



# Videojet 1880

## Operator Manual

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# Table of Contents

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<i>Compliance Information</i> .....	<i>i</i>
<i>For Customers in the European Union</i> .....	<i>i</i>
<i>For Customers in the USA</i> .....	<i>i</i>
<i>For Customers in Canada</i> .....	<i>ii</i>
<i>Pour la clientèle du Canada</i> .....	<i>ii</i>
<i>Support and Training</i> .....	<i>iii</i>
<i>Contact Information</i> .....	<i>iii</i>
<i>Service Program</i> .....	<i>iii</i>
<i>Customer Training</i> .....	<i>iii</i>
<b>Section 1 Introduction</b> .....	<b>1-1</b>
1.1 Videojet 1880 Printer .....	1-1
1.2 About the Manual.....	1-2
1.3 Related Publications .....	1-2
1.3.1 Language Codes.....	1-2
1.4 Content Presentation .....	1-4
1.4.1 The Word ‘Printer’ .....	1-4
1.4.2 Positional References .....	1-4
1.4.3 Units of Measurement.....	1-4
1.4.4 Safety Information.....	1-4
1.5 User Interface Terminology.....	1-5
1.6 Abbreviations and Acronyms .....	1-5
1.7 Chapters in this Manual .....	1-6
<b>Section 2 Safety</b> .....	<b>2-1</b>
2.1 Introduction .....	2-1
2.2 General Safety Guidelines .....	2-1
2.3 Electrical Safety Guidelines .....	2-2
2.3.1 Electrical Power Supply .....	2-2
2.3.2 Electrical Cables .....	2-2
2.3.3 Bonding and Grounding .....	2-3
2.3.4 Fuses .....	2-4
2.4 Fluid Safety Guidelines .....	2-4
2.4.1 Read the Material Safety Data Sheets.....	2-4
2.4.2 Ink/Make-up/Cleaning Solution .....	2-5
2.5 Compressed Air Safety Guidelines .....	2-6
2.6 UI Related Safety Guidelines.....	2-6
2.7 Other Important Guidelines.....	2-7
<b>Section 3 Main Parts</b> .....	<b>3-1</b>
3.1 Printer Overview .....	3-1
3.2 Main Parts of the Videojet 1880 Printer .....	3-2
3.2.1 Touch Screen Display .....	3-3
3.2.2 Electronics Compartment.....	3-4
3.2.3 Main Power Switch .....	3-5
3.2.4 Ink Compartment .....	3-6
3.2.5 Standard IO.....	3-12
3.2.6 Expanded IO .....	3-13
3.2.7 Umbilical .....	3-14
3.2.8 Printhead.....	3-14
<b>Section 4 Operation</b> .....	<b>4-1</b>
4.1 How to Turn On the Printer .....	4-1
4.2 Getting Started with the User Interface.....	4-2
4.3 Login and Access Levels .....	4-5

# Table of Contents

---

4.3.1 How to Login.....	4-5
4.4 How to Start the Printer .....	4-6
4.5 How to Select a Job for Print.....	4-6
4.6 Faults and Warnings .....	4-8
4.6.1 Reading a Fault Message or Warning .....	4-9
4.7 How to Print a Job .....	4-10
4.8 Adjusting the Job.....	4-11
4.8.1 Adjusting the Print Position on the Product .....	4-12
4.8.2 Adjusting the Print Scale on the Product .....	4-13
4.9 How to Stop the Print .....	4-14
4.10 How to Stop the Jet .....	4-14
4.11 How to Turn Off the Printer .....	4-15
4.12 How to Connect the USB to the Printer .....	4-15
<b>Section 5 Job Editor.....</b>	<b>5-1</b>
5.1 Accessing the Job Editor .....	5-1
5.2 How to Create a New Job .....	5-2
5.2.1 Job Settings.....	5-6
5.2.2 Add Field .....	5-10
5.3 How to Edit a Job .....	5-32
5.4 Select and Adjust Multiple Fields in Job Editor .....	5-33
5.5 How to Quick Edit a Job .....	5-34
5.6 Example - Create a New Job .....	5-36
5.6.1 To Insert Text .....	5-37
5.6.2 To Insert Date.....	5-37
5.6.3 To Insert Counter.....	5-41
5.6.4 Save the Job.....	5-42
<b>Section 6 User Interface .....</b>	<b>6-1</b>
6.1 Home Screen Description .....	6-1
6.2 Using the Tools Screen .....	6-3
6.2.1 Performance .....	6-4
6.2.2 Consumables.....	6-6
6.2.3 Line Setup .....	6-7
6.2.4 File Manager.....	6-8
6.2.5 Custom Reference Builder .....	6-12
6.2.6 Global Job Settings .....	6-19
6.2.7 Communications .....	6-21
6.2.8 Printer Settings .....	6-25
6.2.9 User Access .....	6-31
6.2.10 Configure Display .....	6-34
6.2.11 Software Download .....	6-36
6.2.12 Maintenance .....	6-39
6.2.13 Diagnostics .....	6-40
6.2.14 Installation .....	6-43
6.2.15 Ink Build-up Sensor * .....	6-44
6.3 Configure Line Setup.....	6-46
6.3.1 Creating A New Line Setup .....	6-46
6.3.2 Product Direction .....	6-47
6.3.3 Printhead Orientation.....	6-48
6.3.4 Print Mode .....	6-49
6.3.5 Print Trigger.....	6-52
6.3.6 Line Speed .....	6-53
6.3.7 Activate the Line Setup.....	6-58

# Table of Contents

---

6.4 Overall Equipment Effectiveness Availability .....	6-59
6.4.1 Introduction .....	6-59
6.4.2 Printer Availability .....	6-59
6.4.3 Operation Availability .....	6-60
6.4.4 Availability Screen.....	6-61
<b>Section 7 Maintenance .....</b>	<b>7-1</b>
7.1 Maintenance Schedule .....	7-2
7.2 Using the Maintenance Tool .....	7-3
7.2.1 Using the Maintenance Instruction Video .....	7-6
7.3 Replacement of Fluid Cartridges .....	7-7
7.3.1 How to Replace the Fluid Cartridges .....	7-7
7.4 Inspect the Printhead .....	7-9
7.5 Clean the Printhead .....	7-10
7.5.1 How to Clean the Printhead .....	7-12
7.6 Clean the Print Cabinet.....	7-14
7.7 Clean the Touch Screen .....	7-15
7.8 Replacement of Air Filter .....	7-16
7.8.1 How to Remove the Air Filter .....	7-16
7.8.2 How to Install the Air Filter .....	7-18
7.9 Preparation for Long-term Shutdown (Storage) or Transportation .....	7-19
7.9.1 How to Prepare for Long-term Shutdown (Storage) or Transportation .....	7-20
<b>Section 8 Troubleshooting.....</b>	<b>8-1</b>
8.1 The Printer Does Not Start.....	8-2
8.2 Incorrect Print Position.....	8-4
8.2.1 Adjusting the Print Position .....	8-4
8.3 Incorrect Print Size.....	8-5
8.4 Print Not Complete.....	8-5
8.5 Poor Print Quality.....	8-6
8.6 Alarm Messages .....	8-7
8.6.1 Clearing an Alarm .....	8-8
8.6.2 Printer Alarms .....	8-10
<b>Appendix A Specifications.....</b>	<b>A-1</b>
A.1 Electrical Specifications.....	A-1
A.2 Weight .....	A-1
A.3 Dimensions.....	A-2
A.4 Optional Accessories.....	A-3
A.4.1 Mobile Printer Stand .....	A-3
A.4.2 Printhead Stand.....	A-4
A.5 Environmental Specifications .....	A-4
A.6 Ink and Make-up Fluid Capacity .....	A-5
A.7 Print Height.....	A-5
A.8 Font Specifications and Line Speeds .....	A-6
<b>Appendix B DataMatrix Limitations &amp; Requirements.....</b>	<b>B-1</b>
B.1 DataMatrix Limitations & Requirements .....	B-1
B.2 DataMatrix Byte Calculation Example .....	B-2

# Compliance Information

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## For Customers in the European Union

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

**EU EMC Directive 2014/30/EU:**

Essential health and safety requirements relating to electromagnetic compatibility.

EN 61000-6-4	Generic Emissions Standard for Heavy Industrial Environments
EN 61000-3-2	Harmonic Current Fluctuations
EN 61000-3-3	Voltage Fluctuation and Flicker
EN 61000-6-2	Generic standards - Immunity for industrial environments

**EC Low Voltage Directive 2014/35/EU**

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

EN 62368-1	Safety requirements for information technology equipment including electrical business equipment.
EN 60529	Degrees of protection provided by enclosures.

**RoHS Directive 2011/65/EU**

EN 50581	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.
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## For Customers in the USA

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

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

### **WARNING**

**PERSONAL INJURY.**

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

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide 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.

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

This equipment has been tested and certified for compliance with U.S. regulations regarding safety and electrical emissions.

This equipment has been investigated in accordance with the standard for safety:  
UL 62368-1: Safety of information technology equipment.

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## For Customers in Canada

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

This equipment has been tested and certified for compliance with Canadian regulations regarding safety and electrical emissions.

This equipment has been investigated in accordance with the standard for safety: CAN/CSA C22.2 No. 62368-1. Safety of information technology equipment.

## Pour la clientèle du Canada

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

Cet équipement est certifié CSA.

Cet appareil a été testé conformément à la norme de sécurité: CAN/CSA C22.2 N° 62368-1. Matériels de traitement de l'information - Sécurité.

### **WARNING**

#### **PERSONAL INJURY.**

This product is not intended for use in the immediate/direct visual field of the display work place. To avoid disturbing reflections on the display work place, this product shall not be placed in the immediate/direct field of vision.

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# Support and Training

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## Contact Information

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

Videojet Technologies Inc.  
1500 Mittel Boulevard  
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## Service Program

Videojet service and support programs are designed to protect your investment in Videojet printers and deliver the lowest total cost of ownership to your operations.

Videojet offers comprehensive service programs, spare parts and training - all designed to help you keep your lines up and running.

- A complete array of customer services and offerings tailored to meet your operational needs
- A program designed to maximize your equipment uptime, allowing you to focus on your most important mission - your company's productivity
- A product and service program to support and deliver your ultimate purchase: a high quality, reliable printed code on your finished product.

## Customer Training

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

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

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



# Section 1 Introduction

This section contains the following information:

- [Videojet 1880 Printer](#)
- [About the Manual](#)
- [Related Publications](#)
- [Content Presentation](#)
- [User Interface Terminology](#)
- [Abbreviations and Acronyms](#)
- [Chapters in this Manual](#)

## 1.1 Videojet 1880 Printer

The Videojet 1880 printer, as shown in [Figure 1-1](#), is a continuous ink jet printer that can print fixed and variable codes at high line speeds on consumer and industrial products. The printer delivers superior uptime, print quality, and ease of use to the operators.

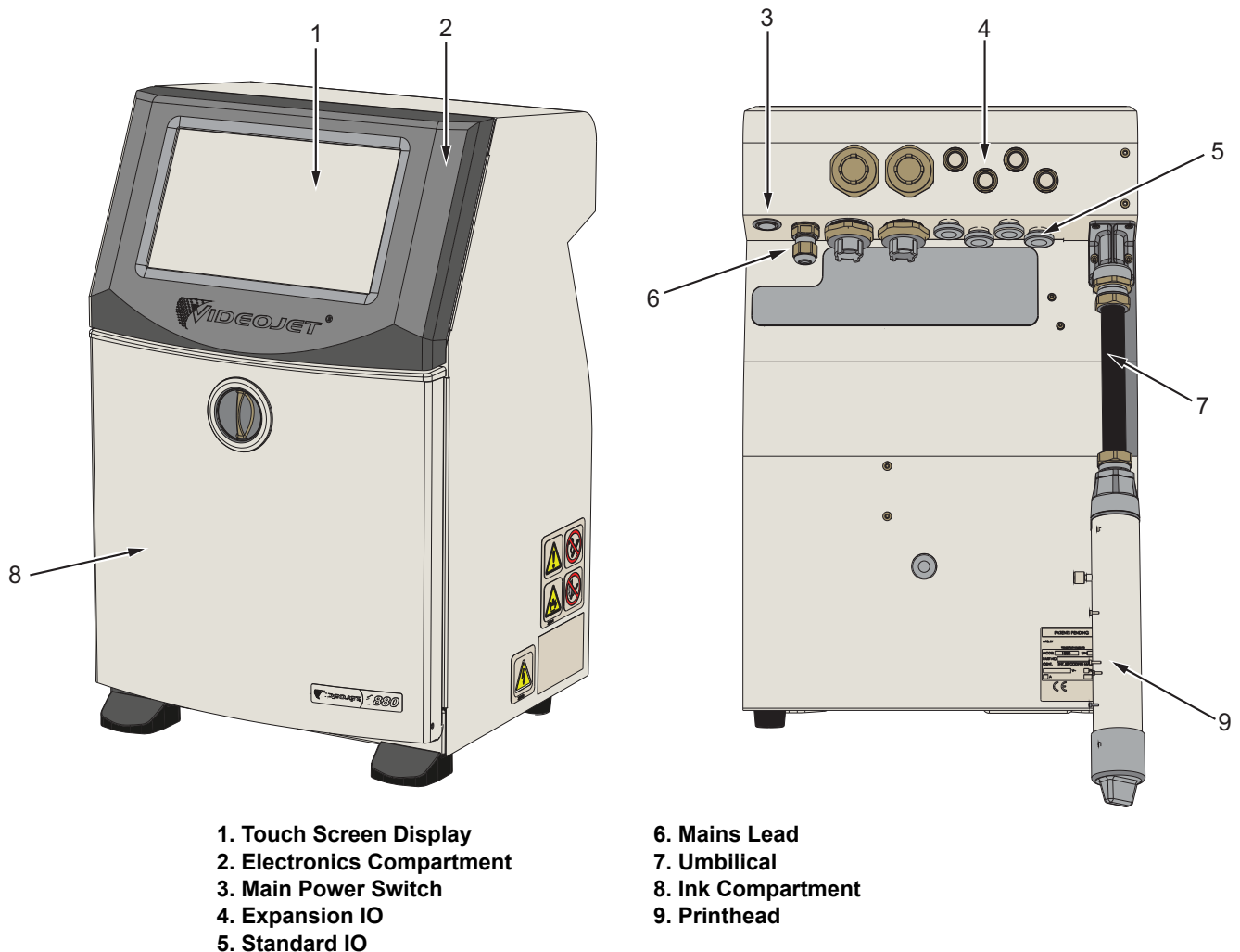


Figure 1-1: Videojet 1880 Printer

## Introduction

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### 1.2 About the Manual

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

### 1.3 Related Publications

The following manual is available for reference:

Videojet 1880 Service Manual, Part Number: 463286.

Videojet 1880 Illustrated Parts Breakdown Manual, Part Number: 463287.

VideojetConnect™ Remote Service, Operator Manual: 462549.

ESI Command Codes Addendum: 463210.

MAXIMiZE Workflow Module: 463301.

#### 1.3.1 Language Codes

Use the list of language codes shown in [Table 1-1](#) to identify the translated versions of the manual. For example, the Spanish version of the operator manual is part number 463285-04.

*Note: Availability of the operator manual is indicated by an asterisk (\*). Availability of the service manual is indicated by a plus sign (+). Please contact the Videojet distributor or subsidiary for more information.*

Code	Language	Availability (see Note:)	
01	English (US)	*	+
02	French	*	+
03	German	*	+
04	Spanish	*	+
05	Portuguese (Brazilian)	*	
06	Japanese	*	
07	Russian	*	
08	Italian	*	
09	Dutch	*	
10	Chinese (Simplified)	*	
11	Arabic	*	
12	Korean	*	
13	Thai	*	
15	Norwegian	*	
16	Finnish	*	
17	Swedish	*	

Table 1-1: Language Codes

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

Table 1-1: Language Codes (continued)

### 1.4 Content Presentation

This manual contains different types of information such as safety guidelines, additional notes, User Interface (UI) terminology and so on. To help you to identify the different types of information, different writing styles are used. This section describes these writing styles.

#### 1.4.1 The Word 'Printer'

The word 'printer' indicates the Videojet 1880 printer, from this point onwards, in this manual.

#### 1.4.2 Positional References

Unless stated to the contrary, positions and directions such as left, right, front, rear, to the right and to the left are given with respect to the printer when viewed from the front.

#### 1.4.3 Units of Measurement

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


#### 1.4.4 Safety Information

The safety information includes warning and caution statements.

##### 1.4.4.1 Warning

The warning statements indicate hazards or unsafe practices that can result in personal injury or death.


For example:

 <b>WARNING</b>
<b>PERSONAL INJURY.</b> The cleaning solution is poisonous if taken internally. Do not drink. Seek medical attention immediately if ingested.

##### 1.4.4.2 Caution

The caution statements indicate hazards or unsafe practices that can result in damage to the equipment.

For example:

 <b>CAUTION</b>
<b>EQUIPMENT DAMAGE.</b> Do not fit or remove any connector on the printer when the power is turned on. The failure to follow this caution can damage the printer.

##### 1.4.4.3 Notes

Notes provide additional information about a particular topic.

For example:

*Note: The user can view the alarm details by clicking on the respective alarm.*

## 1.5 User Interface Terminology

For more information on operating system, refer [Section 6, "User Interface" on page 6-1](#).



Figure 1-2: Menu Screen

## 1.6 Abbreviations and Acronyms

Table 1-2 describes the abbreviations and acronyms included in this manual.

Abbreviation/Acronym	Description
AC	Alternating Current
EHT	Extra High Tension
GUI	Graphic User Interface
IMB	Ink Management Board
LCD	Liquid Crystal Display
MCB	Main Control Board
MSDS	Material Safety Data Sheet
PCB	Printed Circuit Board
UI	User Interface

Table 1-2: Abbreviations and Acronyms

### 1.7 Chapters in this Manual

Table 1-3 provides the list of chapters in this operator manual.

Section No.	Section Name	Description
1.	<a href="#">Introduction</a>	Contains the information about this manual, related publications, and writing styles used in this manual.
2.	<a href="#">Safety</a>	Contains the safety and hazard information.
3.	<a href="#">Main Parts</a>	Contains the description the main parts of the printer.
4.	<a href="#">Operation</a>	Contains the information on how to use the UI to setup and operate the printer.
5.	<a href="#">Job Editor</a>	Contains information on how to create, edit and save jobs.
6.	<a href="#">User Interface</a>	Contains information about user interface.
7.	<a href="#">Maintenance</a>	Provides the maintenance and cleaning procedures of the printer.
8.	<a href="#">Troubleshooting</a>	Contains the operator level diagnostic and troubleshooting procedures.
A.	<a href="#">Specifications</a>	Contains printer specifications.
B.	<a href="#">DataMatrix Limitations &amp; Requirements</a>	Contains datamatrix information.

*Table 1-3: Chapters in the Manual*

## Section 2 Safety

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This section contains the following information:

- [Introduction](#)
- [General Safety Guidelines](#)
- [Electrical Safety Guidelines](#)
- [Fluid Safety Guidelines](#)
- [Compressed Air Safety Guidelines](#)
- [UI Related Safety Guidelines](#)
- [Other Important Guidelines](#)

### 2.1 Introduction

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

The intended use of the printer is to print information directly onto a product. Use of this equipment in any other fashion may lead to serious personal injury.

The safety guidelines provided in this section are intended to educate the operators on all safety issues, so that the printer is serviced and operated in a safe manner.

### 2.2 General Safety Guidelines

- Always refer to the correct service manuals as per the specific Videojet printer model.
- Only Videojet-trained personnel must carry out installation and maintenance work. Any such work undertaken by unauthorized personnel may damage the printer and will invalidate the warranty.
- To avoid damage to the printer components, use only soft brushes and lint-free cloth for cleaning. Do not use high pressure air, cotton waste, or abrasive materials.
- The printhead must be completely dry before attempting to start the printer, otherwise the printhead may get damaged
- Do not fit or remove any connector on the printer when the power is turned on, otherwise the printer may get damaged.

### 2.3 Electrical Safety Guidelines

This section explains the safety guidelines related to electrical power supply, electrical cables, fuses, bonding, and grounding.

#### 2.3.1 Electrical Power Supply

##### **WARNING**

###### **PERSONAL INJURY.**

Lethal voltages are present within this equipment when it is connected to the mains electrical supply. Only trained and authorized personnel must carry out the maintenance work.

##### **WARNING**

###### **PERSONAL INJURY.**

Observe all statutory electrical safety codes and practices. Unless it is necessary to run the printer, disconnect the printer from the mains electrical supply before removing the covers or attempting any service or repair activity. Non-adherence to this warning can result in death or personal injury.

##### **WARNING**

###### **PERSONAL INJURY.**

A high AC voltage is present at the inverter and backlight. Extreme caution is required when diagnosing failure in these areas.

#### 2.3.2 Electrical Cables

##### **WARNING**

###### **PERSONAL INJURY.**

Use only the mains power cable supplied with the printer. The end of this cable must have an approved, three-pole, mains plug that has a protective ground conductor.

The electrical power cables, sockets and plugs must be kept clean and dry.

For pluggable equipment, the socket-outlet must be installed near the equipment and must be easily accessible.

##### **WARNING**

###### **PERSONAL INJURY.**

Always inspect the cables for damage, wear, corrosion, and deterioration. Make all grounding/bonding connections void of areas of paint, ink build-up, and corrosion.



2.3.3 Bonding and Grounding

**⚠ WARNING**

**PERSONAL INJURY.**  
The printer must be connected to an AC power supply that has a protective ground conductor and must be according to IEC requirements or applicable local regulations.

**⚠ WARNING**

**PERSONAL INJURY.**  
Do not use the printer if there is any interruption in the protective ground conductor or if the protective ground conductor is disconnected. The failure to follow this warning can cause an electrical shock.

**⚠ WARNING**

**PERSONAL INJURY.**  
Always ground conductive equipment to an earthing electrode or to the building grounding system with approved cables as per NEC standards in order to drain all potential static discharge. For example, a metal service tray to earth ground.

**⚠ WARNING**

**PERSONAL INJURY.**  
A resistance reading from the grounded service tray to the equipment chassis or mounting bracket should be 0 to less than 1 ohm. A resistance check should be made using a safe and reliable ohmmeter and should be done on a frequent basis.

**⚠ WARNING**

**PERSONAL INJURY.**  
The PCBs contain static sensitive devices. A suitably grounded, antistatic wrist strap must be worn when working on or handling PCBs.

**⚠ WARNING**

**PERSONAL INJURY.**  
Always prevent static discharge from occurring. Use proper Grounding and Bonding methods. Only use Videojet approved metallic service trays and ground cables.

**⚠ WARNING**

**PERSONAL INJURY.**  
Always bond conductive equipment together with approved cables to maintain them at the same potential and minimize static discharge. For example, printhead to metal service tray.

### **WARNING**

#### **PERSONAL INJURY.**

The Optional Wash Station has been solely designed for the cleaning of the printhead.

- Do not use it for purging or printing operations or for any other purposes.
- Always ensure that the jet is stopped and that any hazardous voltages are switched off prior to the commencement of the printhead wash down.

### **CAUTION**

#### **EQUIPMENT DAMAGE.**

Always empty the service trays frequently. Some inks and cleaning solutions are flammable. Make sure that the waste fluids are disposed according to HAZMAT.

### 2.3.4 Fuses

### **WARNING**

#### **PERSONAL INJURY.**

To ensure continued protection against fire hazards, replace fuses only with the specified type and rating.

## 2.4 Fluid Safety Guidelines

This section describes the hazards that may occur while handling ink, make-up fluid, cleaning solutions, and the safety precautions that a user must take to prevent hazards.

### 2.4.1 Read the Material Safety Data Sheets

Read and understand the Material Safety Data Sheet (MSDS) before using any ink, make-up fluid, or cleaning solution. An MSDS exists for each type of ink, make-up fluid, and cleaning solution. For more information, visit [www.videojet.com](http://www.videojet.com) and navigate to *Resources > Safety Data Sheets*.

2.4.2 Ink/Make-up/Cleaning Solution

**⚠ WARNING**

**PERSONAL INJURY.**  
 The ink, make-up fluid and cleaning solution are irritating to the eyes and respiratory system. To prevent personal injury when handling these substances:

- Always wear protective clothing and rubber gloves.
- Always wear goggles with side-shields or a face mask. It is also advisable to wear safety glasses when carrying out maintenance.
- Apply barrier hand cream before handling ink.
- If ink or make-up fluid or cleaning solution contaminates the skin, wash immediately with soap water. DO NOT use washdown or solvent to clean ink stains from the skin. If cleaning solution contaminates the skin, rinse off with running water for at least 15 minutes.

**⚠ WARNING**

**PERSONAL INJURY.**  
 The ink, make-up fluid and cleaning solution are volatile and highly flammable. They must be stored and handled in accordance with local regulations.

- Do not smoke or use a naked flame in the vicinity of these substances.
- Immediately after use, remove any tissue or cloth that becomes saturated with these substances. Dispose all such items in accordance with the local regulations.
- In the event that any ink or make-up fluid or cleaning solution container is not completely empty after use, it should be resealed. Only full bottles are recommended for use when replenishing ink or make-up fluid or cleaning solution; partially filled bottles must be disposed in accordance with the local regulations.

**⚠ WARNING**

**PERSONAL INJURY.**  
 When setting up the nozzle, direct the ink stream into a beaker or suitable container. To avoid the contamination of the ink, do not re-use any ink collected in this way. Dispose all waste ink in accordance with the local regulations.

**⚠ WARNING**

**PERSONAL INJURY.**  
 Prolonged breathing of make-up fluid or cleaning solution may cause drowsiness and/or effects similar to alcoholic intoxication. Use only in open, well-ventilated areas.

**⚠ WARNING**

**PERSONAL INJURY.**  
 The cleaning solution is poisonous if taken internally. Do not drink. Seek medical attention immediately if ingested.

### CAUTION

#### EQUIPMENT DAMAGE.

Make sure that the cleaning solution is compatible with the ink used before carrying out printhead cleaning otherwise the printhead may get damaged.

### CAUTION

#### EQUIPMENT DAMAGE.

Any cleaning solutions containing chloride, including hypochlorite bleaches or hydrochloric acid, can cause unacceptable surface pitting and staining. These should not be used in contact with stainless steels. If wire brushes or wire scouring pads are used, these should be made of stainless steel. Make sure that any abrasive media used is free from sources of contamination, especially iron and chlorides.

## 2.5 Compressed Air Safety Guidelines

### WARNING

#### PERSONAL INJURY.

Airborne particles and substances are a health hazard. Do not use high pressure compressed air for cleaning purposes.

## 2.6 UI Related Safety Guidelines

### CAUTION

#### RISK OF DATA LOSS.

Ensure that the required job is loaded each time before entering the print mode especially after printer power off.

### CAUTION

#### DATA SECURITY.

To prevent unauthorized access to the software, ensure that *Logout* button is selected when exiting from the current user level.

## 2.7 Other Important Guidelines

**⚠ WARNING**

**PERSONAL INJURY.**

If the battery is replaced by an incorrect type, it will lead to an explosion. Always dispose off the used batteries according to the instructions and local regulations.

**⚠ WARNING**

**PERSONAL INJURY.**

In a fault condition, heater can reach 70 °C. Do not touch the plate on which the heater is mounted. The failure to follow this warning can cause personal injury.

**⚠ WARNING**

**PERSONAL INJURY.**

The ink system operates under pressure. Only trained and authorized personnel must carry out the maintenance work.

**⚠ CAUTION**

**EQUIPMENT DAMAGE.**

After a Quick Stop, the machine should not be left in this state for any length of time as drying ink may make restarting difficult. Perform a nozzle backflush.

**⚠ CAUTION**

**EQUIPMENT DAMAGE.**

The printhead must be completely dry before attempting to start the printer otherwise the EHT will trip.

**⚠ CAUTION**

**EQUIPMENT DAMAGE.**

The printer should be placed directly on a flat or solid surface, or bolted to a Videojet supplied stand. In either case the printer must not be operated when tilted. Always keep the printer upright on flat surface.

**⚠ CAUTION**

**EQUIPMENT DAMAGE.**

The printer and printhead contain ink and make-up.

- Do not smoke or use a naked flame in the vicinity of this equipment.
- Please keep the area under and around the printer and printhead clear of obstruction and address any fluid spills immediately.

## Section 3 Main Parts

---

This section contains the following information:

- [Printer Overview](#)
- [Main Parts of the Videojet 1880 Printer](#)

### 3.1 Printer Overview

The printer as shown in the [Figure 3-1](#) is a continuous ink jet printer that can print fixed and variable codes at high line speeds on consumer and industrial products.

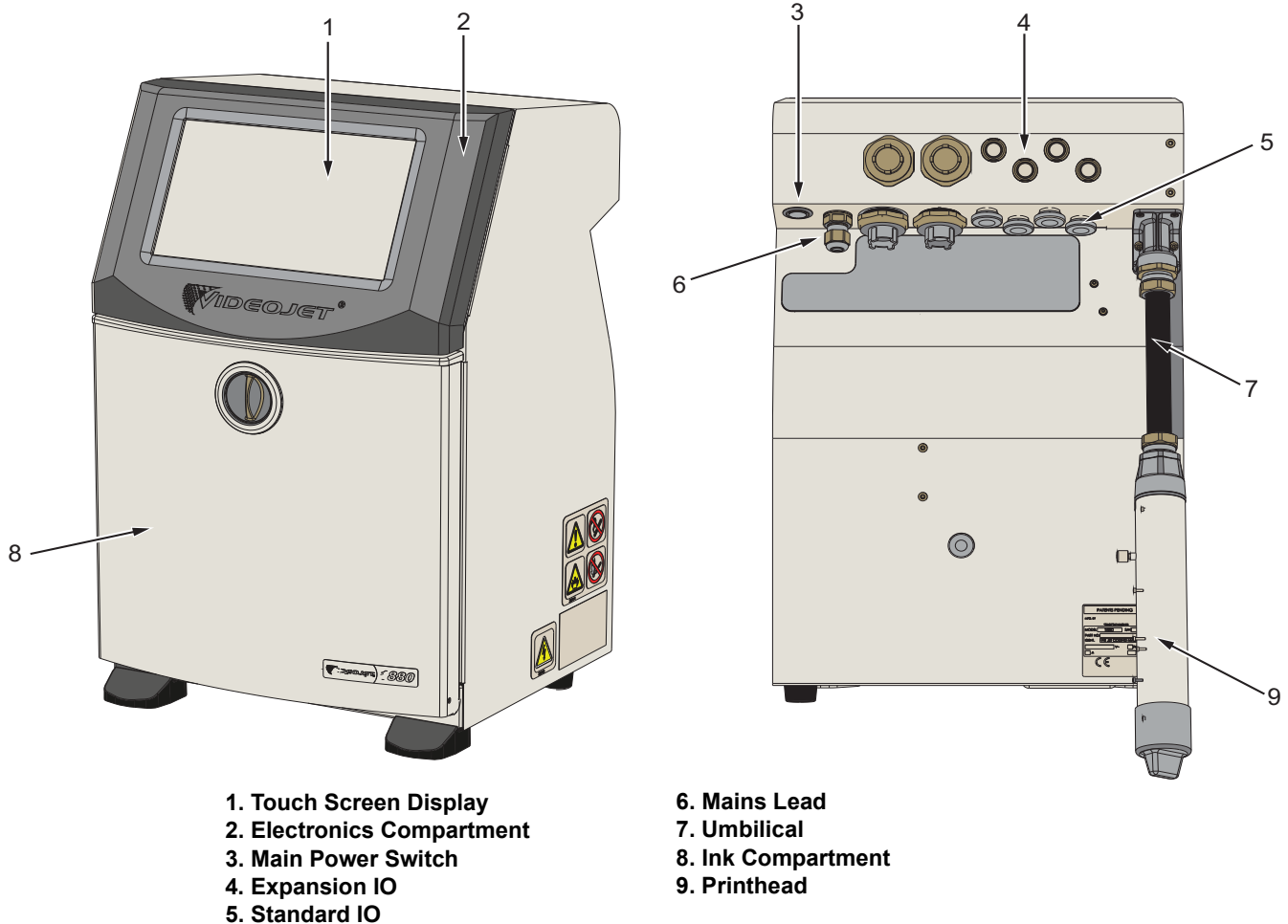


*Figure 3-1: Printer Overview*

### 3.2 Main Parts of the Videojet 1880 Printer

The printer includes the following major parts as shown in [Figure 3-2](#).

- [Touch Screen Display](#)
- [Electronics Compartment](#)
- [Main Power Switch](#)
- [Ink Compartment](#)
- [Standard IO](#)
- [Expanded IO](#)
- [Mains Lead](#)
- [Umbilical](#)
- [Printhead](#)



*Figure 3-2: Main Parts of the Printer*

### 3.2.1 Touch Screen Display

The printer has a 10" LCD touch screen display (see [Figure 3-3](#)). It is mounted on the electronics compartment opening of the cabinet. Printer control is through a Graphic User Interface (GUI).



*Figure 3-3: Display Unit*



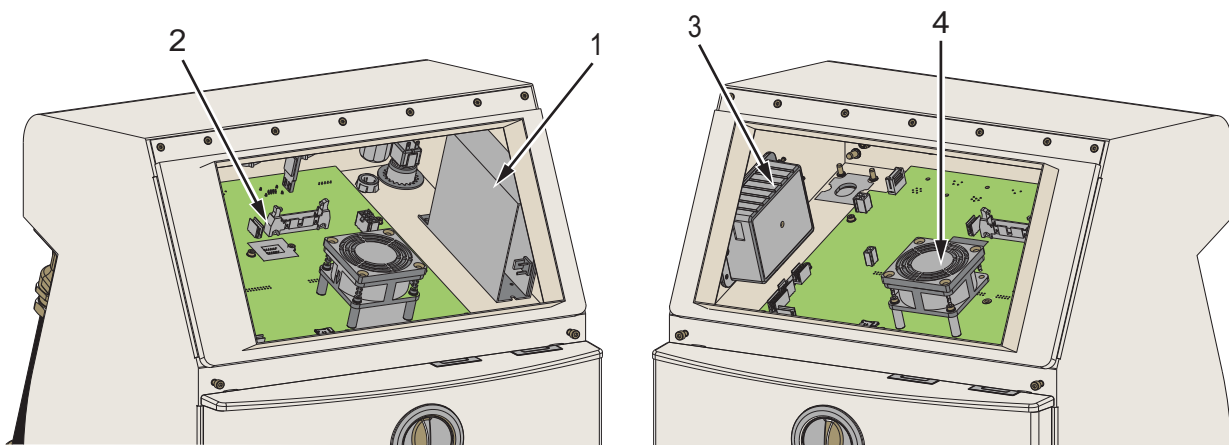
## Main Parts

---

### 3.2.2 Electronics Compartment

Electronics compartment is located behind the touch screen display as shown in [Figure 3-4](#), it consists of the following parts:

- Main Control Board
- Power Supply Unit
- EHT Module
- Expansion Board (optional)
- PEC2 Board (optional)



Different views of the Printer

**1. Power Supply Unit**  
**2. Main Control Board**

**3. EHT Module**  
**4. Electronics Compartment Fan**

*Figure 3-4: Electronics Compartment*

### 3.2.3 Main Power Switch

The main power switch is a push button to turn on or off the power supply to the printer (see [Figure 3-5](#)). The power switch is located at the rear of the printer.

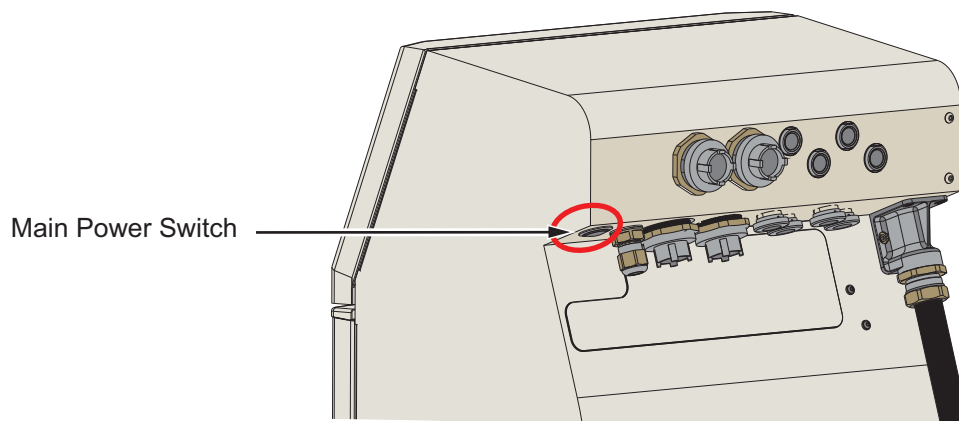


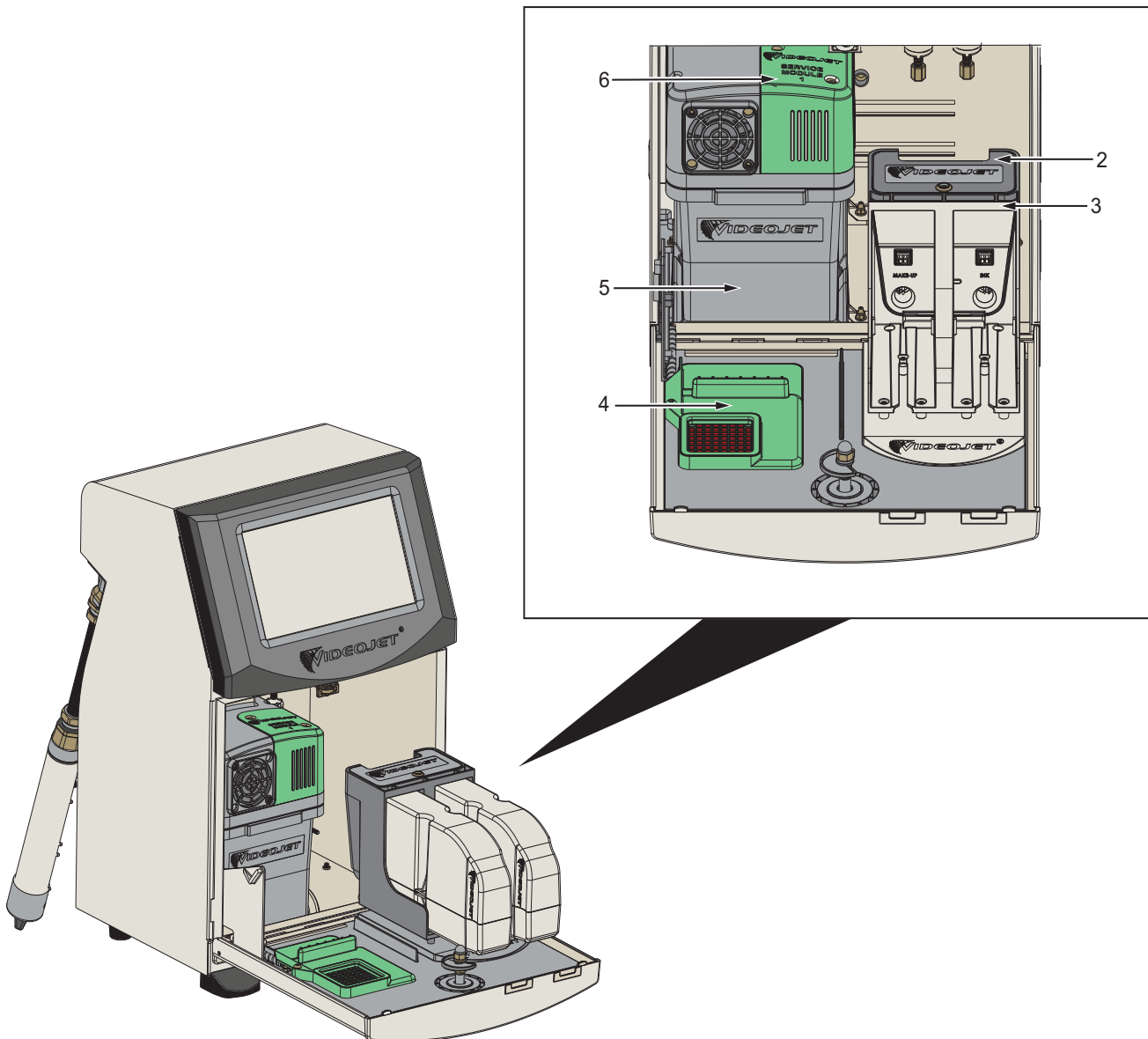
Figure 3-5: Main Power Switch

## Main Parts

### 3.2.4 Ink Compartment

The ink compartment is as shown in [Figure 3-6](#). The major parts in the ink compartment are:

- Fluid Cartridges
- Air Filter
- Solvent Control Module
- Service Module
- Ink System
- Positive Air Pump (optional for IP55)



1. Positive Air Pump Assembly\*
2. Solvent Control Module
3. Fluid Cartridge Holder

4. Air Filter Assembly
5. Ink System
6. Service Module

\* item not shown in illustration

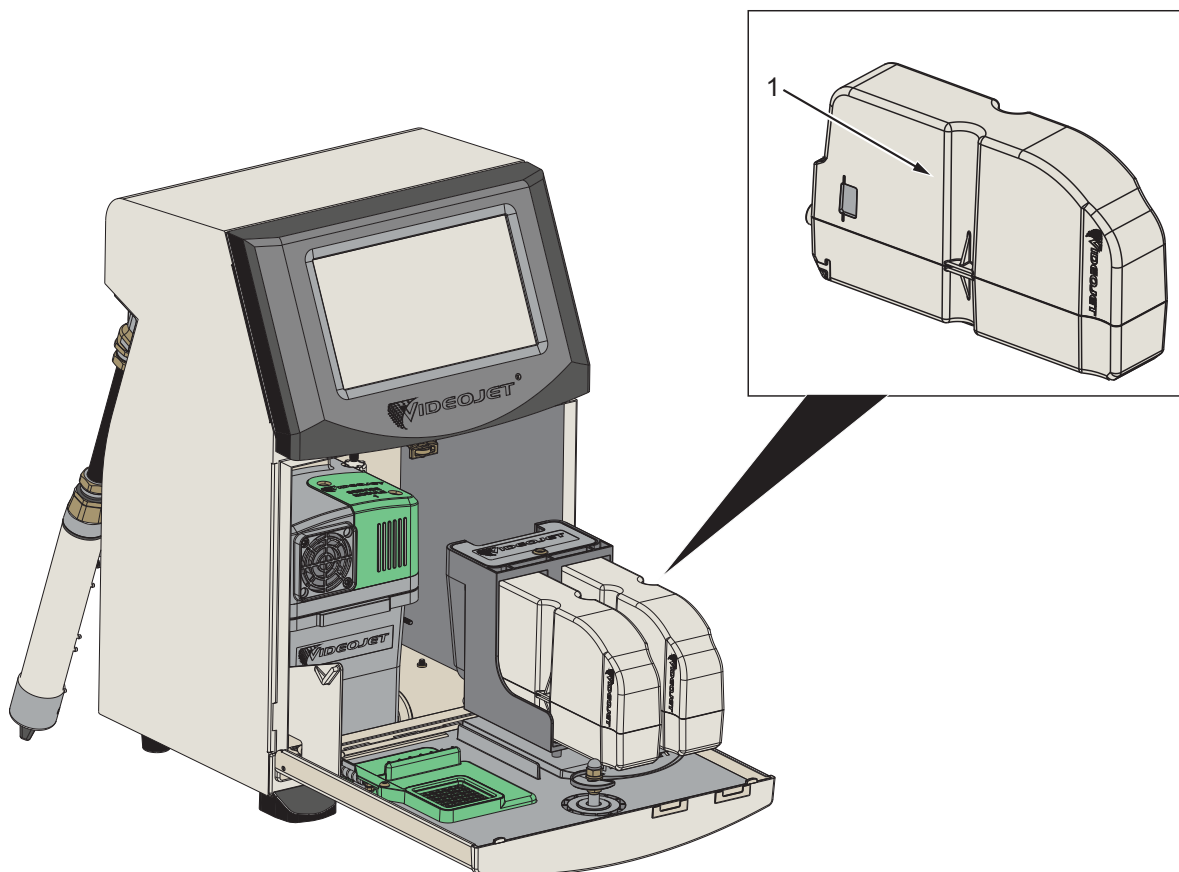
Figure 3-6: Ink Compartment

### 3.2.4.1 Fluid Cartridges

The fluid cartridges are located inside the ink compartment. The cartridges available are ink cartridge and the make-up cartridge (see [Figure 3-7](#)).

The cartridges include smart chip technology that allow the printer to monitor:

- Fluid level
- Type of fluid
- Expiry date of fluid.



1. Fluid Cartridge

*Figure 3-7: Fluid Cartridges*

## Main Parts

---

### 3.2.4.2 Air Filter

The air filter is mounted on the door of the ink compartment as shown in the [Figure 3-8](#). The air filter removes the dust that enters the ink compartment. The air filter is recommended to be changed every 3000 hrs or based on environment conditions.

*Note: IP66 has an air filter located under the fluid support tray.*

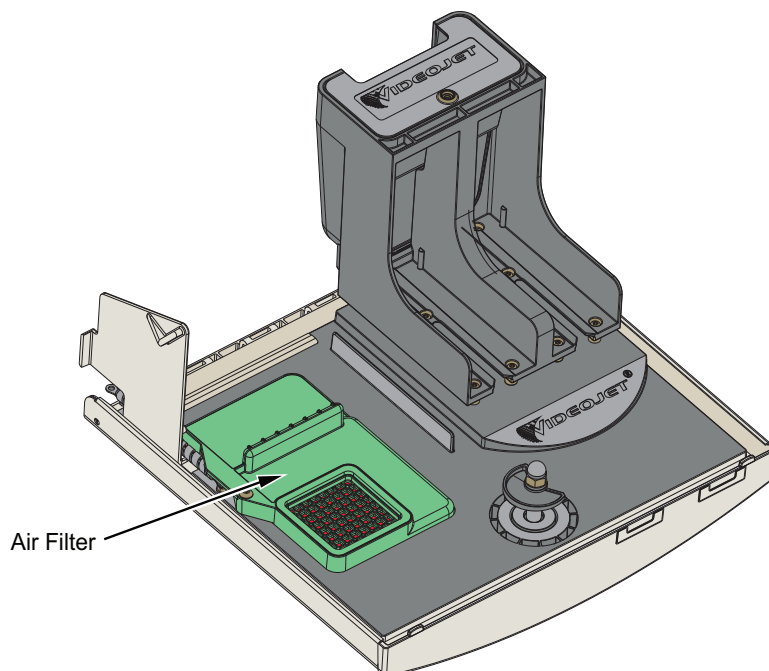


Figure 3-8: Air Filter

### 3.2.4.3 Solvent Control Module

The solvent control module is located below the fluid cartridges as shown in the [Figure 3-9](#).

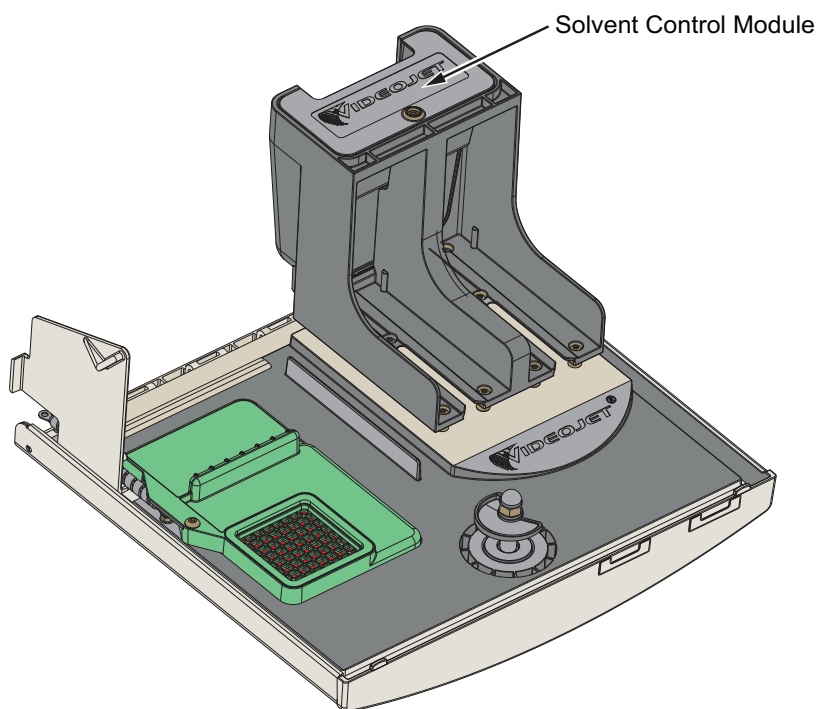
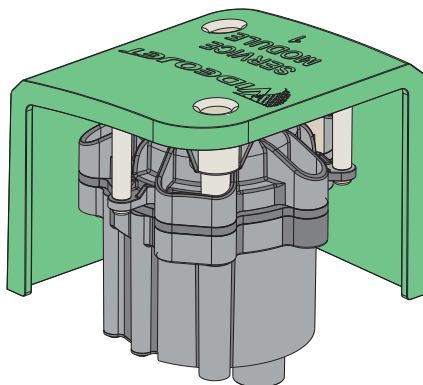


Figure 3-9: Solvent Control Module

#### 3.2.4.4 Service Module

The service module as shown in [Figure 3-10](#) has working life of 12 months. The service module provides appropriate warning at the end of service life. If the filters are used beyond the service life the jets are suppressed and warning message will be displayed each time when the jets are started.



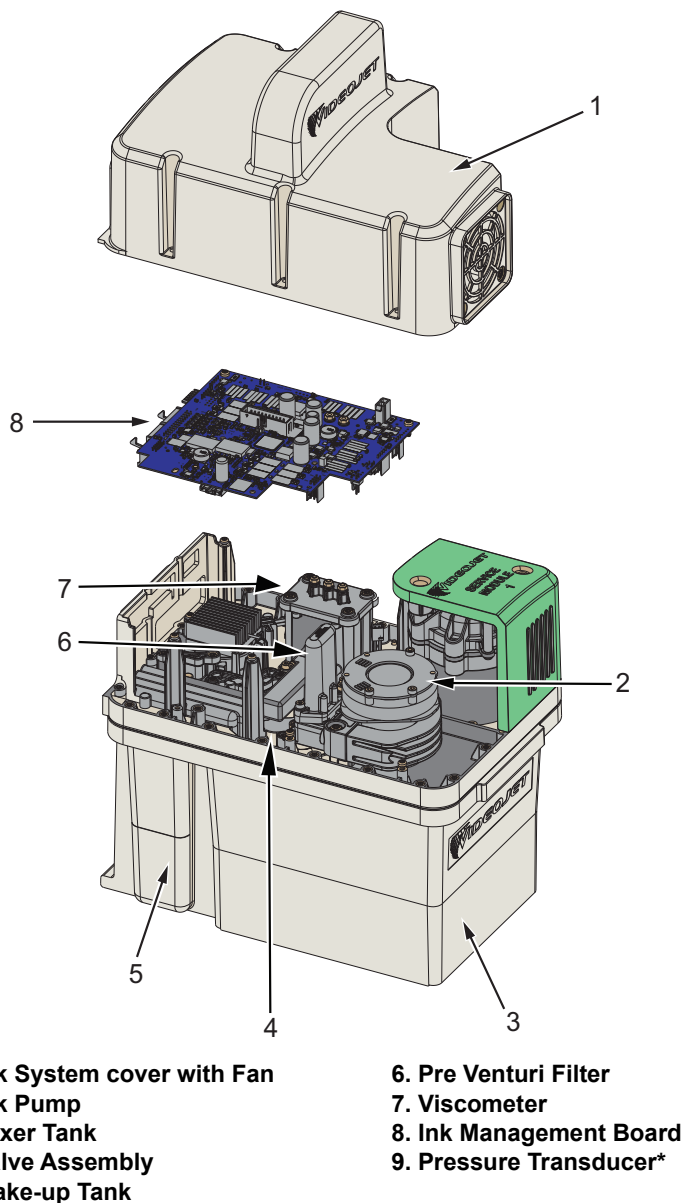
*Figure 3-10: Service Module Assembly*

## Main Parts

### 3.2.4.5 Ink System

Ink system has various sub-systems as shown in the [Figure 3-11](#). The major parts of the ink system are:

- Make-up Tank
- Mixer Tank
- Ink Pump
- Viscometer
- Ink Management Board (IMB)
- Valve Assembly
- Pressure Transducer
- Pre Venturi Filter
- Ink System Cover with Fan Assembly



\* Item not shown in figure

Figure 3-11: Ink System

The [Figure 3-12](#) provides the various connections to the ink system.

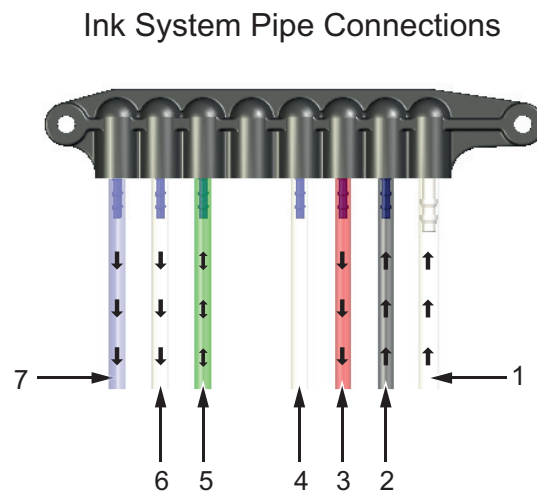


Figure 3-12: Ink System Connections

The [Table 3-1](#) provides the connection details to the ink system

Item No.	Connections	Tube	Description
1	Ink Return	Clear Large	Ink flows into the mixer tank from printhead.
2	Ink Addition	Black Stripe	Ink flows into the mixer tank from cartridge.
3	Ink Feed	Red	Fluid flows from mixer tank to printhead.
4	Not Used	-	-
5	Make-up Feed/Return	Green Stripe	Make-up fluids flows between make-up tank and make-up cartridge
6	Not Used	-	-
7	Gutter recirculation	Clear	Flows to umbilical

Table 3-1: Ink System Connections



## Main Parts

### 3.2.5 Standard IO

The printer comes with Standard IO providing external connections for several types as shown in [Figure 3-13](#). The various connections available with the Standard IO is provided in [Table 3-2](#).

Connector Type
Ethernet
Photocell
Shaft Encoder
Status Output (Beacon)
Relay Switches
USB

Table 3-2: Standard IO Connections

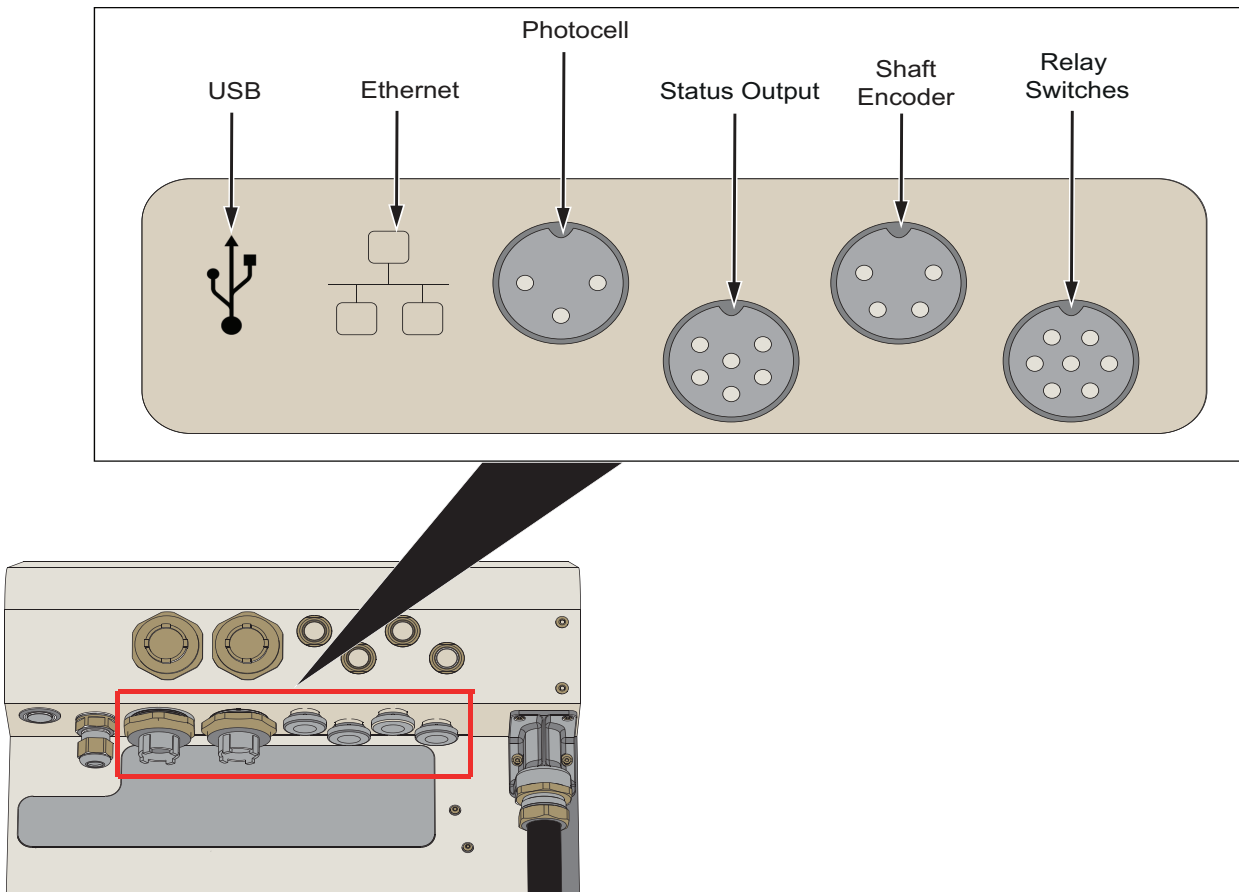


Figure 3-13: Standard IO

### 3.2.6 Expanded IO

Additional connectivity is available through the addition of Expansion Board and PEC2 board as shown in [Figure 3-14](#) to the printer, for external devices.

- The PEC2 board connects to the MCB and provides a second photocell for traversing applications.
- Expansion board connects the additional IO.

**Note:** RS232 connectivity is available through USB/RS232 connector

The various connections available with the Expanded IO is provided in [Table 3-3](#).

Connector Type
Digital IO
Ethernet
Message Select A
Message Select B
Print Trigger 2
Loop out*

Table 3-3: Expansion IO Connections

\* Output signal from print trigger 1/print trigger 2/shaft encoder as configured within the UI.

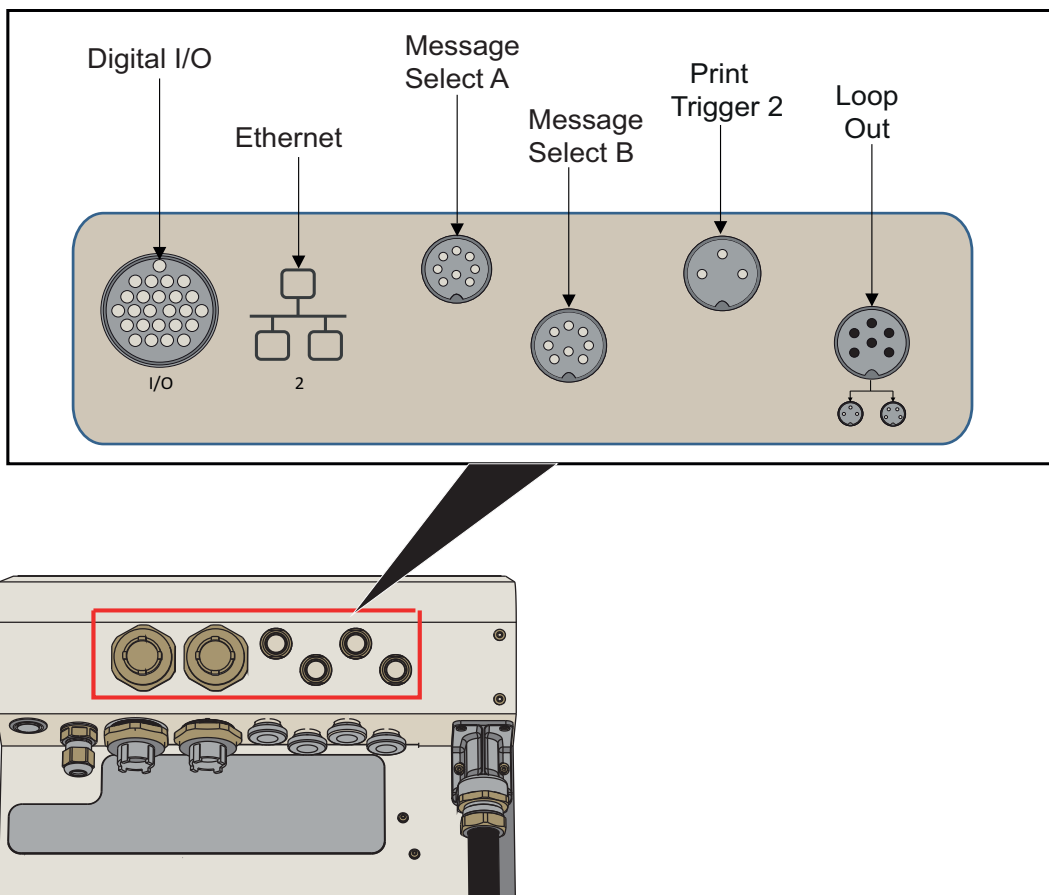


Figure 3-14: Expansion IO

## Main Parts

### 3.2.7 Umbilical

The umbilical contains electrical wiring and ink system tubing from the printer to the printhead. The standard length of the umbilical is 3 m (9.84 ft). The 6 m (16.69 ft) optional umbilical is recommended for traversing applications.

### 3.2.8 Printhead

The printhead consists of print module, valve module and PCB as shown in [Figure 3-15](#) and [Figure 3-16](#). The printhead uses the ink supplied by the mixer tank to print on a product. The control signals and ink are sent to the printhead through the umbilical. The 90 degree printhead is adjustable through 350 degrees and is setup during installation to the required print orientation.

The system will automatically detect a new print module when replaced.

The printhead consists of the following parts:

- Printhead Cover\*
- Valve Module
- Print Module
- Printhead PCB

\* Printhead Cover provided depends on application.

The printhead cover is secured in place by the printhead screw. When correctly tightened in place, the printhead screw provides an earth bond, through the umbilical, to the printer.

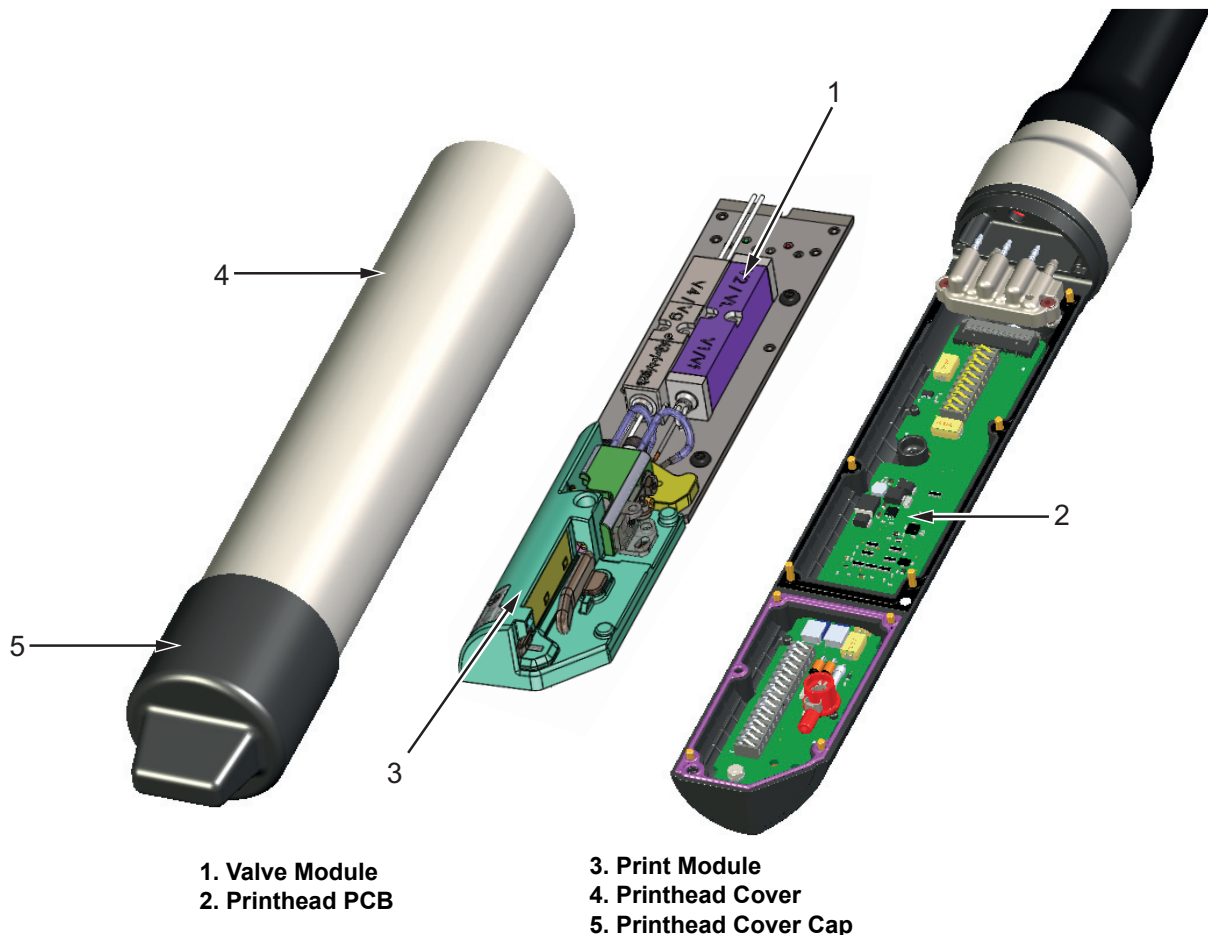
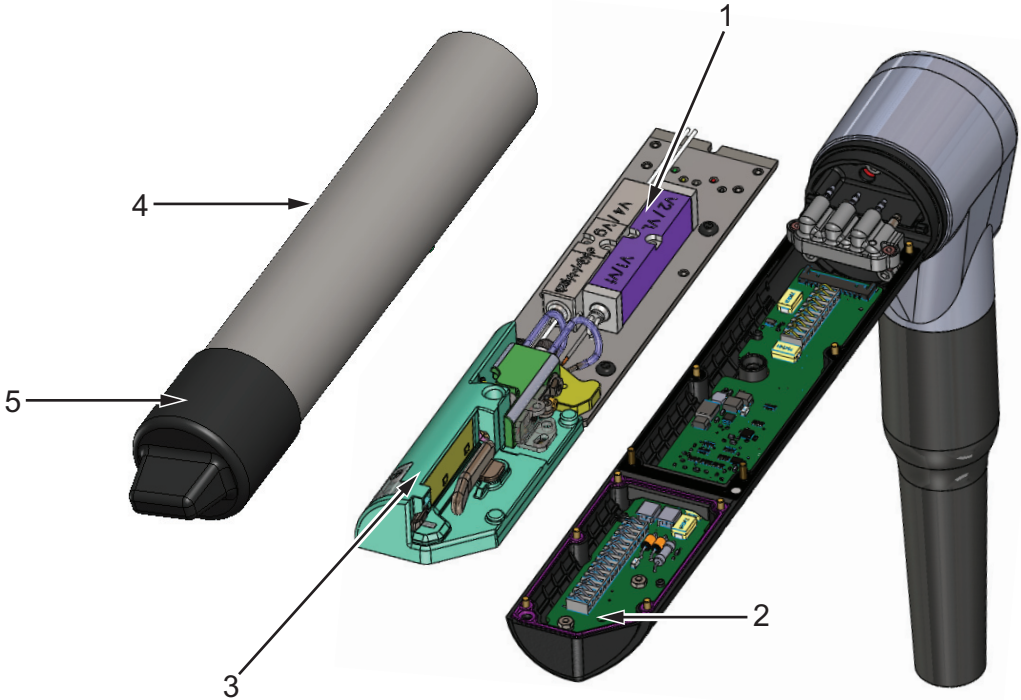


Figure 3-15: Printhead Overview



- 1. Valve Module
- 2. Printhead PCB
- 3. Print Module
- 4. Printhead Cover
- 5. Printhead Cover Cap

Figure 3-16: 90 Degree Printhead Overview

# Section 4    Operation

---

## Introduction

This section provides the basic information for the operator to work on the utility and contains the following topics:

- [How to Turn On the Printer](#)
- [Getting Started with the User Interface](#)
- [Login and Access Levels](#)
- [How to Start the Printer](#)
- [How to Select a Job for Print](#)
- [Faults and Warnings](#)
- [How to Print a Job](#)
- [Adjusting the Job](#)
- [How to Stop the Print](#)
- [How to Stop the Jet](#)
- [How to Turn Off the Printer](#)

### 4.1 How to Turn On the Printer

Do the following task to turn on the printer:

1. Do a visual inspection of the unit. Ensure all connections are secure and cables are connected correctly.
2. Make sure that the mains power supply cable is connected.
3. Press the main power switch on the side of the printer.
4. The printer will start up and upon completion the Home screen is displayed. The status bar of the printer displays SHUTDOWN.

## 4.2 Getting Started with the User Interface

The user interface is a button-based control system. It has an easy-to-use touch screen and most areas of the display are active. All technical aspects of the printer setup and control are accessed through the *Tools* button.

Figure 4-1 shows the Home screen of the utility.



Figure 4-1: Home Screen

The Home screen allows the user to access the below options:











Button		Description
		Starts or stops the jet.
		Holding the <i>Stop Jet</i> for upto 10 seconds will initiate shutdown mode and activate sleep mode. This action will be started when the circle is completed in case of accidental activation. To exit sleep mode and wake the display, wait at least 30 seconds after sleep mode has been activated.
		Starts or stops the print. <i>Note: This button is displayed on the status bar only when the jet is started.</i>
		Returns to the Home screen.
		Shows the list of jobs available, including the current job and the preview of the highlighted job. Once a job is selected, the job can be loaded for printing. If the fields are user enabled, the user can confirm before printing. The user can also create a new job.
		Opens the Tools screen.
		Login or Logout the user from an access level.
		Adjusts the print position and scale of the print.

Table 4-1: Home Screen Buttons

## Operation

The Home screen displays the following information:

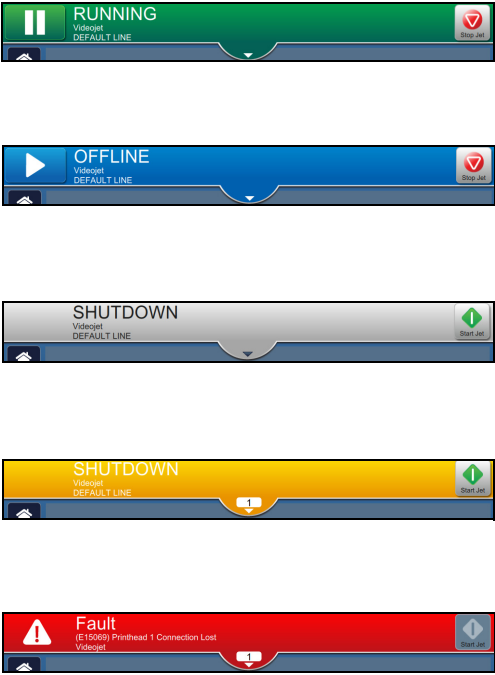
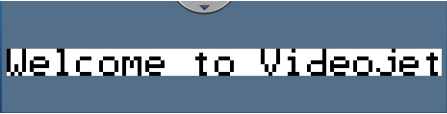

Button	Description
	<p>Displays the status of the printer.</p> <ul style="list-style-type: none"> <li><b>RUNNING:</b> Printer is switched on and ready to print when the proper print trigger is received.</li> <li><b>OFFLINE:</b> Printer is switched on but not ready to print.</li> <li><b>SHUTDOWN:</b> Power to the printhead is disabled and the printer is not ready to print.</li> <li><b>WARNING:</b> Warnings are available that the Operator should be aware of, the printer is not prevented from operating.</li> <li><b>FAULT:</b> Faults are available that the Operator should rectify, before the printer can start.</li> </ul> <p>Allows the user to access the current warnings and faults if any present.</p> <p>Also displays the current job loaded on the printer and the number of current alarms.</p> <p>The down arrow button opens the alarms list.</p> <p><i>Note: Once the alarms list is viewed, the user needs to touch the upward arrow button to go back to the previous screen.</i></p>
	<p>Shows the preview of the job loaded.</p>
	<p>User can customize this section as per their requirement (See <a href="#">Section 6.2.10 - Tools &gt; Configure Display</a>).</p> <p>Touch in this area to view further details.</p> <p>Shows items such as the Batch Product Count, Batch Print Count, Total Print Count, and Pieces/minute.</p>
	<p>Shows the fluid levels (in %) and the calculated run time remaining.</p> <p>Touch in this area to open the consumables menu.</p>

Table 4-2: Home Screen Display



## 4.3 Login and Access Levels

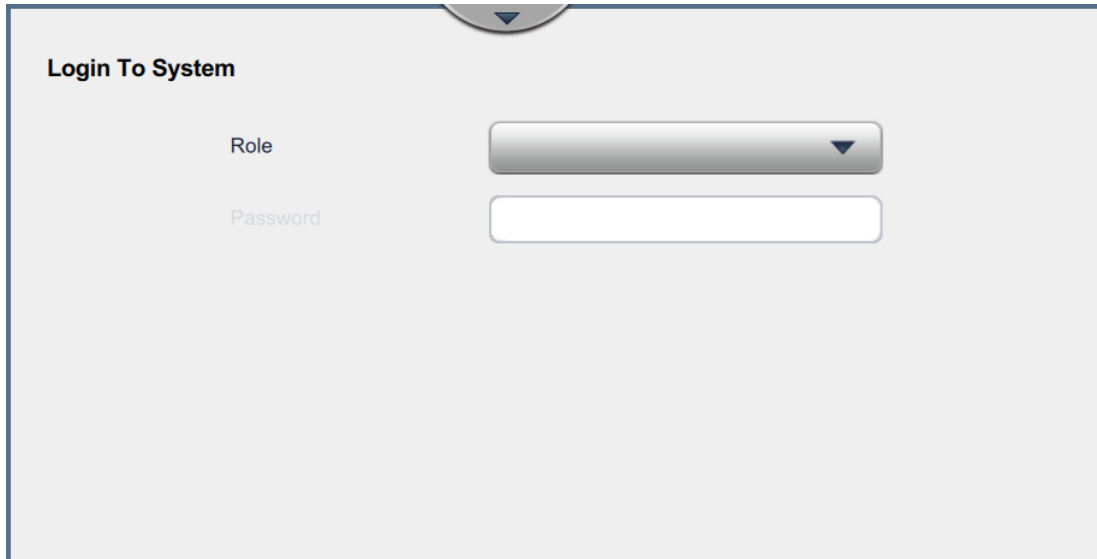
The user interface has the following default access levels:

- Admin
- Maintenance
- Operator
- Logged Out



All user levels are password protected apart from Logged out. The customer can use levels to access different menus in the user interface. The user can configure roles and users, set passwords through user interface. Refer to [Section 6.2.9 User Access on page 6-31](#) for additional information.

### 4.3.1 How to Login

1. Touch the  button to open the Login To System screen as shown in [Figure 4-2](#).



*Figure 4-2: Login screen*


2. Touch the Role drop down and select the required role. Touch the  button.
3. In the Password text box, enter the password using the keypad. Touch the  button.

## Operation


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4. The user is logged on the user access level and the user level is displayed on the top of the screen (see [Figure 4-3](#)).



*Note:* If the function is not visible, user is required to logout and login at the right level.

*Note:* The  button is displayed and the user can exit the access level by touching on the Logout button.

### 4.4 How to Start the Printer

1. Make sure that the printer is in SHUTDOWN mode.
2. Touch the  button. The printer status changes to STARTING UP.
3. Once the jet has started, the printer status changes to OFFLINE.

### 4.5 How to Select a Job for Print

1. Touch the  button to select the job from the available list.
2. Select the required job from the list and touch the  button as shown in [Figure 4-3](#). The job preview will be displayed.

*Note:* If a job is not available in the utility, create a new job. Refer to [Section 5.2](#) for more details.

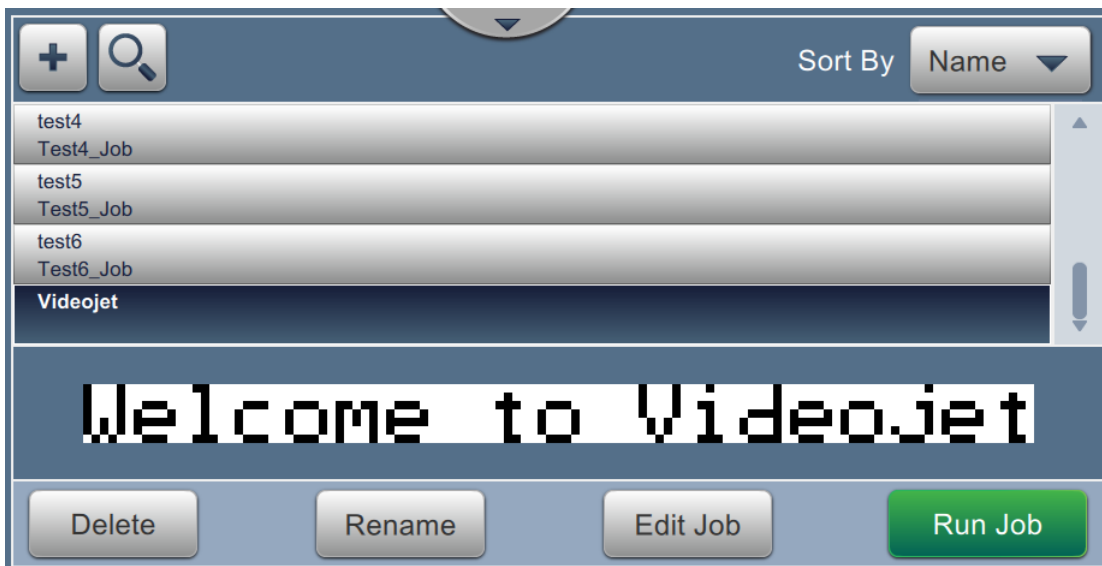

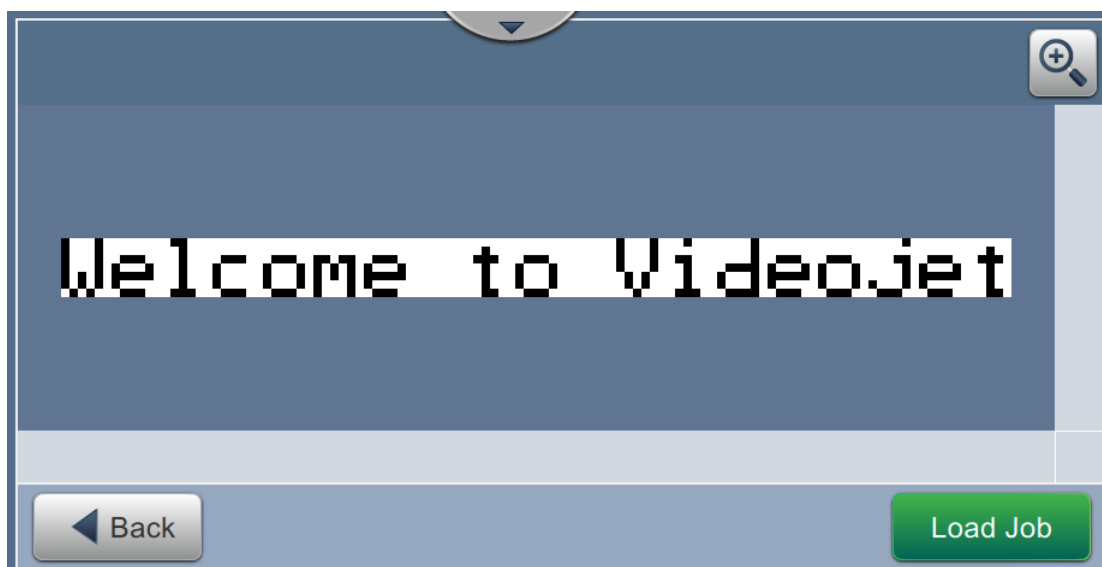


Figure 4-3: Job Selection

3. Touch the  button to load the job for print as shown in [Figure 4-4](#).



*Figure 4-4: Job Selection and Loading*

Now the job is loaded and available for print.

## Operation

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### 4.6 Faults and Warnings

When a fault or warning occurs, the printer displays the fault message in the status bar at the top of the screen.

*Note: Fault, warning and status are displayed in priority.*

#### Fault Message

An occurrence of a fault condition (alarm) will cause the printer to stop printing and stop the jet.



#### Warning Message

An occurrence of a warning condition will not cause the printer to stop printing. The printing will be stopped when the warning becomes a fault condition. The status bar will turn yellow.



#### Maintenance Alerts

An occurrence of a maintenance condition will not cause the printer to stop printing. The status bar will turn blue. Maintenance alert messages provide additional information to support printer operation.

### 4.6.1 Reading a Fault Message or Warning

The status bar changes color if a fault or warning is present and displays the number of current uncleared alarms.

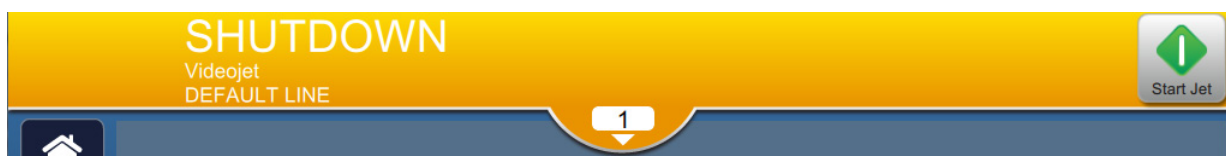



Figure 4-5: Warning Status

1. Touch the  button to check the current uncleared alarms.

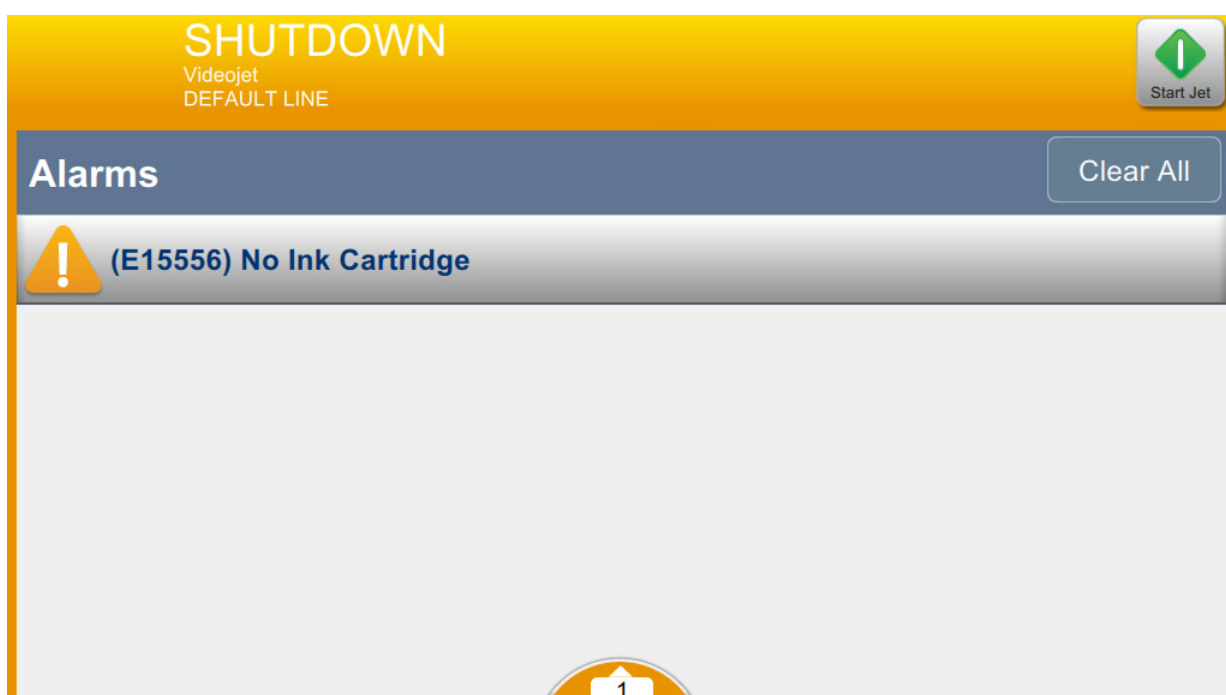
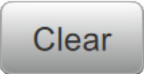







Figure 4-6: Warning Status

2. The  Button is enabled, only when the alarm condition has been resolved or actioned.
3. Touch the  button to clear the warnings/faults.  
*Note: The user can view the alarm details by touching on the respective alarm.*
4. If more than one warning/fault is required to be cleared, touch the  button.  
Touch the  button to return back to the previous screen.

## 4.7 How to Print a Job

**Prerequisites:**

- Fault conditions (alarms) are cleared.
- Make sure that the jet is started and printer is in OFFLINE mode.
- Make sure that the job is loaded.

1. Touch the  to start the print operation and the button changes to .

*Note: RUNNING appears on the status bar.*

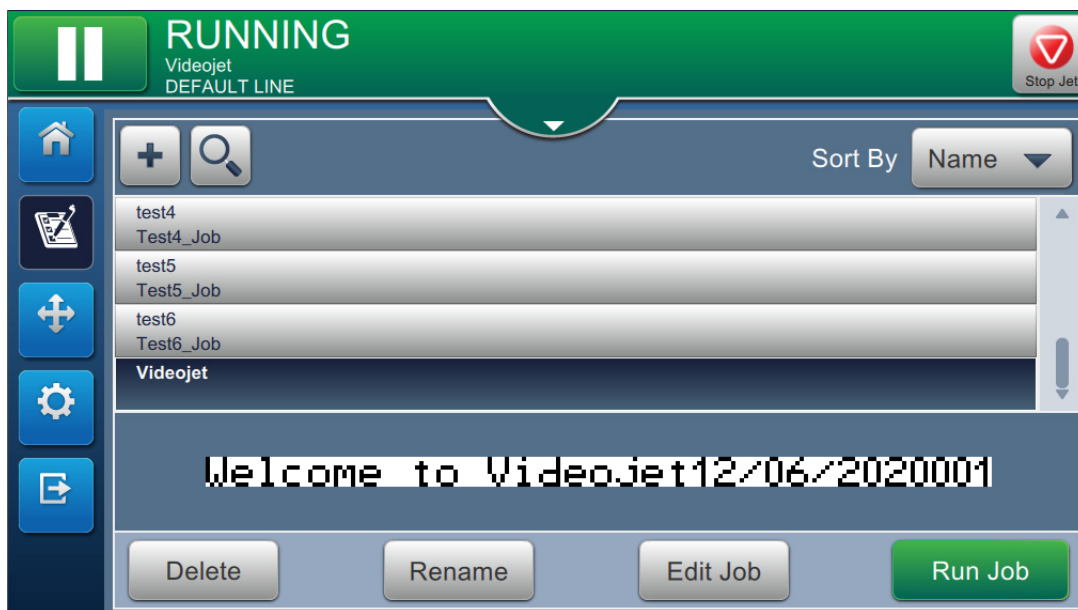


Figure 4-7: Print Job

The job can now be printed.

## 4.8 Adjusting the Job

The user can adjust the job by changing the position and scale.

*Note: These adjustments are for minor changes to position/scale the print properly on the product.*



1. Touch the  button on the Home screen. The screen opens as shown in [Figure 4-8](#).
2. Select the required options to adjust the position of text in the job.



Figure 4-8: Adjust Window

## Operation

### 4.8.1 Adjusting the Print Position on the Product

1. Touch the  button and the current position divider appears as shown in [Figure 4-9](#).

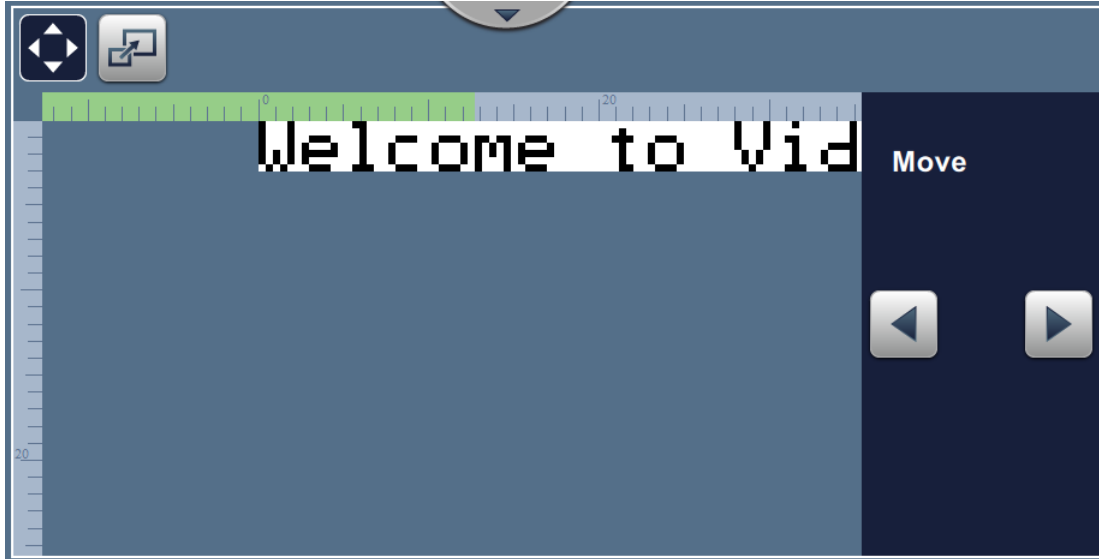




Figure 4-9: Adjust\_Move

2. To adjust the position of print in horizontal direction, touch the  or  button.

**Note:** The print position should be changed in small incremental steps.


3. Monitor the print position as the position is moved by increasing or decreasing the value until the print is in the required position on the product.

**Note:** Adjustments can be made up to +/- 13 mm (0.05 inch) from the datum.

**Note:** To make changes greater than +/- 13 mm (0.05 inch), edit the job parameters (refer to [Section 5.3 How to Edit a Job on page 5-32](#)) or configure the line setup (refer to [Section 6.3 Configure Line Setup on page 6-46](#)).



## 4.8.2 Adjusting the Print Scale on the Product

1. Touch the  button and the current scale divider value appears as shown in [Figure 4-10](#).

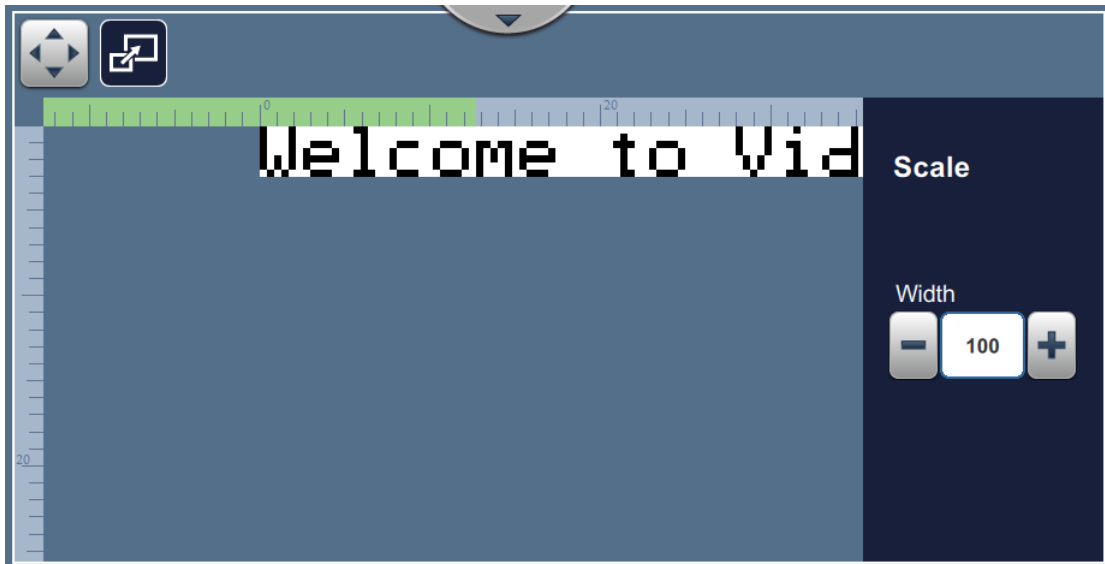




Figure 4-10: Adjust\_Scale

2. To adjust the scale of print, touch the  or  button.



*Note:* The print position should be changed in small incremental steps.

3. Monitor the print position as the position is moved by increasing or decreasing the value until the print is in the required position on the product.

*Note:* Adjustments can be made up to +/- 10% of the original size.

*Note:* To make changes greater than +/- 10% of the original size, edit the job parameters (refer to [Section 5.3 How to Edit a Job on page 5-32](#)) or configure the line setup (refer to [Section 6.3 Configure Line Setup on page 6-46](#)).

### 4.9 How to Stop the Print

1. Touch the  to stop the print operation and the button changes to .

*Note: OFFLINE appears on the status bar.*

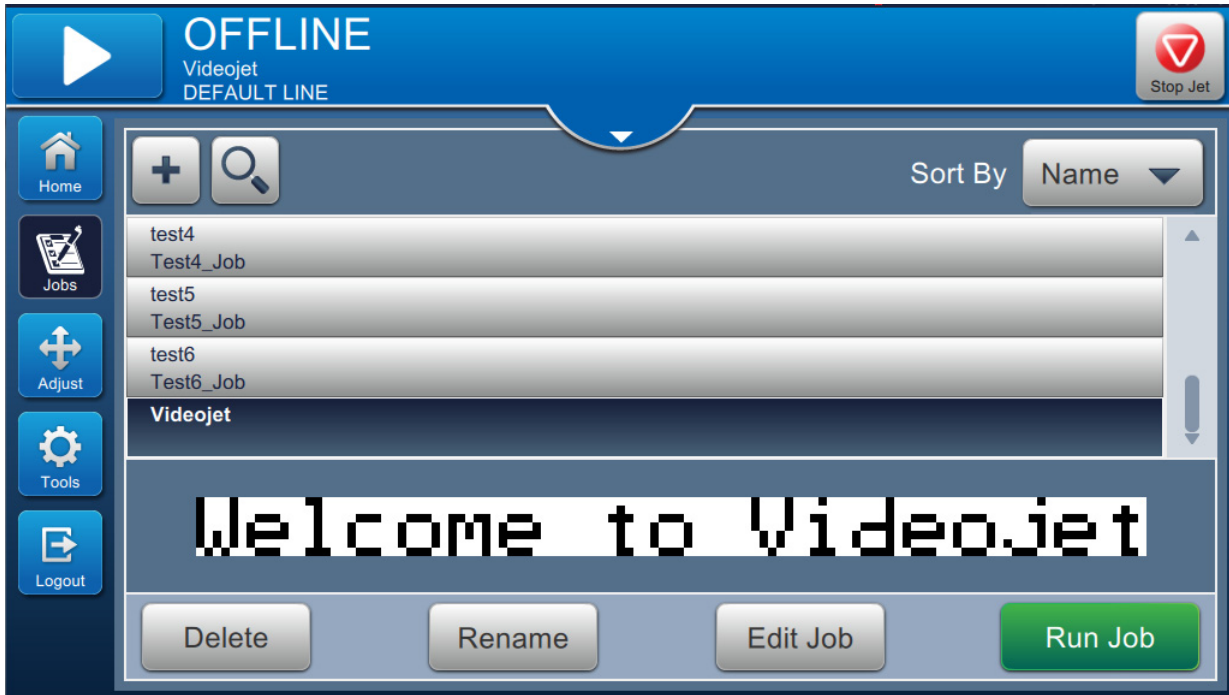



Figure 4-11: Stop Print

The job has stopped printing.

### 4.10 How to Stop the Jet

1. Touch the  button. The printer status changes to SHUTTING DOWN.
2. Once the jet has stopped, the printer status changes to SHUTDOWN.

## 4.11 How to Turn Off the Printer

### ⚠ CAUTION

#### EQUIPMENT DAMAGE.

Turn off the printer after the jet shutdown cycle is complete. The failure to follow this caution can cause additional maintenance.

### ⚠ CAUTION

#### EQUIPMENT DAMAGE.

Do not start and stop the printer many times.

When you stop the printer, the printer uses the make-up fluid to flush the system. If you start and stop the printer many times, the printer uses large amount of make-up fluid. The increased use of make-up fluid can cause Mixer Tank Level High error and low ink viscosity.

If the printer status is SHUTDOWN, the printer can be turned off by pressing the power switch on the side of the printer.

*Note: The mains power is still connected to the printer. To remove power completely, disconnect the mains lead from the mains electrical supply.*

## 4.12 How to Connect the USB to the Printer

1. Locate the USB port on the back side of the printer (see [Figure 4-12](#)) and insert the USB.

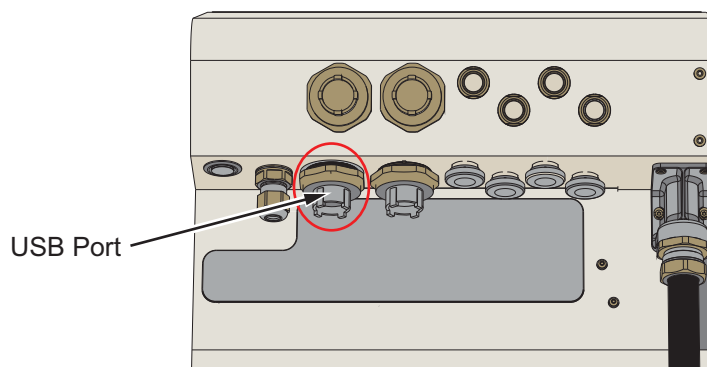


Figure 4-12: USB Location

The USB is now connected and the online status of the USB is displayed on the UI as shown in the [Figure 4-13](#).

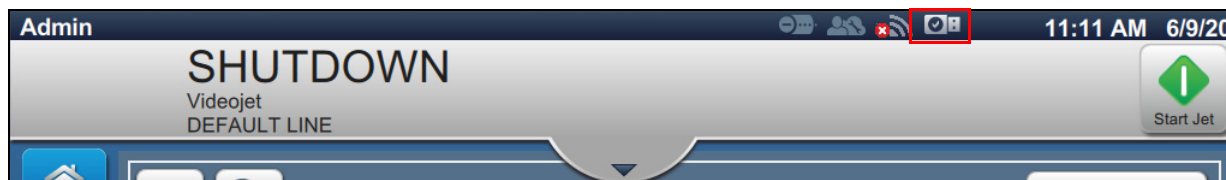


Figure 4-13: USB Status

## Section 5 Job Editor

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### Introduction

This section provides the information on how to work on the job editor and contains the following topics:

- [Accessing the Job Editor](#)
- [How to Create a New Job](#)
- [How to Edit a Job](#)
- [How to Quick Edit a Job](#)
- [Example - Create a New Job](#)


### 5.1 Accessing the Job Editor

The job editor is the main tool that allows the user to create job, edit job, change job parameters and save job. [Figure 4-1 on page 4-2](#) shows the Home screen of the utility. Job Editor can be accessed from both the job preview bar and from the *Jobs* button.

- Job preview > Update
- Jobs > +
- Jobs > Edit Job

## 5.2 How to Create a New Job

This section gives the information about how to create a new job, add different fields, change job settings, parameters and instructions on the printer.

1. Touch the  button and the Job List screen opens as shown in the [Figure 5-1](#).

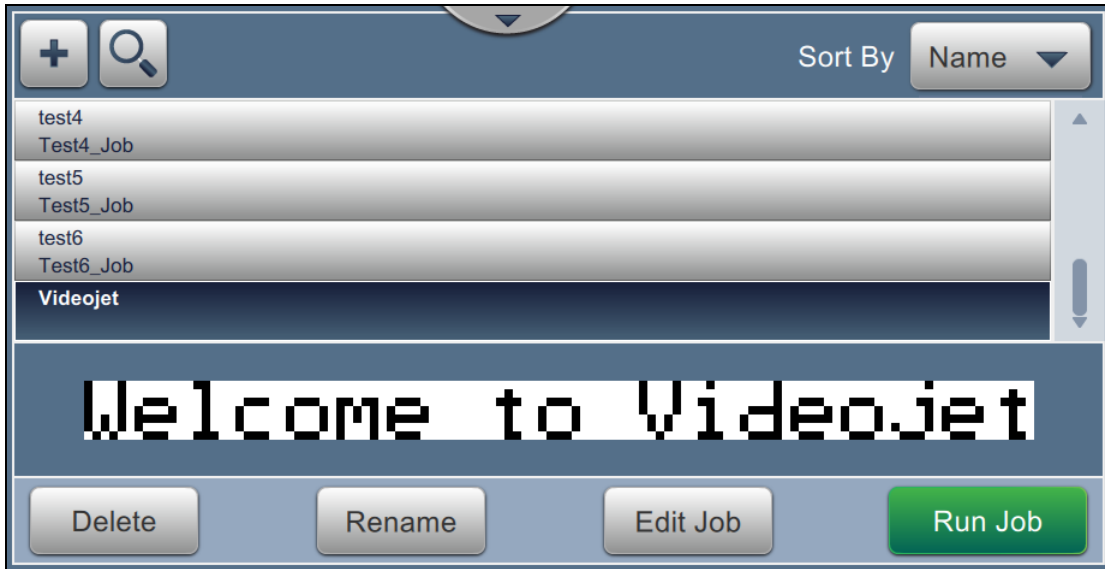



Figure 5-1: Job List Screen

2. Touch the  button to create a new job. The Job Settings screen opens as shown in [Figure 5-2](#).

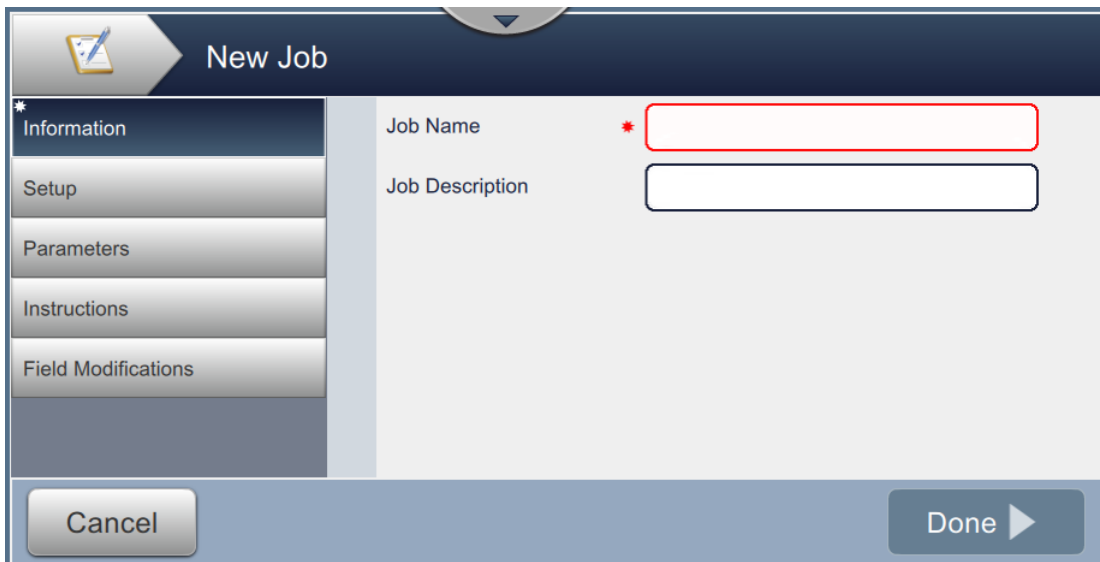
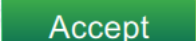


Figure 5-2: Information Screen

3. Touch the Job Name text box to enter the job name for the new job. The Job Name screen opens.

*Note: The user can also provide the job description for the new job.*

4. Enter the required Job Name using utility keypad and touch the  button.

5. Touch the  button on the Job Settings screen.

*Note: The user can also change the setup, parameters and instructions details.*

6. Job Editor screen opens as shown in [Figure 5-3](#).

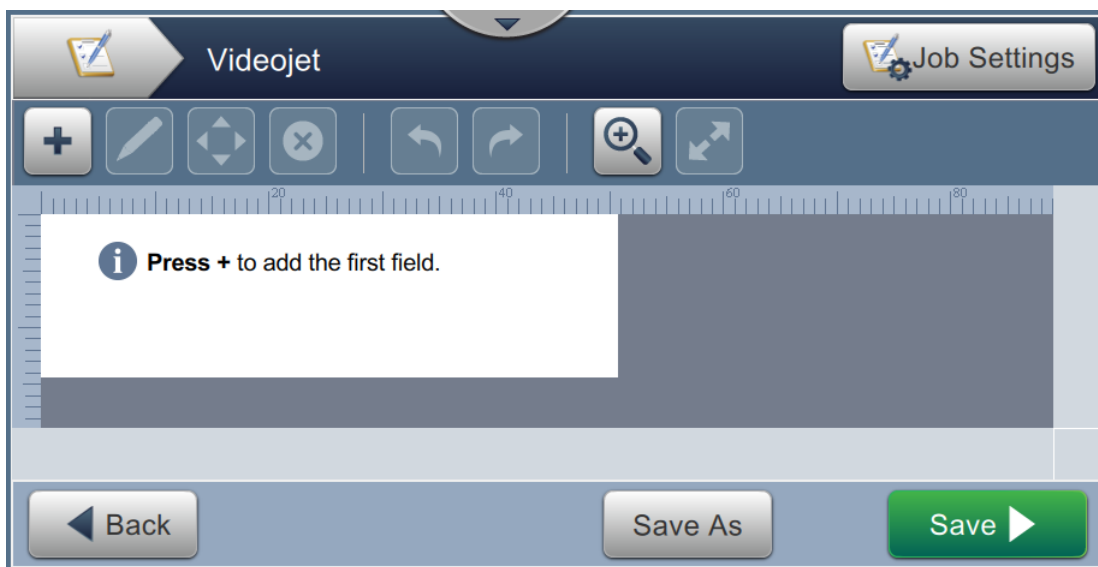

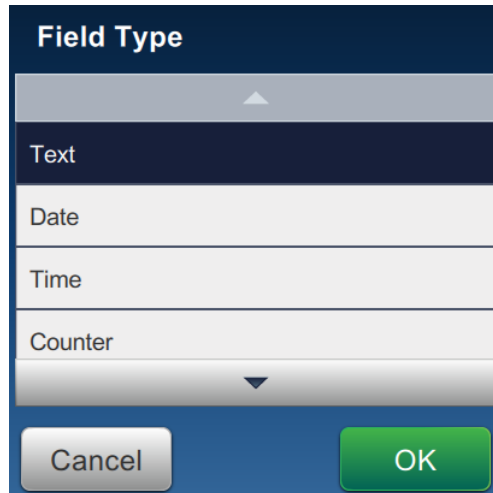



Figure 5-3: Job Editor Screen

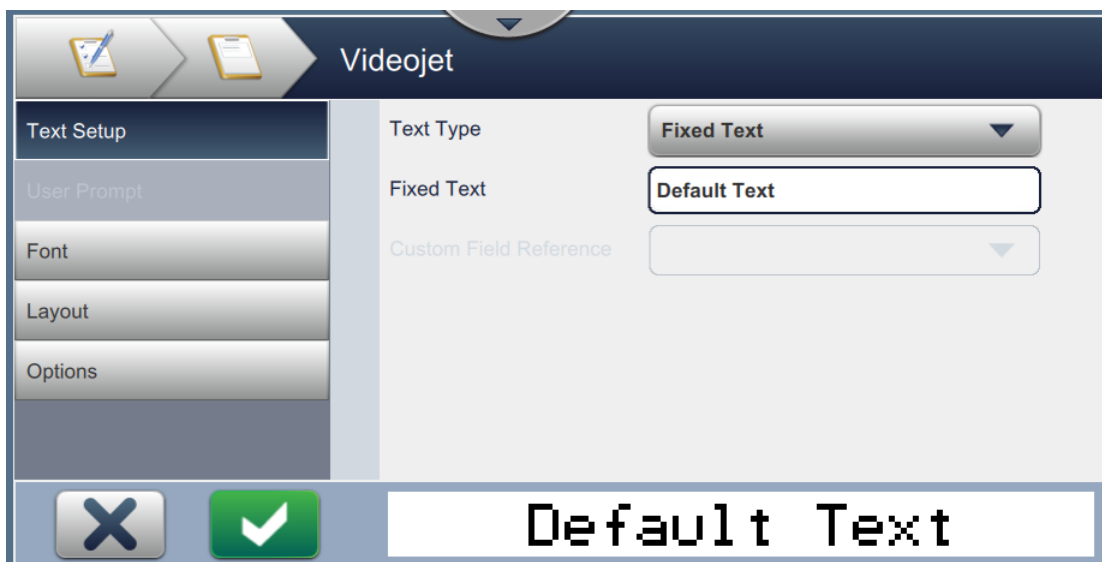
7. Touch the  button and select the required options to add fields as shown in [Figure 5-4](#).

Touch the  button. Refer to [Section 5.2.2](#) for more details.



*Figure 5-4: Add Field Options*

8. Change the parameters as required on the settings screen for the selected field as shown in [Figure 5-5](#). Touch the  button to save the required format of the field.



*Figure 5-5: Field Settings Screen*

Table 5-1 displays the options available for Job Editor screen:

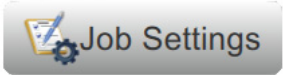








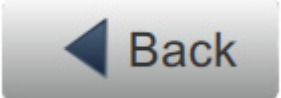
Menu	Buttons	Functions
Job Settings		Displays the job name and job description. The job settings are available for setup and editing. Select <i>Done</i> button to save any changes made and display the Job Editor screen.
Add Field		Adds new field, when selected, the user will have a list of fields to choose from: Text, Date, Time, Counter, Linear Barcode and 2D Barcode. Refer to Table 5-6 for more details.
Edit		Opens the selected field editor and Setup screen. Allows the user to change font type, font size, inverse or mirror the field, enter prompt message and field name.
Nudge		Use the arrow keys that appear within the job design area to move the selected field in the direction of the arrow.
Delete		Deletes the selected field, the user is prompted before the field is deleted.
Undo		Undo last action.
Redo		Redo last action.
Zoom		Zoom the job to be edited. Zoom in upto three times (200%, 300%, 600%). Once the maximum zoom is reached, touch the <i>Zoom</i> button repeatedly to revert back to default.
Maximize		Maximize the job preview.
Back		Go back to the Job Settings screen.

Table 5-1: Job Edit Menu



## Job Editor

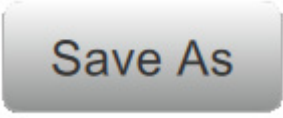


Menu	Buttons	Functions
Save As		Saves the existing job with new job name.
Save		Save the new job and the changes made to the existing job.

Table 5-1: Job Edit Menu (continued)

9. Once the required changes are made for the inserted field, touch the  button.

Now the job is saved and available for print.

### 5.2.1 Job Settings

#### 5.2.1.1 Information

The Information screen ([Figure 5-2 on page 5-2](#)) allows the user to do the following:

Field	Description
Job Name	Displays the job name. Each new job created requires a job name to be entered prior to selecting Done button.
Job Description	The user can enter a job description for the job name.

Table 5-2: Information

5.2.1.2 Setup

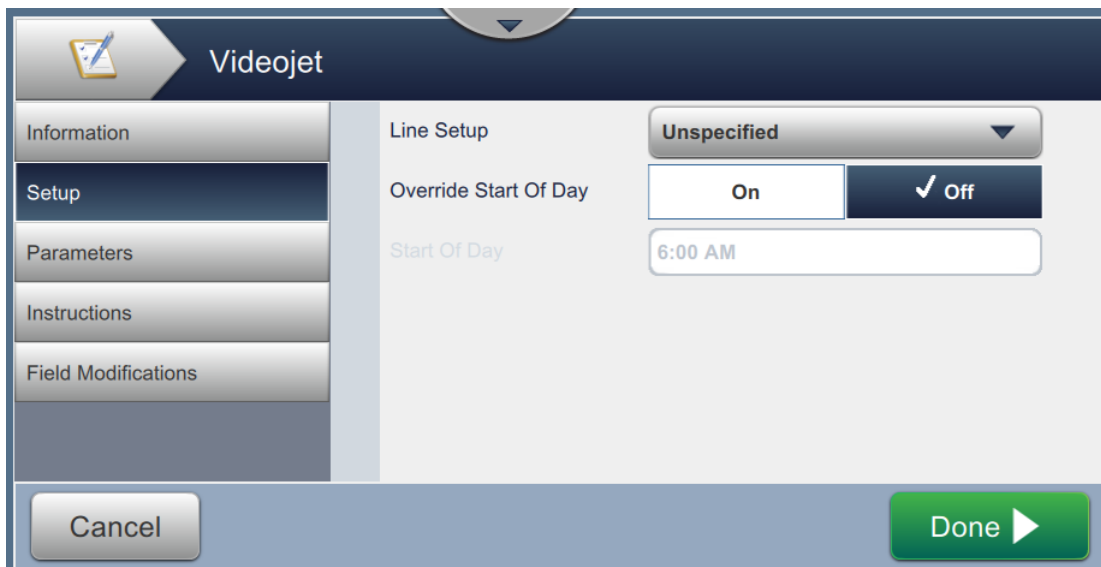


Figure 5-6: Setup Screen

The Setup screen allows the user to do the following:

Field	Description
Line Setup	The user can select the required Line Setup from the drop down list to create the job. All created Line Setup's are available in the drop down list. This Line Setup is selected when the job is loaded. If the Line Setup remains as Unspecified (Default), the currently activated Line Setup will be selected.
Override Start Of Day	If enabled, the user can change the Start of Day from the default (00:00).
Start of Day	The user can define when to change the date within a job (as opposed to midnight). This option is available only if the Override Start of Day field is enabled.

Table 5-3: Setup

5.2.1.3 Parameters



Figure 5-7: Parameters Screen

The Parameters screen allows the user to do the following:

Field	Description
Print Mode	<p>The user can select either Fixed Length mode or Fixed Resolution mode.</p> <p>Enter the Print Length (mm or in) or Print Resolution (dots/mm or dots/in) which is dependent on the print mode selected.</p> <p>The units of measurement are based on the units selected in printer settings.</p> <p><i>Note: The contents of the job are fixed into a defined window. Increasing or decreasing the print length will stretch or squeeze the job.</i></p>
Print Margin	<p>Print Margin works in forward direction and changes the distance of the print position from the leading edge of the product.</p> <p>To increase the distance of the print position, increase the value using + button.</p> <p>To decrease the distance of the print position, decrease the value using - button.</p> <p>The user can enter the value or use +/- for small increments.</p>
Traversing Return Margin	<p>Traversing Return Margin works in reverse direction and changes the distance of the print position from the trailing edge of the product.</p> <p>Refer to <a href="#">Print Margin</a> to adjust the distance of the print position.</p>
Bold	<p>Select the Bold type from the drop down list.</p>
Character Gap	<p>The user has to enter the value to set the gap between the characters.</p>

Table 5-4: Parameters

Field	Description
Raster	
Auto-Select	If enabled, the printer will automatically select the appropriate raster group. <i>Note: Auto-Select is selected as default.</i>
Select by Group	If enabled, the user can manually select the desired raster group.
Raster	Select the required raster group for the job. The group selection displayed will be dependent on the line height required. The raster group can only be selected when Auto-Select is disabled. <i>Note: For printing 2D barcodes, it is recommended to select the specific raster required. For more information contact Videojet customer service or your local distributor.</i>

Table 5-4: Parameters (continued)

5.2.1.4 Instructions



Figure 5-8: Instructions Screen

The Instructions screen allows the user to do the following:


Field	Description
	Opens the keypad to allow job instructions to be added for the job.

Table 5-5: Instructions





Field	Description
	Moves the highlighted instruction down.
	Moves the highlighted instruction up.
	Deletes the highlighted instruction.
	Opens up the keypad to allow the highlighted instruction to be edited.

Table 5-5: Instructions (continued)

### 5.2.2 Add Field

The add field drop down list contains the options that can be entered by the user. [Table 5-6](#) displays the options available:

Option	Description
Text	Inserts the text field either as fixed text, user prompted or as reference text.
Date	Inserts the current date, offset date or user prompted date onto the printed job. The user can customize the date type to derive dates in multiple formats.
Time	Inserts the current time onto the printed job. The real-time capabilities of the printer are used to do this.
Counter	Inserts a counter field that instructs the selected coder to manage and print incremental numeric and alpha data.
Linear Barcode	Inserts a one dimensional barcode. The user can select the barcode type, data type and text for inserting the required bar code. <i>Note: If the barcode needs to include additional data such as date, a custom reference is required. Refer to <a href="#">Custom Reference Builder on page 6-12</a> for more details.</i>
2D Barcode	Inserts a two dimensional barcode. The user can select the barcode type, data type and text for inserting the required bar code.
Logo	Inserts a logo. The user can select the required logo from the available list.

Table 5-6: Add Field Options


### 5.2.2.1 To Add a Text field


Do the following steps to add a text field in the job:

1. Touch the  drop down list and select *Text* as shown in [Figure 5-4 on page 5-4](#).

Touch the  button.

2. The Text Setup screen opens and allows the required text to be selected and formatted as required. The text field preview is available for review at the bottom of the screen.

Touch  button to save the changes made. Refer to [Table 5-7](#) for more details.

*Note:* The  button is used to go back without saving any changes to the field.

3. The text field is inserted into the job design area.

*Note:* The inserted text field can be moved to the desired location in the job design area.

[Table 5-7](#) describes the options available for entering required text:

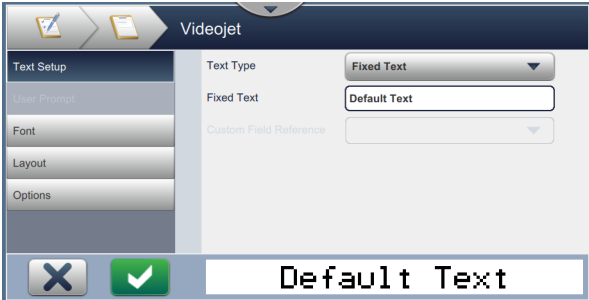
Display	Description
	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• Text Type - Touch the drop down list to select the type of text. Refer to <a href="#">Text Type</a> for more details.</li> <li>• Fixed Text - Touch the text box to enter required text. <i>Note:</i> This option is available only when Fixed Text Type is selected.</li> <li>• Custom Field Reference - Touch the drop down list to select the required custom field created. <i>Note:</i> This option is available only when Custom Reference Text Type is selected.</li> </ul>
Text Type	
Fixed Text	Text is fixed for the job as defined in the Fixed Text field.
User Prompted	Text is entered by the user when job is selected to run. User Prompt options are enabled on selection. <i>Note:</i> Only User Prompted Text fields are available for job edit.

Table 5-7: Text Setup

## Job Editor

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Display	Description
Custom Reference	Inserts a custom reference for each job. Refer <a href="#">Custom Reference Builder on page 6-12</a> for additional details.
Equipment Reference	Inserts the machine ID for each job. Refer <a href="#">Global Job Settings on page 6-19</a> for additional details.
Line Reference	Inserts the line ID for each job. Refer <a href="#">Global Job Settings on page 6-19</a> for additional details.
Factory Reference	Inserts the factory ID for each job. Refer <a href="#">Global Job Settings on page 6-19</a> for additional details.
User Reference	Inserts the current logged in user for each job.

*Table 5-7: Text Setup (continued)*

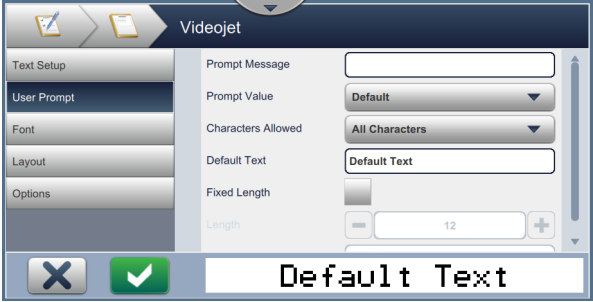
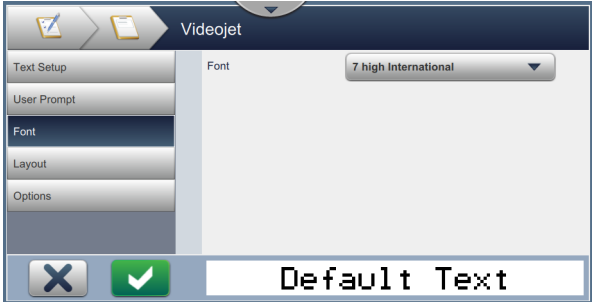
Display	Description
<p>User Prompt</p> 	<p>Provides the options to:</p> <ul style="list-style-type: none"> <li>• Prompt Message - Touch the text box to enter instruction or prompt for the user when the job is selected to run.</li> <li>• Prompt Value - Touch the drop down list to select the required value entered in the job: <ul style="list-style-type: none"> <li><b>Default</b> - The job will contain the default text.</li> <li><b>Blank</b> - The job will contain no text.</li> <li><b>Last</b> - The job will contain the last printed data.</li> </ul> </li> <li>• Characters Allowed - Touch the drop down list to specify the type of character allowed to enter message (Alpha, Numeric, Alpha Numeric, All Characters).</li> <li>• Default Text - Touch the text box to enter the text which will be entered as default.</li> <li>• Fixed Length - Touch the check box to restrict the user entered field to a fixed length. <ul style="list-style-type: none"> <li><i>Note: The Length and Pad Character options are available only when Fixed Length check box is enabled.</i></li> </ul> </li> <li>• Length - Touch the text box to set the length of the user editable field.</li> <li>• Pad Character - Touch the text box to define the character that needs to appear after the text field.</li> </ul>
<p>Font</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• Font - Touch the drop down list to specify font sizes. <ul style="list-style-type: none"> <li><i>Note: The default font size is 7 high.</i></li> <li><i>Note: The last selected font size is stored in memory and will be displayed.</i></li> </ul> </li> </ul>

Table 5-7: Text Setup (continued)



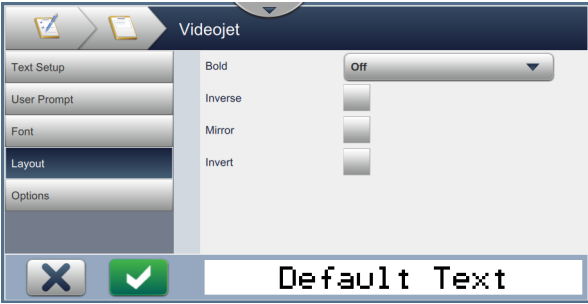
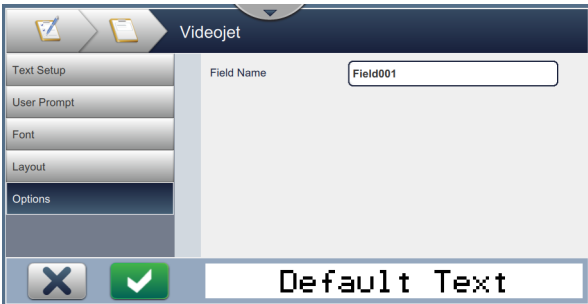
Display	Description
<p>Layout</p> 	<p>Provides the options to:</p> <ul style="list-style-type: none"> <li>• Bold - Touch the drop down list to select the bold type (Off, Bold 1, Bold 2).  <b>Off -</b> VIDEOJET  <b>Bold1 -</b> VIDEOJET  <b>Bold2 -</b> VIDEOJET</li> <li>• Inverse - Touch the check box to invert the font color.  <b>Normal</b> VIDEOJET      <b>Inverse</b> VIDEOJET</li> <li>• Mirror - Touch the check box to flip the field vertically.  <b>Normal</b> VIDEOJET      <b>Mirror</b> VIDEOJET</li> <li>• Invert - Touch the check box to flip the field horizontally.  <b>Normal</b> VIDEOJET      <b>Invert</b> VIDEOJET</li> </ul>
<p>Options</p> 	<p>Provides option to:</p> <ul style="list-style-type: none"> <li>• Field Name - Touch the text box to set the field name.</li> </ul>

Table 5-7: Text Setup (continued)


**5.2.2.2 To Add a Date Field**


Do the following steps to add a date field in the job:

1. Touch the  drop down list and select *Date* as shown in [Figure 5-4 on page 5-4](#).

Touch the  button.

2. The Date Setup screen opens and allows the required date to be selected and formatted as required. The date field preview is available for review at the bottom of the screen.

Touch the  button to save the changes made. Refer to [Table 5-8](#) for more details.

*Note:* The  button is used to go back without saving any changes to the field.

3. The system date is inserted into the job design area.

*Note:* The inserted system date can be moved to the desired location in the job design area.

[Table 5-8](#) describes the options available for editing date format:

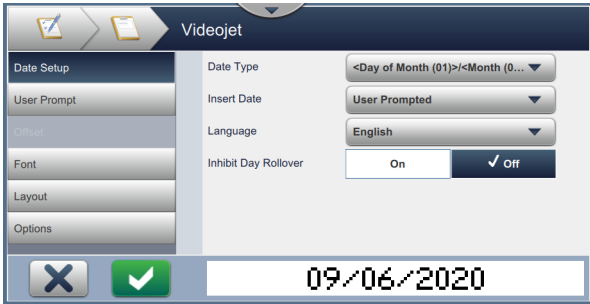
Display	Description
<p>Date Setup:</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• <b>Date Type</b> - Touch the drop down list to select the date format required. For example: Custom, Day of Month (01)/Month(01)/Year(2010). Refer <a href="#">To Create a Custom Date on page 5-17</a> for more details.                     <p><i>Note:</i> The user can define a number of required date formats selecting custom from the date type drop down.</p> </li> <li>• <b>Insert Date</b> - Select the required date to be inserted for the job.                     <p><b>Today</b> - Inserts the current date.  <b>Offset</b> - Inserts an date offset from the current date based on the offset setup.  <b>User Prompted</b> - Date is entered by the user when job is selected to run.</p> <p><i>Note:</i> User Prompt and Offset options are enabled on selection.</p> </li> <li>• <b>Language</b> - Touch the drop down list to select the required date language. For example: English, Arabic, etc.</li> <li>• <b>Inhibit Day Rollover</b> - If enabled, the day rollover is prevented.</li> </ul>

Table 5-8: Date Setup

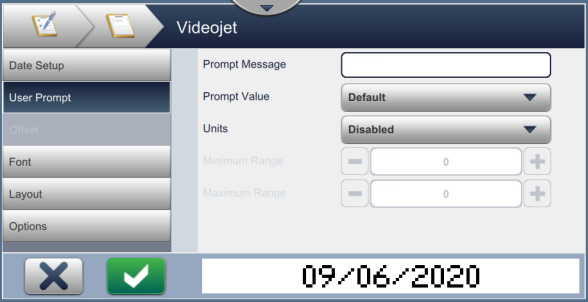
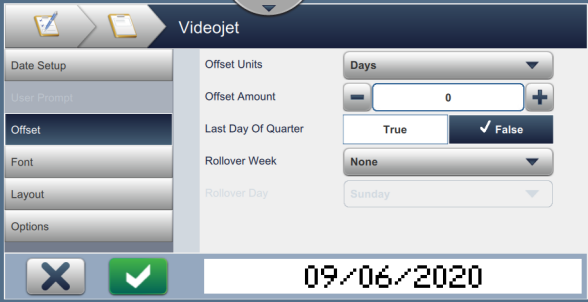
Display	Description
<p>User Prompt:</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• Prompt Message - Touch the text box to enter instruction or prompt for the user when the job is selected to run.</li> <li>• Prompt Value - Touch the drop down list to select the required value entered in the job:  <b>Default</b> - The job will contain the default text.  <b>Blank</b> - The job will contain no text.  <b>Last</b> - The job will contain the last printed data.</li> <li>• Units - Touch the drop down list to select the type of units (Disabled, Days, Months, Years).</li> <li>• Minimum Range - Setting the minimum range prevents the user selecting a date value less than this minimum offset.</li> <li>• Maximum Range - Setting the maximum range prevents the user selecting a date value more than this maximum offset.</li> </ul> <p><i>Note: The Minimum and Maximum Range will appear only when Units option is other than disabled.</i></p>
<p>Offset:</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• Offset Units - Touch the drop down list to offset the date to the required offset value (Days, Months, Years).</li> <li>• Offset Amount - Touch the text box to enter the offset value required.</li> <li>• Last Day Of Quarter - Touch the True/False button to enable/disable the last day of quarter option.</li> <li>• Rollover Week - Touch the drop down list to select the date based on rollover (None, Last Rollover, Next Rollover).</li> <li>• Rollover Day - Touch the drop down list to select the rollover day of the week (Sunday to Monday).</li> </ul> <p><i>Note: The Rollover Day will appear only when Rollover Week option is other than none.</i></p>

Table 5-8: Date Setup (continued)

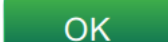
Display	Description
Font	Refer to <a href="#">Table 5-7</a> for details.
Layout	
Options	

Table 5-8: Date Setup (continued)

**To Create a Custom Date**

Do the following steps to create a custom date:

1. From the Date Setup screen, select option *Custom* from the Date Type drop down list as

shown in [Figure 5-9](#). Touch the  button.

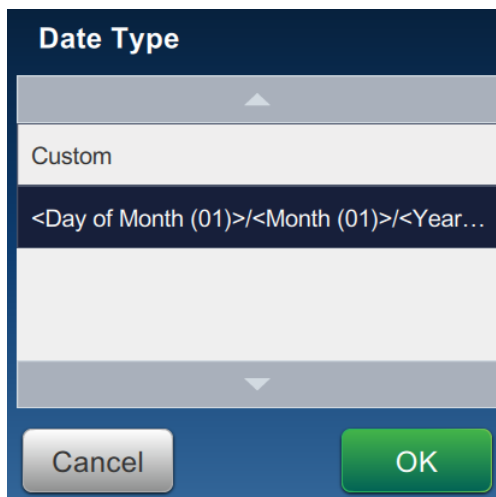


Figure 5-9: Date Format Set Up Screen

2. Select the required format from the list of options (Year, Month, Date of Month, Day of Week, Other and Separator) as shown in [Figure 5-10](#). Each of these options has a number of layouts which are selectable from drop down list, example as shown in [Figure 5-11](#).

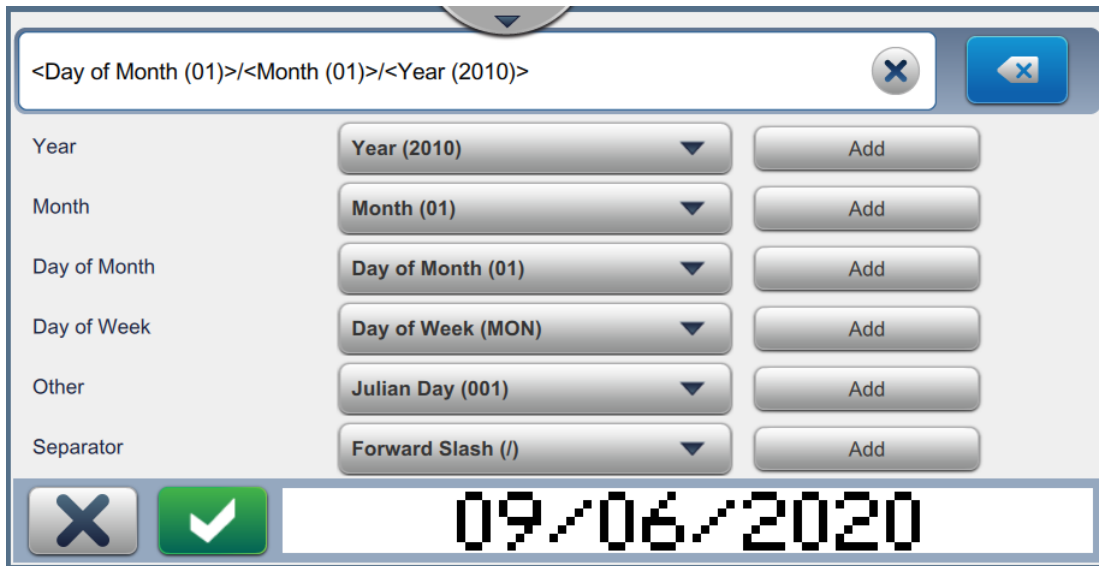


Figure 5-10: Date Set Up Screen

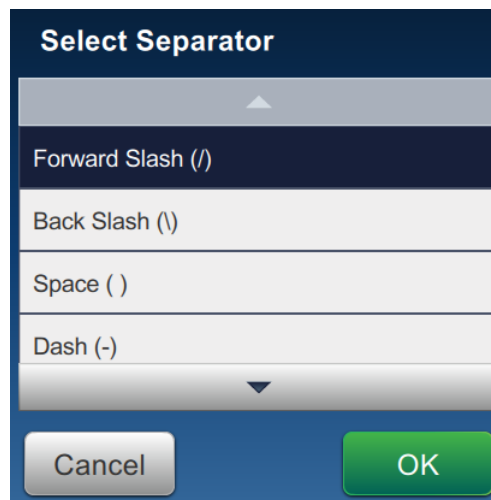




Figure 5-11: Date Separator Set Up Screen

3. Once the required format is selected, touch the  button to move to the date format. The display will show the date format created as shown in [Figure 5-10](#).
4. Touch the  button to save the changes made to the date format.

**Note:** The Date format created will be saved and appears in the Date Type drop down list.


### 5.2.2.3 To Add a Time Field


Do the following steps to add a time field in the job:

1. Touch the  drop down list and select *Time* as shown in [Figure 5-4 on page 5-4](#).

Touch the  button.

2. The Time Setup screen opens and allows the required time to be selected and formatted as required. The time field preview is available for review at the bottom of the screen.

Touch the  button to save the changes made. Refer to [Table 5-9](#) for more details.

*Note:* The  button is used to go back without saving any changes to the field.

3. The system time is inserted into the job design area.

*Note:* The inserted system time can be moved to the desired location in the job design area.

Table 5-9 describes the options available for editing time format:

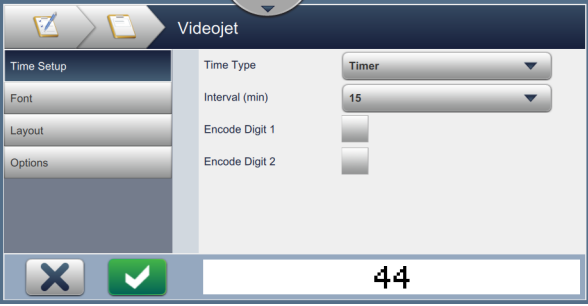
Display	Description
<p>Time Setup</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• <b>Time Type</b> - Touch the drop down list to select: <ul style="list-style-type: none"> <li><b>Custom</b> - Select the required time format from the list of options (Hour, Minute, Second, Period, separator). For example: HH:mm:ss, HH:mm AM/PM, etc.</li> <li><b>Shift</b> - The job will contain the shift code based on the shift time. <p><i>Note: Shift code and time are defined in Global Job Settings. Refer <a href="#">Global Job Settings on page 6-19</a> for additional details.</i></p> </li> <li><b>Timer</b> - The job will contain the timer value. <p><i>Note: The Interval, Encode Digit 1 and Encode Digit 2 will appear only when Timer option is selected from Time Type.</i></p> </li> </ul> </li> <li>• <b>Interval</b> - Touch the drop down list to select the interval for Timer in minutes (15, 30, 45, 60).</li> <li>• <b>Encode Digit 1</b> - Touch the check box to substitute the unit value of timer to alphabetic character (representing that digit).</li> <li>• <b>Encode Digit 2</b> - Touch the check box to substitute the tenth value of timer to alphabetic character (representing that digit).</li> </ul>
Font	Refer to <a href="#">Table 5-7</a> for details.
Layout	
Options	

Table 5-9: Time Setup

### 5.2.2.4 To Add a Counter Field


Do the following steps to add a counter in the job:

1. Touch the  drop down list and select *Counter* as shown in [Figure 5-4 on page 5-4](#).

Touch the  button.

2. The Counter Setup screen opens and allows the required counter to be selected and formatted as required. The counter field preview is available for review at the bottom of the screen.

Touch the  button to save the changes made. Refer to [Table 5-10](#) for more details.

*Note:* The  button is used to go back without saving any changes to the field.

3. The counter field is inserted into the job design area.

*Note:* The inserted counter field can be moved to the desired location in the job design area.

[Table 5-10](#) describes the options available for entering the required counter format:

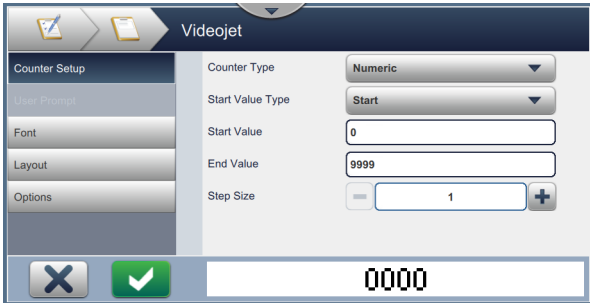
Display	Description
<p>Counter Setup</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• Counter Type - Touch the drop down list to select the type of counter (Numeric, Alpha Uppercase and Alpha Lowercase).</li> <li>• Start Value Type - Touch the drop down list to select Start, Last and User Prompted options.</li> <li>• Start Value - Touch the text box to set the start value of the counter.</li> <li>• End Value - Touch the text box to set the end value of the counter.</li> <li>• Step Size - Touch the text box to set the number of units with which the numeric counter increases or decreases. The step size must be less than the end value and be a factor of the value range. e.g. If the start value is 0 and the end value is 6, then the step size can be 1, 2, 3 or 6.</li> </ul>

Table 5-10: Counter Setup



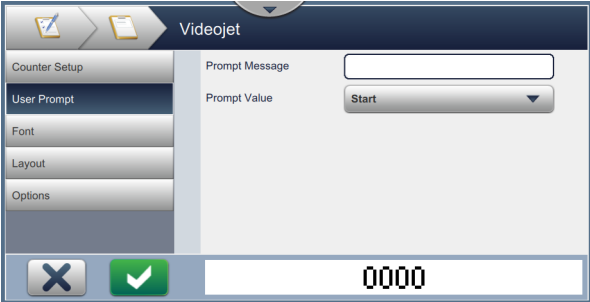
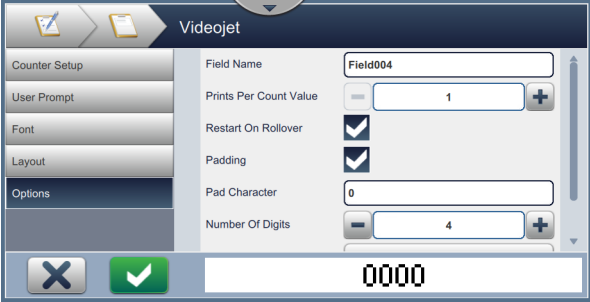

Display	Description
<p>User Prompt</p> 	<p>Provides option to enter:</p> <ul style="list-style-type: none"> <li>• Prompt Message - Touch the text box to enter instruction or prompt for the user when the job is selected to run.</li> <li>• Prompt Value - Touch the drop down list to select the required value entered in the job: <ul style="list-style-type: none"> <li><b>Blank</b> - The job will contain no text.</li> <li><b>Current</b> - The job will contain the current counter value.</li> <li><b>Start</b> - The job will contain the start counter value.</li> </ul> </li> </ul>
<p>Font</p>	<p>Refer to <a href="#">Table 5-7</a> for details.</p>
<p>Layout</p>	
<p>Options</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>• Field Name - Touch the text box to set the field name.</li> <li>• Prints Per Count Value - Touch the text box to set the number of prints required per count.</li> <li>• Restart On Rollover - Touch the check box to restart the count when the counter reaches end value.</li> <li>• Padding - Touch the check box to enable padding, if the leading Pad Character required before the start value.</li> <li>• Pad Character - Touch the text box to define the character that needs to appear before the counter field.</li> <li>• Number Of Digits - Touch the text box to specify number of digits counter can be displayed.</li> </ul> <p><i>Note: The Pad Character and Number Of Digits options will appear only when the Padding check box is selected.</i></p> <ul style="list-style-type: none"> <li>• Increment Counter - Select the required input to increment the counter. The counter is increased or decreased if a job that contains the counter is printed. Select Digital IO inputs to increment the counter externally.</li> <li>• Reset Counter - Select the external input options to reset counter.</li> </ul>

Table 5-10: Counter Setup (continued)


### 5.2.2.5 To Add a Linear Barcode Field


Do the following steps to add a linear barcode field in the job:

1. Touch the  drop down list and select *Linear Barcode* as shown in [Figure 5-4 on page 5-4](#).

Touch the  button.

2. The Linear Barcode Setup screen opens and allows the required linear barcode to be selected and formatted as required. The linear barcode field preview is available for review at the bottom of the screen.

Touch the  button to save the changes made. Refer to [Table 5-11](#) for more details.

*Note:* The  button is used to go back without saving any changes to the field.

3. The barcode is inserted into the job design area.

*Note:* The inserted barcode can be moved to the desired location in the job design area.

Table 5-11 describes the options available for Linear Barcode field:

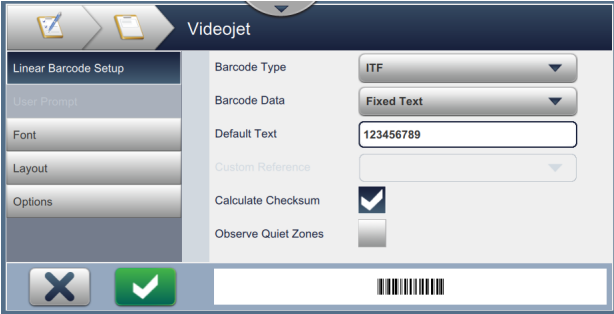
Display	Description
<p>Linear Barcode Setup</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>Barcode Type - Touch the drop down list to select the required barcode (Code 128, Code 39, EAN-128, EAN-13, EAN-8, ITF, UPC-A, UPC-E).</li> <li>Barcode Data - Touch the drop down list to select the required text (Fixed Text, Custom Reference). <i>Note: Custom Reference is available only when a custom reference has been created. Default Text and Custom Reference options are enabled on selection.</i></li> <li>Default Text - Touch the text box to enter the required text.</li> <li>Custom Reference - Touch the drop down list to select the required custom field created. <i>Note: If the barcode needs to include additional data such as date, a custom reference is required. Refer to <a href="#">Custom Reference Builder on page 6-12</a> for more details.</i></li> <li>Calculate Checksum - Touch the check box to verify the information on the barcode. <i>Note: This option is available only for Code 39 and ITF barcode type.</i></li> <li>Observe Quiet Zones - Touch the check box to create a blank margin on either side of the barcode. <i>Note: This option is not available for UPC-A and UPC-E barcode type.</i></li> </ul>
User Prompt	N/A

Table 5-11: Linear Barcode Setup

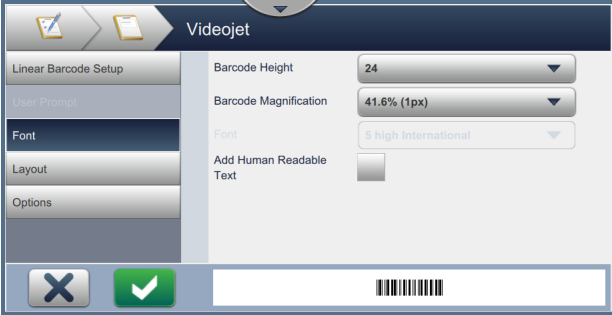
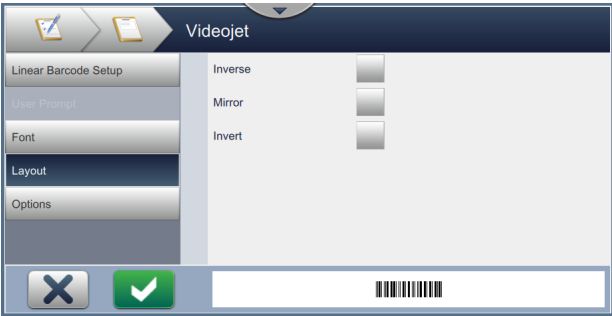



Display	Description
<p>Font</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>Barcode Height - Touch the drop down list to select the barcode height (5, 7, 9, 12, 16, 24, 34).</li> <li>Font - Touch the drop down list to specify font sizes.</li> </ul> <p><i>Note: This option is available only when Add Human Readable check box is selected.</i></p> <ul style="list-style-type: none"> <li>Add Human Readable Text- Touch the check box to select the font height of the barcode text.</li> </ul>
<p>Layout</p> 	<p>Provides the options to:</p> <ul style="list-style-type: none"> <li>Inverse - Touch the check box to invert the font color.</li> </ul> <p style="text-align: center;"><b>Normal</b> <span style="margin-left: 150px;"><b>Inverse</b></span></p>  <ul style="list-style-type: none"> <li>Mirror - Touch the check box to flip the field vertically.</li> </ul> <p style="text-align: center;"><b>Normal</b> <span style="margin-left: 150px;"><b>Mirror</b></span></p>  <ul style="list-style-type: none"> <li>Invert - Touch the check box to flip the field horizontally.</li> </ul> <p style="text-align: center;"><b>Normal</b> <span style="margin-left: 150px;"><b>Invert</b></span></p> 
<p>Options</p>	<p>Provides option to:</p> <ul style="list-style-type: none"> <li>Field Name - Touch the text box to set the field name.</li> </ul>

Table 5-11: Linear Barcode Setup (continued)


### 5.2.2.6 To Add a 2D Barcode Field


Do the following steps to add a 2D barcode field in the job:

1. Touch the  drop down list and select *2D Barcode* as shown in [Figure 5-4 on page 5-4](#).

Touch the  button.

2. The 2D Barcode Setup screen opens and allows the required 2D barcode field to be selected and formatted as required. The 2D barcode field preview is available for review at the bottom of the screen.

Touch the  button to save the changes made. Refer to [Table 5-12](#) for more details.

*Note:* The  button is used to go back without saving any changes to the field.

3. The barcode is inserted into the job design area.

*Note:* The inserted barcode can be moved to the desired location in the job design area.

Table 5-12 describes the options available for 2D Barcode field:

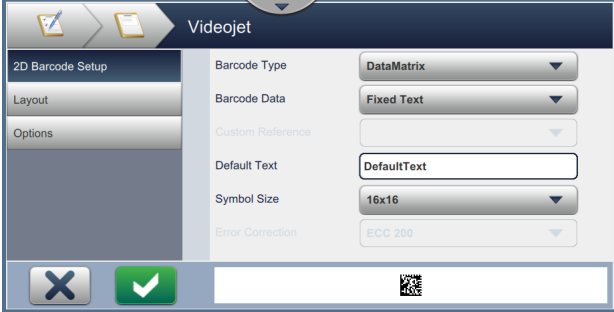
Display	Description
<p>2D Barcode Setup</p> 	<p>Provides the options to change the following parameters:</p> <ul style="list-style-type: none"> <li>Barcode Type - Touch the drop down list to select the required barcode (Data Matrix, QR).</li> <li>Barcode Data - Touch the drop down list to select the required text (Fixed Text, Custom Reference).</li> <li>Custom Reference - Touch the drop down list to select the required custom field created.</li> <li>Default Text - Touch the text box to enter the required text. <i>Note: This option is available only when the Fixed Text barcode data is selected.</i></li> <li>Symbol Size/Version - Touch the drop down list to select the required size of the barcode. <i>Note: Symbol Size appears for Data Matrix barcode and Version appears for QR code.</i> <i>Note: For printing 2D barcodes, it is recommended to select the specific raster. For more information contact Videojet customer service or your local distributor.</i></li> <li>Error Correction - Touch the drop down list to select the amount of error correction based on the operating environment. <i>Note: ECC 200 appears for Data Matrix barcode and L, M, Q, H appears for QR code.</i></li> </ul>
Layout	Refer to <a href="#">Table 5-11</a> for details.
Options	

Table 5-12: 2D Barcode Field

The number of characters allowed for a barcode and the selected symbol size/version varies. If the limit of characters is exceeded, the following message appears.

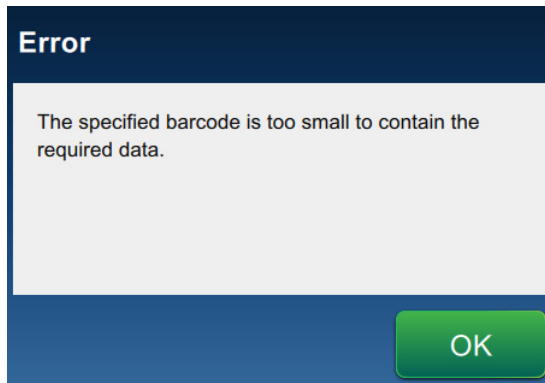


Figure 5-12: Error Message

The following tables shows the maximum limit of characters allowed for each barcode type and its corresponding symbol size/version:

QR Code		Symbol Size			
Error	Character	21x21	25x25	29x29	33x33
L	Numeric	41	77	127	114
	Alphanumeric:	25	47	77	78
M	Numeric	34	63	101	90
	Alphanumeric:	20	38	61	62
Q	Numeric	27	49	77	67
	Alphanumeric:	16	29	47	46
H	Numeric	17	34	58	50
	Alphanumeric:	10	20	35	34

Table 5-13: QR Code - Limit of Characters

**Note:** Refer to [Appendix B: DataMatrix Limitations & Requirements](#) for more information on the maximum limit of characters and QR codes.

DataMatrix		
Error Code	ECC200	
Symbol Size	Numeric	Alphabetic/ Alphanumeric
8x18	10	6
8x32	20	13
10x10	6	3
12x12	10	6
12x26	32	22
12x36	44	31
14x14	16	10
16x16	24	16
16x36	64	46
16x48	98	72
18x18	36	25
20x20	45	31
22x22	60	43
24x24	72	52
26x26	88	64
32x32	125	91

Table 5-14: Datamatrix - Limit of Characters

### 5.2.2.7 To Add a Logo


Do the following steps to add a logo in the job:

1. Touch the  drop down list and select *Logo* as shown in [Figure 5-4 on page 5-4](#).

Touch the  button.

2. The Logo Setup screen opens and allows the user to select the required logo from the drop down list. The logo preview is available for review at the bottom of the screen.

Touch the  button to save the changes made. Refer to [Table 5-15](#) for more details.

3. The  button is used to go back without saving any changes to the field.



4. The logo is inserted into the job design area.

*Note: The inserted logo can be moved to the desired location in the job design area.*

*Note: Logos can be added to a job within CLARiSOFT.*

Table 5-15 describes the options available for Logo:

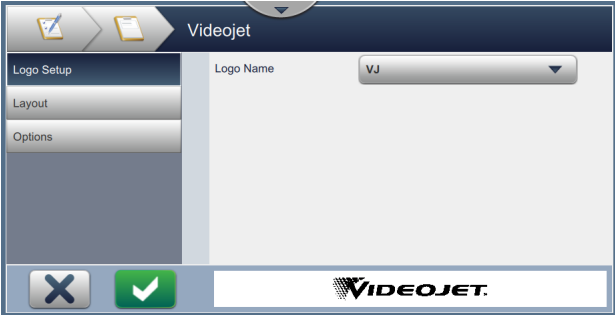









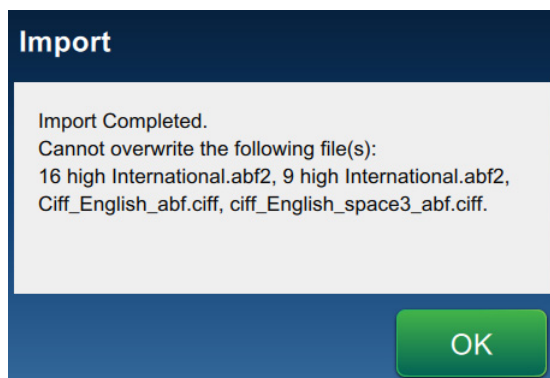
Display	Description
<p>Logo Setup</p> 	<ul style="list-style-type: none"> <li>Logo Name - Touch the drop down list to select the required logo.</li> </ul>
<p>Layout</p> 	<p>Provides the options to:</p> <ul style="list-style-type: none"> <li>Inverse - Touch the check box to invert the font color. <ul style="list-style-type: none"> <li>Normal <span style="margin-left: 150px;">Inverse</span></li> <li> </li> </ul> </li> <li>Mirror - Touch the check box to flip the field vertically. <ul style="list-style-type: none"> <li>Normal <span style="margin-left: 150px;">Mirror</span></li> <li> </li> </ul> </li> <li>Invert - Touch the check box to flip the field horizontally. <ul style="list-style-type: none"> <li>Normal <span style="margin-left: 150px;">Invert</span></li> <li> </li> </ul> </li> </ul>
<p>Options</p>	<p>Provides option to:</p> <ul style="list-style-type: none"> <li>Field Name - Touch the text box to set the field name.</li> </ul>

Table 5-15: Logo Field

### 5.2.2.8 To Import Logos




*Note: Logo files must be monochrome (.bmp) format.*

1. Place the logos on to USB stick root under directory called Graphics.
2. Navigate to *Tools > File Manager > Import Files*.
3. Select the correct drive and click on  .
4. Select the required files to import and click on  .
5. The logos are imported into printers memory.



*Figure 5-13: Import Complete*

### 5.3 How to Edit a Job

1. Touch the  button on the Home screen as shown in [Figure 4-1 on page 4-2](#).
2. The Job List screen opens with a list of jobs, select the required job as shown in [Figure 5-1 on page 5-2](#). Touch the  button.
3. Touch the required field to be edited and touch the  button as shown in [Figure 5-14](#).

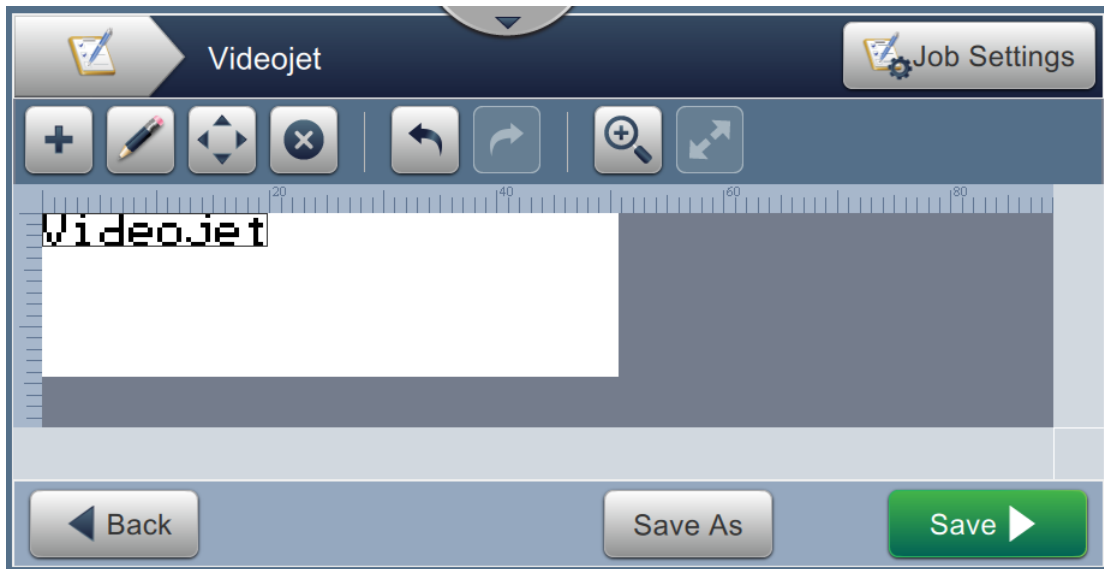



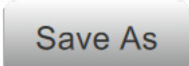




Figure 5-14: Field Edit Screen


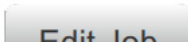
4. Modify the parameters on the Job Field Settings screen for the selected field opens and touch the  button to save the changes made. For more details refer to [Add Field on page 5-10](#).

*Note:* The  button is used to go back without saving any changes to the field.

5. Touch the  button to save the changes made to the job.
6. Touch the  button to save the changes with a new job name.

*Note:* Changes to a job currently in print will not be automatically updated. To print the updated job, touch the  and  button.

## 5.4 Select and Adjust Multiple Fields in Job Editor

1. Touch the  button on the Home screen as shown in [Figure 4-1 on page 4-2](#).
2. The Job List screen opens with a list of jobs, select the required job as shown in [Figure 5-1 on page 5-2](#). Touch the  button. Job Editor screen opens.

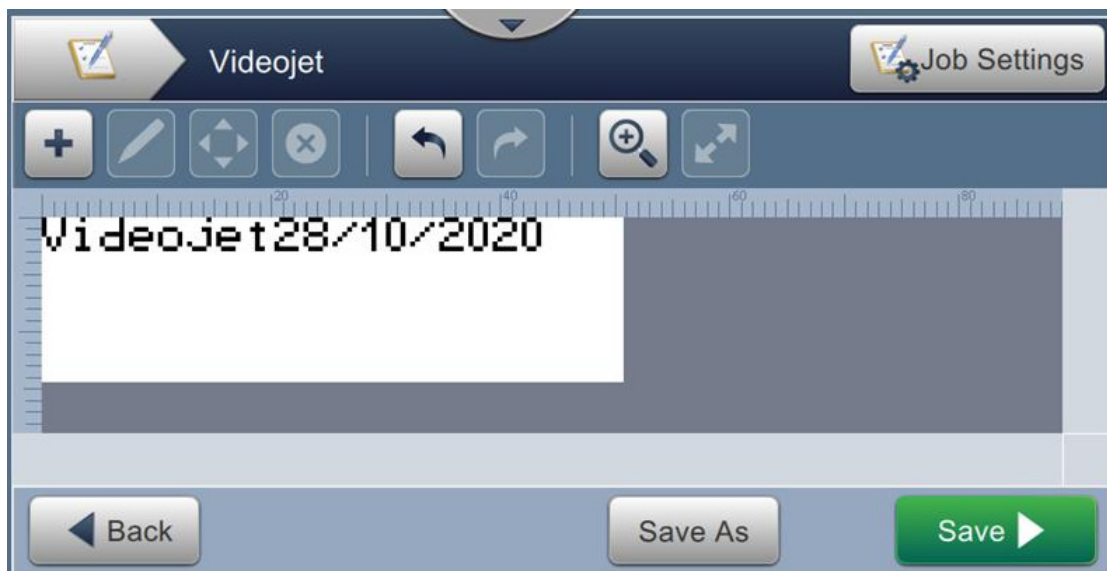


Figure 5-15: Job Editor Screen

3. Navigate to *Job Settings > Field Modifications* as shown in [Figure 5-16](#).

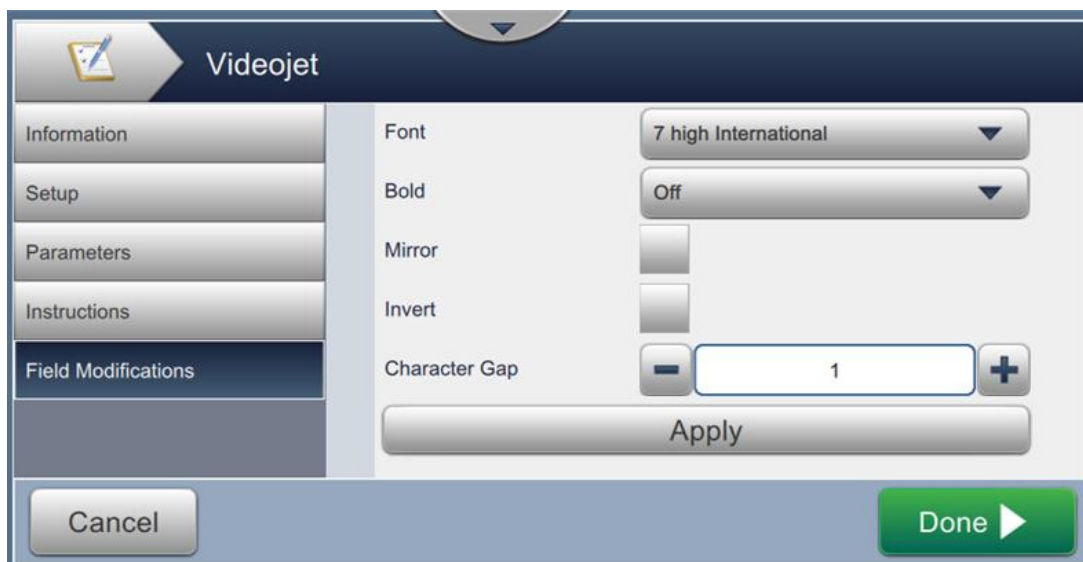


Figure 5-16: Field Modifications Screen

4. Modify the value of required fields and click on *Apply* to change all the fields in the editor canvas at the same time.

### 5.5 How to Quick Edit a Job

*Note: The Update button is enabled only if user editable fields are present.*

*Note: The Print 1x button is enabled when the jet is running. Selecting this button will print the current job once.*

1. Touch the job preview bar from the Home screen.



Figure 5-17: Job Editor

2. Touch the  button. The Job Edit screen opens.

3. To edit a user prompted field, touch the field and then touch the  button as shown in [Figure 5-18](#).

*Note: The available editor tools will be enabled when the field is selected.*

*Note: Only the User Prompted fields are available for edit.*

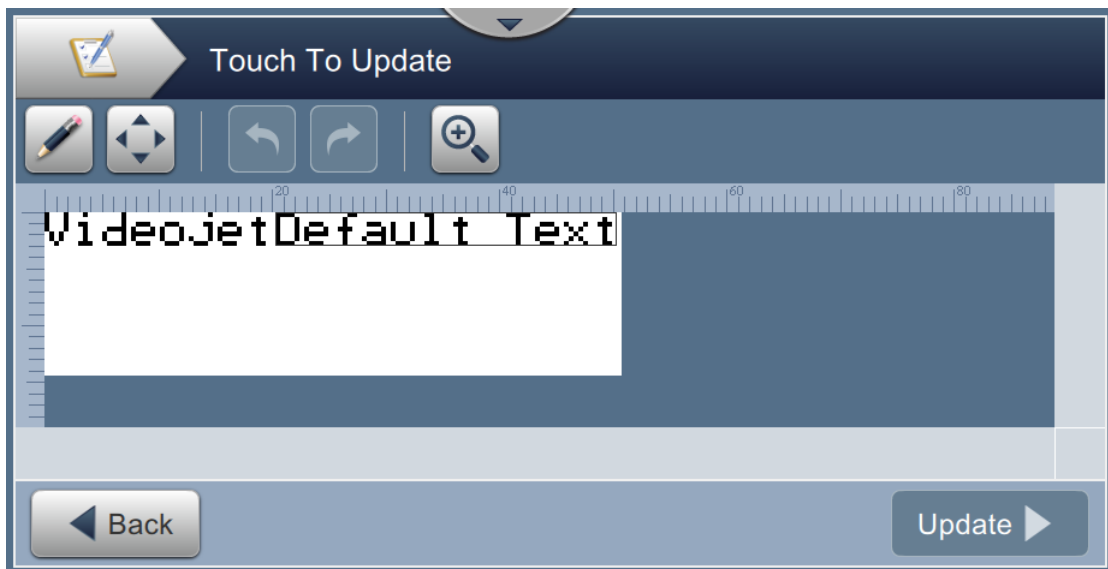



Figure 5-18: Job Editor


4. The utility keypad opens and requires the user to enter text. Touch the  button.

*Note: The utility keypad displays the last saved user value/data or default text or blank based on Prompt Value selected.*

*Note: The changes made to the user editable fields are displayed immediately on the job preview window.*

5. To move the field location, touch the field and then touch the  button as shown in [Figure 5-18](#).

6. Touch  button to save the changes.

7. Touch  button to overwrite the current job. These changes will be made immediately to the job currently being printed.

*Note: Quick edit changes are made only in the currently printed job. The saved job in the jobs list will not change.*

### 5.6 Example - Create a New Job

In the below section the user is guided to create a new job as shown in [Figure 5-19](#) which consists of the following fields:

- One Text field.
- One Date field.
- One Counter field.

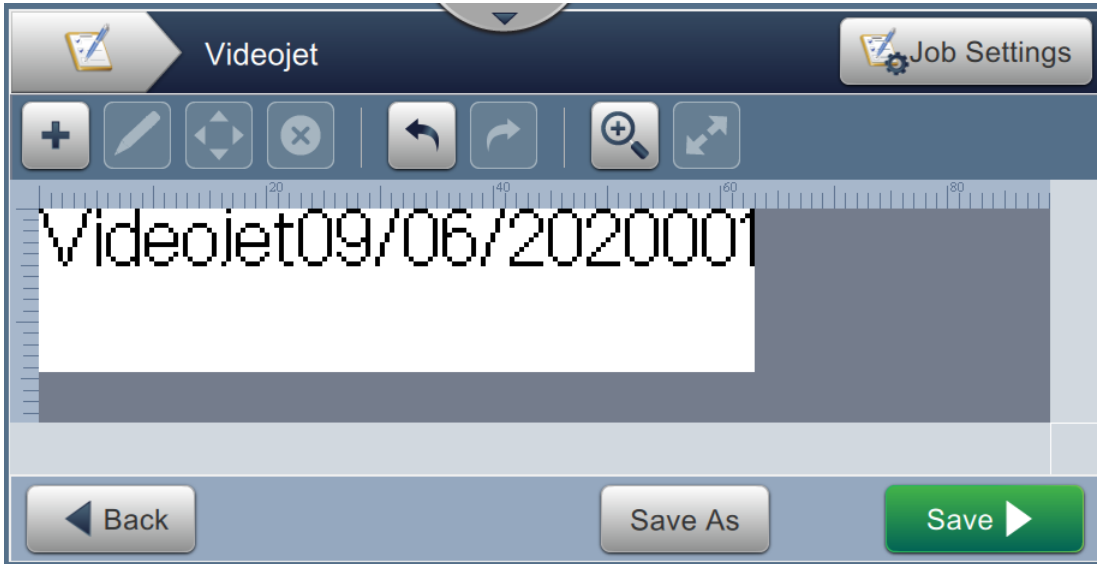










Figure 5-19: Sample Message

1. Touch the  button.
2. Touch the  button as shown in [Figure 5-1 on page 5-2](#) to create a new job.
3. The Job Settings screen opens, enter the job name “Videojet” for the new job in the Job Name text box and touch the  button. Touch the  button.

### 5.6.1 To Insert Text

4. Touch the  drop down list, select the option *Text* as shown in [Figure 5-4 on page 5-4](#).  
Touch the  button.
5. The Text Setup screen opens. Check the Fixed Text is selected.
6. Touch the Default Text box and the utility keypad opens to enter the required text.
7. Enter the text "Videojet" and touch the  button.

#### 5.6.1.1 To Change Font Size of Text

8. Touch the *Font* button and select "12 High International" from the drop down list as shown in [Figure 5-20](#). Touch the  button.

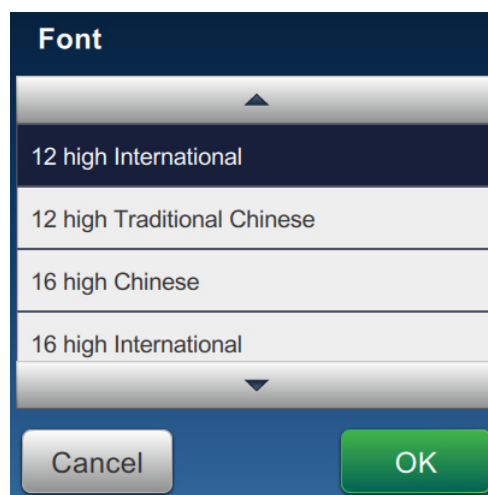



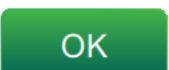


Figure 5-20: Font Size Input Screen


9. Touch the  button to save the changes made. The text field is inserted on the job.
10. Select the field and either drag or use the  button to move the field to the location as shown in [Figure 5-19 on page 5-36](#).

### 5.6.2 To Insert Date

11. Touch the  drop down list, select the option *Date* as shown in [Figure 5-4 on page 5-4](#).  
Touch the  button.



**5.6.2.1 To Change the Date Format**

- 12. The Date Setup screen opens.
- 13. From the Date Setup screen, select option *Custom* from the Date Type drop down list as shown in [Figure 5-21](#). Touch the  button.

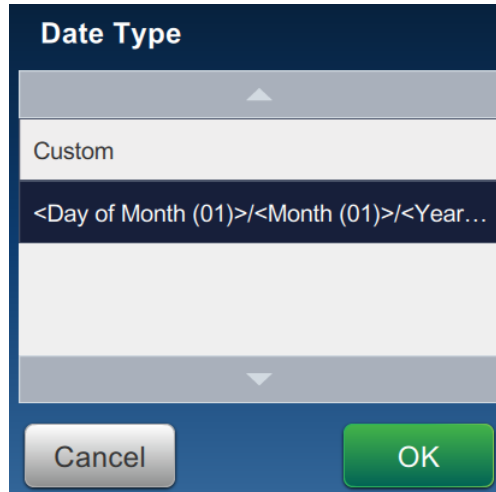
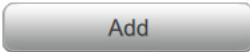

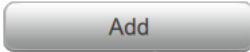

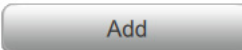


Figure 5-21: Date Format Set Up Screen

- 14. Select option Day of Month (01) from Day of Month drop down list and touch the  button. Select option Forward Slash (/) from Separator drop down list touch the  button.
- 15. Select option Month (01) from Month drop down list and touch the  button. Select option Forward Slash (/) from Separator drop down list touch the  button.

16. Select option Year (2010) from Year drop down list and touch the  button.

The date field preview will show the current date in the selected format as shown in [Figure 5-22](#).

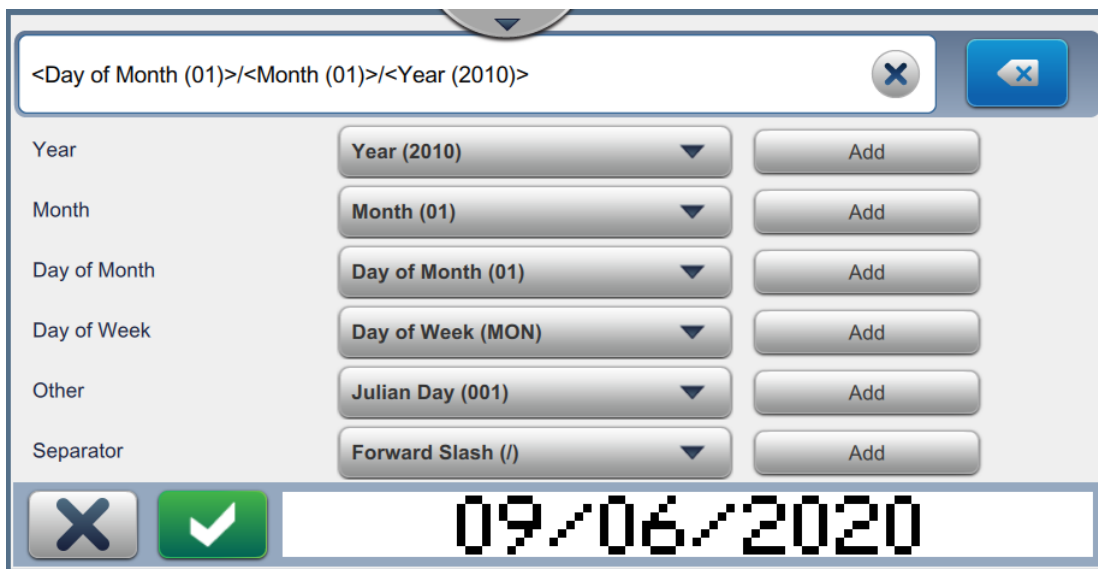



Figure 5-22: Date Separator Set Up Screen

17. Touch the  button to save the custom date format.
18. Select the Offset from Insert Date drop down.
19. From the Offset menu, select the Offset Units as Days and Offset Amount as 7.

5.6.2.2 To Change Font Size of Date



20. Touch the *Font* button and select “12 High International” from the drop down list as shown in [Figure 5-20](#). Touch the  button.



Figure 5-23: Font Size Input Screen

21. Touch the  button to save the changes made. The date field is inserted on the job as shown in [Figure 5-24](#).

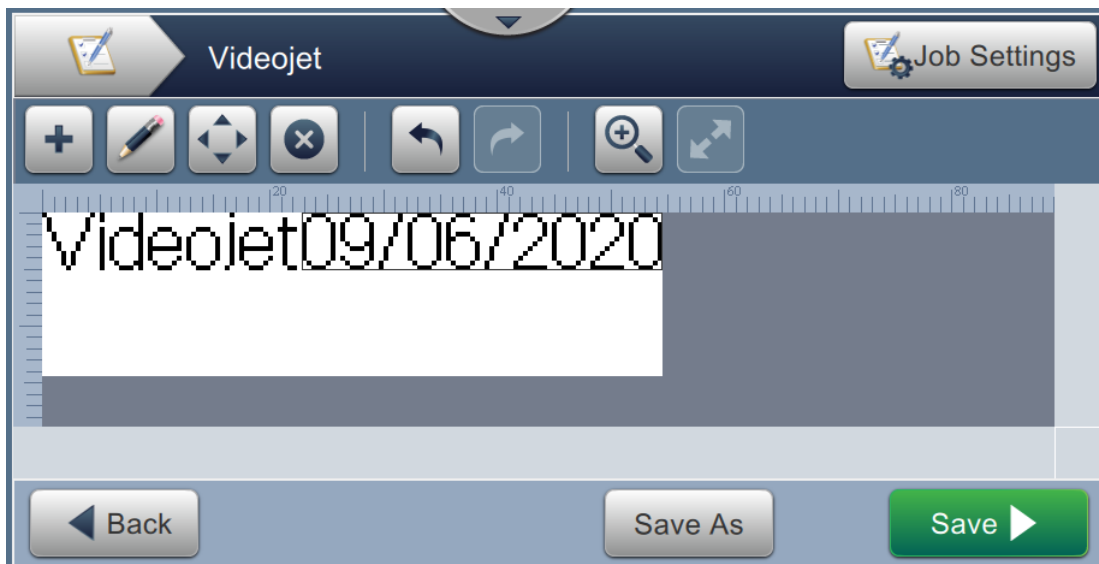

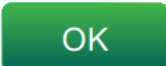



Figure 5-24: Date Field

22. Select the field and either drag or use the  button to move the field to the location as shown in [Figure 5-19](#) on [page 5-36](#).

### 5.6.3 To Insert Counter

23. Touch the  drop down list, select the option *Counter* as shown in [Figure 5-4 on page 5-4](#). Touch the  button.

#### 5.6.3.1 To Change the Start Value

24. The Settings screen opens. Check the counter types Numeric and Start are selected.
25. Touch the start value text box and the utility keypad opens to enter the start value.
26. Enter the Start Value as 1 and touch the  button.
27. Similarly, enter the End Value as 100 and Step Size as 3.

#### 5.6.3.2 To Change Font Size of Counter



28. Touch the *Font* button and select “12 High International” from the drop down list as shown in [Figure 5-20](#). Touch the  button.



Figure 5-25: Font Size Input Screen


29. Touch the  button to save the changes made. The counter field is inserted on the job.

30. Select the field and either drag or use the  button to move the field to the location as shown in [Figure 5-19 on page 5-36](#).

*Note:* If a field overlaps another field, a red border is displayed around the field.

*Note:* To place a field as close to another field, drag the field as close to the field till a green line appears. The field will be placed as close as possible for print.

### 5.6.4 Save the Job

31. Touch the  button to save the job for printing.

32. The job “Videojet” is added to the job list as shown in [Figure 5-26](#).

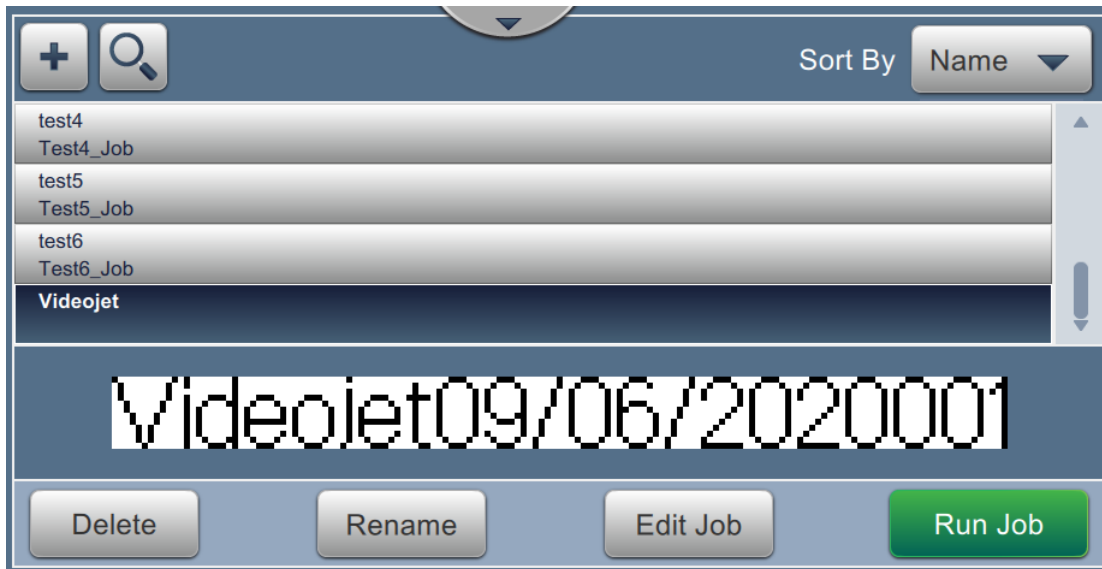


Figure 5-26: Job List

# Section 6 User Interface

## Introduction

This section describes how to use the user interface (UI) and contains the following topics:

- [Home Screen Description](#)
- [Using the Tools Screen](#)
- [Configure Line Setup](#)
- [Overall Equipment Effectiveness Availability](#)

### 6.1 Home Screen Description

The User Interface (UI) has buttons that allow the user to navigate to different screens of the interface. The Home screen of the UI is as shown in the [Figure 6-1](#). To navigate quick touch to select an item, touch and drag to scroll through the menu or page and use arrows to scroll or increase/decrease values. Use the utility keypad and keys to enter the required text, numbers or special characters.

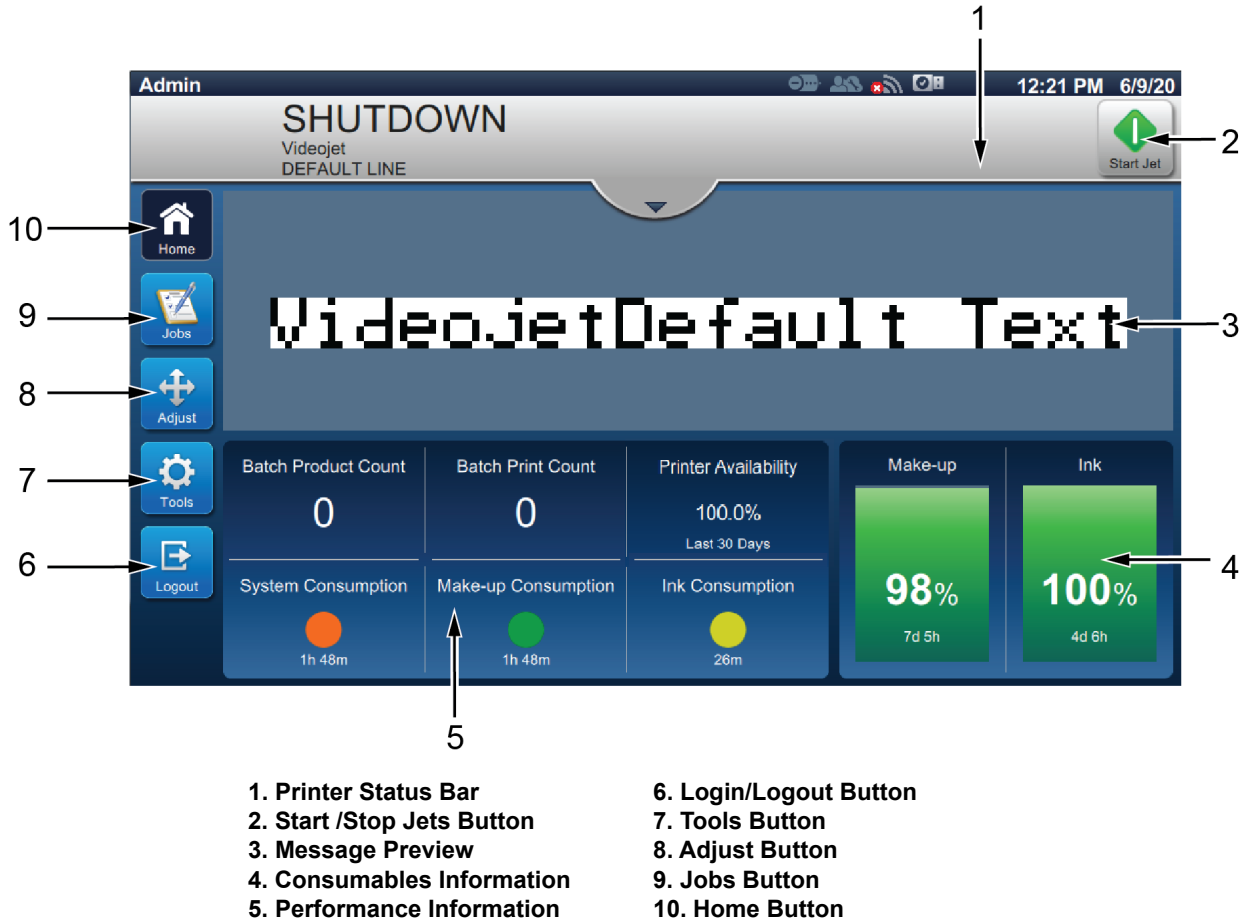


Figure 6-1: Home Screen

The various options to navigate, select or enter values available in the UI are listed in the [Table 6-1](#):

## User Interface



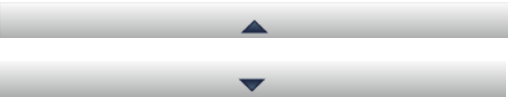












Option (Example)	Description
	Edit - Touch to modify the selected option.
	Drop Down List - Select to display the drop down options.
	Drop Down List Arrows - Scroll up or down to view the list of options.
	Text Box - Select the box to open up the keypad.
	Increment or Decrement with Text box - Select + or - to increase or decrease the value by defined range or select the box to open up the keypad and enter required value.
	Side arrow - Navigates to sub-menu.
	Tool Bar - Touch to navigate back to sub-menu or menu.
	Tab - Select tab to display required menu.
	Option Select - Selected option will change color and display a tick.
	Check Box - Touch box to add or remove tick to enable or disable the required option.
	Option Select - Selected option will change color and display as a filled circle.
	Up/Down Arrow - Select to display or hide the alarms.
	Information Bar - Touch the value/parameter to view the corresponding data.
	Move Arrows - Moves the selected field in the required direction.
	Filter - provides option to select required file type.

Table 6-1: UI Navigation Options

## 6.2 Using the Tools Screen

Tools screen displays the tools available for the printer.


Touch the  button on the Home screen to access the Tools screen (see [Figure 6-2](#)).



Figure 6-2: Tools Screen

The Tools screen provides the access to the following parameters:

<a href="#">Performance</a>	<a href="#">Software Download</a>
<a href="#">Consumables</a>	<a href="#">Maintenance</a>
<a href="#">Line Setup</a>	<a href="#">Diagnostics</a>
<a href="#">File Manager</a>	<a href="#">Installation</a>
<a href="#">Custom Reference Builder</a>	<a href="#">Ink Build-up Sensor *</a>
<a href="#">Global Job Settings</a>	<a href="#">VideojetConnect Remote Service***</a>
<a href="#">Communications</a>	<a href="#">MAXIMIZE***</a>
<a href="#">Printer Settings</a>	<a href="#">Workflow Module(s)**</a>
<a href="#">User Access</a>	<a href="#">ESI Job Settings***</a>
<a href="#">Configure Display</a>	

\* Ink Build-up Sensor tool availability is dependent on printer configuration.

\*\*Workflow Modules can be added as options for additional functionality. For more information contact Videojet customer service or your local distributor.


\*\*\*Separate documentation is available.



6.2.1 Performance



The Performance screen provides statistical information on printer parameters.

1. Touch the  button from the Tools screen. The Performance screen opens as shown in the [Figure 6-3](#).

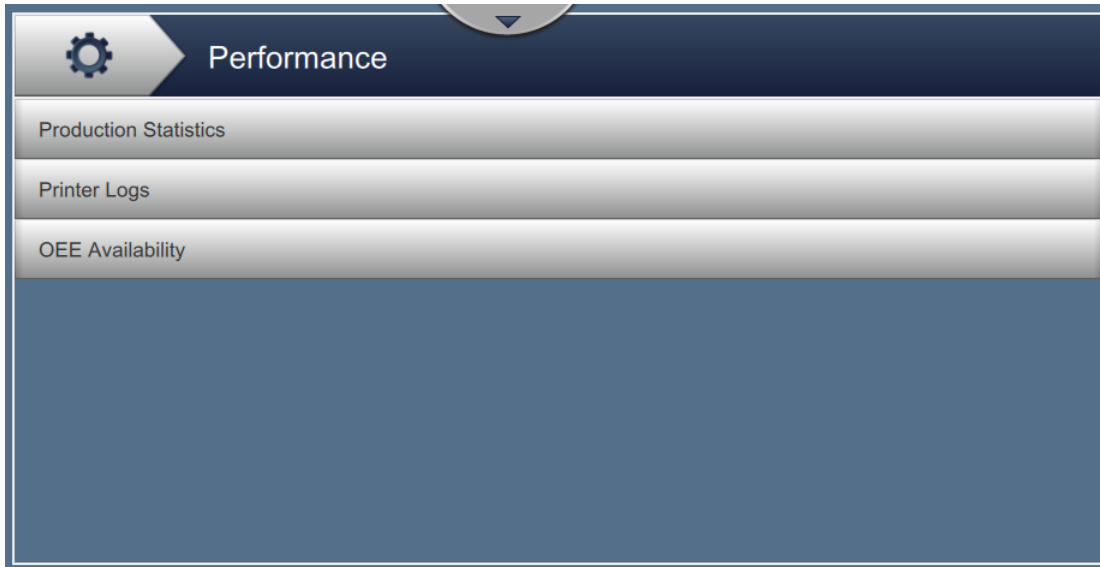


Figure 6-3: Performance Screen

The Performance screen provides the access to the following options as shown in [Table 6-2](#).

Buttons	Description
Production Statistics	Displays details about the production data of the printer. <ul style="list-style-type: none"> <li>• Production Print Count - Displays the total number of individual jobs printed.</li> <li>• Production Product Count - Displays the number of products the printer has detected.</li> <li>• Batch Print Count - Displays the number of individual jobs print in the current batch.</li> <li>• Batch Product Count - Displays the number of products in the batch that the printer has detected.</li> <li>• Pieces/minute - Displays the speed at which the job is printed.</li> <li>• Printer Availability</li> <li>• Operational Avail (Total Time)</li> <li>• Operational Avail (Ready Total Time)</li> <li>• Print Counter - Displays the number of individual jobs printed since counter reset.</li> <li>• Product Counter - Displays the number of products the printer has detected since counter reset.</li> <li>• Print Counter Reset - Resets the Print Counter.</li> <li>• Product Counter Reset - Resets the Product Counter.</li> </ul>

Table 6-2: Performance Options


Buttons	Description
Printer Logs	<p>Displays log of events responsible for printer downtime. Touch the <i>Filter</i> button to filter the available file types. To select the file type required, select box to add check mark. Selecting the file type enables the user to filter the displayed files for export:</p> <ul style="list-style-type: none"> <li>• Select All - Selects all the log data.</li> <li>• Event Data - Selects all the log of events related to printer downtime.</li> <li>• Service Data - Selects all the log of service related events of printer downtime.</li> <li>• Production Data - Selects all the log of production related events of printer.</li> <li>• Alarms - Selects all the alarms, warning or status events.</li> </ul> <p>User can export the log files to USB stick. To export, select <i>Export</i> button. Touch the <i>Back</i> button to go back to the Performance page.</p>
OEE Availability	<p>Displays the data related to:</p> <ul style="list-style-type: none"> <li>• Time Frame - Displays the printer and operation availability values for different available time frames. The history of the availability data enables the user to correlate seasonal changes affecting availability.</li> <li>• Printer Availability - Tracks the downtime directly related to an internal error (fault) such as: <ul style="list-style-type: none"> <li>• Pump Failure</li> <li>• Charge Supply Fault</li> <li>• Gutter Fault</li> </ul> <p>For additional details refer section "<a href="#">Printer Availability</a>" on <a href="#">page 6-59</a>.</p> </li> <li>• Operation Availability - Tracks the downtime related to faults that might be classed as "Procedural" such as: <ul style="list-style-type: none"> <li>• Ink System Empty</li> <li>• Modulation Driver Too Hot</li> </ul> <p>The impact may be due to printer issues, operator related issues, shift changeovers and so on.</p> <p>For additional details refer section "<a href="#">Operation Availability</a>" on <a href="#">page 6-60</a>.</p> </li> </ul> <p>Touch the <i>Export</i> button to export the event log to USB stick. The UI will take the user through the steps required to download to USB. Touch the <i>Back</i> button to go back to the Performance screen.</p>

Table 6-2: Performance Options (continued)

### 6.2.2 Consumables

The Consumables screen displays information for Make-up and Ink consumables.



1. Touch the  button from the Tools screen.

**Note:** The Consumables screen can be accessed from the Home screen by touching the Make-up and Ink area.

2. Select the required consumable to view the details as shown in [Figure 6-4](#).



Figure 6-4: Consumables

The Consumables screen provides the access to the following parameters as shown in [Table 6-3](#).


Option	Description
Part Number	Displays the part number of the inserted cartridge.
Volume remaining (ml)	Displays the calculated volume remaining in the cartridge.
Batch Number	Displays the batch number of the fluid.
First Fit Date	Displays the date the cartridge was first installed.
Expiry Date	Displays the expiry date of the fluid.
Time remaining (est)	Displays the projected time remaining based on the current job. This is a calculated value and will vary depending on the job currently printing.
Time to replace (est)	Displays the expiry date and time remaining. This is the projected when the cartridge will need to be replaced.
Recommended Make-up	Displays the Make-up type recommended for use with ink type.

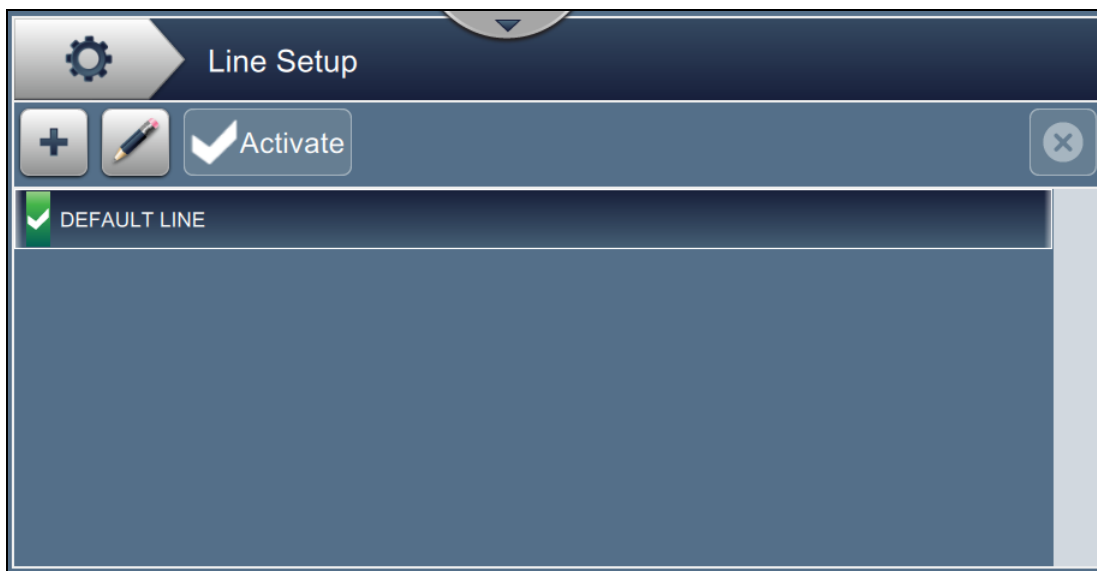
Table 6-3: Consumables

### 6.2.3 Line Setup

The Line Setup screen provides the options to create, edit, save, activate and delete different line configurations.



1. Touch the  button from the Tools screen. The Line Setup screen opens as shown in the [Figure 6-5](#).




*Figure 6-5: Line Setup*

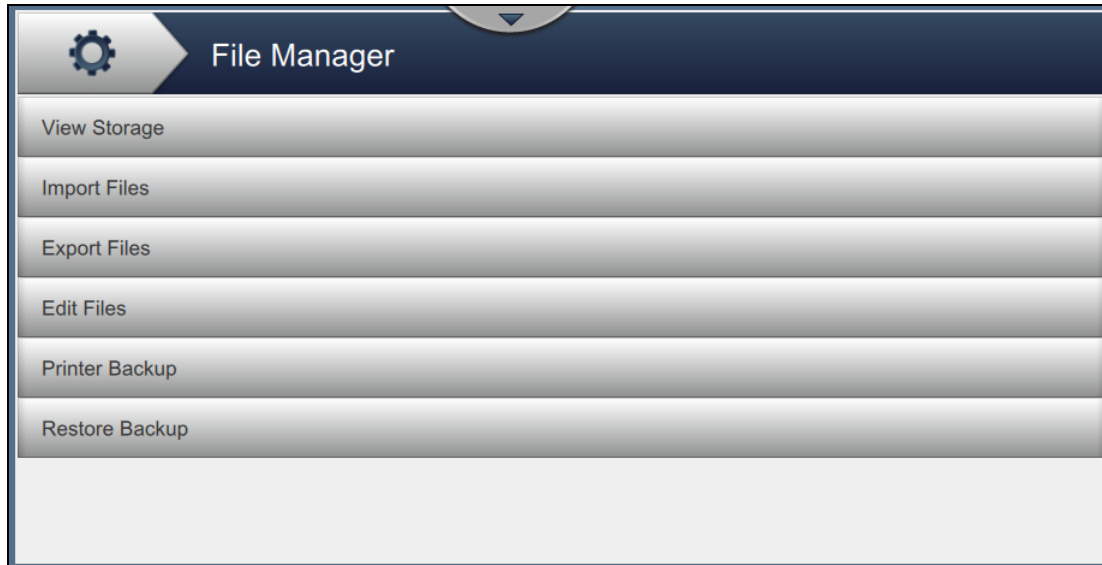
Refer "[Configure Line Setup](#)" on page 6-46 for more details.

### 6.2.4 File Manager

The File Manager permits the user to manage data, import/export files, take printer backup and archive and restore backup.



1. Touch the  button from the Tools screen. The File Manager screen opens as shown in [Figure 6-6](#).
2. Select the required options to organize or manage the data.



*Figure 6-6: File Manager*

**Note:** Make sure that the USB is connected to the printer to perform the File Manager operations. To insert the USB, refer [4.12 How to Connect the USB to the Printer](#) on page 4-15.

The File Manager screen provide access to the following options (see [Table 6-4](#)):



Buttons	Description
View Storage	Displays the storage information on the available drives: Internal drive and USB.
Import Files	<p>Touch the <i>Import Files</i> button to select the drive from which files need to be imported.</p> <p>Touch <i>Continue</i> button to select the files to be imported and touch <i>Import</i> button to import the required files.</p> <p>Refer to <a href="#">Section 5.2.2.8, "To Import Logos"</a> on page 5-31 for more information on the requirements for importing logos.</p> <p>There are three options to select files to import or export:</p> <p><b>Note:</b> <i>These three options are also applicable for Export option.</i></p> <ul style="list-style-type: none"> <li>• Scroll and select the file(s) to import or export.</li> <li>• Touch <i>Select All</i> check box to select all file(s).</li> <li>• Touch  icon to select or deselect the required files and click on <i>OK</i>.</li> </ul> 

Table 6-4: File Manager Options


Buttons	Description
Export Files	<p>Touch the <i>Export Files</i> button to export the printer data to an external drive.</p> <p>Touch the <i>Filter</i> button to filter the available file types. To select the file type required, select box to add check mark. Selecting the file type enables the user to filter the displayed files for export:</p> <ul style="list-style-type: none"> <li>• Select All - Selects all the exportable files available in the printer and export the required files to an external drive.</li> <li>• Custom References - Selects all the custom reference formats available in the printer and export the required files to an external drive.</li> <li>• Fonts - Selects all the font formats available in the printer and export the required files to an external drive.</li> <li>• Logos - Selects all the logo files available in the printer and export the required files to an external drive.</li> <li>• Jobs - Selects all the jobs available in the printer and export the required files to an external drive.</li> <li>• Line Setups - Selects all the line setup configurations available in the printer and export the required files to an external drive.</li> <li>• Logs - Selects all the eventlog and sensor data available in the printer and export the required files to an external drive. Either of the event log or sensor data can be exported by selecting the option from the left hand side of the screen.</li> </ul> <p>Touch the <i>Continue</i> button after selecting required files. Select the required external drive and touch <i>Export</i> button to export the files.</p>
Edit Files	<p>Touch the <i>Edit Files</i> button to open the files list. Select the required drive before selecting the required files. There are two available options to select files:</p> <ul style="list-style-type: none"> <li>• select the file(s) individually.</li> <li>• Touch  icon to select or deselect the required files and click on <i>OK</i>.</li> </ul> <p>Touch the <i>Filter</i> button to filter the available file types. To select the file type required, select box to add check mark. Selecting the file type allows the user to filter the displayed files available for edit:</p> <ul style="list-style-type: none"> <li>• Select All - Selects all the editable files available in the printer.</li> <li>• Jobs - Selects all the jobs available in the printer for edit.</li> <li>• Fonts - Selects all the font formats available in the printer for edit.</li> <li>• Logos - Selects all the logo files available in the printer for edit.</li> <li>• Line Setups - Selects all the line setup configurations available in the printer for edit.</li> <li>• Custom References - Selects all the custom reference formats available in the printer for edit.</li> </ul> <p>Select the individual file(s) to delete or copy or rename. <i>Note: The options available may vary depending on the file(s) selected.</i></p>

Table 6-4: File Manager Options (continued)

Buttons	Description
Printer Backup	<p>Touch the <i>Printer Backup</i> button and follow the steps to perform printer backup.</p> <ul style="list-style-type: none"> <li>• Storage - Select the required location for the backup to be stored from the available options.</li> <li>• Name - The backup name will be automatically populated but if required a new name can be entered by selecting the text.</li> <li>• Options - If the printer set up and parameters, such as viscosity, are correct and running well, the file can be marked as 'known good' for future reference.</li> </ul> <p>Touch the <i>Backup</i> button to start the backup.</p>
Restore Backup	<p>Touch the <i>Restore Backup</i> button and follow the steps to restore printer backup.</p> <ul style="list-style-type: none"> <li>• Location - Select the required location for the backup to be restored from the available options.</li> <li>• Options - Displays the options for the backup restore:  Adding the check mark to 'Restore System Settings' will restore the systems settings as available in the backup file.  Adding the check mark to 'Restore Security Settings' will restore the security settings as available in the backup file.</li> <li>• File - Displays all available files for restoration on the drive selected.  Adding the check mark to 'Only Known Good...' will show only those files marked known good on backup.</li> </ul> <p>Touch the <i>Restore</i> button to start the restore process.  <b>Note:</b> <i>Restore Backup process requires the printer to be SHUTDOWN.</i></p>

Table 6-4: File Manager Options (continued)




## User Interface

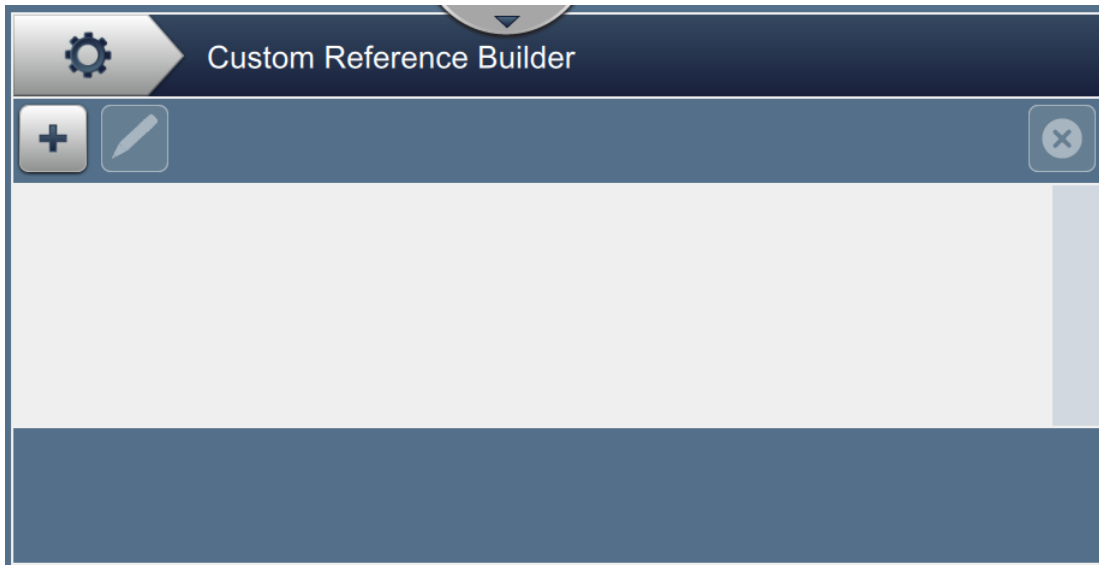
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### 6.2.5 Custom Reference Builder



The Custom Reference Builder screen provides the options to create and edit custom reference fields. These fields can contain one or more data fields to create a unique reference for use in a job.



1. Touch the  button from the Tools screen. The Custom Reference Builder screen opens as shown in the [Figure 6-7](#).



*Figure 6-7: Custom Reference Builder*

2. Touch the  button to create a new custom reference. The Reference Name screen opens.
3. Enter the reference name using utility keypad and touch the  button.

4. The Custom Reference Editor screen opens as shown in the [Figure 6-8](#).

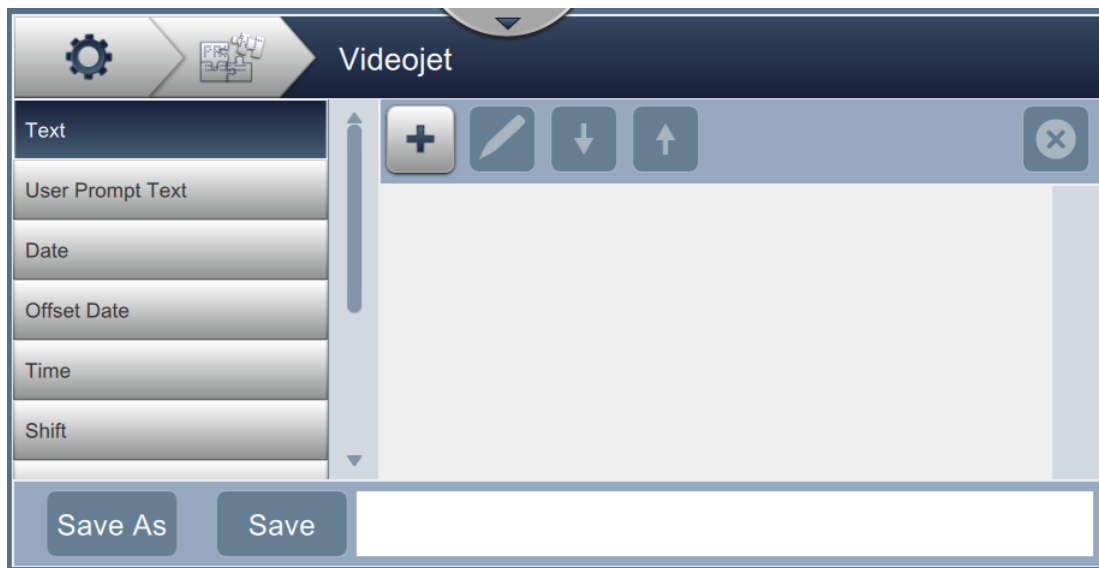



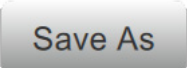
Figure 6-8: Custom Reference Editor

5. The custom reference editor provides the options to add and edit the following parameters as available in the job editor:
- Text
  - User Prompt Text
  - Date
  - Offset Date
  - Time
  - Shift
  - Timer
  - Counter
  - Factory Reference
  - Equipment Reference
  - Line Reference

*Note:* The custom reference data preview is available for review at the bottom of the screen.

6. To delete a field from the custom reference, select the required field and touch the  button.

7. Touch the  button to save the required custom reference format. Touch the

 button to save it with a different name.

*Note:* The user is not allowed to delete a custom reference if it is used in any of the jobs present in the jobs list.

### 6.2.5.1 Example - Create a New Custom Field and Insert it into Job Editor






In the below section the user is guided to



1. Create a Custom Field
2. Import Custom Field into 2D Barcode Job



Figure 6-9: Sample Job

#### Create a Custom Field




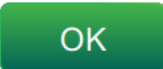
1. Touch the  button from the Tools screen.
2. Touch the  button as shown in [Figure 6-7 on page 6-12](#) to create a new custom field. The Reference Name screen opens.
3. Enter the reference name “Expiry Date” using utility keypad and touch the  button.
4. The Custom Reference Editor screen opens as shown in the [Figure 6-8](#).
5. Select the option Offset Date and touch . The Offset Date gets added to the custom reference builder list.
6. Select the option Offset Date from the custom reference builder list and touch . The Offset Date screen opens.

7. Select years from the Offset Units list. Touch the  button.
8. From Offset Amount screen, change the value to 2 using the number keypad. Touch the  button.

9. Touch the  button to save the changes.

10. Touch the  button to save the custom job.

**Import Custom Field**

1. Touch the  button in the user interface.
2. Select the job "Videojet" from the job list, and touch  button.
3. From the Job Editor screen, touch the  button and select the option *2D Barcode*. Touch the  button.
4. The 2D Barcode Setup screen opens as shown in [Figure 6-10](#).

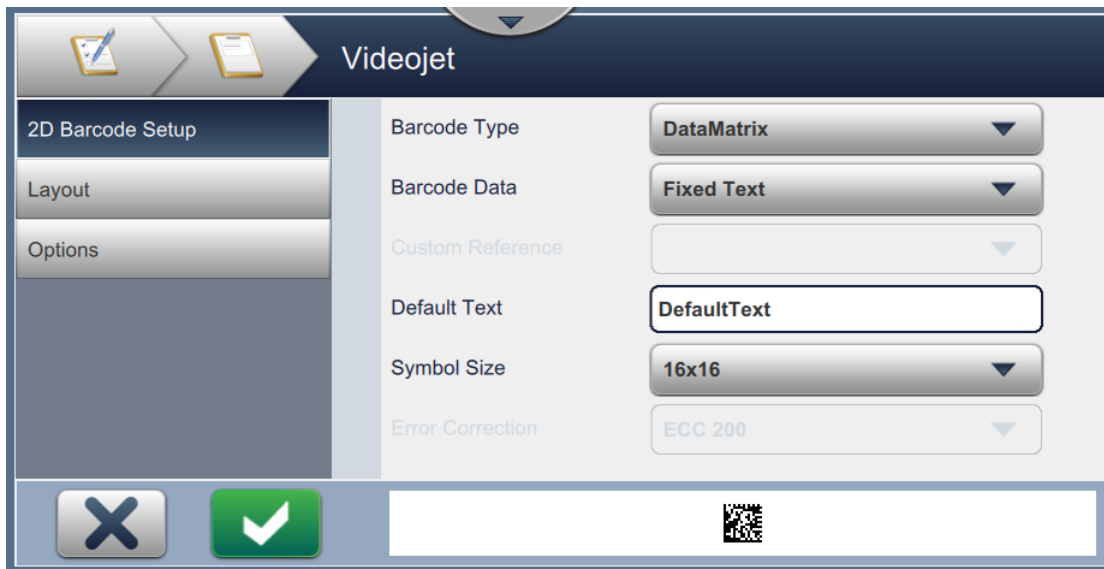


Figure 6-10: 2D Barcode Setup Screen

5. Select DataMatrix from the Barcode Type list.
6. Select Custom Reference from the Barcode Data list.

7. The 2D Barcode Setup screen enables the user to select the custom reference as shown in [Figure 6-11](#).

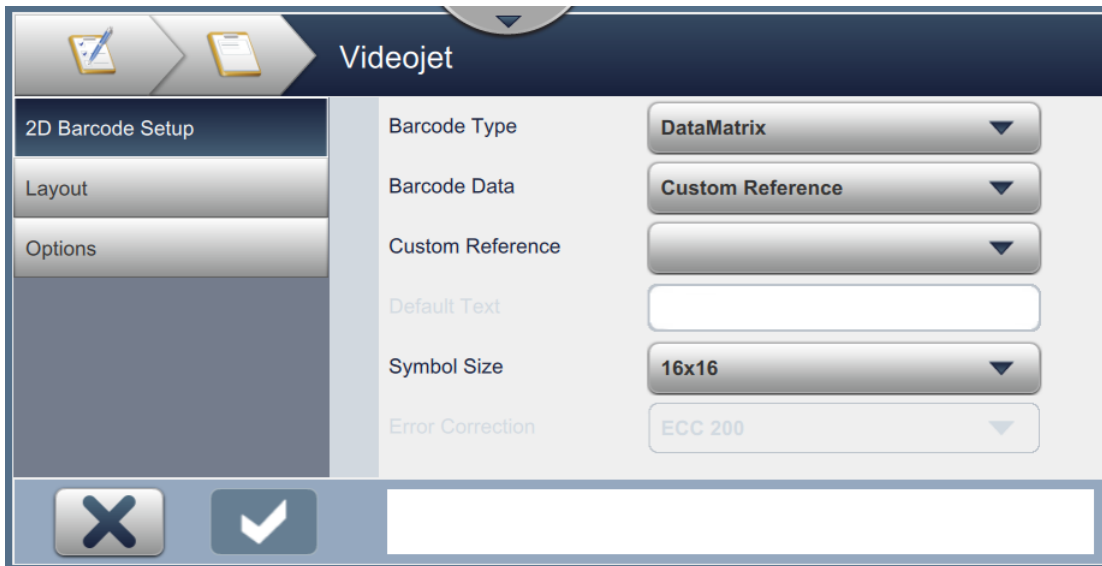


Figure 6-11: 2D Barcode Setup Screen

8. Select Expiry Date from the Custom Reference list as shown in [Figure 6-12](#).

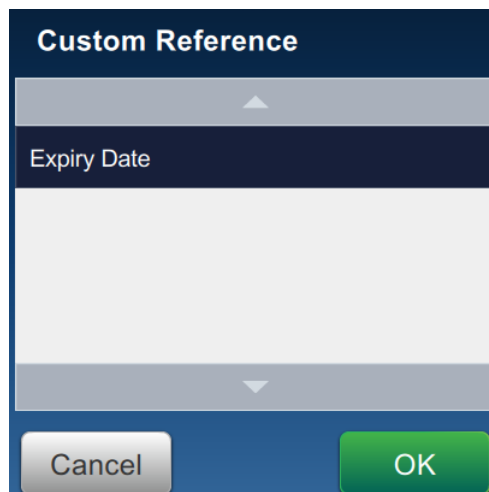


Figure 6-12: Custom Reference List

9. Select the size 16x16 from the Symbol Size list.




**Note:** The user should select appropriate Symbol Size/Version, Error Correction based on barcode type. If user selects the smaller Symbol Size /Version, the user interface displays the error as shown in [Figure 5-12 on page 5-28](#). Refer [Table 5-13 on page 5-28](#) for appropriate Symbol Size/Version for barcode types.

10. Touch the  button to save the changes. The Job Editor screen opens as shown in the

Figure 6-13.



Figure 6-13: Job Editor Screen

11. Select the field and either drag or use the  button to move the field to the location as shown in [Figure 6-9 on page 6-14](#).
12. Touch the  button. Select the option *Text* and touch the  button.
13. Select Custom Reference from the Text Type list. Refer to [Table 5-7 on page 5-11](#) for text options.
14. Select Expiry Date from the Custom Field Reference list as shown in [Figure 6-12](#).
15. Touch the *Font* button and select “12 High International” from the Font list.




16. Touch the  button to save the changes. The Job Editor screen opens as shown in the

Figure 6-14.




Figure 6-14: Job Editor Screen

17. Select the field and either drag or use the  button to move the field to the location as shown in [Figure 6-9 on page 6-14](#).
18. Touch the  button to save the job.

### 6.2.6 Global Job Settings



The Global Job Settings tool provides the options to set parameters that are used by all jobs.

1. Touch the  button from the Tools screen. The Global Job Settings screen opens as shown in the [Figure 6-15](#).

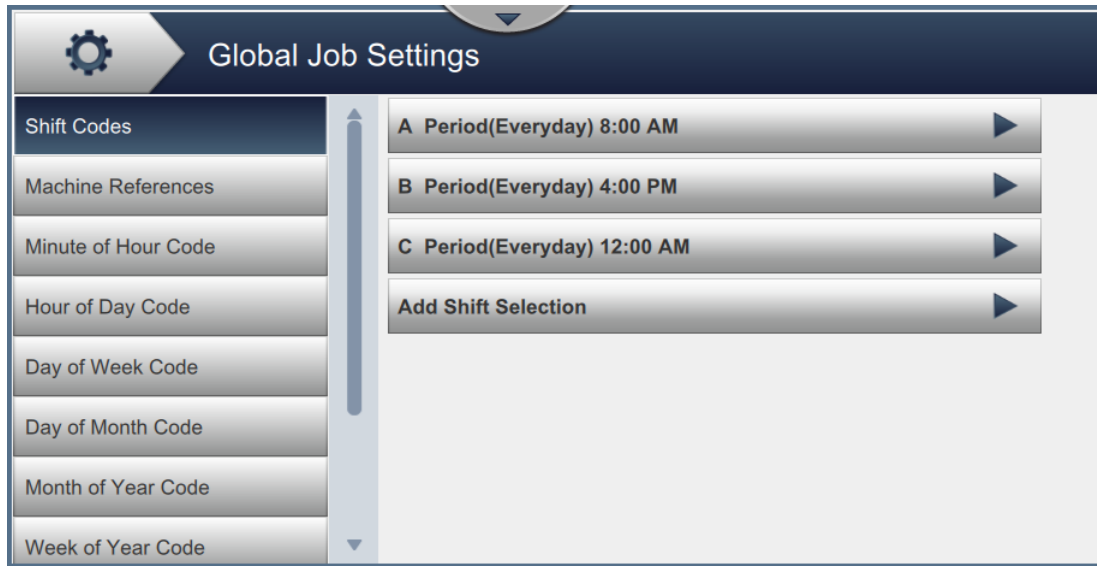


Figure 6-15: Global Job Settings

The Global Job Settings screen provides the access to the following options as shown in [Table 6-5](#).

Buttons	Description
Shift codes	The user can amend and add shifts as required. Shift code, start time and days active are all configurable. Each shift must be unique. The default setting is 3 shifts of 8 hours each 7 days/week. To edit existing shift codes, all parameters are editable by selecting the appropriate text box or drop down list. Select Delete to remove shift or accept to accept changes, cancel to return.
Machine References	Add/Edits Equipment, Factory, Line references.
Minute of Hour Code	Each minute (00-59) can be allocated a unique Alpha-numeric code, to change from the default, select the appropriate text box.
Hour of Day Code	Each hour (00-23) can be allocated a unique Alpha-numeric code, to change from the default, select the appropriate text box.
Day of Week Code	Each day of week (Sunday to Monday) can be allocated a unique Alpha-numeric code, to change from the default, select the appropriate text box. The day to indicate Start of Week can be set by selecting from drop down list.

Table 6-5: Global Job Settings



## User Interface

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Buttons	Description
Day of Month Code	Each day of month (01-31) can be allocated a unique Alpha-numeric code, to change from the default, select the appropriate text box.
Month of Year Code	Each month of year (January to December) can be allocated a unique Alpha-numeric code, to change from the default, select the appropriate text box.
Week of Year Code	Each week of year (01-54) can be allocated a unique Alpha-numeric code, to change from the default, select the appropriate text box.
Year of Decade Code	Each year of decade (0-9) can be allocated a unique Alpha-numeric code, to change from the default, select the appropriate text box.
Last Day of Quarter	Sets the last day of each quarter. To amend, select the text date and select the new date from the calendar.
Bar Width Adjustment	The bar and space widths can be adjusted individually.

*Table 6-5: Global Job Settings (continued)*

### 6.2.7 Communications

The Communications screen provides the options to configure the connections of printer.



1. Touch the  button from the Tools screen. The Communication screen opens as shown in the [Figure 6-16](#).



Figure 6-16: Communications Screen

The Communications screen provides the access to the following options as described in the [Table 6-7](#):

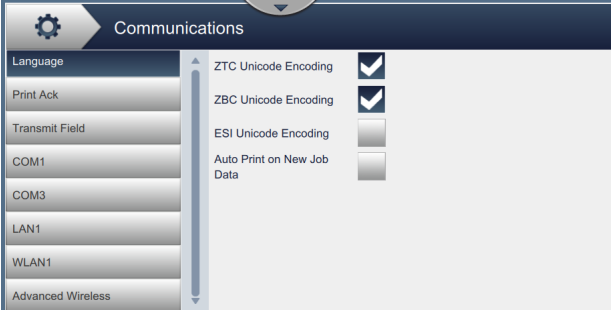
Options	Description
<p>Language</p> 	<p>The user can select the required communication protocol(s). When the printer has an active remote connection, a Under Remote Control message flashes in the banner, indicating that the printer is being controlled by an external protocol. This message appears when a LAN connection is made or a protocol is added to a serial port. The message disappears when the LAN connection is dropped or when the protocol is removed from a serial port.</p>

Table 6-6: Communications

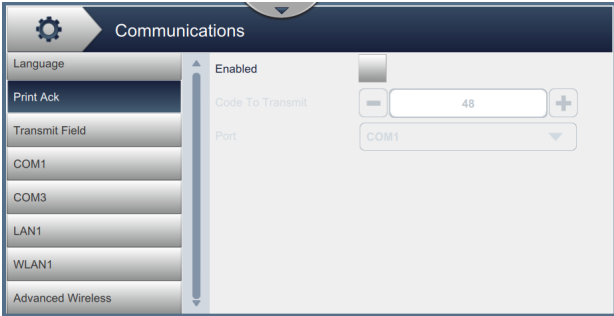
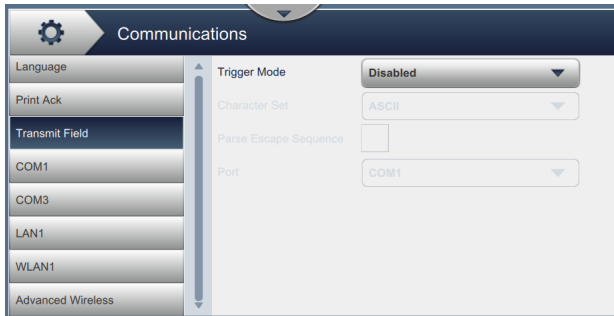
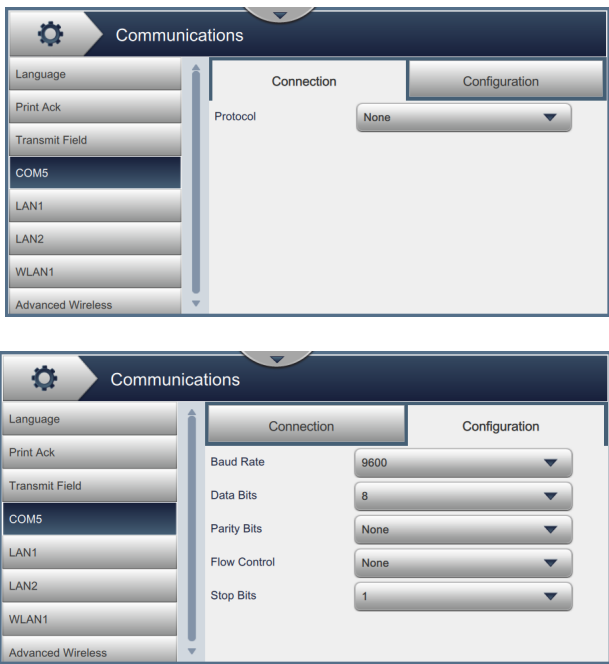
Options	Description
<p><b>Print Ack</b></p> 	<p>When Print Acknowledgment is enabled, the user can set the required parameters for the output.</p>
<p><b>Transmit Field</b></p> 	<p>Select the required Trigger for the transmit field from the drop down list. When enabled, the user can set the required parameters for the output.</p>
<p><b>COM5</b></p> 	<p>Available COM Ports are dependent on printer configuration.</p> <p>If additional COM Ports are available, set the required parameters as required.</p> <p>Connection:</p> <ul style="list-style-type: none"> <li>• IP Address - Displays current IP Address.</li> <li>• Add Protocol and Port - Allows setup of the port number and protocol. When created, the port and protocol will be displayed.</li> </ul> <p>Configuration:</p> <ul style="list-style-type: none"> <li>• Baud Rate - Display baud rate.</li> <li>• Data Bits - Display data bits type.</li> <li>• Parity Bits - Display parity bits type.</li> <li>• Flow Control - Display flow control type.</li> <li>• Stop Bits - Display stop bits type.</li> </ul>

Table 6-6: Communications (continued)

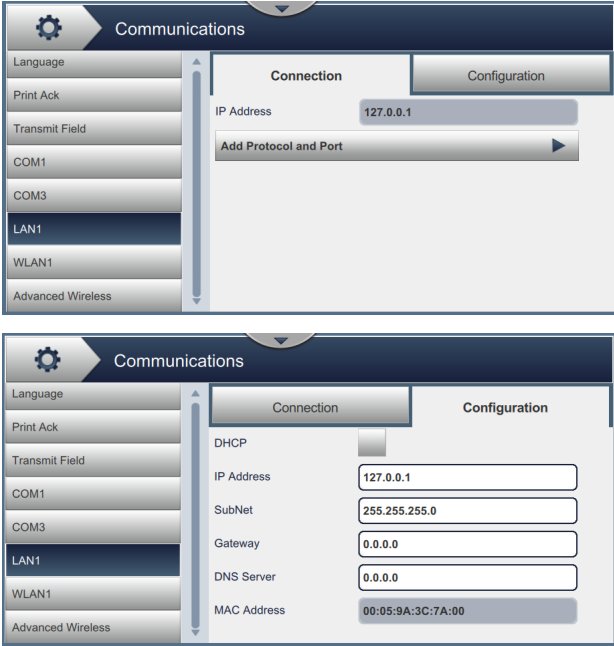
Options	Description
<p><b>LAN1</b></p> 	<p>Allows setup of Ethernet connection:</p> <p><b>Connection:</b></p> <ul style="list-style-type: none"> <li>• Protocol - Allows setup of the protocol. When created, the protocol will be displayed.</li> </ul> <p><b>Configuration:</b></p> <ul style="list-style-type: none"> <li>• DHCP - When enabled, the IP address can be automatically assigned. If disabled, the IP Address can be setup manually.</li> <li>• IP Address - Enter the IP Address of the controller. The default IP Address is 127.0.0.1.</li> <li>• SubNet - Enter the SubNet Mask number. The default SubNet is 255.255.255.0.</li> <li>• Gateway - Enter the Gateway address.</li> <li>• DNS Server - Enter the DNS server address.</li> <li>• MAC Address - Displays the MAC Address of the controller.</li> </ul>

Table 6-6: Communications (continued)

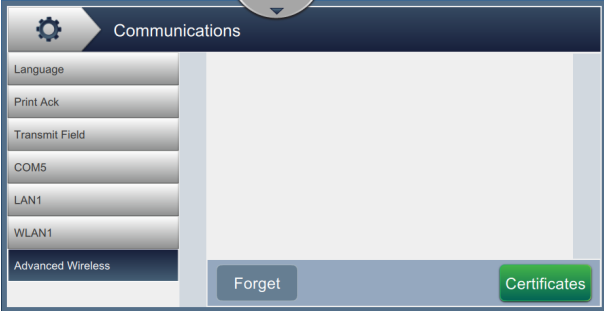
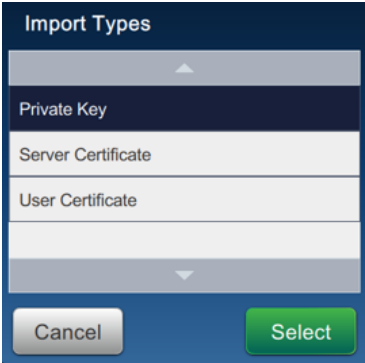
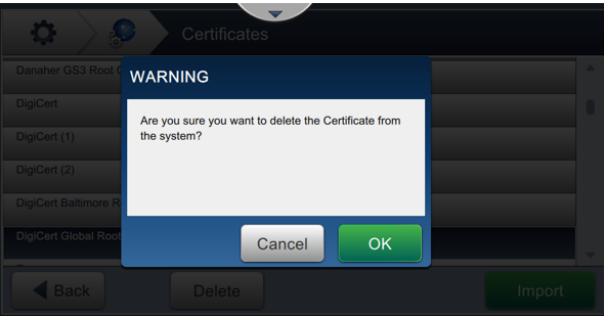
Options	Description
<p>Advanced Wireless</p>   	<p>Allows user to manage security certificates by uploading, updating or deleting the certificates held on the printer.</p> <p>To access secure websites (https:), such as the Videojet Workflow Portal, a valid security certificate is required. A number of certificates are available on the printer for use.</p> <p>To Import a new or update an existing certificate or import a private key, load the required key/certificate to a USB and insert the USB on the printer.</p> <p>Go to <i>Certificates</i> &gt; <i>Import</i> and select one of the three options:</p> <ul style="list-style-type: none"> <li>• Private Key</li> <li>• Server Certificate</li> <li>• User Certificate</li> </ul> <p>Select the required file from the USB and select <i>Import</i>.</p> <p>To delete an existing certificate, go to <i>Certificates</i> and select the required certificate for deletion.</p> <p>Once selected, touch <i>Delete</i> to remove from the printer.</p> <p>To forget a network from the printer to avoid automatic re-connection, select the network to be forgotten from the list and select <i>Forget</i>.</p>

Table 6-6: Communications (continued)

## 6.2.8 Printer Settings

The Printer Settings screen provides the options to view and modify printer parameters.




1. Touch the  button from the Tools screen. The Printer Settings screen opens as shown in [Figure 6-17](#).
2. Select the required options to change the settings of the printer.



Figure 6-17: Printer Settings

The Printer Settings screen provides the access to the following options as described in the Table 6-7:


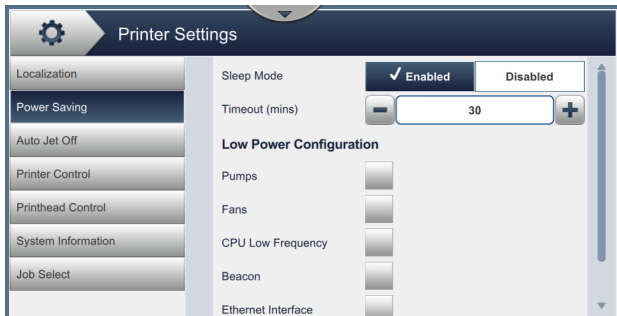
Buttons	Description
<p><b>Localization</b></p> 	<p>Touch the following options to set:</p> <ul style="list-style-type: none"> <li>• Language - Select the required language from the drop down list.</li> <li>• Country - Select the required country from the drop down list.</li> <li>• Keypad Configuration - Select the keypad(s) required along with the default keypad from the options available after touching the keypad configuration button. Select Localization button to return to menu.</li> <li>• Unit Of Measure - Select either Metric or Imperial to set measurement units.</li> <li>• Current Date - Displays the current date. Select the text box to change the date.</li> <li>• Current Time - Displays the current time. Select the text box to change the time.</li> <li>• Calendar - Select the required calendar (Gregorian or Hijri).</li> <li>• Alternate Zero - Set the Alternate Zero symbol from the drop down list (Zero, Zero with Dot, Zero with Slash and Zero with Dash). Alternative zero symbol can be set to one of several available zero characters.</li> </ul>
<p><b>Power Saving</b></p> 	<p>To save power, enable Sleep Mode and the display will turn off after the timeout (mins) has expired from last interaction. The default is 30 mins, increase or decrease this time as required using the +/- buttons or selecting the text field.</p> <p>To further enhance power saving during sleep mode, select the required function to enter low power configuration when sleep mode is activated.</p> <p>When Sleep Mode is either enabled or disabled, selecting and holding Stop Jet for upto 10 seconds will be activated and the selected functions will enter low power mode.</p>

Table 6-7: Printer Settings

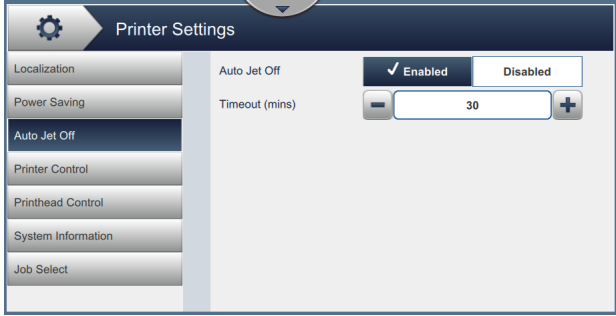
Buttons	Description
<p data-bbox="252 248 416 282">Auto Jet Off</p> 	<p data-bbox="906 248 1481 454">To save power, enable Auto Jet Off and the jet will turn off after the timeout (mins) has expired after the last print. The default is 30 mins, increase or decrease this time as required using the +/- buttons or selecting the text field.</p>

Table 6-7: Printer Settings (continued)



Buttons	Description
<p>Printer Control</p>	<p>Sets various parameters of the printer:</p> <ul style="list-style-type: none"> <li> <b>Jet Start And Stop Mode</b> - Select the required Start/Stop Mode from the drop down list.                     <p><b>Auto</b> - Printer will select the best start and stop mode based on usage.</p> <p><b>Clean</b> - Performs clean start and stop sequence to remove the ink from the manifold and nozzle before the ink jet stops. This action prevents any deposits of ink on the printhead.</p> <p><i>Note: The Jet Start and Stop Mode reverts back to Auto, once either clean or quick sequences are completed.</i></p> <p><b>Quick</b> - Performs Quick start and stop sequence.</p> <p>Use Quick start if the machine has been off for less than half an hour.</p> <p>Quick stop starts without a flushing sequence and uses the ink supply to bleed air from the nozzle.</p> <p><i>Note: The Jet Start and Stop Mode reverts back to Auto, once the Quick sequence is completed.</i></p> </li> <li> <b>Print Ack. Mode</b> - Select the required print acknowledge mode from Off, On-Active High or On-Active Low.                 </li> <li> <b>Print Complete Width (ms)</b> - Enter the required print complete width value in ms.                 </li> <li> <b>Warning Suppression</b> - To ignore the warnings upon printing operation, enable this option.                     <p><i>Note: Print Error and Print Trigger warnings are ignored only. All system warnings will be displayed and require operator action.</i></p> </li> <li> <b>Auto Print on Jet Start</b> - To allow print to start automatically upon jet start, enable this option.                 </li> <li> <b>Auto Print on Job Load</b> - To allow print to start automatically upon job load, enable this option.                 </li> </ul>

Table 6-7: Printer Settings (continued)

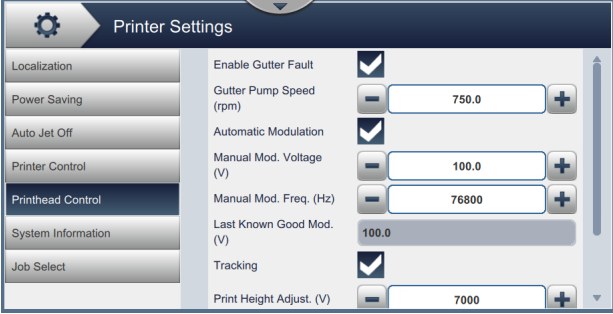
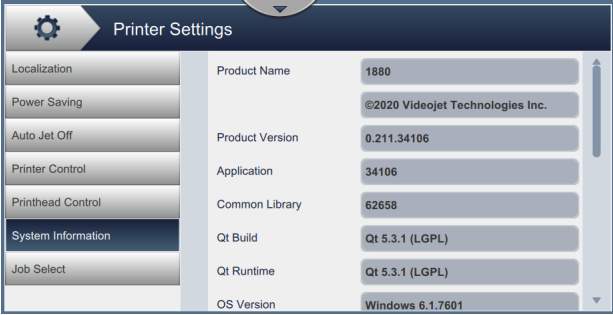
Buttons	Description
	<ul style="list-style-type: none"> <li>No-Code-No-Run - Set this option either Off, Cumulative or Consecutive.</li> <li>No-Code-No-Run Tolerance - Touch the +/- buttons to increase or decrease the tolerance value.</li> </ul> <p><b>Consecutive</b> - The printer displays a fault when the tolerance value is reached in consecutive occurrences only.</p> <p><b>Cumulative</b> - The printer displays a fault when the total tolerance value is reached.</p>
<p><b>Printhead Control</b></p> 	<p>Printhead Control parameters are setup during printer installation and should not normally be adjusted. Following are the parameters available for Printhead Control:</p> <ul style="list-style-type: none"> <li>Enable Gutter Fault - The printer will raise a fault when a gutter fault is detected.</li> <li>Automatic Modulation</li> <li>Manual Mod. Voltage (V) - Displays the manual mod. voltage value.</li> <li>Manual Mod. Freq. (Hz)- Displays the manual mod. frequency value.</li> <li>Last Known Good Mod. (V) - Displays the voltage of last “known good configuration”.</li> <li>Tracking - User can enable/disable the tracking only when Automatic Modulation option is enabled.</li> <li>Print Height Adjust. (V) - Changes the maximum achievable print height.</li> <li>Charge Scale</li> <li>Phase Charge (V) - Set the voltage to optimize the print quality.</li> </ul>
<p><b>System Information</b></p> 	<p>Displays the system information such as Product Name, Product Version, Application, Common Library, QT Build, QT Runtime and so on.</p> <p><i>Note: The application provides the current software version number.</i></p>

Table 6-7: Printer Settings (continued)

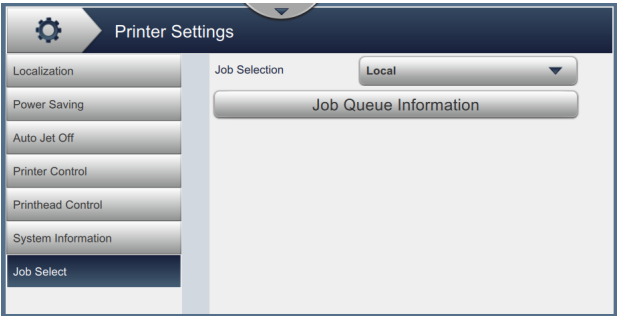


Buttons	Description
<p>Job Select</p>  <p>The screenshot shows a 'Printer Settings' window with a sidebar on the left containing menu items: Localization, Power Saving, Auto Jet Off, Printer Control, Printhead Control, System Information, and Job Select (which is highlighted). The main content area has a 'Job Selection' dropdown menu currently set to 'Local' and a 'Job Queue Information' button below it.</p>	<p>Job Select option is available when optional expansion board is fitted. When External Job Selection is enabled, the additional data required is available for completion. Refer to expansion board setup for additional information.</p>

Table 6-7: Printer Settings (continued)

## 6.2.9 User Access

The User Access screen provides the options to view and modify the security mode, configure roles and configure users.



1. Touch the  button from the Tools screen. The User Access screen opens as shown in the [Figure 6-18](#).
2. Select the required options to change the security settings for roles and users and touch the  button to save the changes.

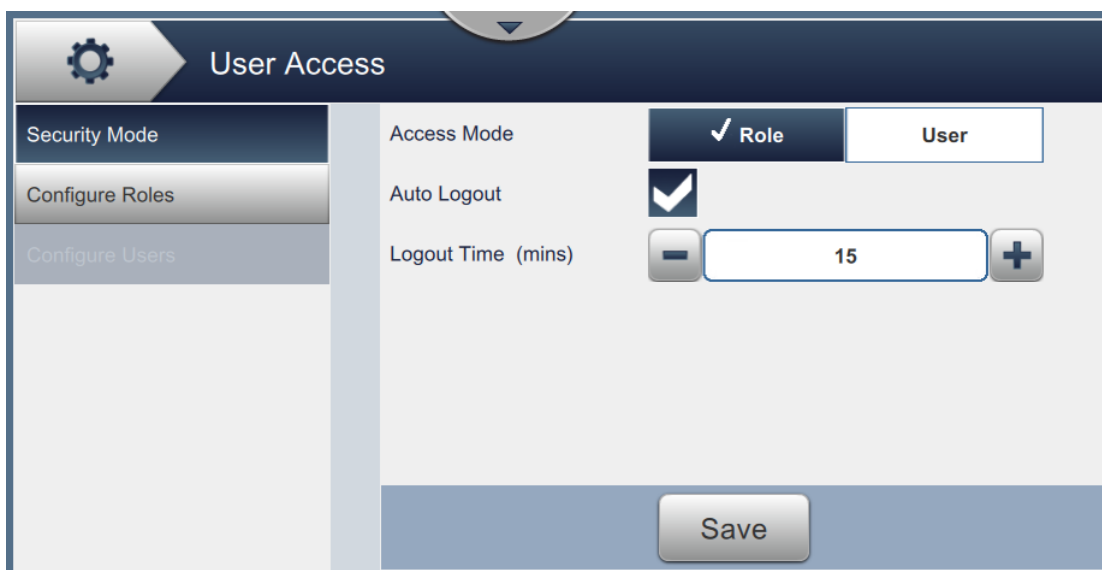


Figure 6-18: User Access

The User Access screen provides the access to the following options as shown in [Table 6-8](#).

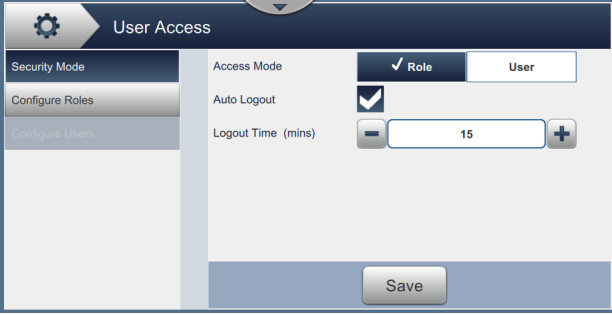
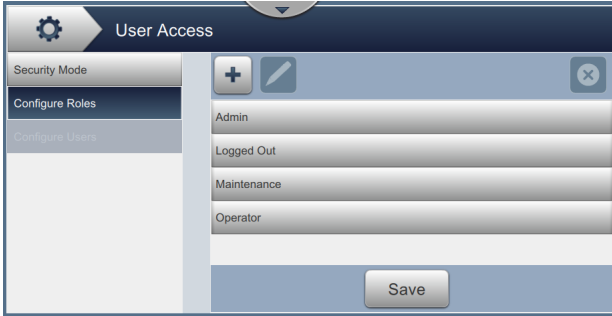
Buttons	Description
<p><b>Security Mode</b></p> 	<p>Touch the following options to set:</p> <ul style="list-style-type: none"> <li>• <b>Access Mode</b> - Select either Role or User Access Mode by touching the required mode.                     <p><b>Role</b> - This mode allows the setup of individual roles in addition to the default setup. Each roll specifies the tools and menus the user can access.</p> <p><b>User</b> - This mode allows the setup of unique users with a unique password based on the available roles. The User can be made active or inactive as required.</p> </li> <li>• <b>Auto Logout</b> - Auto Logout is on by default and will logout users after 15 minutes with no UI interaction. Remove the check from the box to remove auto logout.</li> <li>• <b>Logout Time (mins)</b> - Enter the time for auto logout.</li> </ul> <p><i>Note: Logout Time is available only when Auto Logout option is enabled.</i></p> <p>Touch the <i>Save</i> button to save the changes.</p>
<p><b>Configure Roles</b></p> 	<p>The configured roles available in User Access screen are displayed. The default roles available are Admin, Logged Out, Maintenance and Operator.</p> <p>Touch the following options to set:</p> <ul style="list-style-type: none"> <li>• Touch the + button to create a new role and provide access to required tools.</li> <li>• Touch the <i>Edit</i> button to modify the accessibility to selected role.</li> <li>• Touch the <i>Delete</i> button to delete the selected role. Admin and Logged Out roles cannot be deleted.</li> <li>• Touch the <i>Save</i> button to save the changes.</li> </ul>

Table 6-8: User Access Options

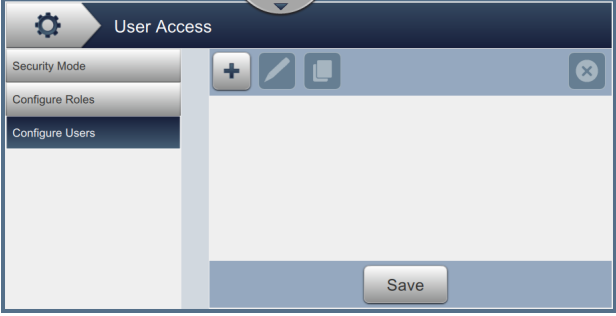

Buttons	Description
<p>Configure Users</p> 	<p>The configured users available in User Access screen are displayed.</p> <p>Touch the following options to set:</p> <ul style="list-style-type: none"> <li>• Touch the + button to create a new user by assigning role(s).</li> <li>• Select the required user and touch the <i>Configure</i> button to create a new user with selected role definitions. The new user created can also be configured.</li> <li>• Touch the <i>Edit</i> button to modify the role for selected user.</li> <li>• Touch the <i>Delete</i> button to delete the selected user.</li> <li>• Touch the <i>Save</i> button to save the changes.</li> </ul>

Table 6-8: User Access Options (continued)

6.2.10 Configure Display

The Configure Display screen displays the required performance information in Home screen.



1. Touch the  button from the Tools screen. The Configure Display screen opens as shown in the [Figure 6-19](#).

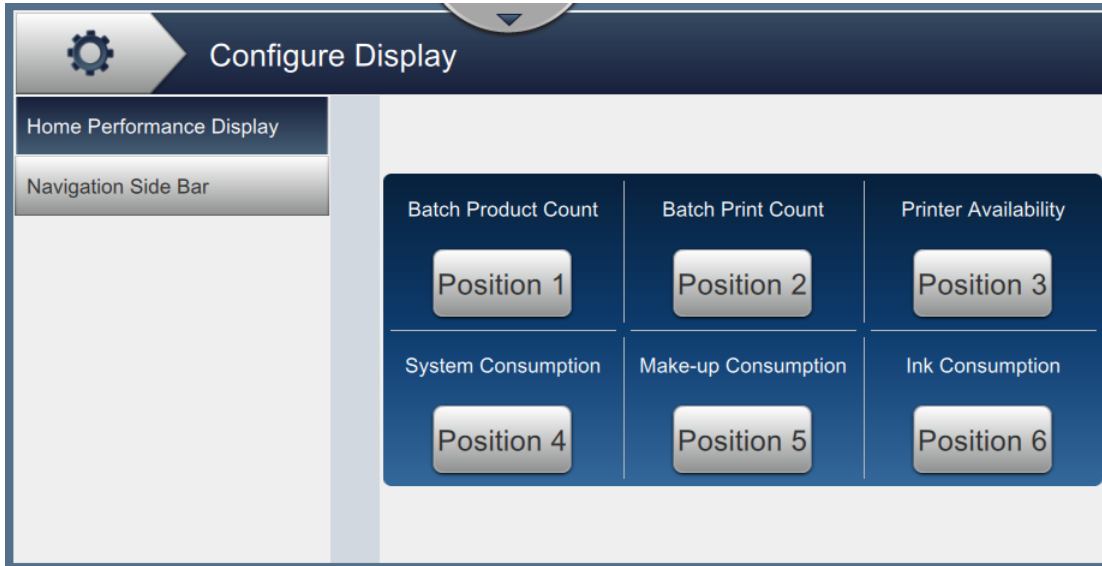


Figure 6-19: Home Performance Display

2. Touch the required position to change the options in Home screen as shown in [Figure 6-20](#).

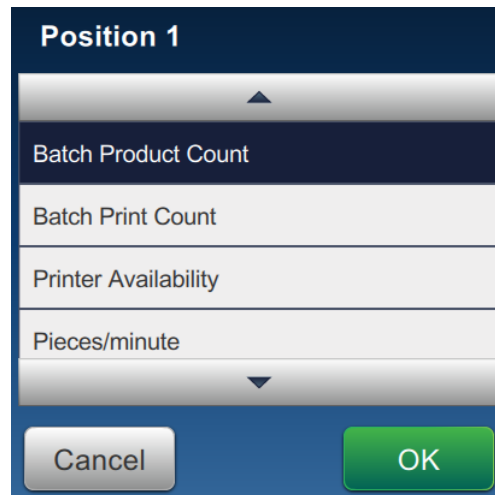


Figure 6-20: Modify Position Options

The options available in each position for Configure Display screen are:

Options	
Not Shown	Operational Avail (Ready Total Time)
Batch Product Count	Print Counter
Batch Print Count	Product Counter
Printer Availability	Printer Health
Pieces/minute	System Consumption
Production Print Count	Make-up Consumption
Production Product Count	Ink Consumption
Operational Avail (Total Time)	

Table 6-9: Options - Configure Display Screen

3. Touch the *Navigation Side Bar* option to set the text settings on the control bar icons as shown in [Figure 6-21](#).



Figure 6-21: Navigation Side Bar

The Navigation Side Bar screen provides the access to the following options as shown in [Table 6-10](#).

Buttons	Description
Display Text	Touch either <i>ON</i> or <i>OFF</i> button to enable or disable the text displayed on the icon.
Truncation	Set the required text truncation mode from the drop down list. The options available are None, ... and ~.
Font Size	Touch the +/- buttons to set the font size (8, 9, 10 or 11).

Table 6-10: Navigation Side Bar

**Note:** The icon preview is available for user review.

4. Touch the  button to save the changes.



### 6.2.11 Software Download

The Software Download screen provides the options to manage system software and Workflow Modules.




1. Touch the  button from the Tools screen. The Software Download screen opens as shown in the [Figure 6-22](#).



Figure 6-22: Software Download Screen

The Software Download screen provides access to the following options as described in the Table 6-11:


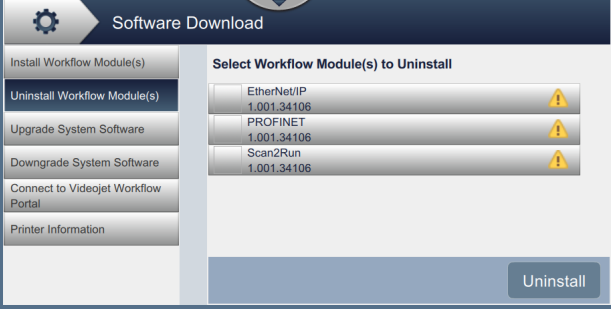
Buttons	Description
<p><b>Install Workflow Module(s)</b></p> 	<p>If a Workflow Module is available, it can be installed via the selected drive as needed.</p>
<p><b>Uninstall Workflow Module(s)</b></p> 	<p>If a Workflow Module is no longer required, it can be selected and uninstalled.</p>
<p><b>Upgrade System Software</b></p> 	<p>To upgrade the system software, select the drive where the upgrade is available, select the required software package and select Upgrade.</p>
<p><b>Downgrade System Software</b></p> 	<p>To downgrade the system software, select the drive where the downgrade is available, select the required software package and select Downgrade.</p>

Table 6-11: Software Download

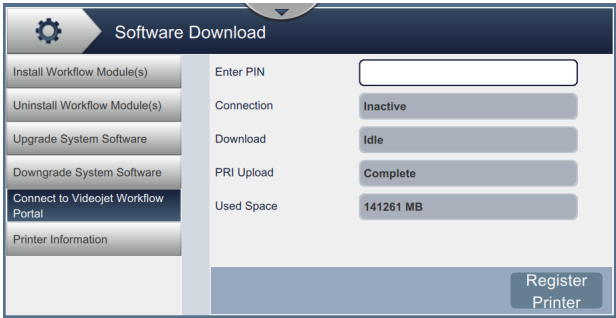


Buttons	Description
<p data-bbox="209 248 695 284">Connect to Videojet Workflow Portal</p> 	<p data-bbox="863 248 1433 454">Allows the printer to connect directly to the Workflow Portal to allow download of system software package and Workflow(s). For more information contact Videojet customer service or your local distributor.</p>
<p data-bbox="209 647 467 683">Printer Information</p> 	<p data-bbox="863 647 1433 822">Displays the Software information related to the printer. The Software Version can be exported to a USB file or via Network as the file is unique to each printer.</p>

Table 6-11: Software Download (continued)

## 6.2.12 Maintenance

The Maintenance tool allows the user to access maintenance instructions along with key maintenance data.



1. Touch the  button from the Tools screen. The Maintenance screen opens as shown in [Figure 6-23](#).
2. Select the required options to perform maintenance activities of the printer.  
Refer [Section 7, "Maintenance" on page 7-1](#) for more details.

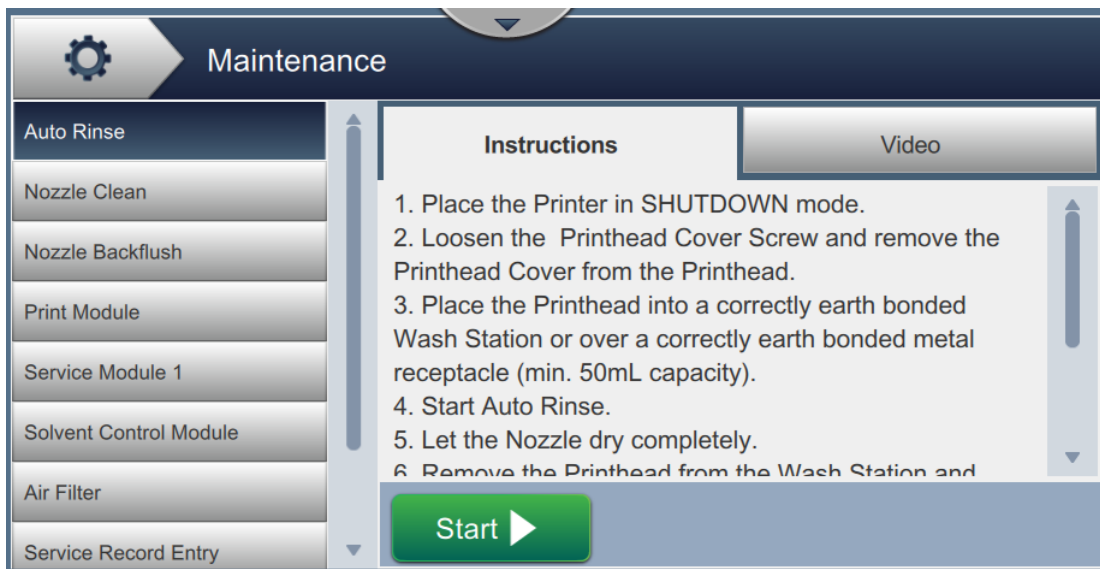



Figure 6-23: Maintenance

### 6.2.13 Diagnostics

The Diagnostics screen displays the current values of key parameters for the printer setup, that support the printer operation and can assist in troubleshooting issues.



1. Touch the  button from the Tools screen. The Diagnostics screen opens as shown in the [Figure 6-24](#).



*Figure 6-24: Diagnostics*

The Diagnostics screen provides the access to the following options as shown in [Table 6-12](#).

Buttons	Description
Printhead	Select the following options to view the values for various parameters: <ul style="list-style-type: none"> <li>• Nozzle</li> <li>• Phasing/Velocity</li> <li>• EHT</li> <li>• Gutter</li> <li>• Accelerometer</li> </ul>
Ink System	Select the following options to view the values for ink system parameters: <ul style="list-style-type: none"> <li>• Ink Pump</li> <li>• Make-up Pump</li> <li>• Viscosity</li> <li>• Ink</li> <li>• Make-up</li> <li>• Gutter Pump</li> </ul>
Temperature	Displays the temperature values for various parameters like Printhead, Ink etc.
Valves	Displays the status (opened or closed) of all the valves.
Electronics	Select the following options to view the values for various parameters: <ul style="list-style-type: none"> <li>• MCB Voltages</li> <li>• IMB Voltages</li> <li>• Printhead PCB Voltages</li> </ul>
I/O	Displays the status of input/output connected devices.
Diagnostics Data	Select the following options to view the values for various parameters: <ul style="list-style-type: none"> <li>• Printhead and Nozzle - Displays the Nozzle diagnostics, Gutter status and Printhead Diagnostics.</li> <li>• Ink System - Displays the Miscellaneous, Ink Status, Hardware States and Beacon State.</li> </ul>
Self Test	Touch the <i>Run Test</i> button to run the self test. The Self Test validates all the parameters required for printer operation and generates the test report. Touch the <i>Export</i> button to export the test log for review and analysis.

Table 6-12: Diagnostics Options

Buttons	Description
Sequences	<p>The sequences are allocated programs to support printer setup and maintenance. Select the required operation and follow the onboard prompts:</p> <ul style="list-style-type: none"> <li>• Prime Mixer Tank - Performs prime mixing operation to increase the viscosity of ink flow for a quality print.</li> <li>• Prime Make-up Tank - Performs make-up priming operation to obtain proper mixture.</li> <li>• Umbilical Purge - Performs umbilical purge operation to prevent debris from blocking the nozzle if the printer has not been used for a long time.</li> <li>• Quick Umbilical Purge - Performs a quick umbilical purge operation (approximately 15 minutes recommended).</li> <li>• System Flush Purge -The machine is started and the flush pump operated. This function removes air from the flush system during the commissioning or when air has been introduced to the flush system during a fault, etc.</li> </ul>
Data Logging	<p>Touch the <i>ON/OFF</i> button to enable/disable the data log option. If enabled, set the time interval for data logging.  <i>Note: Data Logging USB file required, please contact a Videojet subsidiary office or the local Videojet distributor.</i></p>
Scratchpad	<p>The user can load custom diagnostic sequence for fault-finding and testing purposes.  Refer to Service Manual for additional information.</p>

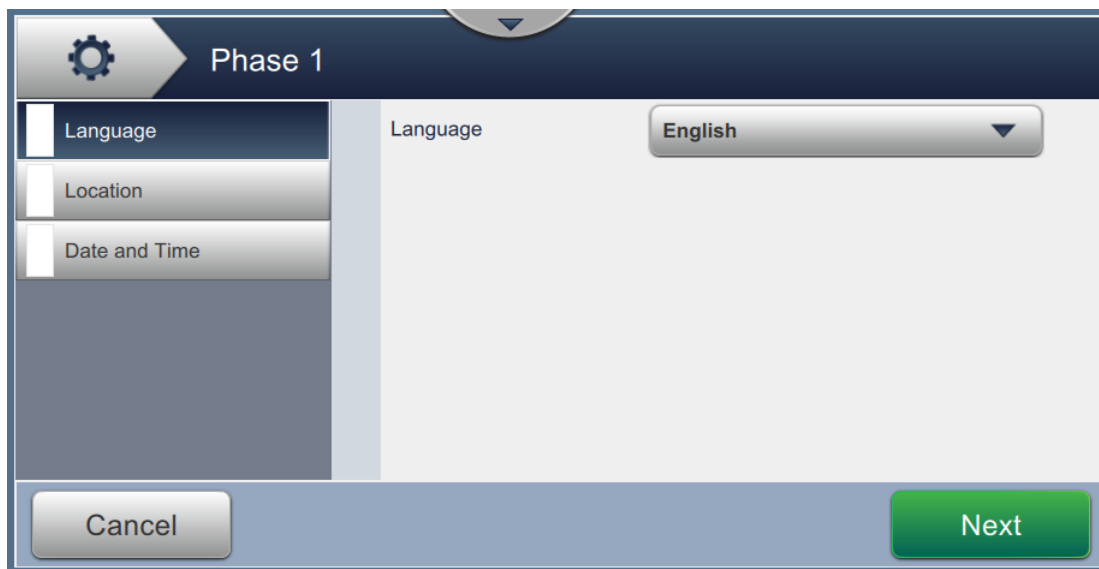
Table 6-12: Diagnostics Options (continued)

### 6.2.14 Installation

The Installation screen will take user through the printer installation in three phases.



1. Touch the  button from the Tools screen. The Installation screen opens as shown in the [Figure 6-25](#).



*Figure 6-25: Installation Screen*

For additional information, refer to the service manual.




6.2.15 Ink Build-up Sensor \*



\*Ink Build-up Sensor tool availability is dependent on printer configuration.

The Ink Build-up Sensor screen displays the data relating to Build-up trend and Threshold. This information is used to help predict when the printhead needs to be cleaned.



1. Touch the  button from the Tools screen. The Ink Build-up Sensor screen opens as shown in the [Figure 6-26](#).

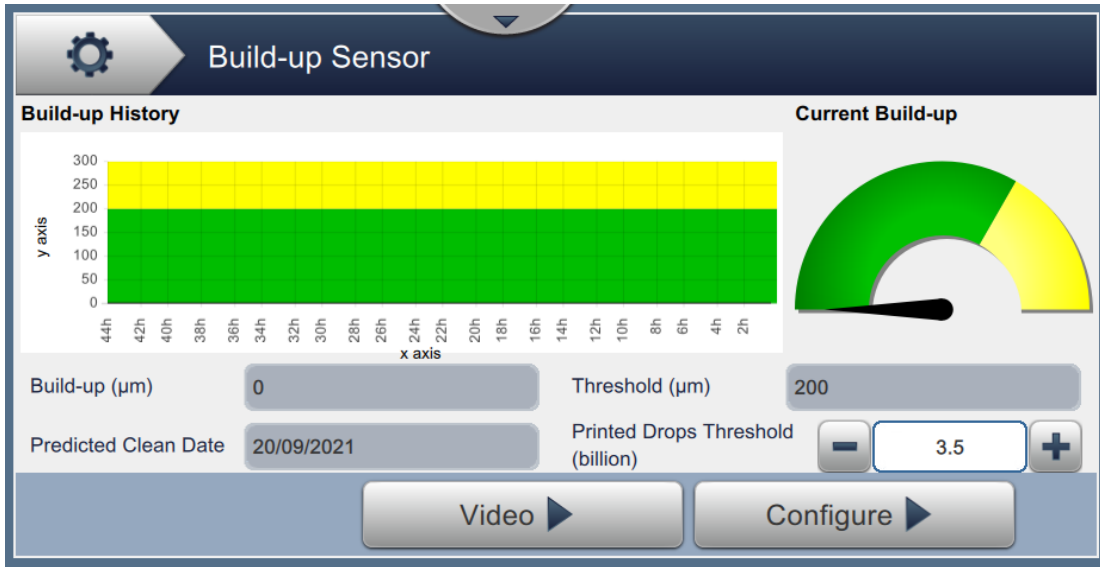


Figure 6-26: Ink Build-up Sensor

The Ink Build-up Sensor screen provides the access to the following options as shown in [Table 6-13](#).

Buttons	Description
Build-up History	Displays the Build-up ( $\mu\text{m}$ ) over time starting at day 0 which is the day the printhead was last cleaned. The green range is set by the threshold limit (microns).
Current Build-up	Displays the current status of the build-up based on the actual sensor readings. The green range is set by the threshold limit (micron).
Build-up ( $\mu\text{m}$ )	Displays the actual build-up in microns when online.
Threshold ( $\mu\text{m}$ )	Displays the Build-up trigger in microns. Once this value is exceeded, a warning will be displayed indicating that printhead should be cleaned to maintain print quality.
Predicted Clean Date	Displays the predicted clean date.
Printed Drops Threshold (billion)	Displays the build-up trigger in printed drops (billions). Once this value is exceeded, a warning will be displayed indicating that printhead should be cleaned to maintain print quality.

Table 6-13: Sensor Configuration

Buttons	Description
Video	Displays the instructions for cleaning the printhead.
Configure	<p><b>Triggers</b> Allows the setup of the trigger for each parameter to raise a warning to indicate printhead clean required to prevent print quality deterioration. The parameter available is:</p> <ul style="list-style-type: none"><li>• Build-up (<math>\mu\text{m}</math>)</li></ul> <p><b>Printhead Cleaning</b> Displays the following parameters:</p> <ul style="list-style-type: none"><li>• Printhead Last Cleaned Date</li></ul> <p>Touch the <i>Push to Reset</i> to update the Printhead Last Cleaned to the current date.</p>

Table 6-13: Sensor Configuration (continued)

### 6.3 Configure Line Setup

The Line Setup provides the options to create, edit, save, activate, and delete line configurations.



*Note: It is not recommended to edit Default Line Setup.*

#### 6.3.1 Creating A New Line Setup



1. Touch the  button from the Tools screen.
2. Touch the  button on the Line Setup screen to create a new line setup as shown in

Figure 6-27. Line Setup Name screen opens with an utility keypad.

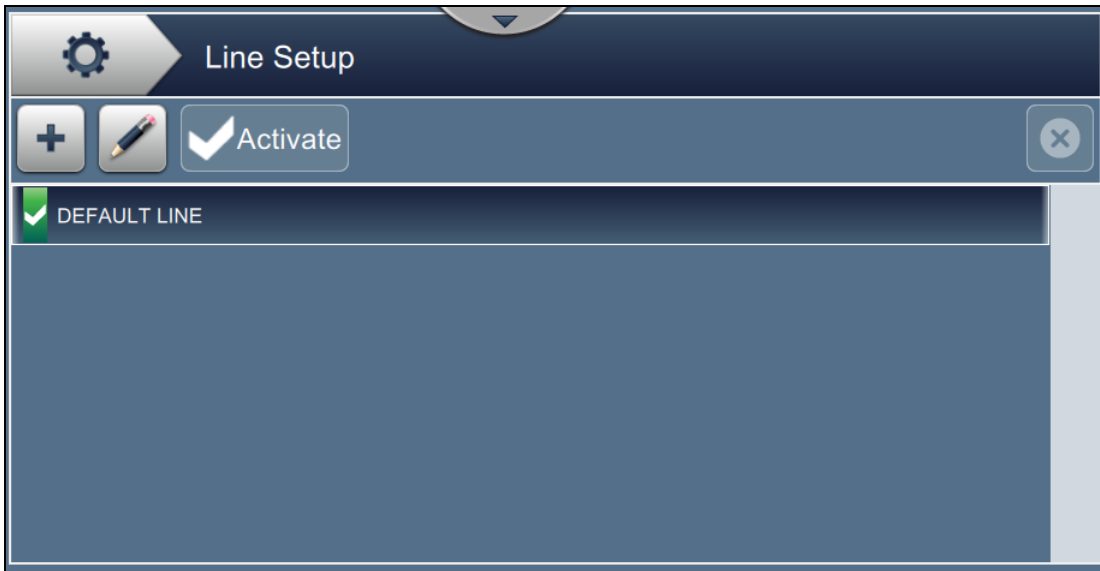
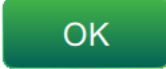


Figure 6-27: Line Setup Screen

3. Enter the name for line setup and touch the  button to save the name.

4. To configure the Line Setup, follow the steps to progress through each setting, selecting the required option as shown in [Figure 6-28](#).

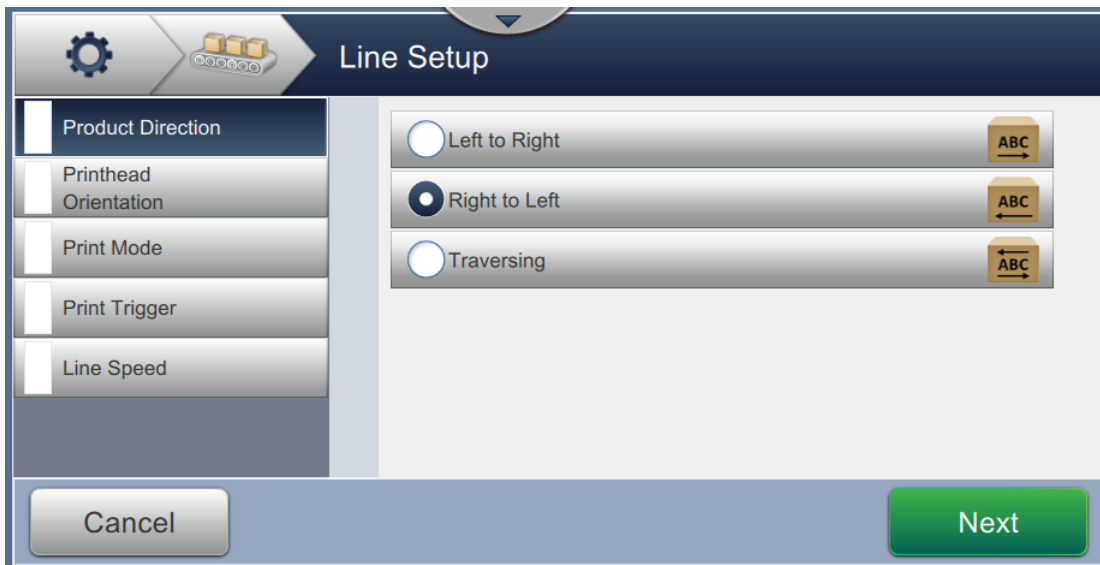



Figure 6-28: Line Setup Settings

### 6.3.2 Product Direction

The Product Direction sets the direction of the print required.

1. Touch the option *Product Direction* on the line setup setting screen as shown in [Figure 6-28](#).
2. Select the required direction of print, touch the  button to confirm and move to the next setting.

### 6.3.3 Printhead Orientation

The Printhead Orientation changes the orientation of the print on the product.

1. Select the orientation of printhead as shown in [Figure 6-29](#).

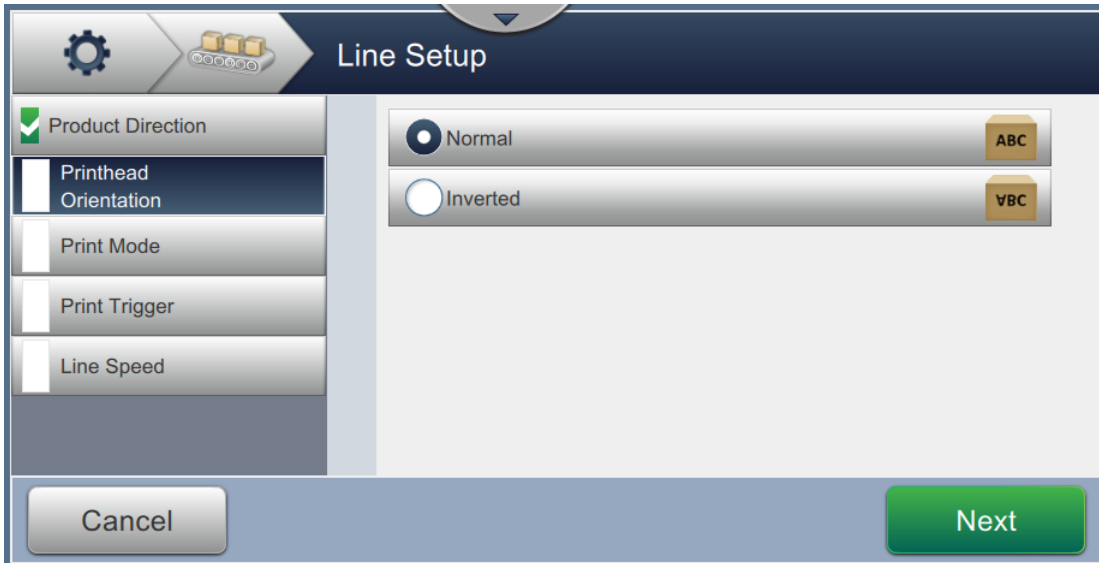



Figure 6-29: Line Setup - Printhead Orientation

#### To Print Job in Normal Orientation

2. Touch the *Normal* button to enable print in normal orientation.

#### To Print Job in Inverted Orientation

3. Touch the *Inverted* button to enable print in inverted orientation.
4. Touch the  button to set the orientation.

### 6.3.4 Print Mode

The Print Mode sets different printing modes. The print modes are

- Single Print/Trigger
- Multiple Print/Trigger
- Continuous

1. Touch the *Print Mode* on the Line Setup Setting screen as shown in [Figure 6-30](#).

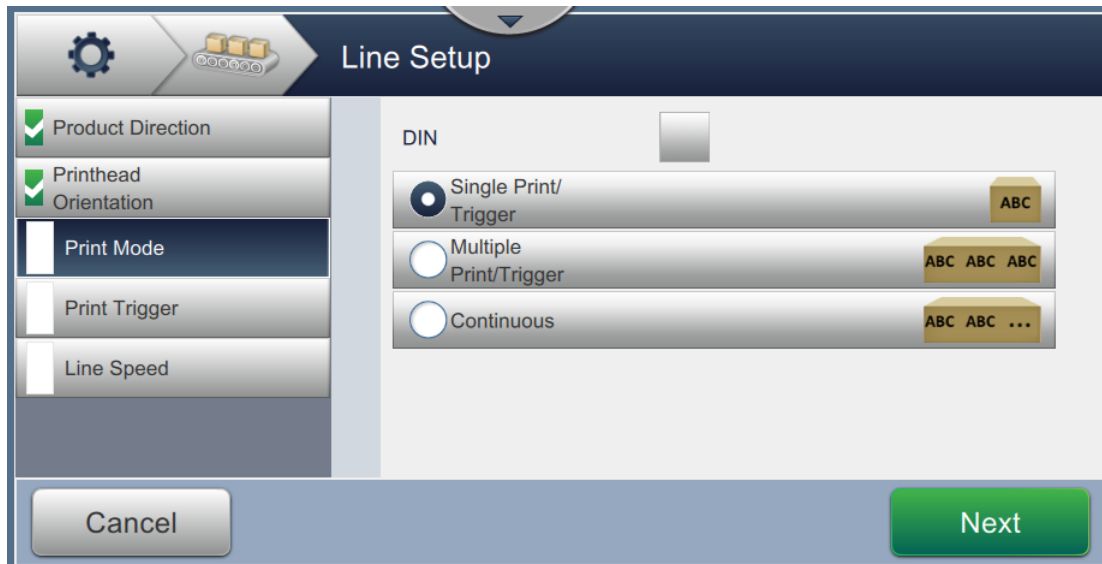


Figure 6-30: Line Setup - Print Mode

#### DIN Print

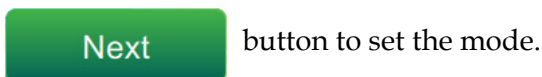
The DIN print automatically reverses the direction of print for every other print trigger. This method is used when printing on cables.

1. Enable DIN print mode, select the print mode required along with DIN mode.

#### Single Print/Trigger

The Single print/trigger prints the job one time on the product.

1. Select the *Single print/trigger* option for single print mode of print, touch the



button to set the mode.


#### Multiple Print/Trigger

The Multiple mode enables the printer to print multiple times on the product following one print trigger.

1. Select the *Multiple* option as shown in [Figure 6-30](#). Touch the



button.

2. Change the parameters in Settings screen, touch the  button to set the mode as shown in [Figure 6-31](#).

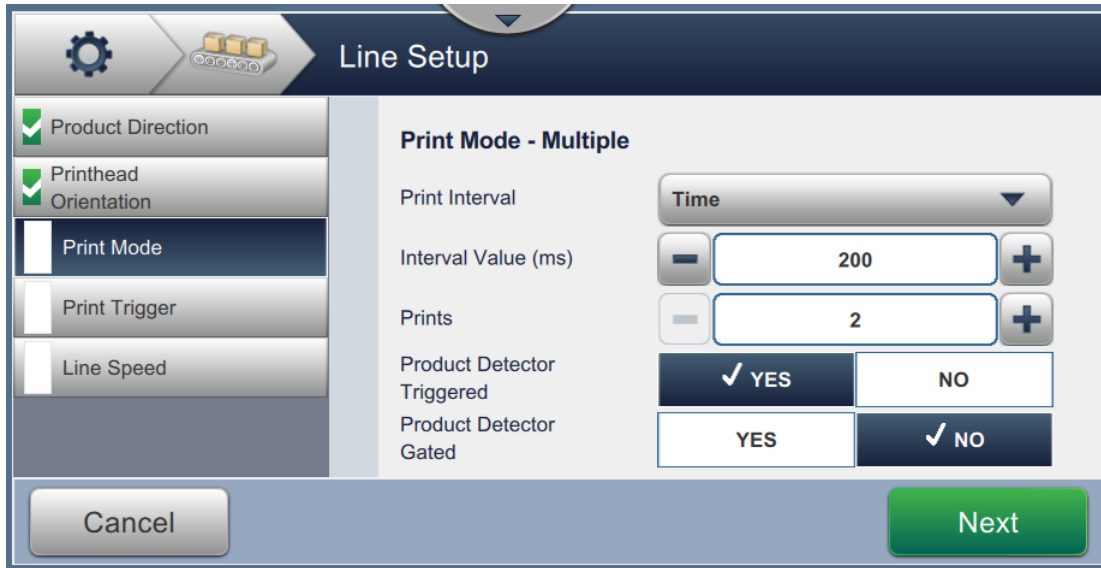




Figure 6-31: Print Mode - Multiple

Option	Description
Print Interval	Defines the time gap between two or more consecutive prints on the product. Select the type of print interval from the list and touch the <i>OK</i> button. The Print Interval options available are Time, Encoder Pulses and Distance.
Interval Value	Defines the time gap value between two or more consecutive prints on the product. Touch the +/- buttons to set the Interval Value in ms.
Prints	Defines the number of times the job needs to be printed on the product. Touch the +/- buttons to set the number of prints.
Product Detector Triggered	Touch either <i>YES</i> or <i>NO</i> button to enable or disable the option. If <i>YES</i> selected, printer will not start printing continuously until printer is triggered via product detector.
Product Detector Gated	Touch either <i>YES</i> or <i>NO</i> button to enable or disable the option. If <i>YES</i> selected, printer will continue to print while product detector is active and will stop printing when product detector is deactivated.

Table 6-14: Multiple Mode Parameters

**Continuous**

The Continuous print mode prints the job repeatedly on the product.

1. Select the *Continuous* option as shown in [Figure 6-30](#). Touch the  button.
2. Change the parameters in the Settings screen. Touch the  button to set the mode as shown in [Figure 6-32](#).

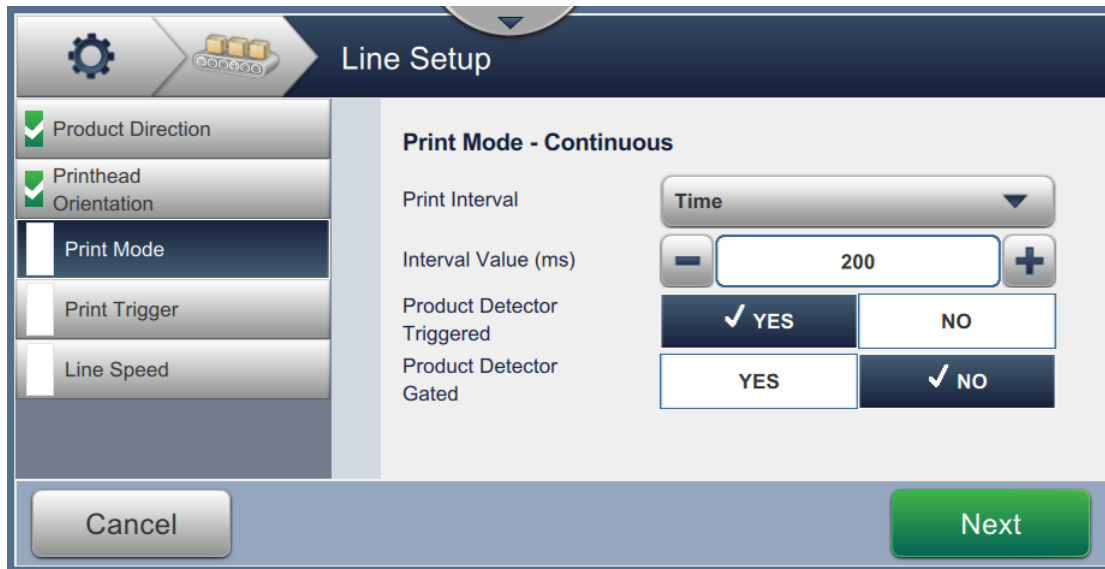



Figure 6-32: Print Mode - Continuous

Refer [Table 6-14 on page 6-50](#) for details on the parameters.



### 6.3.5 Print Trigger

The Print Trigger selects the trigger edge for starting the print direction.

1. Touch the option *Print Trigger* in the Line Setup Setting screen as shown in [Figure 6-33](#).
2. Select the parameters as required and touch the  button to set the values.

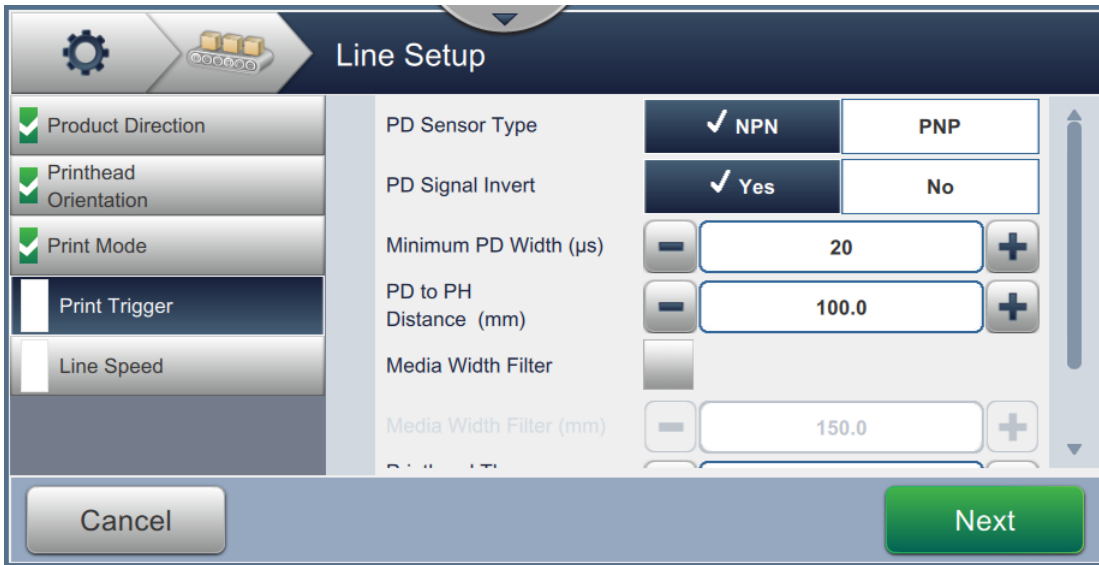


Figure 6-33: Line Setup - Print Trigger

The Print Trigger screen provides the options to set the following parameters (see [Table 6-15](#)):

Option	Description
PD Signal Invert	Defines the product detector trigger edge to be received as low to high or high to low.
Minimum PD Width (µs)	Defines the length of detect area (length which the detector senses).
PD to PH Distance (mm)	Defines the distance between the printhead and the product detector in mm. Both the leading edges and trailing edges of the product are sensed by the product detector before the printer starts printing.
Media Width Filter	Enable/ disable the Media Width Filter (mm).
Media Width Filter (mm)	Sets the product length in the printer in mm. It allows the printer to ignore the product detect trigger while the product is passing the photocell.
Printhead Throw Distance	Defines the distance between the printhead and product in mm. <i>Note: The recommended throw distance is 12 mm.</i>

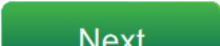
Table 6-15: Print Trigger-Options

### 6.3.6 Line Speed

The Line Speed defines the movement of product to the printer head. Three types of line speeds are defined in the printer, they are:

- **Manual Setup** - Define the line speed in m/min or ft/min.
- **Measured by Shaft Encoder** - The line speed is measured by the shaft encoder that senses changes in the product speed and enables the printer to adjust the print width.
- **Measured by Product Size/Time** - The line speed is measured by the product size and time taken by the product to move towards the printer.

*Note: The Measured by Product Size/Time option is disabled for Continuous print mode.*

1. Touch the *Line Speed* in the Line Setup Setting screen, select the required line speed as shown in [Figure 6-34](#). Touch the  button to set the line speed.

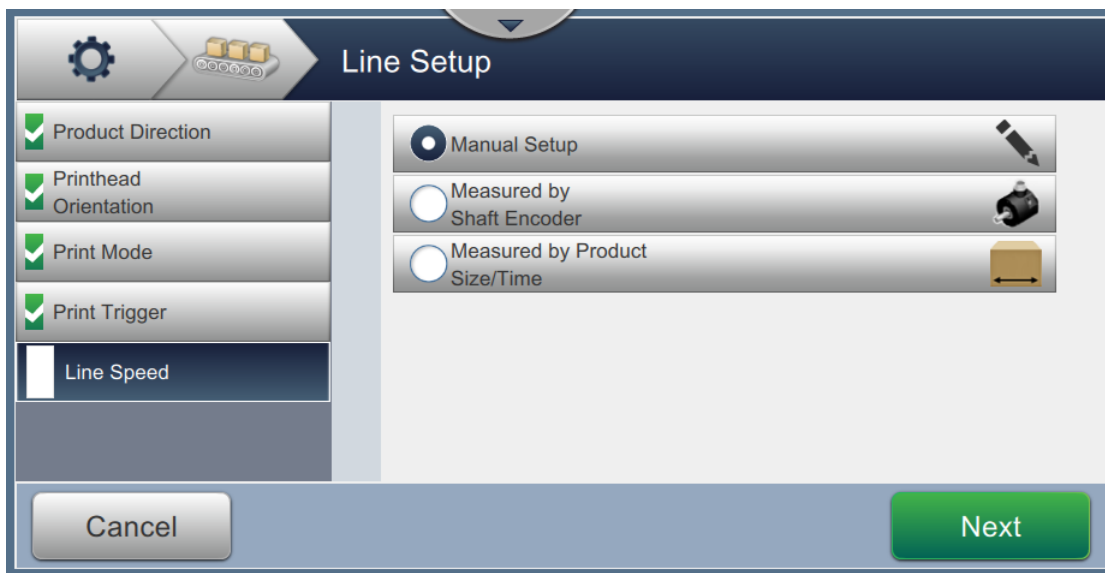



Figure 6-34: Line Setup - Line Speed

## User Interface

---

To setup the option **Manual Setup**:

1. Select the *Manual Setup* as shown in [Figure 6-34](#). Touch the  button to enter the required settings.
2. Touch the +/- buttons or enter the value to set the required Line Speed in m/min.

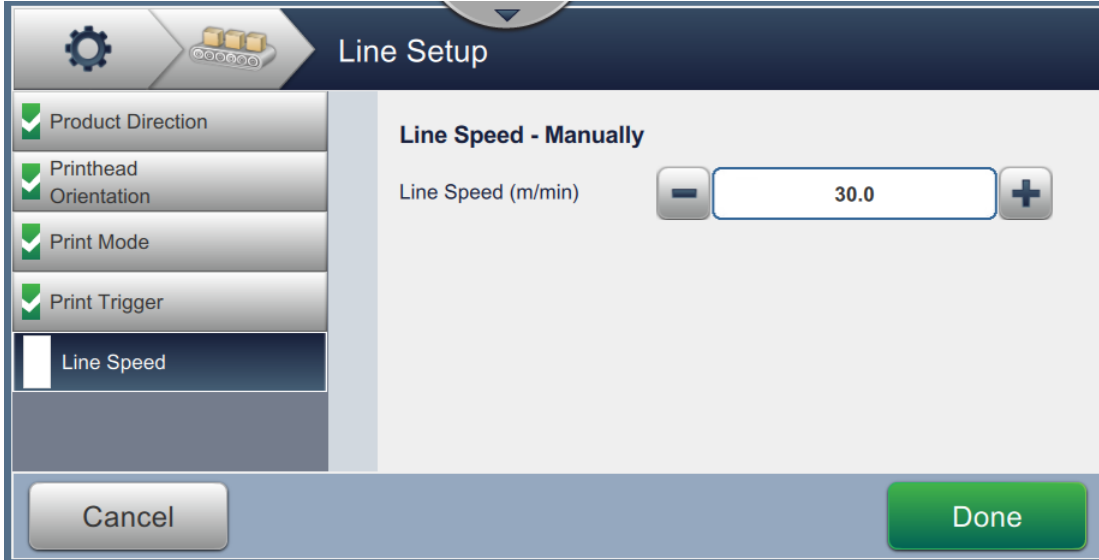





Figure 6-35: Line Speed - Manual Setup

3. Touch the  button in the Settings screen to confirm the value, save and exit the setup.

**Note:** Selecting the  button does not set the value to the parameter, it moves the user to the next screen. The parameters are not saved until the  button is selected.

**To setup the option Measured by Shaft Encoder:**

1. Select the *Measured by Shaft Encoder* as shown in [Figure 6-34](#). Touch the  button to enter the required settings.

2. Change the required parameters on the Setting screen as shown in [Figure 6-36](#).

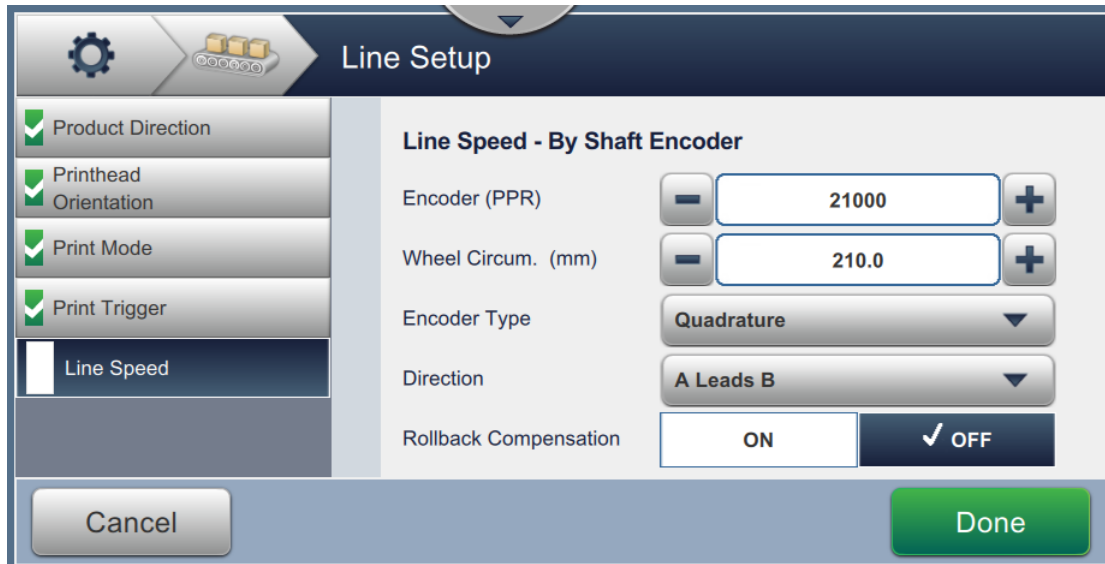


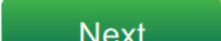
Figure 6-36: Line Speed - Measured by Shaft Encoder


Table 6-16 describes the options available on the measured by Shaft Encoder screen.

Option	Description
Encoder (PPR)	Set the encoder option for a fixed line speed in pulses/revolution. Enter the required Encoder value and touch the <i>Accept</i> button to set the value.
Wheel Circum.(mm)	Set the wheel circumference in mm or in. Enter the required Wheel Circumference value and touch the <i>Accept</i> button.
Encoder Type	Select the encoder type from the list: <ul style="list-style-type: none"> <li>• Non-Quadrature - Single Direction print, no directional monitoring of product and can use single or dual channel encoder.</li> </ul> <p><i>Note: Direction and Rollback Compensation options are not available for Non-Quadrature encoder type.</i></p> <ul style="list-style-type: none"> <li>• Quadrature - Selects direction of print, monitors direction of product and must use dual channel encoder.</li> </ul> <p><i>Note: If the printer provides a 2 channel input, the printer will utilize the pulse if set to quadrature or non-quadrature. It is important to know the hardware input.</i></p>
Direction	Select the direction for quadrature: <ul style="list-style-type: none"> <li>• Not Used</li> <li>• A Leads B</li> <li>• B Leads A</li> </ul>
Rollback Compensation	Rollback compensation makes sure the printer prints on the product one time only, if the product is placed on a line that can move or settle (For example: conveyor belt), the printer counts the number of encoder counter strokes as it prints. If the line stops and moves backwards the printer will not restart printing until the counter stroke number has returned to the last known position. Touch the <i>ON</i> button to enable the rollback compensation option.


Table 6-16: Measured by Shaft Encoder - Parameters

3. Touch the  button in the Settings screen to confirm the value, save and exit the setup.

*Note:* Selecting the  button does not set the value to the parameter, it moves the

user to the next screen. The parameters are not saved until the  button is selected.

**To setup the option Measured by Product Size/Time:**

1. Touch the *Measured by Product size/time* as shown in [Figure 6-34](#). Touch the  button to enter the required settings.
2. Change the required parameters on the Settings screen as shown in [Figure 6-37](#).

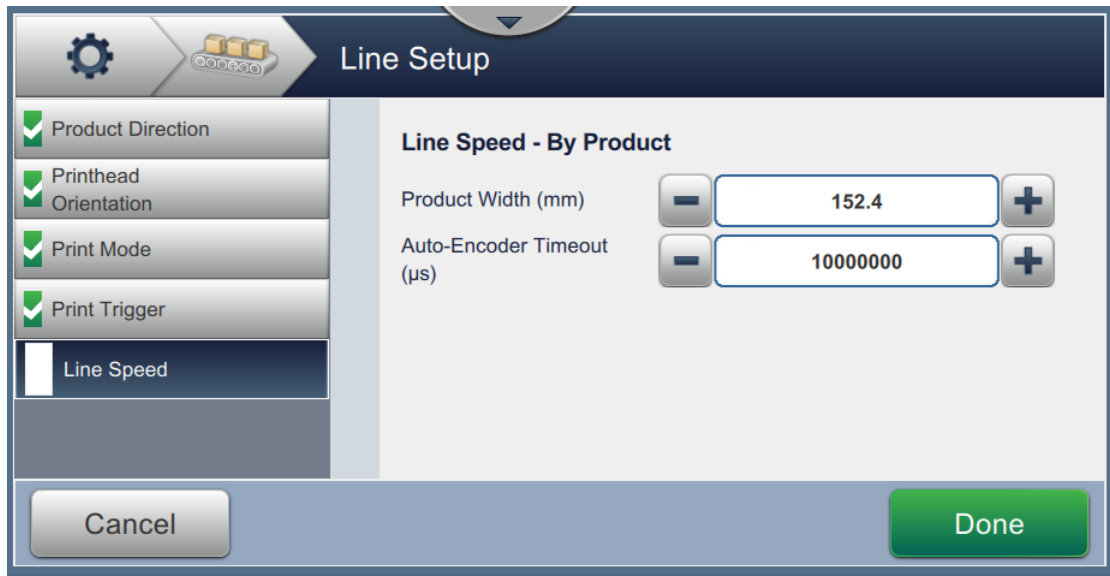




Figure 6-37: Line Speed - Measured by Product Size/Time Settings

Table 6-17 describes the parameters available:

Option	Description
Product Width (mm)	Enter the required Product Width value. Touch the <i>Accept</i> button to set the product width value.
Auto Encoder Timeout (µs)	Auto encoder option uses a very accurate detector to sense the leading and trailing edge of each product and adjust the width of the code for every product. Specifying the auto encoder time out disables the auto encoder if the product is not detected in the time gap. Enter the required Auto Encoder Timeout value. Touch <i>Accept</i> button to set the value.

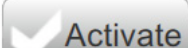
Table 6-17: Measured by Product Size/Time - Parameters

3. Touch the  button in the Settings screen to confirm the value, save and exit the setup.

**Note:** Selecting the  button does not set the value to the parameter, it moves the user to the next screen. The parameters are not saved until the  button is selected.

### 6.3.7 Activate the Line Setup

Follow the steps below to activate the Line for the printer. Alternatively, the Line Setup can be selected for each job refer to section [5.2.1.2 Setup on page 5-7](#). To activate the Line Setup as the printer default, do the following:

1. Select the required line setup from the list as shown in [Figure 6-27 on page 6-46](#).
2. Touch the  button to setup the required configuration.

## 6.4 Overall Equipment Effectiveness Availability

### 6.4.1 Introduction

Availability is a measurement of equipment uptime. It is the amount of time that the equipment is ready to run when required by production. This is one of the three key metric of OEE and is available for Videojet 1880.

The 'Availability' tool helps to isolate operational versus printer issues and enables the user to track the printer downtime and view the downtime statistics. The screen of faults that allows the analysis of runtime measurement data helps the user to understand and eliminate the more frequent causes of both printer and operational downtime.

The availability shows two basic availability metrics simultaneously:

- Printer Availability
- Operation Availability

**Note:** Operation Availability can be changed between two separate production time proxies as required by the user: "Printer Total Time" and "Printer Ready Total Time" mode. For more information, refer "["Operation Availability" on page 6-60](#)".

$$\text{Availability}\% = \frac{\text{Operating Time}}{\text{Planned Production Time}}$$

Where

- Operating Time is Total Printer Uptime
- Planned Production Time is the Actual Line Run Time Expected\*.

\*Based on proxy selected 'Printer Total Time' or 'Printer Ready Total Time'.

### 6.4.2 Printer Availability

Printer Availability tracks the downtime directly related to an internal error (fault) such as

- Pump Failure
- Charge Supply Fault
- Gutter Fault

Printer Availability is defined as

$$\text{Printer Availability} = 1 - \frac{\text{Printer Downtime}}{\text{Printer Total Time}}$$

'Printer Total Time' is the total amount of time for which the printer is turned on (has power applied). If the printer is powered down when a fault is active, the amount of time that the printer is off is also included in this printer total time.

'Printer Downtime' is the amount of 'Printer Total Time' the printer has spent in a 'Printer Fault State'. 'Printer Fault state' is defined as the period where the printer is not available due to a fault identified as a printer fault. For more information, refer service manual.



### 6.4.3 Operation Availability

This is a broader measure to reflect the full impact of the down time to production line. Operation Availability tracks the downtime related to faults that might be classed as “Procedural” such as:

- Mixer Tank Empty
- Modulation Driver Too Hot

The impact may be due to printer issues, operator related issues, shift changeovers and so on.

Operation Availability is defined as

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

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


- Printer Total Time.
- Printer Ready Total Time.

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

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

*Note: Refer Service Manual for further information on printer and operation fault states.*

#### 6.4.4 Availability Screen

1. Touch the  button from the Tools screen. The *Performance* screen opens as shown in the [Figure 6-3 on page 6-4](#) and touch the *OEE Availability* button.
2. Printer Availability and Operation Availability data is displayed with the time frame for printer total time as shown in [Figure 6-38](#).

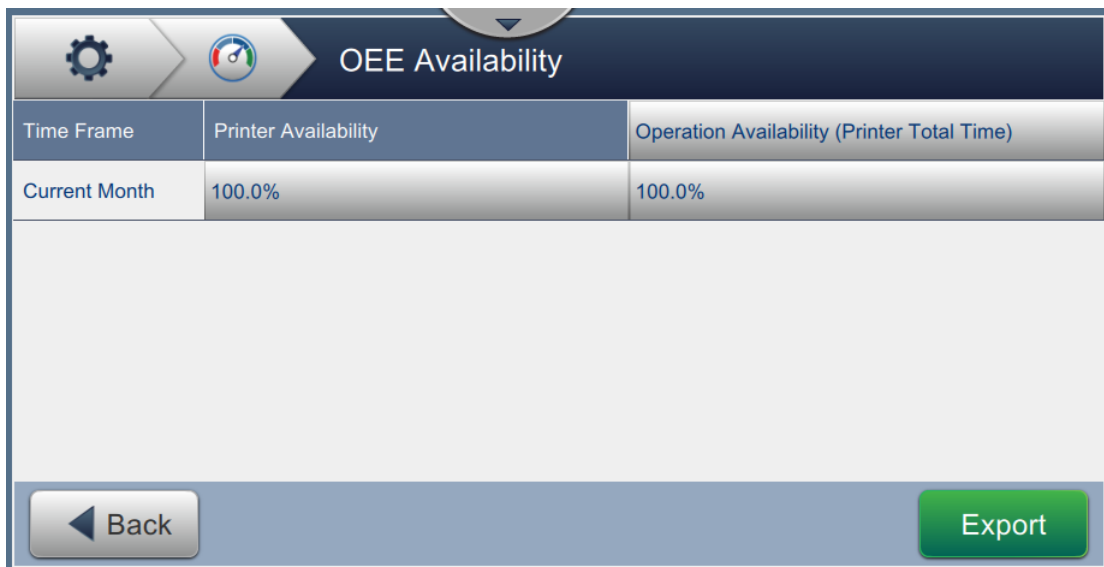


Figure 6-38: Performance - OEE Availability

**Note:** Touch the cell to view the fault type screen for the selected availability data. The screen displays the fault type, duration and frequency.

Option	Description
Time Frame	Displays the printer and operation availability values for different available time frames. The history of the availability data enables the user to correlate seasonal changes affecting availability.
Printer Availability	Displays the printer availability data.
Operation Availability	Displays the operation availability data based on the proxy in use for the calculation, that is Printer Total Time or Printer Ready Total Time.
Export	Exports the event log to USB stick. The UI will take the user through the steps required to download to USB.

Table 6-18: OEE Availability Screen Options

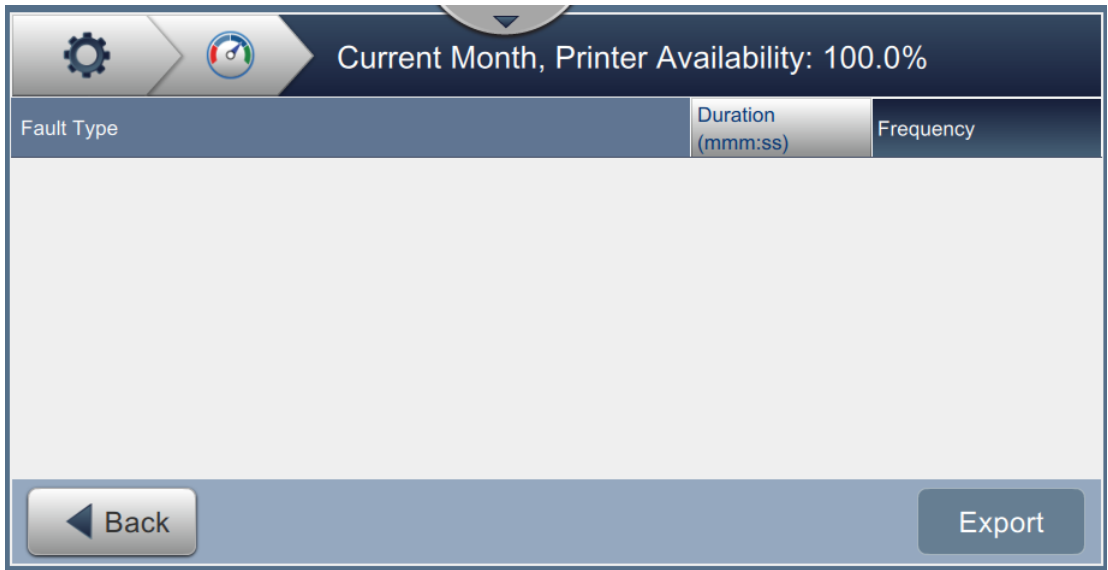
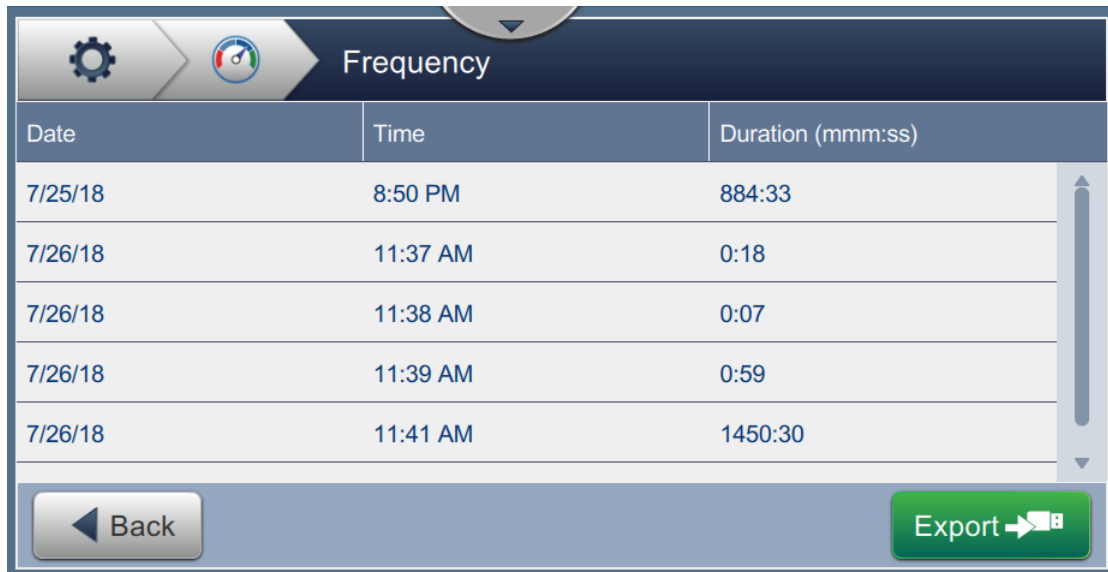


Figure 6-39: Printer Availability - Fault Type

Option	Description
Fault type	Description of the error code and fault. Touch the fault type to view the detailed description of the fault and possible solutions.
Duration (mmm:ss)	The total duration of time the printer was in this fault state.
Frequency	The number of times the printer had this fault in the time frame.
Export	Exports the event log to USB stick. The UI will take the user through the steps required to download to USB.
Back	Provides option to go back to the OEE Availability page.

Table 6-19: Fault Type

Touch the Frequency or Duration value to view the Printer Logs screen (see [Figure 6-40](#)). Printer logs displays the date, time and duration of each occurrence of that specific fault. This page can be used to correlate the occurrence of a fault with other events in the production facility.



Date	Time	Duration (mmm:ss)
7/25/18	8:50 PM	884:33
7/26/18	11:37 AM	0:18
7/26/18	11:38 AM	0:07
7/26/18	11:39 AM	0:59
7/26/18	11:41 AM	1450:30

Figure 6-40: OEE Availability - Printer Logs Screen

Refer to [Printer Logs on page 6-5](#) for additional information.

## Section 7 Maintenance

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### Introduction

The maintenance of the printer includes the procedures that an operator or a service technician can perform. This section describes the maintenance tasks that the operators of the printer are allowed to perform. The other maintenance tasks that only the trained service technicians and personnel must perform are described in the service manual.

This section provides the information on maintenance task that the operator can perform and contains the following topics:

- [Maintenance Schedule](#)
- [Using the Maintenance Tool](#)
- [Replacement of Fluid Cartridges](#)
- [Inspect the Printhead](#)
- [Clean the Printhead](#)
- [Clean the Print Cabinet](#)
- [Clean the Touch Screen](#)
- [Replacement of Air Filter](#)
- [Preparation for Long-term Shutdown \(Storage\) or Transportation](#)

*Note:* For information on sequences refer to service manual.

### 7.1 Maintenance Schedule

The [Table 7-1](#) provides the list of maintenance activities that needs to be performed on a periodic schedule.

Interval	Task
When the ink and/or make-up cartridges are empty	<a href="#">Replacement of Fluid Cartridges</a>
As Required - The user will be prompted to clean gutter/printhead based on printer setup.	<a href="#">Clean the Printhead</a> Clean the following parts of the printhead: <ul style="list-style-type: none"><li>• Deflector Plate</li><li>• Gutter</li></ul> <i>Note: Check the quality of the print before you do maintenance.</i>
As Required	<a href="#">Clean the Print Cabinet</a>
As Required	<a href="#">Clean the Touch Screen</a>
3,000 hrs (Recommended)	<a href="#">Replacement of Air Filter</a>
12 months	Replacement of Service Module

Table 7-1: Maintenance Checklist

## 7.2 Using the Maintenance Tool

The Maintenance tool allows the user to access maintenance instructions along with key maintenance data.

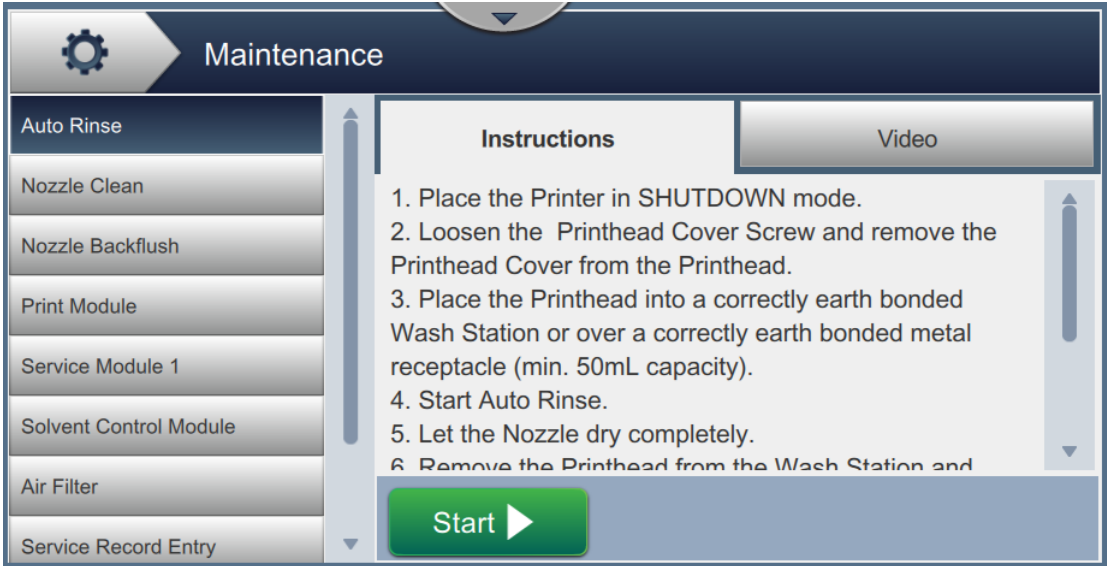


Figure 7-1: Maintenance

## Maintenance

The Maintenance screen provides the access to the following options as shown in [Table 7-2](#).

Buttons	Description
Auto Rinse	Provides the steps and video to perform an Auto Rinse.
Nozzle Clean	Provides the steps and video to perform the Nozzle Clean. Refer to <a href="#">7.5 on page 10</a> for additional information.
Nozzle Backflush	Provides the steps and video to perform the Nozzle Backflush. Follow the steps and touch the <i>Start</i> button when instructed to start the process. Once complete, an <i>OK</i> message is displayed.
Print Module	Displays the following parameters for the Print Module: <ul style="list-style-type: none"> <li>• Serial Number</li> <li>• Nozzle Size (µm)</li> <li>• Target Velocity (m/s)</li> <li>• Date Fitted</li> <li>• Print Run Hours</li> <li>• Printed Drops (millions)</li> </ul>
Service Module 1	Displays the following parameters for the Service Module 1: <ul style="list-style-type: none"> <li>• Serial Number</li> <li>• Date Fitted</li> <li>• Run Hours</li> <li>• Predicted Change Date</li> </ul> <p>Touch the <i>Change Service Module 1</i> button to view the steps or video on how to perform the procedure in preparation to replace the Service Module 1.</p>
Solvent Control Module	Displays the following parameters for the Solvent Control Module: <ul style="list-style-type: none"> <li>• Serial Number</li> <li>• Date Fitted</li> <li>• Number Of Hours</li> <li>• Predicted Change Date</li> </ul> <p>Touch the <i>Change Solvent Control Module</i> button to view the steps or video on how to perform the procedure in preparation to replace the Solvent Control Module.</p>

Table 7-2: Maintenance Options



Buttons	Description
Air Filter	<p>Displays the following parameters for the Air Filter:</p> <ul style="list-style-type: none"> <li>• Run Hours</li> <li>• Predicted Change Date</li> </ul> <p>Touch the <i>Change Air Filter</i> button to view and follow the steps or video on how to perform the procedure. Refer to <a href="#">7.8 Replacement of Air Filter on page 16</a> for additional information.</p>
Service Record Entry	<p>Displays the Customer Service Record Entry. The information can be updated by selecting the required textbox.</p>
Service Instructions	<p>Provides a list of each of the available Service Instructions. Selecting one of the options will display the steps and video for that procedure:</p> <ul style="list-style-type: none"> <li>• Air Filter</li> <li>• Service Module 1</li> <li>• Solvent Control Module</li> </ul>
Empty & Clean System	<p>Touch the <i>Empty Ink</i> button and follow steps to empty ink from the ink system. A video is provided for additional guidance.</p> <p>Touch the <i>Clean System and Empty Make-up</i> button and follow steps to flush the ink system. A video is provided for additional guidance. This step cannot be started, until the Empty Ink steps are completed.</p>

Table 7-2: Maintenance Options (continued)

## Maintenance

### 7.2.1 Using the Maintenance Instruction Video

The video provides the step-by-step instructions to complete a maintenance procedure.

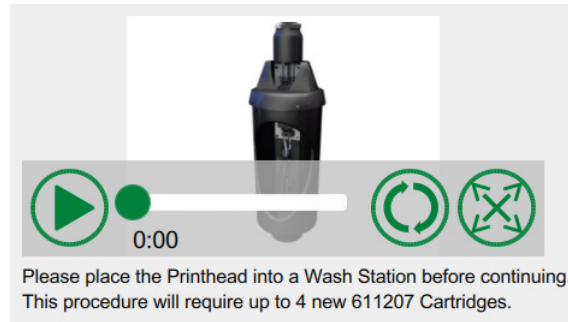


Figure 7-2: Maintenance Instruction Video Screen

The following options are available on the video:








Buttons	Description
 	Starts or stops the video
	Progress of the video and the time completed. <i>Note: This is not user editable.</i>
 	Loops the video or plays the video only once.
 	Expands to full screen or fits to preview screen.

Table 7-3: Maintenance Instructions Video Options

### 7.3 Replacement of Fluid Cartridges

There are two types of fluid cartridges:

- Ink cartridge
- Make-up fluid cartridge

The user has to install the cartridges when the printer is commissioned or when the cartridges are empty. The type of fluid (ink or make-up fluid) is written on the cartridge labels.

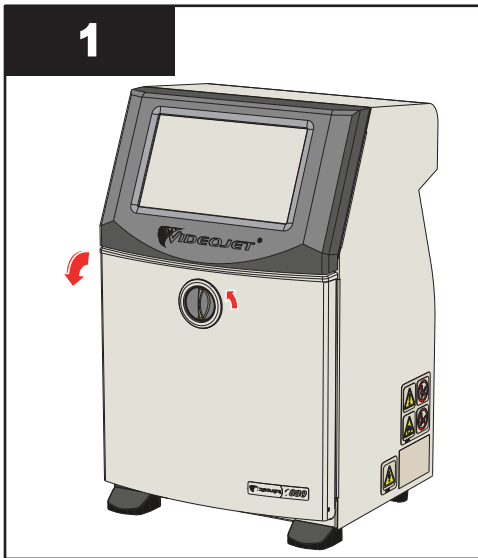
*Note: The following instructions are available as video on the UI.*

**Parts and Tools Required:**

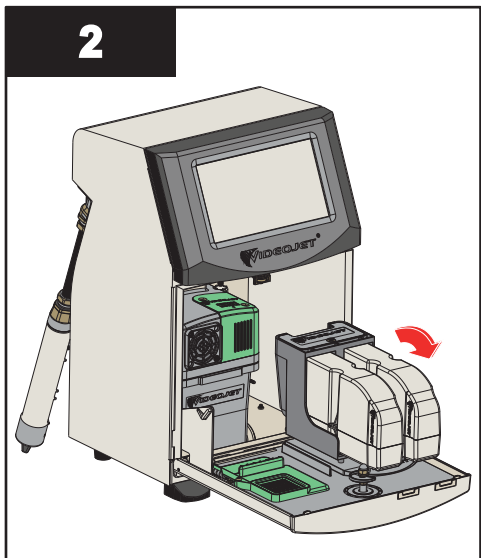
Parts/Tools	Quantity
Make-up Cartridge	1
Ink Cartridge	1
Safety Glasses	-
Gloves	-
Lint Free Cloth	-

Table 7-4: Parts and Tools

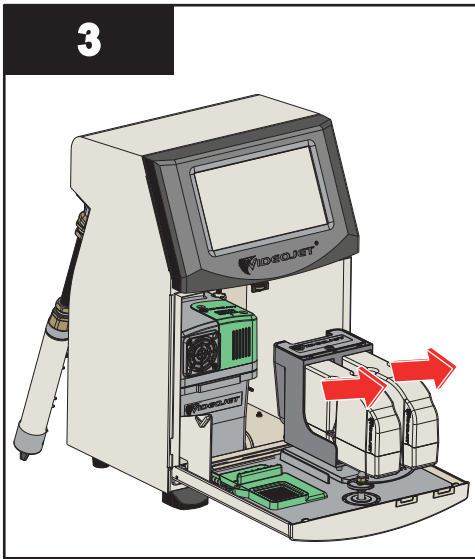
#### 7.3.1 How to Replace the Fluid Cartridges



1. Rotate the vertical position knob in the counter-clockwise direction to the horizontal position and unlock the door. Open the ink compartment door.



2. Keep the ink compartment door in the position as shown in figure.



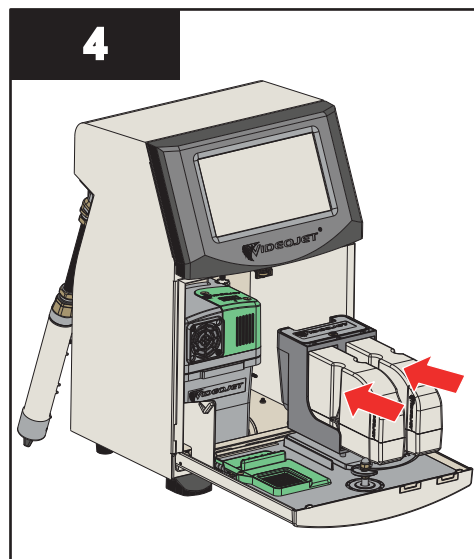
3. Pull the old (ink and/or make-up fluid as needed) cartridge to remove it from the cartridge holder.

*Note: Shake the ink cartridge before inserting it into the printer.*

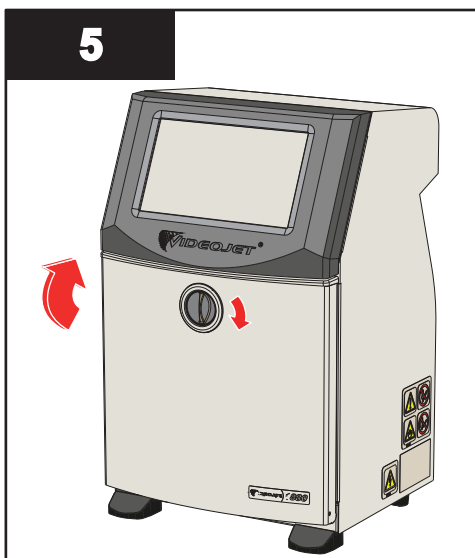
- *Make sure that the cartridge is engaged completely in the holder.*
- *Make sure that the cartridge level indicator shows 100% full.*

*Note: Push the cartridge until the cartridge locks into the cartridge holder (that is till you hear a snap sound).*

*Note: The printer takes a few minutes before it displays the cartridge level.*



4. Insert the ink cartridge/make-up fluid into the cartridge holder by aligning the cartridge key with the correct holder slot.



5. Close the ink compartment door. Rotate the horizontal knob in clockwise direction to vertical position to lock the ink compartment door.

## 7.4 Inspect the Printhead

Do the following tasks to inspect and clean the printhead:

1. If the user is in print mode, exit the print mode. The printer status changes to OFFLINE.
2. Loosen the printhead screw and remove the printhead cover.
3. Inspect the printhead and the inside of the printhead cover for any ink deposits. If cleaning is required, refer [Clean the Printhead on page 7-10](#).

### 7.5 Clean the Printhead

Do the following to clean the printhead:

#### **WARNING**

##### **PERSONAL INJURY.**

In the event of an ink or solvent spill, leakage from the printer could cause a floor/slip hazard and/or fire hazard (particularly if the equipment is situated over flammable material and/or other equipment). An optional drip tray is available (Part Number 234407). To install, place the drip tray on surface that the printer is to be used. Place the printer in the centre of the drip tray.

Ensure that the drip tray is appropriately grounded to avoid static build up.

#### **WARNING**

##### **VAPOUR HAZARD.**

Prolonged breathing of cleaning solution vapor can cause drowsiness and/or effects like alcoholic intoxication. Use only in well ventilated, open areas.

#### **WARNING**

##### **PERSONAL INJURY.**

The cleaning solution is poisonous if taken internally. Do not drink. Seek medical attention immediately if ingested.

#### **WARNING**

##### **HANDLING CLEANING SOLUTION.**

The cleaning solution is irritating to the eyes and respiratory system. To prevent personal injury when handling this substance:

- Always wear protective rubber gloves and clothing.
- Always wear goggles with side-shields or a face mask. It is also advisable to wear safety glasses when carrying out maintenance.
- Apply barrier hand cream before handling ink.
- If cleaning solution contaminates the skin, rinse off with running water for at least 15 minutes.

#### **WARNING**

##### **FIRE AND HEALTH HAZARD.**

The cleaning solution is volatile and flammable. It must be stored and handled in accordance with local regulations.

Do not smoke or use a naked flame in the vicinity of the cleaning solution.

Immediately after use remove any tissues or cloth that are saturated with cleaning solution. Dispose off all such items in accordance with local regulations.

**⚠ CAUTION**

**EQUIPMENT DAMAGE.**  
To prevent the damage to the printer components, use only soft brushes and lint free cloths to clean the printer. Do not use high-pressure air, cotton waste or abrasive materials.

**⚠ CAUTION**

**EQUIPMENT DAMAGE.**  
Make sure that the cleaning solution is compatible with the ink used before you clean the printhead. The failure to follow the caution can damage the printer.

*Note: Make sure that the jet is turned off.*

*Note: Navigate to Tools > Maintenance > Nozzle Clean screen to review the steps and video for details on the process.*

**Prerequisites:**

- 1. Exit the print mode. The printer status changes to OFFLINE.
- 2. Stop the ink jet and wait for the printer to completely shutdown.

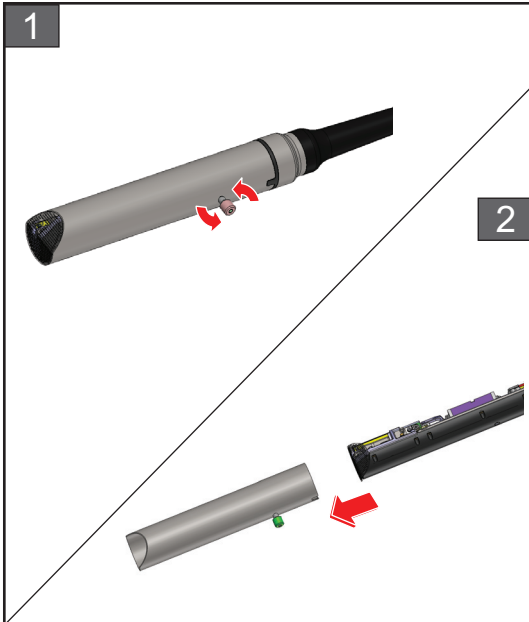
**Parts and Tools Required:**

Parts/Tools	Quantity
Wash Station	1
Cleaning Solution	-
Safety Glasses	-
Gloves	-
Lint Free Cloth	-

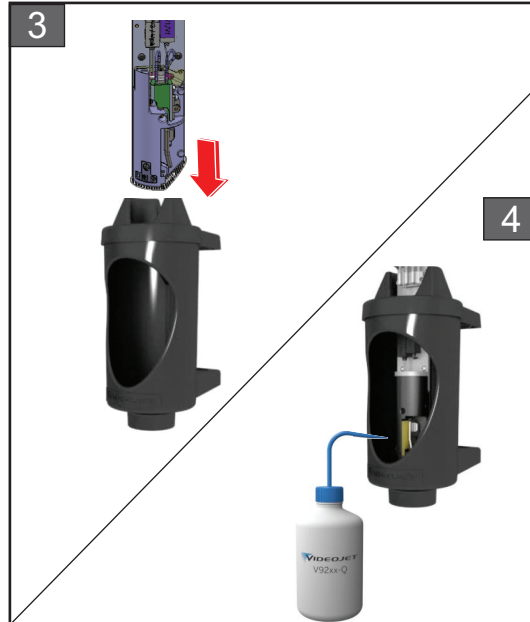
*Table 7-5: Parts and Tools*

### 7.5.1 How to Clean the Printhead

#### Nozzle Clean



1. Loosen the screw on the printhead in the direction as indicated.
2. Remove the printhead cover from the printhead.



3. Put the printhead into the wash station with a properly earthed bowl underneath.

Navigate to *Tools > Maintenance > Nozzle Clean* screen. Start the Nozzle Clean.

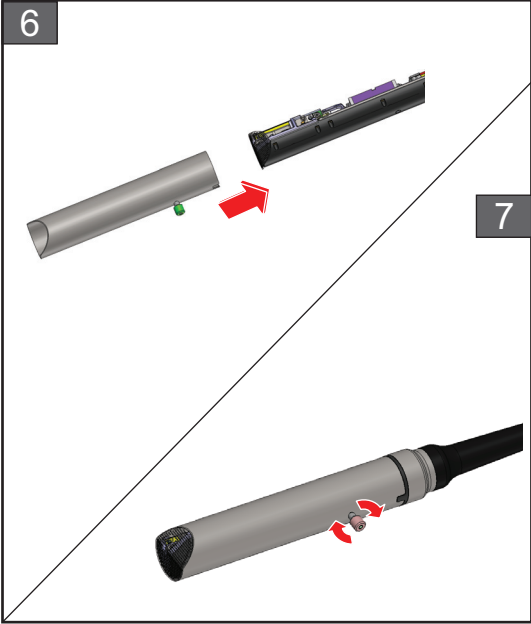
4. On completion of Nozzle Clean, use the correct cleaning solvent to clean the following parts of the printhead:
  - Gutter Sensing Tube
  - Charge electrode
  - Deflector plate
  - Nozzle

**Note:** The cleaning solution must be compatible with the type of ink that you use in the printer.





- 5. Allow the printhead to dry and make sure that the slot in the charge electrode is free of cleaning solution. Remove the printhead from the wash station.



- 6. Refit the printhead cover onto the printhead assembly.
- 7. Tighten the screw on the printhead cover in the direction as indicated.
- 8. Carefully remove the bowl from the wash station and discard the fluid according to local regulations.

**Nozzle Backflush**

Navigate to *Tools > Maintenance > Nozzle Backflush* screen.

Review the steps and video for details on the process. Refer to service manual for additional information.

## 7.6 Clean the Print Cabinet

Do the following to clean the print cabinet:

### **WARNING**

**PERSONAL INJURY.**

Airborne particles and materials are a health hazard. Do not use high-pressure compressed air to clean the printer cabinet.

### **CAUTION**

**EQUIPMENT DAMAGE.**

Any cleaning solutions containing either chloride, including hypochlorite bleaches or hydrochloric acid, can cause unacceptable surface pitting and staining. These should not be used in contact with stainless steels. If wire brushes or wire scouring pads are used, these should be made of stainless steel. Make sure that any abrasive media used is free from sources of contamination, especially iron and chlorides.

**Prerequisites:**

- Stop the printer
- Switch off the power to the printer

**Parts and Tools Required:**


Parts/Tools	Quantity
Safety Glasses	-
Gloves	-
Lint Free Cloth	-

Table 7-6: Parts and Tools

1. Remove the dust from the printer with a vacuum cleaner, or soft brush.  
*Note: Use compressed air to remove the dust quickly. The air pressure must not be more than 20 psi.*
2. Clean the outer surfaces of the printer with a wet lint free cloth. Use a mild detergent to remove the contamination that you cannot remove by a wet cloth.

## 7.7 Clean the Touch Screen

Do the following to clean the touch screen:

 <b>CAUTION</b>
<b>EQUIPMENT DAMAGE.</b> Only clean the LCD Screen by wiping with a soft cloth or cotton pad. Water may cause damage or discoloration of the screen. Clean condensation or moisture from any source immediately.

**Prerequisites:**

- Stop the printer
- Switch off the power to the printer

**Parts and Tools Required:**

Parts/Tools	Quantity
Safety Glasses	-
Gloves	-
Lint Free Cloth	-

*Table 7-7: Parts and Tools*

1. Clean the touch screen by wiping with a dry soft cloth or cotton pad as necessary.
2. Ensure any moisture is removed immediately to avoid staining or damage to the touch screen.  
*Note: If necessary, the cloth can be moistened with a little ethanol to remove any dirt.*

## 7.8 Replacement of Air Filter

Do the following to remove and install the Air Filter:

*Note:* Navigate to Tools > Maintenance > Service Instructions > Change Air Filter screen to view the UI instructions and video.

**Prerequisites:**

- Stop the printer

**Parts and Tools Required:**

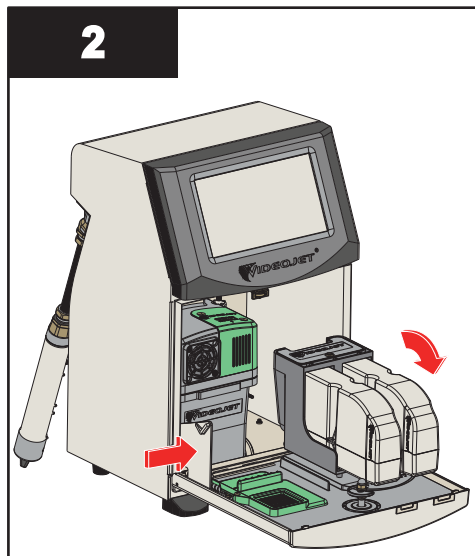
Parts/Tools	Quantity
Air Filter Element	1

Table 7-8: Parts and Tools

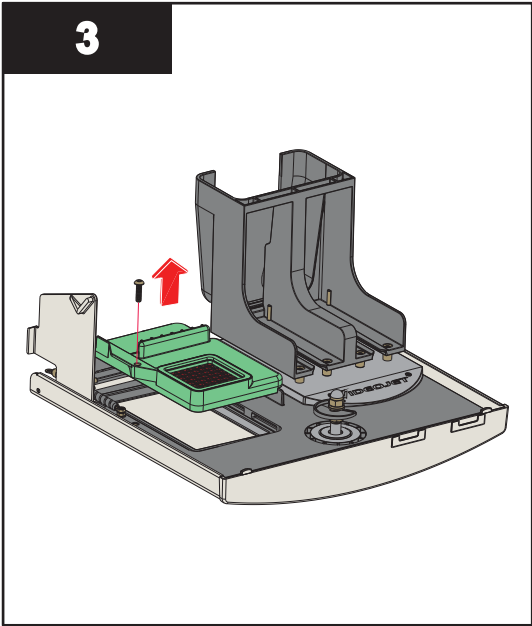
### 7.8.1 How to Remove the Air Filter



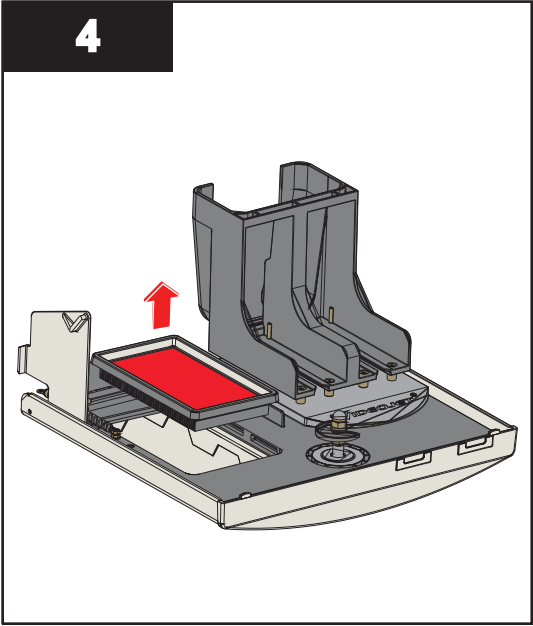
1. Rotate the vertical position knob in the counter-clockwise direction to the horizontal position and unlock the door. Open the ink compartment door.



2. Press the latch at the side of the ink compartment to open the door completely.



3. Unclip the Air Filter unit from the door.

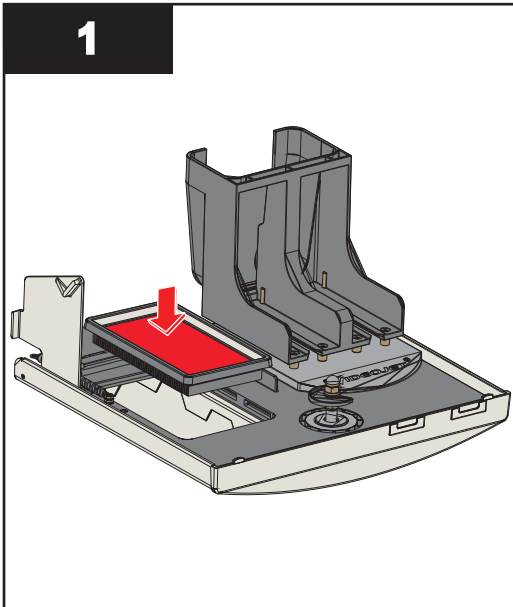


4. Open the Air Filter cover and remove the Air Filter element from the Air Filter unit.

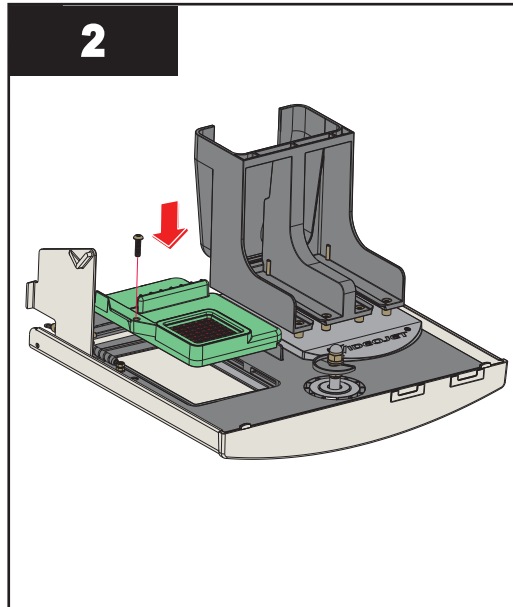
The removal of Air Filter is complete.

## Maintenance

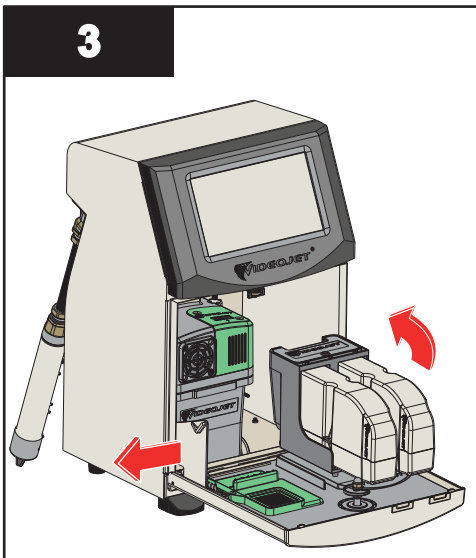
### 7.8.2 How to Install the Air Filter



1. Insert the new Air Filter element and close the cover.



2. Insert the Air Filter unit into the ink door fully with clips engaged.



3. Align the latch to the sides of the ink compartment door.



4. Close the ink compartment door. Rotate the horizontal knob in clockwise direction to vertical position to lock the ink compartment door.

The installation of air filter is complete.

## 7.9 Preparation for Long-term Shutdown (Storage) or Transportation

*Note: Long term Shutdown procedure should be done when the printer will not be used for more than three months.*

### Parts and Tools Required

Parts/Tools	Quantity
Make-up Cartridges matching existing make-up in mixer tank which will be flushed	2
Empty Cartridges	4
Safety Glasses	-
Gloves	-
Lint Free Cloth	-

Table 7-9: Parts and Tools

### WARNING

#### PERSONAL INJURY.

The ink, make-up fluid and cleaning solution are irritating to the eyes and respiratory system. To prevent personal injury when handling these substances:

- Always wear protective clothing and rubber gloves.
- Always wear goggles with side-shields or a face mask. It is also advisable to wear safety glasses when carrying out maintenance.
- Apply barrier hand cream before handling ink.
- If ink or make-up fluid or cleaning solution contaminates the skin, wash immediately with soap water. DO NOT use washdown or solvent to clean ink stains from the skin. If cleaning solution contaminates the skin, rinse off with running water for at least 15 minutes.

### WARNING

#### PERSONAL INJURY.

The ink, make-up fluid and cleaning solution are volatile and highly flammable. They must be stored and handled in accordance with local regulations.

- Do not smoke or use a naked flame in the vicinity of these substances.
- Immediately after use, remove any tissue or cloth that becomes saturated with these substances. Dispose all such items in accordance with the local regulations.
- In the event that any ink or make-up fluid or cleaning solution container is not completely empty after use, it should be resealed. Only full bottles are recommended for use when replenishing ink or make-up fluid or cleaning solution; partially filled bottles must be disposed in accordance with the local regulations.

### ⚠ WARNING

#### PERSONAL INJURY.

Prolonged breathing of make-up fluid or cleaning solution may cause drowsiness and/or effects similar to alcoholic intoxication. Use only in open, well-ventilated areas.

### 7.9.1 How to Prepare for Long-term Shutdown (Storage) or Transportation

Do the following tasks to prepare the printer for long-term shutdown/transportation:

1. Navigate to *Tools > Maintenance > Empty & Clean System* screen.
2. Follow the instructions/video and touch the *Next* button as shown in the [Figure 7-3](#) to progress.

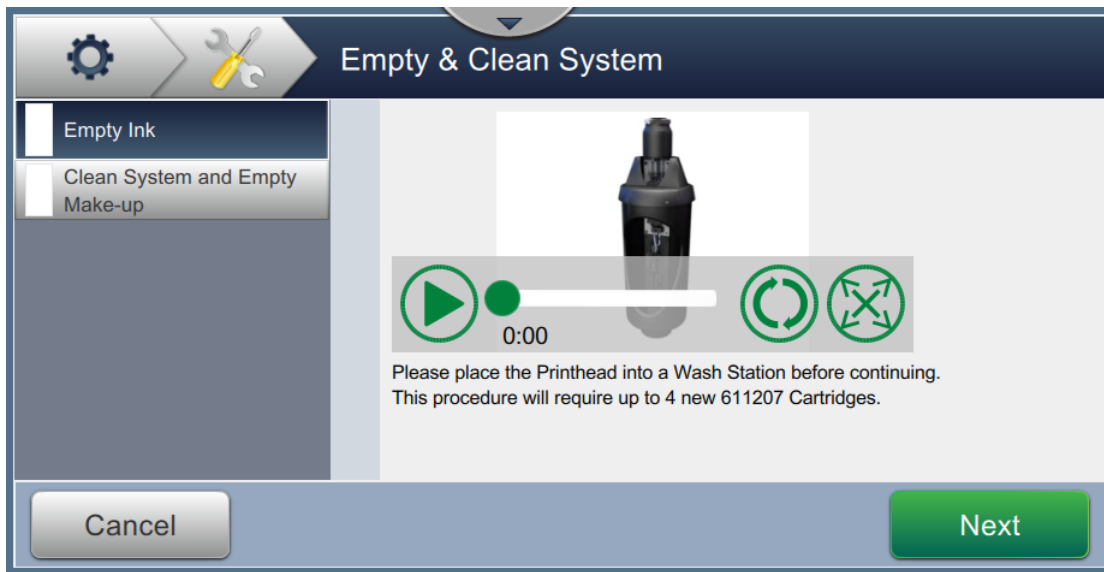


Figure 7-3: Empty and Clean System Screen

The printer is now ready for storage or transportation.

**Note:** When the mixer tank has been refilled with the ink removed for storage, do not recalibrate viscosity on re-install as the calibration data has been saved.

**Note:** Upon completion of long-term shutdown/transportation, the service module 1 must be replaced.



# Section 8 Troubleshooting

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## Introduction

This section contains the troubleshooting, fault diagnosis information for the users. This section contains the following information:

- [The Printer Does Not Start](#)
- [Incorrect Print Position](#)
- [Incorrect Print Size](#)
- [Print Not Complete](#)
- [Poor Print Quality](#)
- [Alarm Messages](#)

The service manual has more information on troubleshooting for the service technician and trained personnel.

### **WARNING**

#### LETHAL VOLTAGES.

Lethal voltages are present within this equipment when the equipment is connected to the mains electrical supply. Only trained and authorised personnel must do the maintenance work. Observe all statutory electrical safety codes and practices. Unless it is necessary to run the printer, disconnect the printer from the mains electrical supply before you remove the covers or do any service or repair activity. The failure to follow this warning can cause death or personal injury.

### **WARNING**

#### PERSONAL INJURY.

It is possible that in a fault condition the heater can reach 70° C. Do not touch the plate on which the heater is installed. The failure to follow this warning can cause the personal injury.

### 8.1 The Printer Does Not Start

1. Make sure that the printer is turned on. To turn on the printer, press the push button on the left hand side of the printer.
2. Check the status bar (see [Table 8-1](#)) to see if a system fault has occurred or if user action is required.

*Note: The status bar across the top of the Home screen indicates the color of the beacon output.*

Status Bar	Beacon	Beacon Output
Blue	GREEN	The jet is running and the printer can print correctly (not in print mode).
Green	GREEN	The printer is in print mode and can print correctly.
Yellow	AMBER and GREEN	The printer requires user interference to prevent a system fault. For example, ink or make-up fluid low.
Red	RED	Any fault that prevents printing. For example, jet not running, deflector plate trip.

Table 8-1: Status Bar

3. Check the troubleshooting table (see [Table 8-2](#)) to see the symptom, probable cause and action required by the user.

Symptom	Probable Cause	Action
Status bar is red or yellow	Multiple causes - Refer to error code	Inspect the display to see the related fault messages and warnings that are displayed. Refer to " <a href="#">Alarm Messages</a> " on page 8-7.
Status bar is green and the printer does not print	Product sensor and shaft encoder are not connected properly	Make sure that the product sensor and shaft encoder are connected and correctly operating (a lamp found behind the product sensor must flash if a product passes the sensor).
	-	If the problem continues, report the fault to Videojet Technologies Inc. at 1-800-843-3610 (US only). The customers outside the US must contact a Videojet subsidiary office or the local Videojet distributor.

Table 8-2: Troubleshooting

Symptom	Probable Cause	Action
Display or beacon (where installed) does not illuminate	Main electrical supply is not available.	Check the mains electrical supply and ensure that the electrical supply is available.
	Mains input connector is not fitted or incorrectly fitted	Check the mains electrical supply and ensure that input connector is fitted correctly.
	Mains power supply button is in OFF position	Check the mains electrical supply and ensure that power supply button is in ON position (looks pressed in).
	-	If the problem continues, report the fault to Videojet Technologies Inc. at 1-800-843-3610 (US only). The customers outside the US must contact a Videojet subsidiary office or the local Videojet distributor.

*Table 8-2: Troubleshooting*

### 8.2 Incorrect Print Position

1. Make sure that the Print Margin (distance from edge) is correct. Refer to [Section 5.2.1.3, "Parameters" on page 5-8](#).
2. Make sure that the PD to PH Distance (product to printhead distance) is correct. Refer to [Section 6.3.5, "Print Trigger" on page 6-52](#).

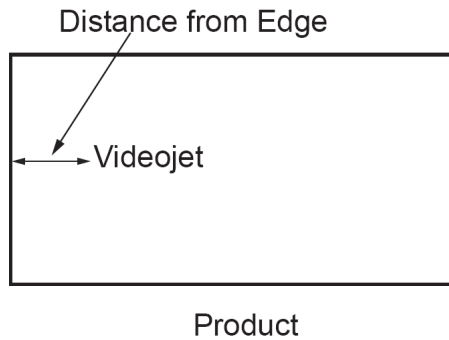


Figure 8-1: Print Position

3. Make sure that there are no additional spaces at the start of the job.

#### 8.2.1 Adjusting the Print Position

4. The user can modify the print position by changing the value from *Adjust > Move*.

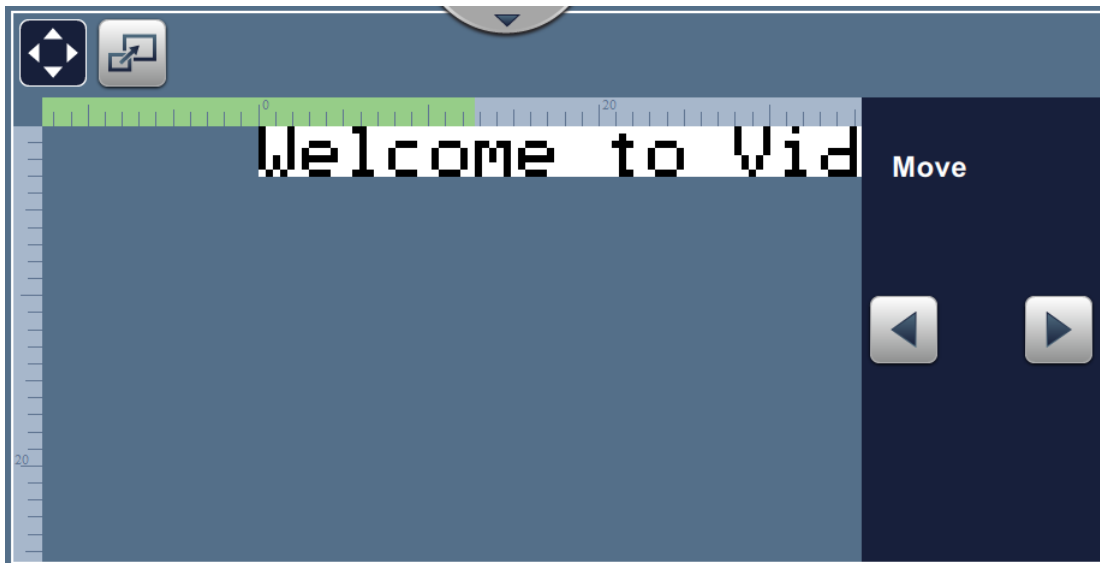


Figure 8-2: Adjusting Print Position - Move

5. Refer to section ["Adjusting the Print Position on the Product" on page 4-12](#) for additional details.

### 8.3 Incorrect Print Size

1. Make sure that the set character height and font is correct. Refer to [Section 5.2.2, "Add Field" on page 5-10](#).

*Note:* Refer to the relevant field type to modify the character height and font.

2. Make sure that the distance from the printhead to the product is correct. The character height increases and resolution decreases as the printhead moves away from the product.

*Note:* The optimal distance from the printhead to the product for the best quality is 12 mm. The range is 5 to 15mm.

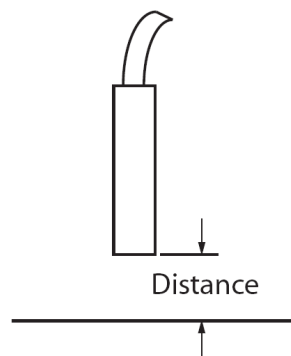


Figure 8-3: Distance from Product

3. Refer to section ["Adjusting the Print Scale on the Product" on page 4-13](#) for additional details.

### 8.4 Print Not Complete

You must check for any ink deposits on the printhead and clean the printhead if necessary. Refer to [Section 7.5, "Clean the Printhead" on page 7-10](#).

Make sure that the field height does not exceed the selected job height (selected raster).

## 8.5 Poor Print Quality

PRINT QUALITY TEST  
PRINT QUALITY TEST

The example on the left shows good overall character formation, no stray drops and an even application of print.

Table 8-3 describes the samples of bad printing, their causes and the steps required to correct the fault.

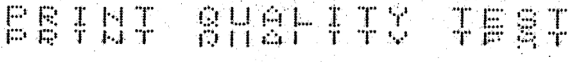

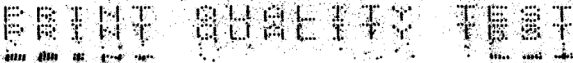
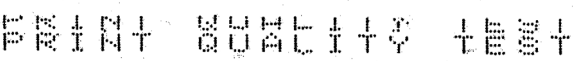
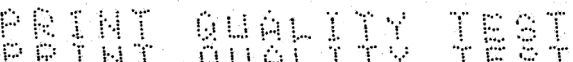
Sample and Cause	Remedy
 <p>Jet not aligned correctly, or nozzle has a partial block. Note bottom drops clipping the edge of the gutter. Possible EHT too low.</p>	<p>Clean the printhead. Navigate to <i>Tools &gt; Maintenance &gt; Nozzle Clean</i> and follow the procedure, ensure that the gutter is clean. If the problem persists, complete Nozzle Backflush procedure. Navigate to <i>Tools &gt; Maintenance &gt; Nozzle Backflush</i> and follow the procedure.</p>
 <p>Phasing error. The correct placement of drop is not good. You see a good amount of splashing in the area around.</p>	<p>Clean the printhead. Navigate to <i>Tools &gt; Maintenance &gt; Nozzle Clean</i> and follow the procedure. If the problem persists, complete Nozzle Backflush procedure. Navigate to <i>Tools &gt; Maintenance &gt; Nozzle Backflush</i> and follow the procedure. Make sure there is enough time available between prints to phase.</p>
 <p>Incorrect modulation, too many satellites, charging process not correct.</p>	<p>Backflush nozzle and check for correct breakup.</p>
 <p>Pressure too high, drops not deflected correctly, drops “run in” to one another, small print.</p>	<p>Check for jet alignment. Refer to the service manual for more information.</p>
 <p>Pressure too low, the drops are overdeflected or incorrectly positioned. Possible loss of most deflected drops.</p>	<p>Check for jet alignment. Refer to the service manual for more information.</p>

Table 8-3: Samples of Bad Printing

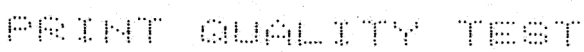
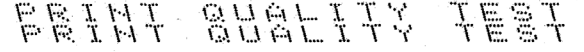
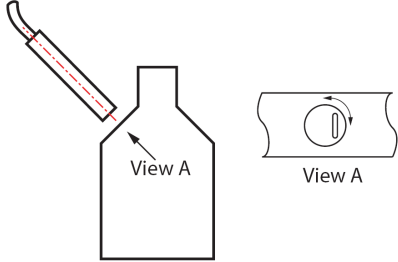
Sample and Cause	Remedy
 <p>PRINT QUALITY TEST</p> <p>Printhead too far from the substrate. The drops are affected by air currents and are spaced too far apart vertically</p>	<p>Decrease the distance from the substrate, or select a more correct font.</p>
 <p>PRINT QUALITY TEST</p> <p>The printhead slot not vertical to the substrate travel.</p>	<p>The face of the of the printhead must be at 90 degrees angle to the surface of the substrate and the slot must be vertical to the substrate movement. Refer to the figure below.</p> 

Table 8-3: Samples of Bad Printing (continued)

## 8.6 Alarm Messages

When a fault or warning occurs, the printer displays the alarm code and description in the status bar and shows the number of alarms currently active. The status bar will turn yellow if a warning is active and it turns red, if a fault is active as shown below.

*Note: If both faults and warnings are present, faults will be displayed first.*



Figure 8-4: Fault Message

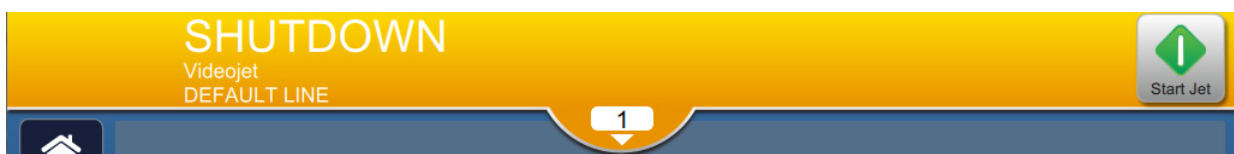


Figure 8-5: Warning Message

## Troubleshooting

When a fault occurs, the jet stops. An external output is available when a fault occurs. This output can be used to interface with the packaging machine's stop circuit to ensure that the packaging machine is stopped in the event of an error.




To view the alarms in more detail and to view instructions to resolve, click downward arrow on the status bar.

### 8.6.1 Clearing an Alarm

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

To view the details of the fault(s), proceed as follows:

1. Touch the  on the status bar to view the list of uncleared faults (Figure 8-6).
2. Touch the fault name in the list to read more details about the fault.

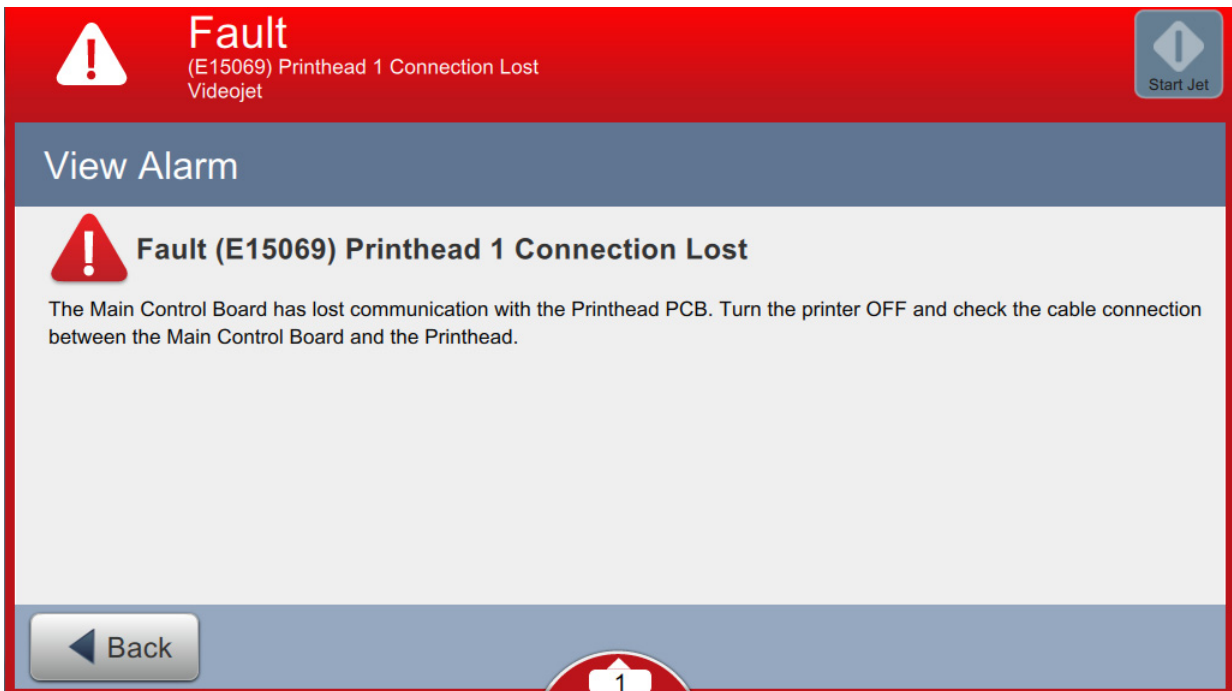


Figure 8-6: Fault List



3. Read the details of the fault and the instructions available on screen that provides detail of the fault and recommended actions necessary to clear the fault condition.

*Note: Videos are available for a number of alarm conditions.*

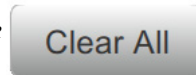
4. When the fault condition has been removed, the *Clear* button is activated. Touch the



button to remove the fault message.

*Note: This step applies only to those alarms which remain until cleared using the "Clear" button. A number of alarms will automatically clear when the alarm condition is rectified.*

*Note: To clear one or more alarms, touch the*



*button.*

## Troubleshooting

### 8.6.2 Printer Alarms

Error Reference	Name	Remedial Action
E10621	Wrong Cartridge in Make-up Slot	The Cartridge in the Make-up slot contains Ink. Please fit a suitable Make-up Cartridge.
E10622	Wrong Cartridge in Ink Slot	The cartridge in the Ink slot contains Make-up. Please fit a suitable Ink Cartridge.
E10623	Ink Cartridge Insertions Exceeded	The Cartridge in the Ink slot has exceeded its allowed number of insertions. Please fit a suitable Ink Cartridge.
E10624	Make-up Cartridge Insertions Exceeded	The Cartridge in the Make-up slot has exceeded its allowed number of insertions. Please fit a suitable Make-up Cartridge.
E10625	Ink Cartridge Expired	The Ink Cartridge has reached the end of its usable life. Please fit a suitable Ink Cartridge.
E10626	Make-up Cartridge Expired	The Make-up Cartridge has reached the end of its usable life. Please fit a suitable Make-up Cartridge.
E10649	New Ink Parameters	The Ink operating parameters have changed and updated to IMB.
E10719	Printhead 1 Job Not Ready to Print	Printhead 1 Job is not ready to print. Please Run and Load Job.
E10751	Air Filter Performance Reduced	The temperature in the Ink Compartment is higher than expected. Please check the Air Filter for obstructions. It is recommended that the Air Filter is replaced.
E10755	Service Module Replacement Required	The Service Module has exceeded its service life and Jet Start is prohibited. Please replace the Service Module.
E10757	Printhead 1 Build-Up Detection is Offline	The Printhead 1 Build-Up detection is offline. Please clean the Build-Up Sensor.
E15044	Invalid Job Width	The Job exceeds the maximum Print Width. Please edit the Job to reduce the Print Width before continuing or select a new Job.
E15048	Ink Cartridge Empty	The Ink Cartridge is empty. Please fit a suitable Ink Cartridge.
E15050	Make-up Cartridge Empty	The Make-up Cartridge is empty. Please fit a suitable Make-up Cartridge.
E15059	Make-up Tank High	The level of fluid in the Make-up Tank is above the allowed limit. Please continue to run the Ink Jet if possible and avoid actions that will result in the introduction of additional Make-up into the system, including Clean Stop/Start and Nozzle Flushing.

Table 8-4: Printer Alarms

<b>Error Reference</b>	<b>Name</b>	<b>Remedial Action</b>
E15061	Make-up Tank Empty	The Make-up Tank is empty. Please check the Make-up Cartridge and fit a suitable replacement if necessary.
E15062	Make-up Tank Empty	The Make-up Tank is empty. Please fit a suitable Make-up Cartridge and perform 'Prime Make-up Tank' before restarting the jet.
E15063	Mixer Tank High	The level of fluid in the Mixer Tank is above the allowed limit. Please continue to run the Ink Jet if possible and avoid actions that will result in the introduction of additional Make-up into the system, including Clean Stop/Start and Nozzle Flushing.
E15065	Mixer Tank Empty	The Mixer Tank is empty. Please check the Ink Cartridge and fit a suitable replacement if necessary.
E15066	Mixer Tank Empty	The Mixer Tank is empty. Please fit a suitable Ink Cartridge and perform 'Prime Mixer Tank' before restarting the jet.
E15150	Ink Viscosity Too Low	The Ink is too thin. Please continue to run the Ink Jet if possible and avoid actions that will result in further dilution, including Clean Stop/Start and Nozzle Flushing.
E15151	Ink Viscosity Too High	The Ink is too thick. Check the Make-up Tank level and re-prime the tank if necessary.
E15154	'Quick' Stop due to Operator Selection	The printer performed a 'Quick' Stop due to Operator selection. To avoid start up issues, restart the Ink Jet at the earliest opportunity. Inspect the Printhead prior to start up and clean if necessary.
E15171	Printhead 1 No Time to Phase	The Printer failed to acquire valid Phase Profile data before the timeout occurred. Please reduce the Print Rate / Line Speed and check the Product Detector for correct operation.
E15201	Printhead 1 Velocity Detect Timeout	The Printer failed to acquire valid drop speed data before the timeout occurred. Please reduce the Print Rate / Line Speed and check the Product Detector for correct operation.
E15262	'Quick' Start as Mixer Tank High	The printer is performing a 'Quick' Start as the Mixer Tank is High.
E15263	'Quick' Start due to No Make-up Cartridge	The printer is performing a 'Quick' Start as there is No Make-up Cartridge.
E15264	'Quick' Start as Make-up Cartridge Empty	The printer is performing a 'Quick' Start as the Make-up Cartridge is Empty.

Table 8-4: Printer Alarms (continued)

## Troubleshooting

Error Reference	Name	Remedial Action
E15265	'Quick' Stop as Mixer Tank High	The printer performed a 'Quick' Stop as the Mixer Tank is High. To avoid start-up issues, restart the Ink Jet at the earliest opportunity. Inspect the Printhead prior to start and clean if necessary.
E15266	'Quick' Stop due to Incorrect Make-up Type	The printer performed a 'Quick' Stop due to incorrect Make-up Type. To avoid start-up issues, restart the Ink Jet at the earliest opportunity. Inspect the Printhead prior to start and clean if necessary.
E15267	'Quick' Stop due to No Make-up Cartridge	The printer performed a 'Quick' Stop as there is No Make-up Cartridge. To avoid start-up issues, restart the Ink Jet at the earliest opportunity. Inspect the Printhead prior to start and clean if necessary.
E15268	'Quick' Stop as Make-up Cartridge Empty	The printer performed a 'Quick' Stop as the Make-up Cartridge is Empty. To avoid start-up issues, restart the Ink Jet at the earliest opportunity. Inspect the Printhead prior to start and clean if necessary.
E15269	Printhead 1 Missed Print: Product Delay too short	Missed Print: Printhead 1 Product Delay is too short. Review the PD to PH Distance and increase as required.
E15277	Printhead 1 Missed Print: Out Of Strokes	Missed Print: The print is being missed as the Job was not created in the available time.
E15285	Incorrect Make-up Type	The cartridge in the Make-up slot is of the wrong type (%1). Please fit a %2 Make-up Cartridge.
E15286	Incorrect Ink Type	The Cartridge in the Ink slot is of the wrong type (%1). Please fit a %2 Ink Cartridge.
E15287	Printhead 1 Missed Print: Overlap	Missed Print: The Print is being truncated due to an overlap with the following print.
E15295	Printhead 1 Missed Print: Overlap	Missed Print: The Print is being missed due to an overlap with the following print.
E15303	Printhead 1 Build-Up Detected	The Printhead may require cleaning. Clean and dry the Printhead at the earliest opportunity in order to sustain the quality of print.
E15311	Job Too Long	The Job exceeds the maximum Print Width. Please edit the Job to reduce the Print Width before continuing or select a new Job.
E15319	Printhead 1 Missed Print: Product Queue Too Deep	Missed Print: There are more than 20 products between the Product Detector and the Printhead which are not yet printed. Contact your local Videojet Service Representative.

Table 8-4: Printer Alarms (continued)

Error Reference	Name	Remedial Action
E15344	Selected Job Too Long	The selected Job is too long. Please reduce the Job length.
E15356	Printhead 1 Missed Print: Overspeed	Missed Print: Line speed is too fast for the current Job. Review the Line Speed setting and adjust as needed.
E15445	Warming Up	Please wait while the Ink System warms up.
E15542	Printhead 1 Accelerometer Peak Shock Level Exceeds Threshold	The Printhead has sustained mechanical shock or Acceleration greater than the recommended limit. If the Printhead was recently dropped while the Ink Jet was running, then inspect the Printhead and clean if necessary. If the Printer is currently employed in a traversing application, then reduce Printhead Acceleration and Deceleration rates in order to maximize Uptime and sustain quality of print.
E15556	No Ink Cartridge	The printer cannot detect the presence of a Cartridge in the Ink slot. Please fit a suitable Ink Cartridge.
E15557	No Make-up Cartridge	The printer cannot detect the presence of a Cartridge in the Make-up slot. Please fit a suitable Make-up Cartridge.
E15561	No Code No Run	The printer has stopped printing, because it has missed a number of prints, equal to the No Code No Run Threshold setting. Please review any 'Missed Print' warnings displayed and adjust the printer setup or No Code No Run Threshold accordingly.
E15562	Electronics Compartment Temperature Too Hot	The measured temperature in the Electronics Compartment is above the allowed limit. Please check the ambient conditions in the vicinity of the Printer and relocate it if necessary.
E15564	Printhead 1 Cleaning Recommended	The recommended date for Printhead cleaning as calculated by the printer is approaching. In order to sustain the quality of print, inspect the Printhead at the next opportunity and clean if necessary.
E15622	Printhead 1 Invalid Job Adjustment	The Selected Job cannot be printed with the active Line Setup. Please select a new Line Setup from the Line Setup System Tool or within Job Parameters.
E15646	Service Module 1 Replacement Due in %L1 Hours	The Service Module 1 is nearing the end of its usable life. Please ensure that you have a replacement available.
E15648	Service Module 1 Insertions Exceeded	The Service Module 1 has exceeded its allowed number of insertions. Please fit a new Service Module 1.

Table 8-4: Printer Alarms (continued)

## Troubleshooting

Error Reference	Name	Remedial Action
E15649	Service Module 1 / Ink Cartridge Mismatch	The Ink type contained within the Ink Cartridge is not compatible with the Ink type previously used with the fitted Service Module 1. Please install a suitable Ink Cartridge, or replace the Service Module 1 with a new or compatible module.
E15650	Ink System incompatible with Service Module 1	Service Module 1 is not compatible with the Ink System fluid. Please install a suitable Service Module 1.
E15783	Printhead 1 Product Delay Out of Range	Printhead 1 Product Delay is outside of the allowed range. Review the PD to PH Distance and increase or decrease as required.
E15804	Air Filter Replacement Recommended	The Air Filter has reached the end of its recommended service life. Please replace the Air Filter.
E15805	Traversing Unavailable	Traversing is unavailable on a printer without the Expansion board. Product direction is set to "Right to Left".
E15982	Air Filter Replacement Due	The Air Filter has reached 97% of its recommended service life. Please ensure that you have a suitable replacement available.
E15985	Service Module Replacement Due	The Service Module has reached 97% of its service life and will require replacing soon. Please ensure that you have a suitable replacement available.
E15987	Air Filter Replacement Due	The Air Filter has reached 90% of its recommended service life. Please ensure that you have a suitable replacement available.
E15990	Service Module Replacement Due	The Service Module has reached 90% of its service life and will require replacing soon. Please ensure that you have a suitable replacement available.
E15992	Air Filter Replacement Recommended	The Air Filter has reached the end of its recommended service life. Please replace the Air Filter.
E15995	Service Module Replacement Required	The Service Module has reached the end of its service life. Please replace the Service Module.
E15997	Air Filter Replacement Recommended	The Air Filter has exceeded its recommended service life. Please replace the Air Filter.

Table 8-4: Printer Alarms (continued)

# Appendix A Specifications

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## Introductions

This section provides the printer specifications and contains the following topics:

- [Electrical Specifications](#)
- [Weight](#)
- [Dimensions](#)
- [Optional Accessories](#)
- [Environmental Specifications](#)
- [Ink and Make-up Fluid Capacity](#)
- [Print Height](#)
- [Font Specifications and Line Speeds](#)

### A.1 Electrical Specifications

The electrical specifications of the printer are shown in [Table A-1](#).

Voltage	100 V AC to 240 V AC
Frequency	50 to 60 Hz
Power Consumption	70 Watts

*Table A-1: Electrical Specifications*

### A.2 Weight

The dry weight specification of the printer is shown in [Table A-2](#).

Dry Weight	20-22 kg (dependent on variant)
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*Table A-2: Weight Specifications*

## A.3 Dimensions

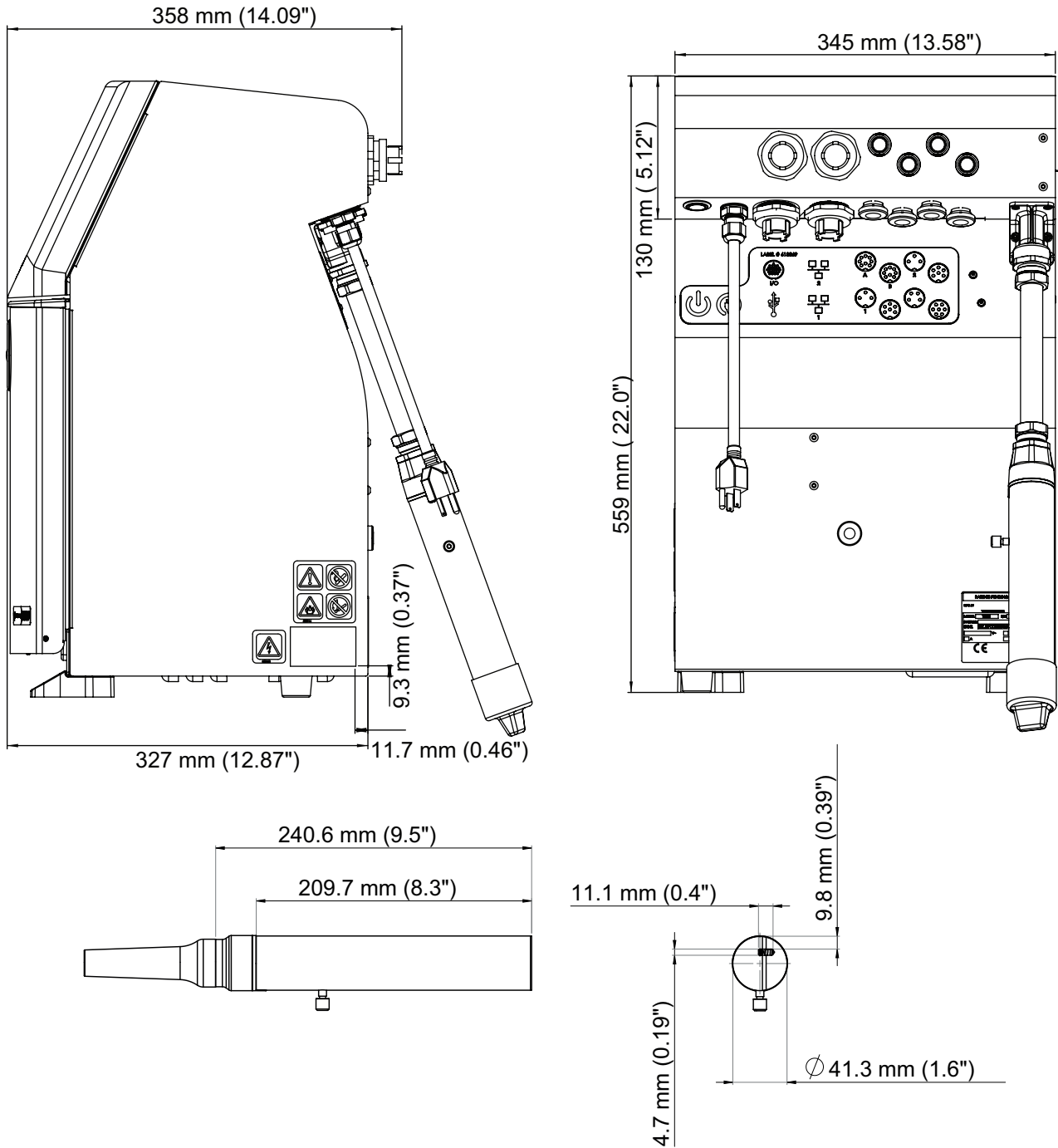


Figure A-1: Printer Dimensions



Cabinet	Width	345 mm
	Height	559 mm
	Depth	358 mm
Printhead	Diameter (Sleeve)	Ø41.3 mm
	Diameter of the nozzle orifice	60 Microns 70 Microns
Umbilical	Length	3 m (Ø20 mm for straight umbilical) 6 m (Ø17.4 mm)
Cabinet Variations	IP66 IP55	

Table A-3: Printer Dimensions

## A.4 Optional Accessories

### A.4.1 Mobile Printer Stand

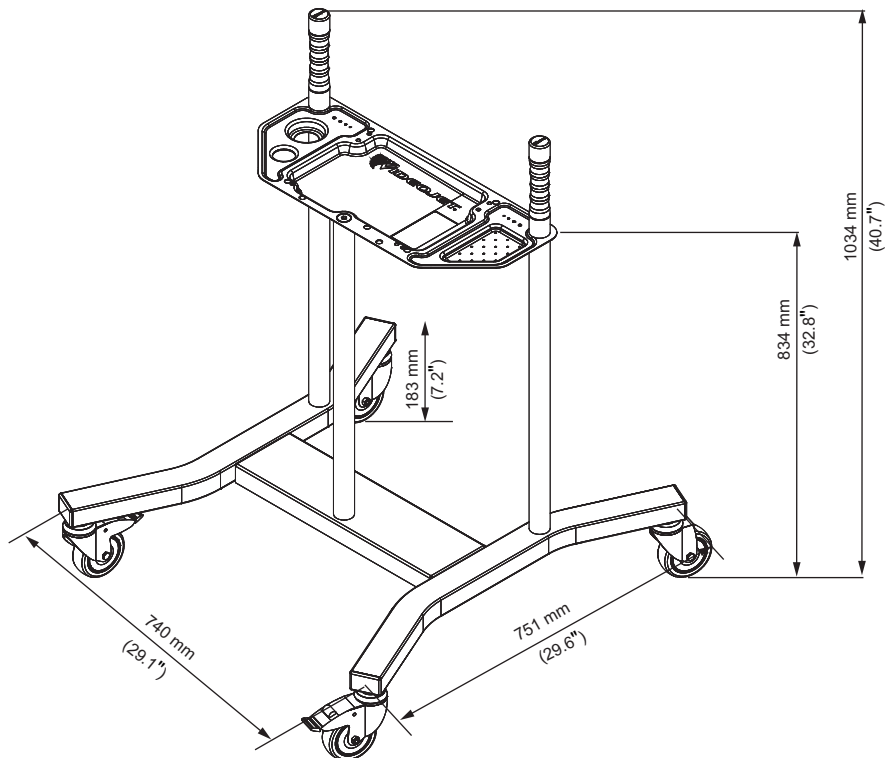


Figure A-2: Mobile Printer Stand

## A.4.2 Printhead Stand

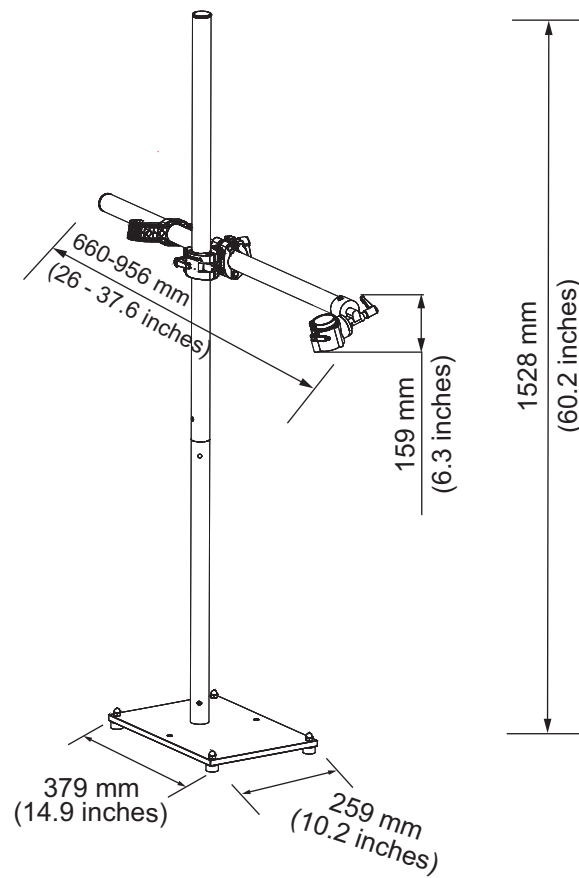


Figure A-3: Printhead Stand

## A.5 Environmental Specifications

The environmental specifications of the printer are shown in [Table A-4](#).

Operating temperature	0 °C to 50 °C (32 °F to 122 °F)
Rate of change of ambient temperature	10 °C (18 °F) per hour maximum
Relative humidity	0% to 90% non-condensing
Storage temperature	0 °C to 50 °C (32 °F to 122 °F) in original packaging
Industrial-protection rating*	IP66 or IP55

Table A-4: Environmental Specifications

\* Cabinet only (dependent on variant)

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## A.6 Ink and Make-up Fluid Capacity

The ink and solvent capacity of the printer are shown in [Table A-5](#).

Ink Cartridge	750-1000 ml
Make-up Fluid Cartridge	750-1000 ml

*Table A-5: Ink and Make-up Fluid Capacity*

## A.7 Print Height

The minimum and maximum height of the message for the print matrix is shown in [Table A-6](#).

Minimum	2 mm
Maximum	10 mm

*Table A-6: Print Height*

## A.8 Font Specifications and Line Speeds

The font specifications and the line speeds for 60 micron and 70 micron nozzle are shown in [Table A-7](#).

*Note: The line speeds listed in [Table A-7](#) are for 60dpi only unless otherwise indicated.*

Line Mode	Height	Width	Cal Speeds (60 micron)		Cal Speeds (70 micron)	
			ft/min	m/min	ft/min	m/min
1	5	4	1097	334	1097	334
1	5	5	914	278	914	278
1	7	5	800	243	800	243
1	9	7	533	162	533	162
1	12	9	256	78	256	78
1	16	10	305	93	305	93
1	24	16	96	29	96	29
1	34	25	56	17	56	17
2	5	5	376	114	376	114
2	7	5	376	114	400	122
2	9	7	229	69	125	38
2	12	9	85	26	85	26
2	16	10	56	17	56	17
3	5	5	305	93	305	93
3	7	5	229	69	221	67
3	9	7	121	37	56	17
4	5	5	193	59	85	26
4	7	5	136	41	56	17
5	5	5	56	17	56	17

Table A-7: Line Speeds (60 and 70 micron)

# Appendix B DataMatrix Limitations & Requirements

## B.1 DataMatrix Limitations & Requirements

A DataMatrix is a two-dimensional barcode consisting of black and white "cells" or modules arranged in either a square or rectangular pattern, also known as a matrix. The information to be encoded can be text or numeric data. Videojet printers are capable of printing both square and rectangular datamatrices of up to 32x32 in size.



Figure B-1: DataMatrix

Symbol Size Row x Column	Data Capacity		
	Numeric	Alphanumeric	Max Bytes
10 x 10	6	3	1
12 x 12	10	6	3
16 x 16	16	10	10
18 x 18	24	16	16
20 x 20	36	25	20
22 x 22	44	31	28
24 x 24	60	43	34
26 x 26	88	64	42
32 x 32	124	91	60

Table B-1: Square DataMatrix sizes supported by Videojet CIJ Printers

Symbol Size Row x Column	Data Capacity		
	Numeric	Alphanumeric	Max Bytes
8 x 18	10	6	3
8 x 32	20	13	8
12 x 26	32	22	14
12 x 36	44	31	20
16 x 36	64	46	30
16 x 48	98	72	47

Table B-2: Rectangular DataMatrix sizes supported by Videojet CIJ Printers

If you are having trouble fitting their desired code into the datamatrix, consider the following:

- The data capacity limitations are not specifically character limits, but byte limits.
- The total bytes taken up by the customer data varies not only by the quantity of characters, but the type (e.g. numeric, alphanumeric, case, special characters) and the order in which they are set.
- If the desired DM is only just shy of fitting, it is possible to shift characters around so that they groups compile differently and fewer bytes are used.
- Due to the Text Mode used (C40), uppercase letters will use fewer bytes than lower case letters.

## B.2 DataMatrix Byte Calculation Example

There is generally no need to manually calculate datamatrix information. However, if during the course of troubleshooting you need to determine why you are exceeding byte limits, you can calculate the bytes required by the code using the following information.

- The default encoding for character data in a datamatrix is ASCII
- Additional compression methods may be applied. Videojet printers use C40 compression on all characters except consecutive digit pairs (00-99), which use ASCII.
- Characters in your data are grouped into groups of three codewords each codeword takes up 2 Bytes of data.
- The codeword representation of a letter or number will be an integer. This integer will not be the same as the represented character (e.g. "1" in C40 is represented by "5").
- C40 has four sets of characters, Set 0 - Set 3. Any characters from Set 2 - Set 3 will require two codewords, one to call the Set and the codeword of the character.
  - Set 0 is the default, so using characters from Set 0 requires only the one codeword.
  - Since characters/values from Sets 1 - Set 3 require two codewords, using these characters will make you hit byte limits in fewer data characters.

Here's an example of how a code translates to byte size. The use case requires that we fit the information into a 16x16 datamatrix, which has a byte limitation of 10 bytes.

### Example Data for the 2D DataMatrix: J-1Q6Q9-21CK007

Group	Group 1			Group 2			Group 3			Group 4			Group 5		
Codeword Position	C1	C2	C3	C1	C2	C3	C1	C2	C3	C1	C2	C3	C1	C2	C3
Data	<b>J</b>	-		1	Q	6	Q	9	-	<b>21</b>	C		K	<b>00</b>	7
Encoded Data*	23	1	12	5	30	10	30	13	1	12	<b>151</b>	16	24	<b>130</b>	3

\*Default encoding (ASCII - bolded) is used for digit pairs, other content is in C40.

- As each group is 2 bytes this data equates to 10 bytes, which are the maximum bytes for the 16x16 datamatrix. Any additional characters would require a larger datamatrix.
- Note that the "-" takes up two codewords. The encoded result requires two references to the C40 Mode, "1" which invokes "set 2" and "12" which then invokes code 12 from set 2 (-). See [Table B-3](#).
- Note that the second time the "-" appears, the "1" and "12" are split between groups 3 and 4. When determining byte counts in this way, it is therefore possible that characters required two codes can straddle groups.
- Note that in Group 4, the 21 is treated as a single character, as is the 00 in Group 5. Consecutive digits (00-99) are encoded in the default ASCII as values 130-229.
- Since the 1 and 6 in Group 2 are not double digits, they are encoded in C40 just like other characters.

Code	Set 0	Set 1	Set 2	Set 3
0	set 1	NUL	!	`
1	set 2	SOH	"	a
2	set 3	STX	#	b
3	space	ETX	\$	c
4	0	EOT	%	d
5	1	ENQ	&	e
6	2	ACK	'	f
7	3	BEL	(	g
8	4	BS	)	h
9	5	HT	*	i
10	6	LF	+	j
11	7	VT	,	k
12	8	FF	-	l
13	9	CR	.	m
14	A	SO	/	n
15	B	SI	:	o
16	C	DLE	;	p
17	D	DC1	<	q
18	E	DC2	=	r
19	F	DC3	>	s
20	G	DC4	?	t
21	H	NAK	@	u
22	I	SYN	[	v

Table B-3: C40 Text Mode Codes

Code	Set 0	Set 1	Set 2	Set 3
23	J	ETB	\	w
24	K	CAN	]	x
25	L	EM	^	y
26	M	SUB	_	z
27	N	ESC	FNC1	{
28	O	FS		
29	P	GS		}
30	Q	RS	hibit	~
31	R	US		DEL
32	S			
33	T			
34	U			
35	V			
36	W			
37	X			
38	Y			
39	Z			

Table B-3: C40 Text Mode Codes (continued)