
Type	Select the required label quality.
Use default height (%)	<p>Tick the tick box to use the default print height setting.</p> <p>Untick the tick box to display the <i>Height (%)</i> setting.</p>
Height (%)	<p><i>Note:</i> This setting is only valid if the Use default height (%) tick box is not ticked.</p> <p>Set the print height percentage.</p>
Use default stroke pitch	<p>Tick the tick box to use the default stroke pitch setting.</p> <p>Untick the tick box to display the <i>stroke pitch (mm)</i> setting.</p>
Stroke pitch (mm)	<p><i>Note:</i> This setting is only valid if the Use default stroke pitch tick box is not ticked.</p> <p>Set the distance between print strokes. A stroke is the line of ink drops which is used to make up each printed character.</p>

End of procedure.

Lock Label Elements

Label elements can be locked to stop them from being accidentally edited or moved within the label design.

To lock a label element:

- (1) In the label creator's side menu, select the *Label* tab.
- (2) Select the *Manage* menu.
- (3) Select the element to be locked from the list of elements, or select the element in the label design area.
- (4) Select the Lock icon in the side menu to lock the selected element.
- (5) Select the Save icon to save the setting.



End of procedure.

Calculate Print Time

To calculate the minimum print time of the label, select *Calculate min. print time* at the top of the *Label Creator* screen.

Preview Label

Select *Preview* at the top of the Label Creator to view a preview image of the label design.

Open and Edit a Label

To edit an existing label:

- (1) From the *Home Screen*, select *Label finder*.
- (2) Select the label which requires editing.

The label will open in the Label Creator. To edit the content within the Label Creator:

- (3) Select an element to edit within the label design.
- (4) Edit the item using the available settings in the side menu.

End of procedure.

Copy a Label Element

To copy an element within the label design:

- (1) Select the element to copy.
- (2) In the side menu, select the *Element* tab.
- (3) Select the *Edit* menu.
- (4) Select the *Copy* icon.



- (5) Drag the new element to a suitable position in the label design area.
- (6) Select the Save icon to save the change.



End of procedure.

Copy Multiple Label Elements

To copy multiple elements within the label design:

- (1) In the side menu, select the *Manage* tab.
- (2) Select the tick box next to the name of each element which will be copied.

Note: A red square will be displayed around each selected element in the label design area.

- (3) Select the *Element* tab.
- (4) Select the *Edit* menu.
- (5) Select the *Copy* icon.



- (6) Drag the new elements to suitable positions in the label design area.
- (7) Select the Save icon to save the change.



End of procedure.

Delete a Label Element

To delete an element within the label design:

- (1) Select the element to delete.
- (2) In the side menu, select the *Element* tab.
- (3) Select the *Edit* menu.
- (4) Select the *Delete* icon.



- (5) Select the Save icon to save the change.



End of procedure.

Delete Multiple Label Elements

To delete multiple label elements within the label design:

- (1) In the side menu, select the *Manage* tab.
- (2) Select the tick box next to the name of each element which will be deleted.

Note: A red square will be displayed around each selected element in the label design area.

- (3) Select the *Element* tab.
- (4) Select the *Edit* menu.
- (5) Select the *Delete* icon.



- (6) Select the Save icon to save the change.



End of procedure.

Move a Label Element

To move an element within the label design:

- (1) Select the element to move.
- (2) Either:
 - (a) Select the *Drag* icon and drag the element to move it.



- (b) Select the *Arrows* icon and use the arrows to move the selected element precisely.



- (3) Select the Save icon to save the change.



End of procedure.

Zoom

Select the *Fit to Screen*, *Zoom In* or *Zoom Out* icon to change the magnification of the label area.



Fit to Screen



Zoom In



Zoom Out

Save Label

Once the label has been created:

- (1) Select the Save as icon.



- (2) Give the label a name and select a location.
- (3) Select the Save icon.



End of procedure.

LABEL STORE AND FILE MANAGEMENT

Selecting an Existing Label

Note: Where no label is selected, “No label selected” will be displayed on the Home screen.

To open an existing label:

- (1) On the Home Screen, select *Label finder*.
- (2) Open the required folder from the folder list displayed on the screen.
- (3) If the label name is known, select *Search for a label...* and enter the label’s name. If the label name is not known, swipe the screen vertically to scroll through the available the labels.

Note: Stored labels can be viewed by name, or by name and a preview image:



View labels by name.



View labels by name and preview image.



Refresh the label list.

- (4) When the required label has been found, select either *Print*, *Edit* or *Preview*.

End of procedure.

File Manager

Home > Setup > File Manager

The File Manager is a useful tool for reviewing, organising and editing stored labels, images and scripts. The File Manager can also copy files from USB memory devices.

The following File Manager options are available:

Option Name	Explanation
New Store	Create a new folder to store labels, images and scripts.
Open	Open an existing label store / folder.
Edit	<ul style="list-style-type: none"> • Rename • Copy • Cut • Paste • Delete • Details.

Import Label(s)

Home > Setup > File Manager > USB

To import labels into the printer from a USB flash drive:

- (1) Insert the USB flash drive containing the label files into the USB port on the TouchPanel.
- (2) Wait until the USB icon on the information bar turns green.



- (3) Select *Home > Setup > File Manager*.
- (4) Open the *USB* folder.
- (5) Open the folder which contains the label file.
- (6) Select the *Edit* icon next to the label to be imported.



- (7) Select either *Cut* or *Copy*.
- (8) Navigate to the required label store on the printer.
- (9) Select *Paste*.
- (10) Remove the USB flash drive from the TouchPanel.

End of procedure.

Import Single Jet Labels into Duo Printers

Single jet Ax-Series labels can be imported into a Duo printer in the normal way as described above. However, when the label is opened in the Editor a prompt will appear to specify loading it in the upper, lower or both regions.

Export a Label(s)

Home > Setup > File Manager > USB

To export a label from the printer to a USB flash drive:

- (1) Insert a USB flash drive into the USB port on the TouchPanel.
- (2) Wait until the USB icon on the information bar turns green.



- (3) Select *Home > Setup > File Manager*.
- (4) Navigate to the required label store on the printer.
- (5) Select the *Edit* icon next to the label to be exported.



- (6) Select either *Cut* or *Copy*.
- (7) Navigate to the USB folder.
- (8) Select *Paste*.
- (9) Remove the USB flash drive from the TouchPanel.

End of procedure.

BACKUP PRINTER

There are 3 types of file information that can be saved to a USB device, these are: Full, Labels and Service. These will save different information to a USB memory device: a Full backup will copy the entire printer configuration; a Label backup will copy all the labels in the current label store. Both the Full and Label backups can also be copied (restored) to other printers or retained to restore the original printer settings.

The Service files can be copied from the printer's software files. This provides information for a certified engineer, such as log files, jet characterisation information and email information. These file types cannot be copied back to the printer as they are for information only.

Create a Backup

Home > Setup > Backup & Restore > Backup

- (1) Insert a USB flash drive into the USB port on the TouchPanel.
- (2) Wait until the USB icon on the information bar turns green.



- (3) Select, *Home > Setup > Backup & Restore > Backup*
- (4) Select the files you want to back up by selecting the appropriate tick boxes.
- (5) Select *Backup*.
- (6) Enter text to identify the backup file in the *Optional reference information* box.
- (7) Select *Continue*.

Notes: (1) A full Backup can take up to 40 minutes to complete.

- (2) The files will be copied to a folder called "DominoBackup" on the USB flash drive.
- (3) A prompt will display when the backup is complete, select OK to clear the prompt.
- (4) Remove the USB flash drive from the TouchPanel.

End of procedure.

Restore from a Backup

Home > Setup > Backup & Restore > Restore

CAUTION: *If restoring information to a different printer, it is essential that the printer hardware is of the same version level. Please contact Domino for advice.*

Only Full or Label backup files can be restored to a printer. The information in the backup file will override the current printer settings.

Note: *It is necessary to restart the printer as part of the restore procedure.*

- (1) Insert the USB flash drive containing the backup file(s) into the USB port on the TouchPanel.
- (2) Wait until the USB icon on the information bar turns green.



- (3) Select, *Home > Setup > Backup & Restore > Restore*.
- (4) Select the Source Folder and navigate to the location of the backup file(s).
- (5) Select the backup file(s).
- (6) Select *Restore*.
- (7) A prompt will display showing detailed information about the restore file. Select *Continue labels/full restore* to continue the restore process.

Note: *Full backups and larger label files may take a few minutes to complete.*

- (8) A prompt will display when the backup is complete, select *OK* to clear the prompt.
- (9) Remove the USB flash drive from the TouchPanel.

End of procedure.

EDITOR DEFAULTS

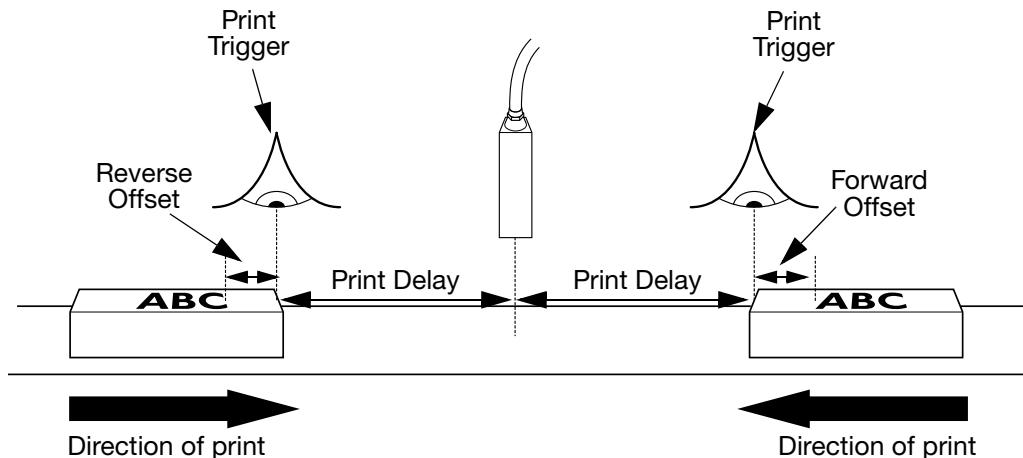
Set the default label settings. New labels will use these defaults.

Print Offset

Home > Setup > Editor Defaults > Properties

The Forward offset is used to adjust the position of the label on the print surface. If the print head is on a traversing line the Reverse offset can also be set.

Note: *This is a global print setting, label designs can also be saved with their own individual print offset, see [page 4-22](#).*



Print Offset Diagram

Repeat Print

Home > Setup > Editor Defaults > Properties

Labels can be repeat printed using one of two different methods. Or, repeat printing can be turned off as described in the table below.

Note: *This is a global setting which will affect all label designs. To configure an individual label design to print repeatedly, see [page 4-26](#).*

Repeat Method	Explanation
Off	Repeat printing will not be enabled.
Counted	Repeatedly print the label for a specified number of times after a single pulsed print trigger signal is received. See page 4-58 .
Continuous	Continuously repeat print the label when a constant print trigger signal is received by the printer. The printer will stop printing when the print trigger signal stops. See page 4-59 .

Counted

To set Counted repeat printing, the following settings must be configured:

Setting Name	Explanation
Repeat	Select <i>Counted</i> .
Repeat count	Enter the number of times to repeat the current label. <i>Note:</i> <i>The number of repeat counts is extra to the initial print, i.e. 6 will print 6 extra prints (7 in total).</i>
Repeat spacing type	Select how the distance between prints is measured: <i>Space by pitch</i> - The distance between the start of one print and the start of the next print measured in print strokes. <i>Space by gap</i> - The distance between the start of one print and the start of the next print measured using the gap between characters.
Repeat Spacing	Set the distance from the start of one print to the start of the next.
Repeat: Update each print	Tick the <i>Update each print</i> tick box to update any clock and counter information contained in the label with each print. Alternatively, Untick the <i>Update each print</i> tick box to keep the same information on each print.
Repeat: End of product	Use the print trigger signal to set the behaviour of repeat printing: <i>Ignore</i> - End of detected product will have no effect on repeat printing. <i>Complete</i> - If the end of product is detected between prints, one more repeat label will be printed. If the end of product is detected while printing a repeat, the print will complete and no further repeats will be printed. <i>Cancel</i> - If the end of product is detected between prints, no further repeats will be printed (and the pending print will be cancelled). If end of product is detected while printing a repeat, the print will complete.

Continuous

To set Continuous Repeat Printing, the following settings must be configured:

Setting Name	Explanation
Repeat	Select <i>Continuous</i> .
Repeat Spacing Type	Select how the distance between prints is measured: <i>Space by pitch</i> - The distance between the start of one print and the start of the next print measured in strokes. <i>Space by gap</i> - The distance between the start of one print and the start of the next print measured using the gap between characters.
Repeat Spacing	Set the distance from the start of one print to the start of the next.
Repeat: Update each print	Tick the <i>Update each print</i> tick box to update any clock and counter information contained in the label with each print. Alternatively, untick the <i>Update each print</i> tick box to keep the same information on each print.
Repeat: End of product	Use the print trigger signal to set the behaviour of repeat printing: <i>Ignore</i> - End of detected product will have no effect on repeat printing. <i>Complete</i> - If end of product is detected between prints, one more repeat label will be printed. If the end of product is detected while printing a repeat, the print will complete and no further repeats will be printed. <i>Cancel</i> - If the end of product is detected between prints, no further repeats will be printed (and the pending print will be cancelled). If end of product is detected while printing a repeat, the print will complete.

Clocks/Dates

Home > Setup > Editor defaults > Clocks / dates

View and change:

- Hour codes.
- Day of week codes.
- Day of month codes.
- Month codes.
- Day names.
- Month names.

REGIONAL SETTINGS

Set the Language and Keyboard

Home > Setup > Regional > Language & keyboard

Set:

- Language
- Keyboard layout
- IME Scheme
- Primary currency.

Set the Master Clock

Home > Setup > Regional > Date & time

Note: The correct System Date and System Time values must be entered to print accurate date or time elements within label designs.

Set:

- System date
- System time (24 hour clock).

GLOBAL PRINT SETTINGS

Note: Engineers certified by Domino can refer to the Engineers Reference Guide for further details of the functionality described in this section.

Position / Orientation

Home > Setup > Global print settings > Position / orientation

- Notes: (1) Everyday adjustments to print height, print delay, invert and reverse should be made on the Print Optimisation screen, see [page 4-9](#).
- (2) These are global settings which will affect all label designs when printed. The Invert and Reverse settings can also be configured and saved with individual label designs, see [page 4-22](#).

Select/set the following:

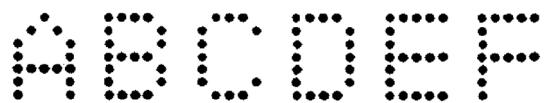
Setting Name	Explanation
Charge scaling(%)	Set the nominal print height by adjusting the charge on the ink drops.
EHT(%)	Set the nominal print height by adjusting the charge on the EHT plates in the print head.
Print delay (mm)	Set the distance between a product sensor detecting a product and the label being printed.
Print height (%)	Adjust the print height percentage.
Invert	Invert the label.
Reverse	Reverse the label.

Appearance

Home > Setup > Global Print Settings > Appearance

Select from the following check boxes:

Setting Name	Explanation
Bold	Print label in bold. (Set to 1 in the example below)
Intercharacter gap	Vary the gap between characters in the label. Activate via the check box. Specify Intercharacter gap via the Label Creator.



Content

Home > Setup > Global Print Settings > Content

Setting Name	Explanation
Script / serial number persistence enabled	On power up, the printer will continue from the value of the script or serial number counter which was valid when the printer was shut down.
Reset all	Reset Persistent Script Variables via the <i>Reset All</i> button.

Behavioural Configuration

Home > Setup > Global Print Settings > Behavioural configuration

Shows current scripts being run.

STATUSES, ALERTS AND FAULT FINDING

Statuses

Shown below are some printer statuses and their explanations. Printer statuses are displayed on the Status tab at the top of the QuickStep interface.

Status Name	Explanation
Off	The ink jet is off and the printer will not print, but the user interface can still be used.
Sequencing On	The printer is getting ready to print. Once completed, the printer will be in a Ready state.
Printhead warming up	The printer is heating the print head to the optimum temperature for the ink.
Ready	The printer is ready to print. If a label is on-line, it will print on receiving a product detect signal.
Sequencing Off	The printer is changing from the Ready state to the Off state.
Gutter clearing in progress	The print head gutter is being cleared to stop ink from drying and blocking the gutter.

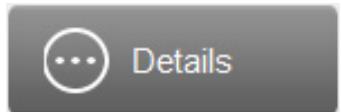
Alerts

Alerts are displayed on the Status tab at the top of the QuickStep interface. When multiple alerts occur only the highest alert will be displayed. If multiple alerts occur, the full list of alerts can be viewed by selecting the status tab.

Common alert ID codes, their causes and remedies are listed on [page 4-66](#).

To clear an alert, or view information about how to solve the alert:

- (1) Select the *Status* tab.
- (2) The icons illustrated below will become available to select.

Icon	Explanation
	<p>Select the <i>Details</i> icon to display the following information:</p> <ul style="list-style-type: none"> • Date and time the alert occurred. • Alert ID number. • Alert level. • Detailed information about the alert. • A solve icon which can be pressed to display recommendations for fixing the problem. • A QR code which can be scanned by a mobile phone or tablet device to show a video or further details about how to solve the alert. • A clear button to acknowledge and clear the alert.
	<p>Select this icon to acknowledge and clear the alert. If this icon is greyed out then an action must be performed before the alert can be cleared.</p>

End of procedure.

Alert ID Codes

The table below describes some alerts which the printer might encounter. The table also lists possible causes and remedies.

If an alert occurs that is not listed in the table:

- Select the *Solve* icon to view options for solving the alert.
- Scan the QR code with a mobile phone or tablet device to show a video or further details about how to solve the alert.
- Contact the local support office for further help.

Alert ID	Description	Possible Cause and Remedy
10	Print Speed too high - Print max speed limit in force	<p>Incorrect print configuration for the production line speed.</p> <p>Reduce the print quality to allow the label to be printed faster, see page 4-21.</p>
15	Deflection EHT has tripped.	<p>Spark across the EHT plates.</p> <p>Run the print height calibration wizard and slightly reduce the <i>EHT (%)</i> value, see page 3-40.</p> <p><i>Note:</i> <i>The EHT (%) value must only be adjusted in small steps.</i></p> <p>Ink build up on charge electrode.</p> <p>Clean the print head, see page 5-17.</p> <p>Partially blocked nozzle.</p> <p>Run the nozzle unblocking wizard, see page 5-18.</p> <p>Ink jet clipping the gutter.</p> <p>Check the ink jet alignment, see page 5-19. Also, check the print height calibration, page 3-40.</p> <p>Excessive print height.</p> <p>Run the print height calibration wizard, see page 3-40.</p> <p>Ink leak at nozzle.</p> <p>Check for ink drops around the nozzle and call an engineer certified by Domino to repair or replace the nozzle.</p>
20	Ink Level Below Minimum	<p>The ink level is running low.</p> <p>Fit a new ink cartridge, see page 5-4.</p>

Alert ID	Description	Possible Cause and Remedy
24	Gutter Dry at Start-up	<p>The printer was not shut down correctly. Clean the print head, see page 5-17 and restart the printer.</p> <p>Blocked nozzle. Run the nozzle unblocking wizard, see page 5-18.</p> <p>Dried ink in the gutter. Clean the print head, see page 5-17 and restart the printer.</p> <p>Ink jet incorrectly aligned. Check the ink jet alignment, see page 5-19.</p>
25	Add make-up cartridge	<p>A new make-up cartridge is required. Fit a new make-up cartridge, see page 5-4.</p>
41	Ink level too high	<p>the ink viscosity has increased and extra make-up has been added to the ink causing the level to increase. Replace the ITM, see page 5-10.</p> <p>Frequent flushing has occurred, either due to repeated start/stop, repeated flushing or cleaning of the print head. Avoid frequent start/stop and shut down the printer before cleaning the print head.</p> <p>The printer has been moved to a different location with the ink and make-up cartridges fitted. Shut down the printer and remove the ink and make-up cartridges before moving the printer.</p>
53	Make-up Level Below Minimum	<p>The make-up level is running low. Fit a new make-up cartridge, see page 5-4.</p>
134	Unexpected shutdown	<p>The printer was not powered off using the correct method. Follow the correct shut down procedure, see page 4-17.</p>

Alert ID	Description	Possible Cause and Remedy
139	Print trigger occurred while printing	The printer received a false trigger signal before the label finished printing. Increase the persistence level for the print trigger, see page 3-38 .
		The product sensor is faulty. Replace the product sensor.
		Label too long for the product. Check the printed label and reduce the label length.
213	Inspection Required	An inspection is required by an engineer certified by Domino. Contact the local support office to organise an inspection.
234	Gutter Stall	The gutter has stalled. Restart the printer following the correct procedure, see page 4-16 . If the fault reoccurs, switch off the printer and contact the local support office.
235	Gutter Pump not Rotating	The gutter pump has stopped. Restart the printer following the correct procedure, see page 4-16 . If the fault reoccurs, switch off the printer and contact the local support office.
236	Gutter Blocked Attempting to Clear	The printer is attempting to clear an obstruction in the gutter.
237	Gutter Blocked	Dried ink in the gutter. Clean the print head, see page 5-17 and restart the printer.
		Incorrect shut down procedure followed. Clean the print head, see page 5-17 and restart the printer.
		Blocked nozzle. Run the nozzle unblocking wizard, see page 5-18 . Ink jet incorrectly aligned. Check the ink jet alignment, see page 5-19 .
		The printer is attempting to increase the vacuum within the gutter. Follow any instructions given on the TouchPanel.

Alert ID	Description	Possible Cause and Remedy
520	Change ITM - ITM Ink Type Incorrect	The ITM which has been fitted is the wrong type. Shut down the printer, remove the ITM and replace it with the correct type, see page 5-10 .
521	Change ITM - ITM Tag Dead	The ITM has reached the end of its life and can no longer be used. Replace the ITM, see page 5-10 .
523	Change ITM - Expired	The ITM has reached the end of its life and can no longer be used. Replace the ITM, see page 5-10 .
524	Insert ITM - No Valid ITM present	No ITM fitted. Fit an ITM, see page 5-10 . ITM not fitted correctly Check that the ITM is correctly fitted in the printer cabinet, see page 5-10 . The RFID tag on the ITM is not working correctly. Replace the ITM, see page 5-10 .
528	Add ink cartridge	A new ink cartridge is required. Fit a new ink cartridge, see page 5-4 .
530	Change Ink Cartridge - Ink Type Incorrect	The printer has detected that the ink cartridge fitted (or offered up to the QMM) is not the correct type. If the cartridge has been fitted, immediately switch off the printer and contact the local support office.
531	Change Ink Cartridge - Ink Cartridge Expired	The ink cartridge has expired and a new cartridge is required. Fit a new ink cartridge, see page 5-4 .
532	Change Ink Cartridge - Empty	The ink cartridge is empty. Fit a new ink cartridge, see page 5-4 .

Alert ID	Description	Possible Cause and Remedy
534	Insert Ink Cartridge - No Valid Ink Cartridge Present	<p>No ink cartridge fitted.</p> <p>Fit an ink cartridge, see page 5-4.</p> <p>Ink cartridge not fitted correctly</p> <p>Check that the ink cartridge is correctly fitted in the printer cabinet, see page 5-4.</p> <p>The RFID tag on the ink cartridge is not working correctly.</p> <p>Replace the ink cartridge, see page 5-4.</p>
539	Insert Make-up Cartridge	<p>A new make-up cartridge is required.</p> <p>Fit a new make-up cartridge, see page 5-4.</p>
540	Make-up low	<p>The make-up level in the make-up module (MUM) is low.</p> <p>Fit a new make-up cartridge, see page 5-4.</p>
542	Change Make-up Cartridge - Cartridge Empty	<p>A new make-up cartridge is required.</p> <p>Fit a new make-up cartridge, see page 5-4.</p>
543	Change Make-up Cartridge - Cartridge Dead	<p>The make-up cartridge has reached the end of its life and can no longer be used.</p> <p>Fit a new make-up cartridge, see page 5-4.</p>
544	Insert Make-up Cartridge - No valid Cartridge present	<p>No make-up cartridge fitted.</p> <p>Fit a make-up cartridge, see page 5-4.</p> <p>Make-up cartridge not fitted correctly</p> <p>Check that the make-up cartridge is correctly fitted in the printer cabinet, see page 5-4.</p> <p>The RFID tag on the make-up cartridge is not working correctly.</p> <p>Replace the make-up cartridge, see page 5-4.</p>
556	Print head warming up	<p>The print head is warming up.</p> <p>If this status persists, contact the local support office.</p>

Alert ID	Description	Possible Cause and Remedy
557	Misaligned jet at start-up	<p>The nozzle is blocked. Run the nozzle unblocking wizard, see page 5-18.</p> <p>The ink jet is misaligned. Check the ink jet alignment, see page 5-19.</p> <p>The gutter is blocked. Clean the print head, page 5-17.</p>
1312	Charge Detection Error	<p>The printer cannot detect ink drops within the charge electrode due to a build of ink of the charge electrode. Clean the print head, page 5-17.</p> <p>The ink jet is not modulating correctly. Check the ink jet modulation and break-up within the charge electrode. If this is not visible contact the local support office.</p> <p>The ink jet is misaligned. Check the ink jet alignment, see page 5-19.</p>
1313	Recovered Successfully	<p>The printer has recovered from a previous fault or alert, no user action should be required.</p> <p>If this alert repeats and the print quality is reduced, contact the local support office.</p>

Fault Finding

Issue	Possible Cause	Remedy
Not Printing, error Gutter Dry is displayed	Blocked Nozzle.	<i>Home > Setup > Wizards > Nozzle unblocking wizard.</i>
Ink on deflector plates and/or charge electrode, possible faults could be: <ul style="list-style-type: none"> • Ink detected on Charge Electrode. • Charge detection has failed. • Fall back jet modulation in use. • Deflection EHT has tripped. 	Blocked Nozzle or dirty print head.	With the printer switched off and unplugged, clean the print head. Refer to page 5-17 .
No print occurs but message has been sent.	Faulty sensor.	Check the sensor and its position.
	Faulty encoder.	Check the encoder is outputting signals (can be seen via the Ext I/F screen).
	Incorrect setting of sensor.	Check that the active level is set correctly.
	Print delay and/or offset set incorrectly.	Check the delay and offset for this message are suitable, adjust as required.
	Enable/Disable (Send to Print) button has been pressed when in the Home screen	This button will toggle printing within the Home screen, so only necessary action is to press button again.

PART 5 : MAINTENANCE

CONTENTS

	Page
GENERAL MAINTENANCE	5-3
Ink and Make-up Cartridge Replacement	5-4
Make-Up Module Filter Replacement	5-8
ITM Replacement	5-10
Air Filter Replacement	5-15
i-PULSE PRINT HEAD MAINTENANCE	5-17
Print Head Cleaning	5-17
Clearing a Blocked Nozzle	5-18
Ink Jet Alignment Check	5-19

MAINTENANCE

THIS PAGE INTENTIONALLY LEFT BLANK

GENERAL MAINTENANCE



- WARNINGS:**
- (1) Protective equipment such as gloves and glasses must be worn when working on or near the printer. Physical contact with ink or make-up can cause skin or eye damage.
 - (2) If the printer is ever operated in a way that allows it to print into a beaker, the beaker must be made of conducting material and be securely connected to earth (ground), as the electrostatic charges on the ink drops used for printing can cause a fire hazard.
 - (3) Do not smoke or allow naked flames (or other sources of ignition) in the vicinity of any inks or solvents as this is highly dangerous.

Ink and Make-up Cartridge Replacement

**WARNING:**

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

CAUTIONS:

- (1) *If the make-up cartridge is not replaced when needed, the make-up module will empty and the ink viscosity will go outside the printer's operating limits.*
- (2) *If the make-up cartridge is not replaced, head flushing will not be carried out when the printer is shut down. Ink may be deposited on the print head components and dry causing a blockage.*

Note:

The used ink and make-up cartridges contain residual chemicals which are hazardous to the environment. Local waste disposal regulations must be followed to safely dispose of the used cartridges.

When the ink or make-up cartridges need to be replaced, the messages 'Add Ink Cartridge' or 'Add Make-up Cartridge' will appear on the TouchPanel status tab. If these messages are ignored, the messages 'Ink Level Below Minimum' and 'Make-up Level Below Minimum' will appear. Also, the amber alert light and the ink or make-up level alert light on the printer cabinet will illuminate.

When the ink or make-up cartridges require replacing immediately, the messages 'Change Ink Cartridge - Empty' or 'Change Make-up Cartridge - Cartridge Empty' will appear on the TouchPanel status tab. Also, the red alert light will illuminate and the ink or make-up light on the printer cabinet will start flashing. If the ink or make-up cartridge is not replaced at this stage, the printer will stop working and will not continue printing until a new cartridge is fitted.

Tools required: 6mm Hex Key.

To replace the ink or make-up cartridge:

- (1) Open the access door to the printer's ink compartment.
- (2) Remove the old cartridges by rotating the ink cartridge anti-clockwise and the make-up cartridge clockwise to free them before lifting the cartridge away.



Removal of Ink and Make-up Cartridges

- (3) Before breaking the tab on the new cartridge and inserting it, hold the cartridge near the Quality Management Module (QMM) to check that the ink or make-up type is correct. The lights on the QMM will flash amber to indicate that the RFID tags are being read. When the RFID tags have successfully been read and validated, the lights will turn green. See “[QMM \(Quality Management Module\) Status Lights](#)” on page 2-17.

Notes:

- (1) If a fault is detected, the QMM lights will turn red and an alert will be displayed on the Status tab.
- (2) If the RFID tag cannot be read, or an RFID tag is not present, the QMM lights will turn solid amber.

MAINTENANCE

- (4) Insert a 6mm hex key into the top of the new cartridge, twist to break the sealing tab and remove the sealing tab.



*Breaking the Make-up
Cartridge Sealing Tab*



*Breaking the Ink Cartridge
Sealing Tab*

- (5) Push the ink cartridge onto the ITM, or push the make-up cartridge onto the make-up module.



*Make-up Cartridge
Replacement*



*Ink Cartridge
Replacement*

MAINTENANCE

- (6) Rotate the ink cartridge clockwise and the make-up cartridge anti-clockwise. Ensure that the label is facing towards you.



Ink and Make-up Cartridge Replacement

- (7) Check for leaks inside the printer.
(8) Close the access door to the printer ink compartment.
(9) Dispose of empty cartridges by following local waste disposal regulations.

End of procedure.

Make-Up Module Filter Replacement


WARNING:

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

CAUTION:

Cleanliness is of extreme importance. Ensure debris does not enter the make-up module during this process or the printer may become damaged. Observe good cleanliness procedures at all times.

Note: *The used make-up module filter contains residual chemicals which are hazardous to the environment. Local waste disposal regulations must be followed to safely dispose of the filter.*

Tools required: 6mm hex key.

The make-up filter is situated in the make-up module. As a user replaceable part it is coloured yellow.

To replace the make-up filter:

- (1) If the printer is on, press and hold the power button  for 2 seconds and wait for the printer to shut down.
- (2) Open the access door to the printer ink compartment.
- (3) If a make-up cartridge is attached to the make-up module, remove it by twisting the cartridge in a clockwise direction and lifting it out of the printer (refer to “[Ink and Make-up Cartridge Replacement](#)” on page 5-4).
- (4) Remove the old make-up filter from the module by inserting a 6mm hex key into the yellow filter top and unscrewing the filter from the module.



Make-Up Module Filter Replacement

MAINTENANCE

- (5) Use the 6mm hex key to screw the new make-up filter into the make-up module.
- (6) Replace the make-up cartridge (if fitted).
- (7) Start the printer and check for leaks.
- (8) Shut the ink compartment access door.
- (9) Dispose of the old make-up filter by following local waste disposal regulations.

End of procedure.

ITM Replacement



- WARNINGS:**
- (1) The printer must be shut down and the power cable must be disconnected before the ITM can be removed. The ink system is pressurised. If the printer is not shut down ink will spray out of the ITM manifold over the person removing the ITM.
 - (2) Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

CAUTION: Cleanliness is of extreme importance. Ensure debris does not enter the new ITM or ink block during this process or the printer may become damaged. Observe good cleanliness procedures at all times.

- Notes:
- (1) Paper towels (or similar) and wash are required for this procedure.
 - (2) Waste paper towels will be contaminated with chemicals which are hazardous to the environment. Local waste disposal regulations must be followed to safely dispose of used paper towels.
 - (3) The used ITM contains residual chemicals which are hazardous to the environment. Local waste disposal regulations must be followed to safely dispose of the used ITM.

The main ink and gutter filters are situated in the ITM and are an integral part of the printer's ink system. Replacement of these filters therefore occurs automatically during scheduled ITM replacement.

The messages, 'The ITM life is soon to expire. Ensure a replacement ITM is available' and 'Intelligent Ink System is in depletion mode to prepare for ITM change' will appear near the end of the ITM life. Printing will not continue beyond the expiry of the ITM life.

The ink system will automatically run down the level of ink in the ink cartridge to a minimum level, so it is usual to replace the ink cartridge at the same time.

To replace the ITM:

- (1) If the printer is on, press and hold the power button  for 2 seconds and wait for the printer to shut down.
- (2) Disconnect the power lead from the rear of the printer.
- (3) Open the access door to the printer ink compartment.
- (4) If an ink cartridge is attached to the ITM, remove it by twisting the cartridge anti-clockwise and lifting it out of the printer.

MAINTENANCE

- (5) Pull the two ITM retaining clips upwards away from the ITM.



Removing the ITM

- (6) Pull the ITM backwards, withdrawing the connecting manifold from the ink block and remove the old ITM.

- Notes:
- (1) *If the ITM does not withdraw with moderate pressure, push the ITM fully forward (which will break any seal caused by dry ink) and try again.*
 - (2) *The manifold pipes will contain residual ink. Take care when removing the ITM to avoid spillage.*
- (7) Unpack the new ITM and remove the sealing strip that protects the ITM manifold.
 - (8) Re-use the sealing strip to seal the manifold on the old ITM.

MAINTENANCE

- (9) Place paper towel or similar on top of the level sensor modules to catch excess fluid and using wash, remove any dried residual ink from the ink block valve face.



Washing the ink block valve face

- (10) Place paper towel or similar under the ITM manifold pipes and lubricate the pipes with wash.



Washing the ITM manifold pipes

MAINTENANCE

(11) Insert the ITM between the retaining clips and push the manifold pipes into the ink block.



Inserting the ITM

(12) Continue pushing until the retaining clips engage with a click.



ITM Clip Engagement

MAINTENANCE

- (13) Re-connect the power lead to the rear of the printer.
- (14) Press and hold the power button  for 2 seconds and wait for the printer to start.
- (15) Attach a new ink cartridge to the ITM or re-use the existing ink cartridge. See, “[Ink and Make-up Cartridge Replacement](#)” on page 5-4.
- (16) Check the ink compartment for leaks.
- (17) The status lights on the Quality Management Module (QMM) will flash amber to indicate that the RFID tags on the ITM, Ink Cartridge and Make-up Cartridge are being read. When the RFID tags have successfully been read and validated, the status lights will turn green.

Notes: (1) *If fault is detected, the QMM status lights will turn red and an alert will be displayed on the Status tab.*

(2) *If the RFID tag cannot be read, or an RFID tag is not present, the QMM status lights will turn solid amber.*



Quality Management Module Status Lights

- (18) Shut the ink compartment access door.
- (19) Dispose of contaminated paper towels and the old ITM by following local waste disposal regulations.

End of procedure.

Air Filter Replacement


WARNING:

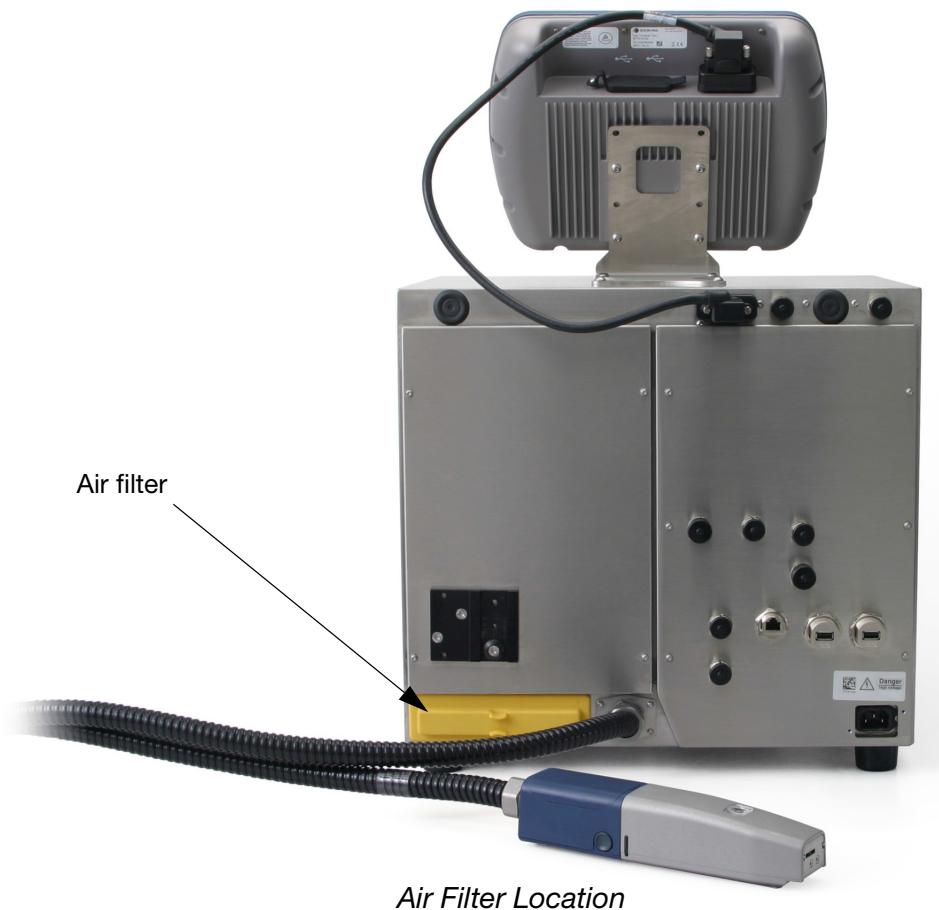
Protective equipment such as gloves and glasses must be worn when this procedure is carried out. The air filter may contain hazardous particles.

Air filter replacement is recommended after every 2000 hours of operation but may need to be replaced sooner depending on the operating environment.

Note: The air filter is not designed to be cleaned, it must be replaced.

A new air filter can be ordered through www.buydomino.com

The air filter is located in a slot at the back of the printer. As a user replaceable part it is coloured yellow.



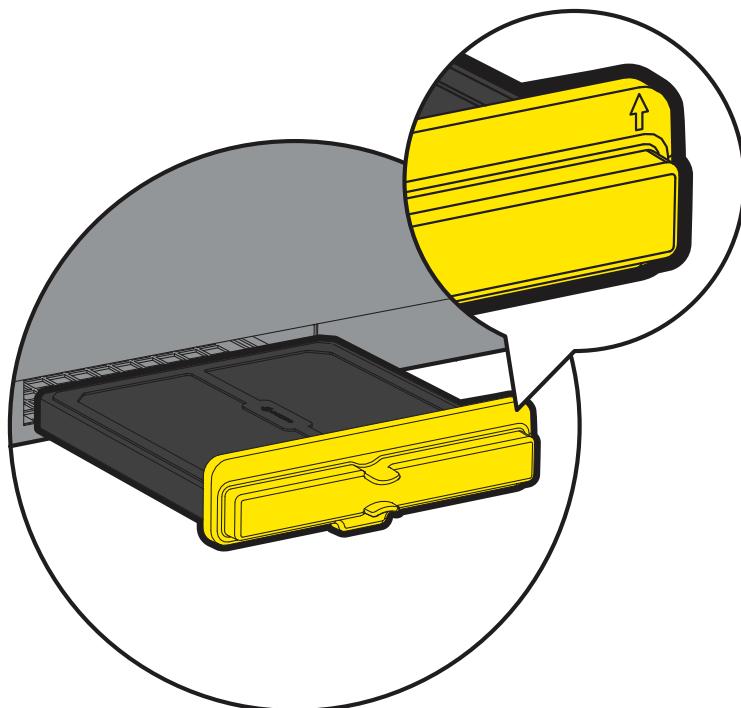
To replace the air filter:

- (1) If the printer is on, press and hold the power button  for 2 seconds and wait for the printer to shut down.
- (2) Remove the air filter by holding the yellow exposed part of the filter and pulling it gently out of the filter housing.

MAINTENANCE

- (3) Replace the air filter with a new unit.

Note: *Ensure the new air filter is correctly orientated by confirming the arrow symbols on the yellow filter moulding are pointing up. If the filter is inserted upside-down it will get stuck in the printer cabinet.*



Filter Orientation

- (4) Press and hold the power button  for 2 seconds to start up the printer.

End of procedure.

i-PULSE PRINT HEAD MAINTENANCE

Print Head Cleaning


WARNING:

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

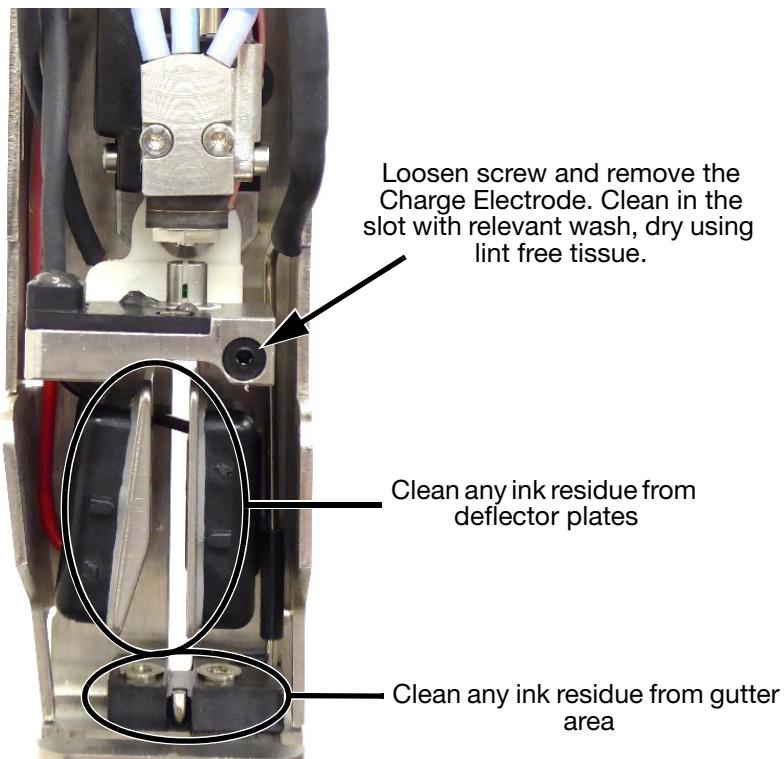
CAUTION:

The printer must be switched off before starting this procedure. If the printer is running whilst this procedure is carried out, wash will enter the gutter and may cause the viscosity of the ink to thin.

Required tools: T6 Torx Driver.

Clean the print head as follows:

- (1) If the printer is on, press and hold the power button  for 2 seconds and wait for the printer to shut down.
- (2) Disconnect the power lead from the rear of the printer.
- (3) At the print head, remove the holster by pressing in the two holster retaining clips on the sides of the print head.
- (4) Remove the internal cover by gently squeezing in the sides to release the clips and lifting the lower part away from the print head and gently pulling downwards.
- (5) Follow the annotated instructions in the following illustration.



i-Pulse Print Head Cleaning

- (6) Replace the print head holster.

End of procedure.

Clearing a Blocked Nozzle

**WARNING:**

Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.

CAUTIONS:

- (1) *Do not run the nozzle unblocking wizard more than 2 times. Each time the wizard is run, the printer adds make-up to the ink. If the wizard is run too many times the ink viscosity will thin and go out of the printer's operating range. If the nozzle is not clear after 2 attempts, contact the local support office to organise a visit from an engineer certified by Domino.*
- (2) *Unless trained, do not attempt to remove the nozzle assembly. Removing the nozzle assembly can cause contamination to enter the ink system. The nozzle assembly is also tuned to the print head and will require re-tuning if removed.*

Clear a blocked nozzle as follows:

- (1) On the TouchPanel, select *Home > Setup > Wizards > Nozzle unblocking wizard*.
- (2) Select *Start nozzle unblocking*.
- (3) Follow the on screen instructions.

End of procedure.

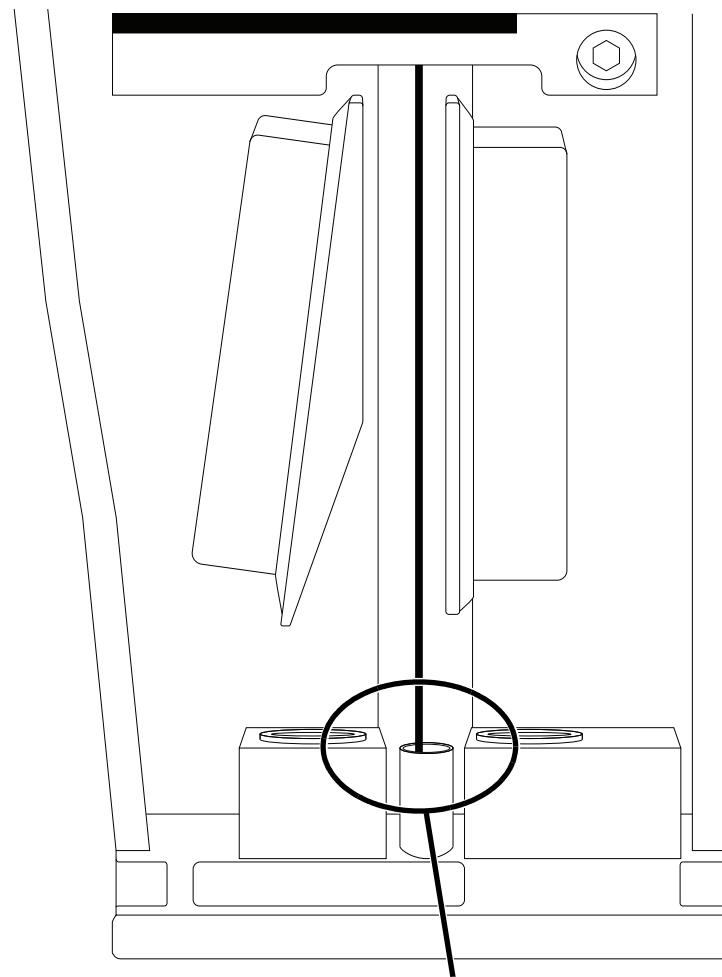
Ink Jet Alignment Check



- WARNINGS:**
- (1) Protective equipment such as gloves and glasses must be worn when this procedure is carried out. Physical contact with printer ink or make-up can cause skin or eye damage.
 - (2) The print head must be placed in a wash station, or positioned over a beaker made of a conducting material and securely connected to earth (ground) in case the jet is misaligned out of the gutter. The electrostatic charges on the ink drops used for printing can cause a fire hazard.

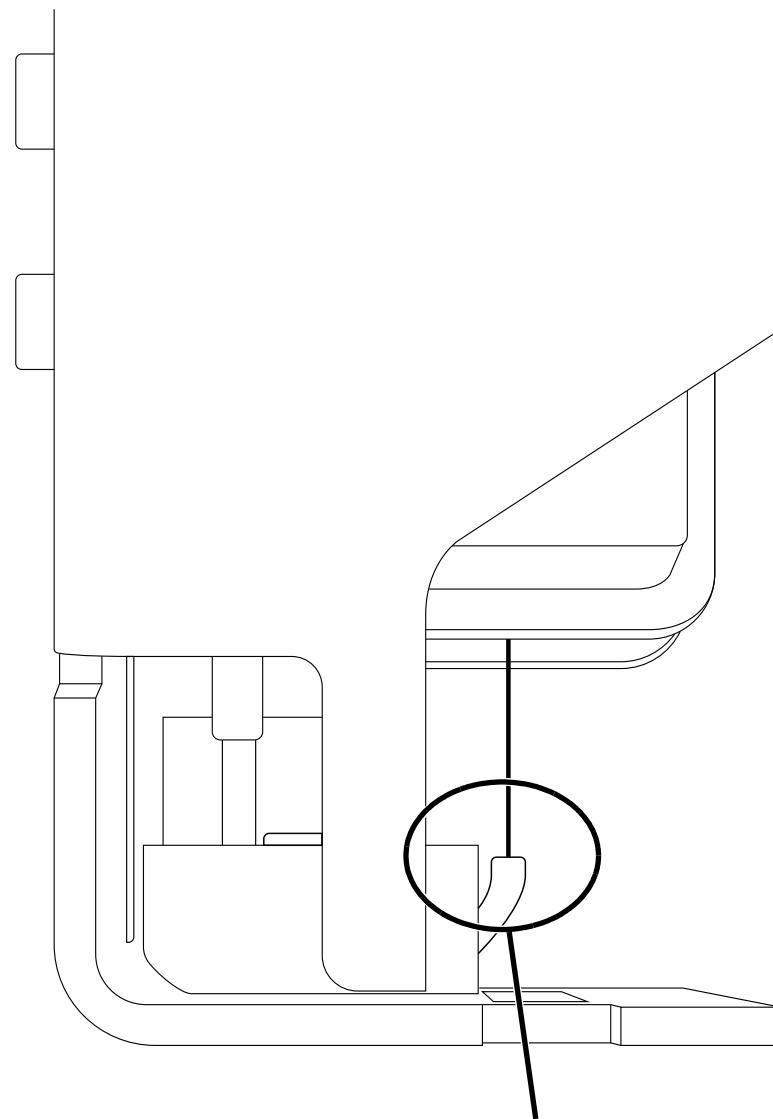
Check the ink jet alignment as follows:

- (1) Remove the holster from the print head by pressing in the two holster retaining clips and withdrawing the holster.
- (2) Fit the print head into a wash station, or place a beaker made of a conducting material and connected to earth (ground) underneath the print head.
- (3) With the ink jet running, check the position that the ink jet enters the gutter as shown in the following diagrams.



Ink jet $\frac{1}{3}$ from the left side of the gutter wall.

Ink Jet Alignment Viewed from the Front



Ink jet in the centre of the gutter.

Ink Jet Alignment Viewed from the Side

- (4) If the alignment is incorrect, an engineer certified by Domino can re-align the ink jet.
- (5) Replace the print head holster.

End of procedure.



Domino Ax-Series User Documentation – Part No. EPT02989I

Domino Printing Sciences plc has a policy of continuous product improvement, the Company therefore reserves the right to modify the specification contained within this document without notice.

© Domino Printing Sciences plc 2016. All rights reserved.

Domino Amjet Inc.
1290 Lakeside Drive
Gumee IL.60031
U.S.A.
Tel: +1 847 244 2501
Fax: +1 847 244 1421
Email: solutions@domino-na.com

Domino Printing Sciences plc
Bar Hill
Cambridge CB23 8TU
England
Tel: +44 (0)1954 782551
Fax: +44 (0)1954 782874
Email: enquiries@domino-uk.com



EPT02989I_1