

Videojet 1520 Excel

Operator Manual

P/N 462270-01

Revision AA, July 2011

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Compliance Information

For Customers in the European Union

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

EN55022:2006 + A1:2007 Class A Emissions Standard for industrial environments

EN61000-6-4 2007 Generic Emissions Standard for Heavy Industrial

Environments

EN61000-3-2 2006 Harmonic Current Fluctuations
EN61000-3-3 2008 Voltage Fluctuation and Flicker

EN61000-6-2 2005 Immunity Characteristics for Industrial Environ-

ments

Following the provisions of EU EMC Directive 2004/108/EC

EC Low Voltage Directive 2006/95/EEC

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

IEC 60950-1:2001

Safety requirements for information technology equipment including electrical business equipment.

EN 60529:1991

Degrees of protection provided by enclosures (IP code).

For Customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.



Warning

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

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide responsible protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio

communications. Operation of this equipment in a residential area is likely to cause harmful interference in 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.

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

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

Electromagnetic Testing Services Limited

Pratts Fields

Lubberhedges Lane

Stebbing, Dunmow

Essex, CM6 3BT

England, UK

This equipment has been investigated by Underwriters Laboratories Inc. in accordance with the standard for safety: UL 60950-1: Safety of information technology equipment first edition. Subject 2178 marking and coding equipment, electronics.

Report reference E252185.

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 by:

Electromagnetic Testing Services Limited

Pratts Fields

Lubberhedges Lane

Stebbing, Dunmow

Essex, CM6 3BT

England, UK

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This equipment has been investigated by Underwriters Laboratories Incorporated in accordance with the standard for safety: CAN/CSA C22.2 No. 60950-1-03. Safety of information technology equipment. Subject 2178 marking and coding equipment, electronics.

Report reference E252185.

Pour la clientèle du Canada

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicales aux appareils numerique de las class A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

Cet équipement est certifié CSA.

This equipment has been investigated by Underwriters Laboratories Incorporated in accordance with the standard for safety: CAN/CSA C22.2 No. 60950-1-03. Safety of information technology equipment. Subject 2178 marking and coding equipment, electronics.

Report reference E252185.



Warning

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.

Customer Support and Training

Contact Information

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

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Service Program

About Total Source Commitment

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

The Total Source Commitment

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

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

Customer Training

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

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

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

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Introduction

Videojet 1520 Excel Printer

This printer is a continuous ink jet printer that can print fixed and variable codes at elevated line speeds on consumer and industrial products. The printer delivers superior uptime, excellent print quality, and ease of use to the users.

About the Manual

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

Related Publications

The following manual is available for reference:

Videojet 1520 Excel Service Manual, Part Number: 462274.

Language Codes

When you order these manuals, make sure to add the 2-digit language code at the end of the part number. For example, the spanish version of the operator manual is part number 462270-04. Table 1-1 on page 1-2 shows the list of language codes that you can use to identify the translated versions of this manual.

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

Code	Language	Availability (see note)	
01	English (US)	*	+
02	French	*	
03	German	*	
04	Spanish	*	
05	Portuguese Brazilian	*	
08	Italian	*	
09	Dutch	*	
11	Arabic	*	
15	Norwegian	*	
16	Finnish	*	
17	Swedish *		
18	Danish	*	
19	Greek	*	
20	Hebrew	*	
21	English (UK)	*	+
23	Polish	*	
24	Turkish	*	
25	Czech	*	
26	Hungarian	*	
33	Vietnamese	*	
34	Bulgarian	*	
44	Romanian	*	
45	Macedonian	*	
46	Serbian	*	

Table 1-1: List of Language Codes

Content Presentation

This Operator Manual contains different types of information like, safety guidelines, additional notes, user interface (UI) terminology and so on. To help

you identify the different types of information, different writing styles are used in this manual. This section describes these writing styles.

Positional References

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

Units of Measurement

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

Safety Information

The safety information includes warning and caution statements.

Warning

The warning statements indicate hazards or unsafe practices that can cause severe personal injury or death. For example:



Warning

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

Caution

The caution statements indicate hazards or unsafe practices that can cause damage to the equipment. For example:



Caution

EQUIPMENT DAMAGE. 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.

Notes

Notes provide additional information about a particular topic.

For example:

Rev AA Content Presentation 1-3

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

User Interface Terminology

Each set of commands visible on the printer display screen at one time is called a frame. For example, the screen shown in Figure 1-1 is Frame <01 Edit>.

The frames and menus of the user interface (UI) are shown between two angle brackets (for example, <02 Edit>).

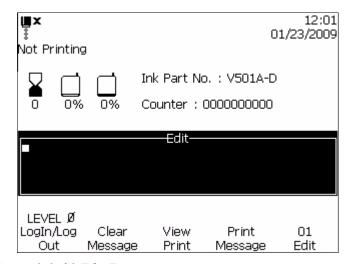


Figure 1-1. 01 Edit Frame

The writing style used to indicate different keys on the control panel is shown in Table 1-2.

Key	Style Used
	Left arrow key
	Right arrow key
(*)	Up arrow key
\Diamond	Down arrow key

Table 1-2: Content Presentation Style

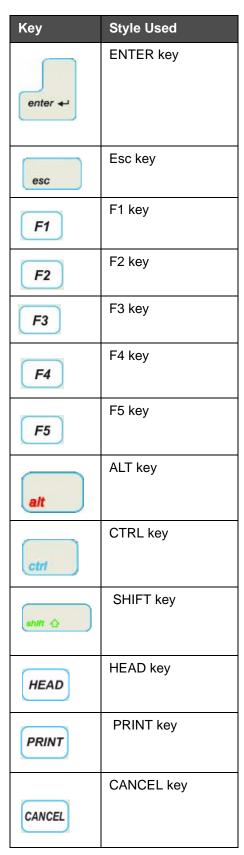


Table 1-2: Content Presentation Style (Continued)

Rev AA Content Presentation 1-5

Key	Style Used
DELETE	DELETE key

Table 1-2: Content Presentation Style (Continued)

Abbreviations and Acronyms

Abbreviation	Expansion
AC	Alternating Current
CDA	Clean Dry Air
LED	Light Emitting Diode
LCD	Liquid Crystal Display
UI	User Interface
WYSIWYG	What You See Is What You Get

Table 1-3: Abbreviations and Acronyms

Chapters in the Manual

Chapter No.	Chapter Name	Description
1.	Introduction	Contains the information about this manual, the related publications, and writing styles used in this manual
2.	Safety	Contains the safety and hazard information
3.	Main Parts	Describes the main parts of the printer
4.	Printer Operation	Contains the information on how to set up and operate the printer
5.	User Interface	Explains how to use the UI to create and save messages
6.	Maintenance	Contains the information on how to maintain and clean the printer

Table 1-4: List of Chapters

Chapter No.	Chapter Name	Description
7.	Troubleshooting	Contains the operator level diagnostic and troubleshooting procedures
8.	Specifications	Contains printer specifications
9.	Software Summary Chart	A guide for easy navigation in the UI
10.	Index	An alphabetic guide to help you locate important information

Table 1-4: List of Chapters

Safety

2

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 potential 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 chapter are intended to educate the operators on all safety issues so that the printer is serviced and operated in a safe manner.

General Safety Guidelines

- Always refer to the correct service manuals as per the specific Videojet printer model for important details.
- 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 cloths 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.

Rev AA Introduction 2-1

Electrical Safety Guidelines

This section explains the safety guidelines related to electrical power supply and electrical cables.

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.

Electrical Cables



Warning

PERSONAL INJURY. Use only the main power cable supplied with the printer. The end of this cable must have an approved, three-pole, main 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.

Grounding and Bonding



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.

Fuses



Warning

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

Fluid Safety Guidelines

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

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 and navigate to *Documentation > Material Safety Data* Sheets.

Ink and Make-up Fluid



Warning

PERSONAL INJURY. The ink and make-up fluid 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 contaminates the skin, wash immediately with soap water. DO NOT use washdown or solvent to clean ink stains from the skin.



Warning

PERSONAL INJURY. The ink and make-up fluid 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 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; 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 fluid vapor may cause drowsiness and/or effects similar to alcoholic intoxication. Use only in open, well-ventilated areas.

Cleaning Solution



Warning

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



Warning

PERSONAL INJURY. 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

PERSONAL INJURY. The cleaning solution is volatile and highly 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 tissue or cloths that become saturated with cleaning solution. Dispose all such items in accordance with local regulations.



Caution

EQUIPMENT DAMAGE. Ensure 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 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.

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.

UI Related Safety Guidelines



Caution

DATA SECURITY. To prevent unauthorized access to the software, navigate to the <01 Edit> frame, press the F1 key (with Password Protection set to On) and pressing the Enter key.



Caution

RISK OF DATA LOSS. Ensure the correct message name is selected for message deletion as no message selection confirmation prompt is given.

Other Important Guidelines



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.



Caution

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



Warning

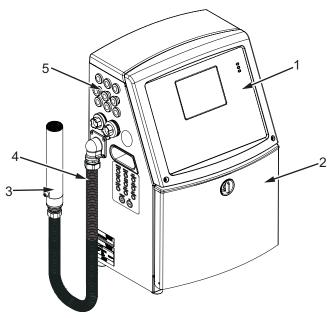
PERSONAL INJURY. If the battery is replaced by an incorrect type, it will lead to an explosion. Always dispose off the used batteries according to the instructions and local regulations.



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.

Videojet 1520 Excel Printer



- 1. Control Panel
- 2. Ink Compartment
- 3. Printhead
- 4. Umbilical

- 5. Connector Panel
- 6. Electronics Compartment*
- 7. Main Power Switch*
- 8. Back Filter*

Figure 3-1: Main Parts of the Printer (Videojet 1520)

^{*}The components are not shown in the picture.

Control Panel

You can use the control panel (Figure 3-2) to do the following tasks:

- Start and stop the printer
- Create, edit, copy and delete the print messages
- Select a message to print
- Monitor the status of the printer
- Configure and control the printer functions

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

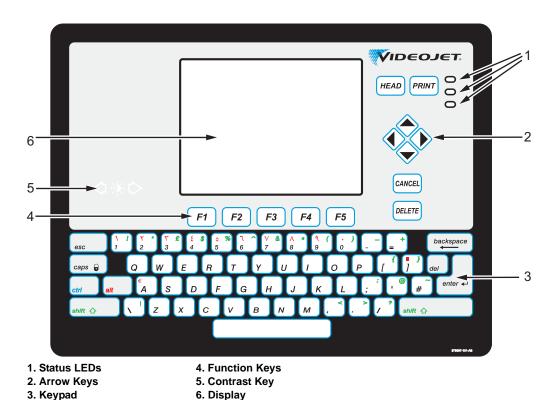


Figure 3-2: Control Panel

Note: Language specific keypads are provided with the language kits.

Status LEDs

The light emitting diodes (LEDs) (item 1,) indicate the system status.

3-2 Control Panel

Arrow Keys

The arrow keys (item 2) allow the operator to position the cursor when creating/editing a message or graphics and scrolling through options in a list of options.

Keypad

The keypad (item 3) is 72 key, QWERTY, membrane type with tactile response keys. The solvents that you use for printing and maintenance do not damage the keypad.

Display

The Quarter Video Graphics Array (QVGA) Liquid Crystal Display (LCD) (item 6) has a resolution of 320 x 240 pixels. The LCD has an LED backlight to help you see in low light conditions.

Contrast Keys

The contrast keys (item 5) help the operator to increase or decrease the contrast of the LCD.

Function Keys

The function keys F1 to F5 (item 4) help the user to navigate through the UI.

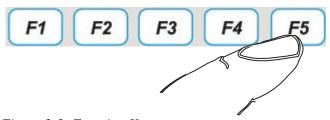


Figure 3-3: Function Keys

Rev AA Control Panel 3-3

Display Screen

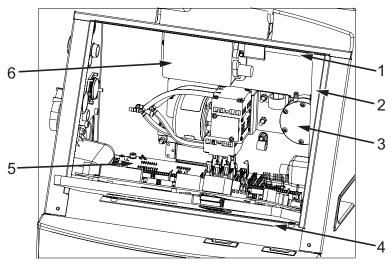
The display screen displays the following elements.

- The icons that indicate the printer status and fault conditions.
- The icons that indicate the fluid levels in the ink and make-up fluid cartridges.
- Different menus

3-4 Control Panel

Electronics Compartment

The electronics compartment contains the parts shown in Figure 3-4.



- 1. Electronics Compartment Fan
- 2. Power Supply Unit (PSU)
- 3. Positive Air Pump
- 4. Control System Board (CSB)
- 5. Printer Interface Board (PIB)
- 6. EHT Module
- 7. Connector Panel Boards*

Figure 3-4: Electronics Compartment (Videojet 1520)

Note: When a customer orders a Videojet 1520 Excel printer with an air dryer, the positive air pump is removed from the printer. The air dryer supplies positive air to the printhead from an external air source. Air dryers are required when the printer is operated in an environment with elevated humidity or where certain water sensitive inks are used. Please contact Videojet Technologies Inc. Customer Service Department at 800.843.3610 (United States only), or contact the local *Videojet Technologies Inc. representative for more information.*

^{* -} Component is not shown in the figure

Ink Compartment

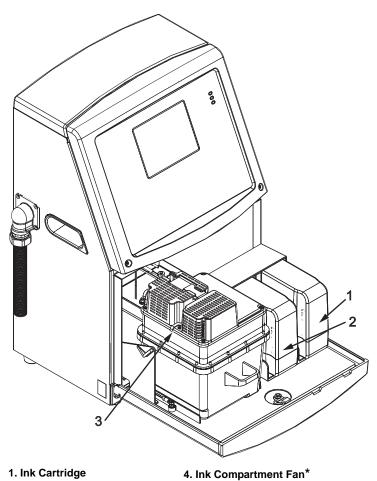
The ink compartment of the printer contains the ink core module, and the smart ink and make-up fluid cartridges. The cooling fan cools the ink compartment and a filter does not allow the dust into the ink compartment.

Ink Core Module

The ink core module maintains the pressure and viscosity of the ink in the printer, and contains the following parts:

- Ink Module
- Ink Pump

Note: The ink core module comes as a single unit. You cannot remove or replace any part inside the ink core module except the ink pump.



- 1. Ink Cartridge
- 2. Make-up fluid Cartridge
- 3. Ink Core Module
- 5. Gutter Pump*

*The components are not shown in the picture.

Figure 3-5: Ink Compartment

Smart Cartridge

Note: Refer to "Replace Smart Cartridges" on page 6-4 to replace the cartridges.

The smart cartridges use the smart chip technology to ensure the proper and in shelf-life ink and make-up fluids are used.

Ink Compartment Fan

The ink compartment fan cools the ink module and the ink pump.

Printhead and Umbilical

The printhead uses the ink supplied by the ink core module to print the text and graphic characters on a product. The control signals and ink are sent to the printhead through the umbilical.

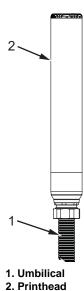
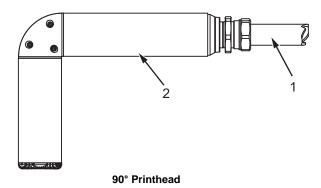


Figure 3-6: Printhead and Umbilical (Videojet 1520)

Rev AA Printhead and Umbilical 3-7



- 1. Umbilical
- 2. Printhead

Figure 3-7: Printhead and Umbilical

Connector Panel

The connector panel is on the left side of the printer (item 5, Figure 3-1 on page 3-1). The panel contains the connectors shown in Figure 3-8 on page 3-9.

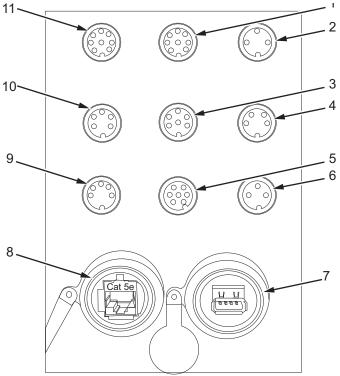
Note: The number of connectors provided depends on the model you select.

Table 3-1 provides the connectors for the printer.

Connector Type	РСВ	Standard	Optional
Print Trigger 1	PCB 1	Videojet 1520 Excel	-
COMMS RS232	PCB 2	Videojet 1520 Excel	-
COMMS RS485	PCB 1	Videojet 1520 Excel	-
Shaft Encoder	PCB 2	Videojet 1520 Excel	-
Relay Switches	PCB 1	Videojet 1520 Excel	-
Status Output (Lampstack)	PCB 2	Videojet 1520 Excel	-
USB	-	Videojet 1520 Excel	-
Message A Input	PCB 3	-	Videojet 1520 Excel
Print Trigger 2	PCB 3	-	Videojet 1520 Excel
Message B Input	PCB 3	-	Videojet 1520 Excel
Ethernet	-	Videojet 1520 Excel	-

Table 3-1: Connector Panel Ports

3-8 Connector Panel



- 1. Message A Input
- 2. Print Trigger 2 (Reverse Print)3. Status Output (Lampstack)
- 4. Shaft Encoder
- 5. Relay Switches
- 6. Print Trigger 1

- 7. USB
- 8. Ethernet
- 9. COMMS RS485
- 10. COMMS RS232
- 11. Message B Input

Figure 3-8: Connector Panel

Pinout Information

Connector	Pinout
Print Trigger 2 (Reverse Print)	DIN 3 Pin
Status Output (Lampstack)	DIN 6 Pin
Shaft Encoder	DIN 4 Pin
Relay Switches	DIN 7 Pin
Print Trigger 1	DIN 3 Pin
USB	-
Ethernet	-

Table 3-2: Connector Pinout Information

Rev AA Connector Panel 3-9

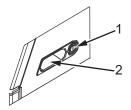
Connector	Pinout
COMMS RS485 (180° Pin Position)	DIN 5 Pin
COMMS RS232	DIN 5 Pin
Message B Input	DIN 8 Pin
Message A Input	DIN 8 Pin

Table 3-2: Connector Pinout Information

Main Power Switch

The main power switch (item 1, Figure 3-9) is a green push button to turn the printer on and off. You can find the main power switch on the right side of the printer.

Note: The handles (item 2) are provided for easy movement of the unit.



- 1. Main Power Switch
- 2. Handles

Figure 3-9: Main Power Switch

Back Filter

The ink compartment fan draws the air from the outside atmosphere to keep the ink compartment cool. The back filter removes the dust from the air that goes inside the ink compartment. The IP55 back filter is standard for Videojet 1520 Excel The IP65 back filter is optional for Videojet 1520 Excel.



Figure 3-10: Back Filter (IP55 Version) - Videojet 1520



Figure 3-11: Back Filter (IP65 Version) - Videojet 1520

Rev AA

Back Filter 3-11

Printer Operation and Setup

Introduction

This chapter provides the procedures to set up and operate the printer. The chapter describes how to perform the following tasks:

- Turn on and turn off the printer
- Head Start and stop the printer
- Print the messages
- Set up the printer
- Back up, restore, clone, and upgrade the system
- Custom Font

Printer Operation

This section describes the procedures that a user must perform to print the messages on a product.

Turn on the printer

Do the following tasks to turn on the printer:

- **1** Do the visual inspection.
- **2** Make sure that the electrical supply for the printer is available.
- **3** Press the switch to turn on the printer. The <01 Edit> frame appears after the printer starts.

Rev AA Introduction 4-1

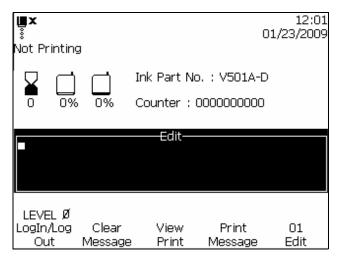


Figure 4-1: <01 Edit> Frame

Understand the UI

The knowledge of Videojet 1520 Excel UI is required to operate the printer. Before you begin to operate the printer, refer to the following sections in this manual:

- "Content Presentation" on page 5-1.
- "User Interface" on page 5-1.

Create the Messages

Refer to "Manage Messages" on page 5-19 for more information.

Head Start and Stop the Printer

The default procedures to start and stop the printer are the Head Start and the Head Stop.

Note: If the Head Start or the Head Stop are not available, the printer requires INK ON or INK OFF. The printer cannot provide the Head Start and the Head Stop options if the make-up fluid is empty or if the ink core level is high. Make sure that the make-up fluid is not empty or the ink core level is not high.



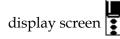
Caution

Do not perform the Head Start or the Head Stop many times. The failure to follow this caution can cause high use of flush and dilution of the ink. The diluted ink decreases the quality of the print.

Head Start

Do the following tasks to Head Start the printer:

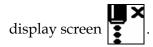
Press the HEAD key on the control panel. The Jet on icon appears on the



Head Stop

Do the following tasks to Head Stop the printer:

Press the HEAD key on the control panel. The Jet off icon appears on the



INK ON and INK OFF (start and stop the printer)

The INK ON sequence starts without a flushing sequence, and uses the ink supply to remove the air from the nozzle. This sequence is used during maintenance and replacement procedures.

The INK OFF is used to manually stop the jet for a short period, or to automatically stop the jet during an EHT trip etc. INK OFF procedure is primarily intended for situations where the machine must be stopped and restarted several times in quick succession.

INK ON

Do the following tasks to INK ON the printer:

- 1 Navigate to the frame <02 Service>.
- **2** Press the F1 key until ON appears above Ink menu. The printer turns on the ink and the ink jet starts.

INK OFF

Do the following tasks to INK OFF the printer:

- 1 Navigate to the frame <02 Service>.
- **2** Press the F1 key until OFF appears above Ink menu.

Printer Operation 4-3

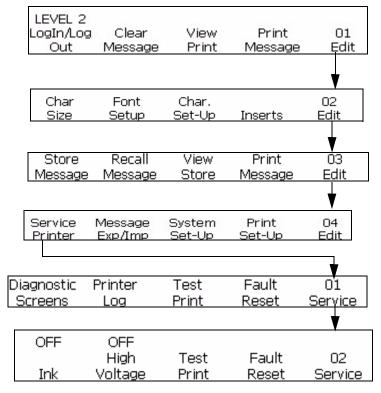


Figure 4-2: <02 Service> Frame

Print a Message

The procedures in this section show how to print a message normally (as soon as the printer receives a product detect signal) or with a delay (some time after the printer has received a product detect signal).

Load a message into the printer after you have done any of the following:

- Created a new message
- Made changes to an existing message
- Recalled a message from storage

Note: When a message appears in the display screen, that does not necessarily mean it was the last message loaded into the printer. It may be a message that is currently being created or edited. Therefore, you should always load the desired message into the printer before printing. This will ensure that the correct message is printed.

Criteria for Printing a Message

The following criteria must be met for printing a message:

- The message must be loaded into the printer by selecting the <Print Message> option (<01 Edit> or <03 Edit>).
- The green LED must be solid green along with the solid jet running icon at the top of the display screen. The PRINT key must be pressed with the message "Printing" shown at the top of the display.



Figure 4-3: PRINT Key

Note: The printer can print a message while in the Service mode by pressing <F3 Test Print> located in Frame <02 Service>. Refer to "Software Summary Chart" on page B-1 to find <02 Service>.

Print Without any Delay

Do the following tasks to print a message without any delay:

- 1 Make sure that the message you need to print appears in the display screen:
 - Use the keypad and enter the required message.
 - Recall a stored message. Refer to "To Recall a Stored Message" on page 5-23.
- **2** Is the message that appears in the screen loaded into the printer?
 - If YES, continue to the next step.
 - If NO, go to Frame <01 Edit> or <03 Edit>). Press the F4 key to select <Print Message>. The message "Message Loaded" appears on the display screen.

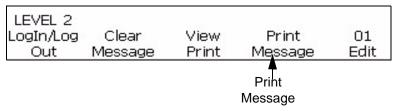


Figure 4-4: <01 Edit> Frame

3 Is the green LED turned on, and is the solid jet running icon appearing at the top of the display?

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- If YES, continue to the next step.
- If NO, press the HEAD key and wait until the green LED is flashing and the jet running icon appears at the top of the screen.

Is the green LED light solid?

• If NO, press the PRINT key. If the light is still not lit, and the top of the display says "Not Printing", go to <01 Edit> or <03 Edit> and press the F4 key to select <Print Message>.

When the green LED is solidly lit (along with the solid jet running icon) and the top of the display reads "Printing", it indicates that the printer will now print a message whenever it receives a product detect signal.

Delay Printing of a Message

You can delay the printing of a message onto a product after the product detect signal is received by the printer. This enables you to control the placement of the message on the product.

The delay value is entered in print strokes, and the entry must be from 0-7500 for inches.

Refer to "Set Print Delay" on page 4-28, for information on how to set the print delay.

Note: In order to set the print delay, measure the distance from the product detector to the printhead (x). Next, measure the distance from the leading edge of the product to the point on the product where you want to start printing (y). Add these together (x+y). This is the delay value you must enter (see Figure 4-5 on page 4-7). Encoder values must be properly set for the delay to work properly.

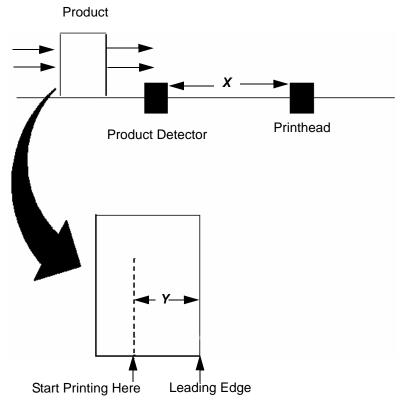


Figure 4-5: Delaying the Printing of a Message Example

Nozzle Flush

During nozzle flush, the solvent from a wash bottle is directed towards the nozzle face, and the solvent is sucked back through the nozzle to clean the nozzle. Begin from frame <02 Prime> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Service Printer > 01 Service > 02 Service > 03 Service - Auto Prime > 01 Prime > 02 Prime). See Figure 4-6 on page 4-8.

The nozzle flush routine is performed in the following conditions:

- The nozzle is clogged with the dried ink.
- The jet break up is asymmetric.
- The jet has moved its position in the gutter because of the debris collection in the nozzle. The removal of debris using nozzle flush routine should restore the original jet position assuming that nothing has physically moved.

Refer to the Service Manual for Nozzle Flush procedure.

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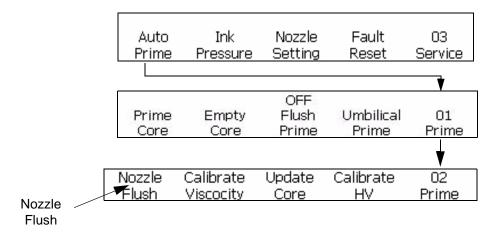


Figure 4-6: Nozzle Flush

Printer Setup

Set Display Language

The user can change the language displayed in the UI.

Do the following tasks to set the display language in the UI:

- 1 Begin in frame <04 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System > 02 System > 03 System > 04 System). See Figure 4-7.
- **2** Press F3 and the current language appears on the display. Use the cursor to navigate to the required language.
- **3** Press Shift and Enter to set the language.

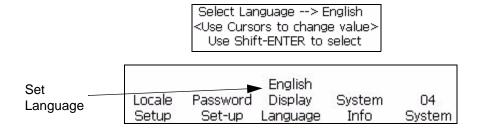


Figure 4-7: Set Display Language

Note: Power-cycle is performed for some of the languages after changing the display language for the change to take effect.

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Set Keyboard Language

- 1 Begin in frame <04 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System > 02 System > 03 System > 04 System).
- 2 Press the F1 key on <04 System> to select <Locale Setup> and <01 Locale> appears. See Figure 4-8.
- **3** Press F1 <Set Editor Font Group> on <01 Locale> to set the *Editor Font Group*. Select *Chinese* or *Japanese* for setting the Chinese and Japanese fonts. For other languages, select *International*. Perform a power-cycle for the changes to take effect.
- **4** Press F2 <Keyboard Language> to set the correct keyboard language. Refer to Table 4-1 for more information.

Editor Font Group	Keyboard Language
Chinese	PinYin IME Tr Chi IME
Japanese	Japan IMEJapanese
International	 English European Greek Korean Russian Thai Turkish Vietnamese Arabic Bulgarian Eastern Polish

Table 4-1: Editor Font Group - Keyboard Languages

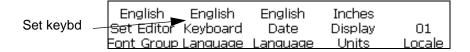


Figure 4-8: Set Keyboard Language

Throw Distance

You can set the distance between the product and the printhead.

Note: If you change the throw distance value from default, the printer will require more initial delay to build the printed message.

Enter the Throw Distance

Do the following tasks to enter the throw distance in the UI.

1 Navigate to frame <06 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print > 06 Print). See Figure 4-9.

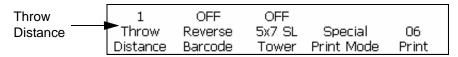


Figure 4-9: Throw Distance

2 Press the F1 key. The message shown in Figure 4-10 on page 4-10 appears.

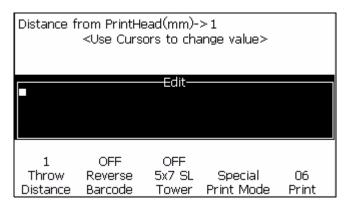


Figure 4-10: Throw Distance_06 Print

3 Enter the Throw Distance and press the ENTER key. The throw distance entered appears above <Throw Distance>.

Auto Print

If you enable one of the following menus, you can set the printer to start printing automatically:

- Ink On Start
- On Load Message

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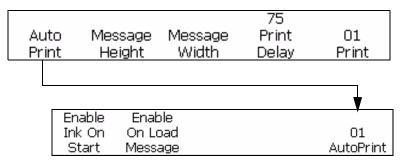


Figure 4-11: Auto Print

Set Automatic Print

Do the following tasks to enable auto print:

- 1 Navigate to Frame <01 Autoprint> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print AutoPrint > 01 AutoPrint). See figure Figure 4-11.
- **2** Press the F1 key. The Ink On Start is enabled and Enable appears above Ink On Start.

Note: Press the F1 key to toggle between the enable and disable functions.

3 If you want to print the message when you select the message, press the F2 key. The OnSelect Message is enabled and Enable appears above <OnSelect Message>.

Note: Press the F2 key to toggle between the enable and disable functions.

View and Reset the Print Count

The procedures in this section show you how to view the current print count, and reset the print count to zeros. The print count is the number of messages the printer has printed. The product count and print count are displayed in Frame <02 Print>.

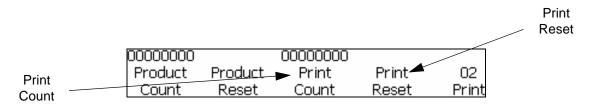


Figure 4-12: Frames < Print Reset > and < Print Count >

View the Current Print Count

Do the following tasks to view the current print count:

- 1 Navigate to Frame <02 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print > 02 Print). See Figure 4-12.
- **2** View the current value above <Print Count>.

Reset the Current Print Count

Do the following tasks to reset the current print count to zeros:

- 1 Navigate to Frame <02 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print > 02 Print). See Figure 4-12.
- **2** Press the F4 key to select <Print Reset>. The value above <Print Count> changes to zeros.

View and Reset the Product Count

The procedures in this section show you how to view the current product count, and reset the product count to zeros. The product count is the number of product detect signals received by the printer. The product count is displayed in Frame <02 Print>.

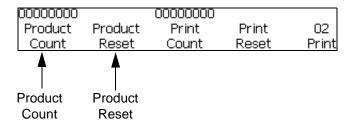


Figure 4-13: <02 Print> Frame

View the Current Product Count

Do the following tasks to view the current product count.

- 1 Navigate to Frame <02 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print > 02 Print). See Figure 4-13.
- **2** View current value above <Product Count>.

Reset the Current Product Count

Do the following tasks to reset the current product count to zeros.

1 Navigate to Frame <02 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-up > 01 Print > 02 Print). See Figure 4-13.

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2 Press the F2 key to select <Product Reset>. The value above <Product Count> changes to zeros.

Set the Product Detector

This setting sets the product detector for Continuous or External configuration. External product detector will require the use of an external product detector connected to the printer.

Do the following tasks to set the product detector:

- 1 Navigate to Frame <07 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print > 06 Print > 07 Print). See Figure 4-14.
- **2** Press the F1 key to toggle <Product Detector> into an External 1, External 2 or Continuous setting.



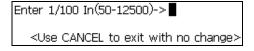
Figure 4-14: <07 Print> Frame

Internal Distance

This section determines the rate at which the internal product detects will occur. The range is from 50 to 12500 (in 1/100th inch increments). The Internal Distance selection can only be initiated if the F1<Product Detector> is set to Internal.

Do the following tasks to set the internal distance:

- 1 Navigate to Frame <07 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print > 06 Print > 07 Print). See Figure 4-14.
- **2** Press the F2 key to select <Internal Distance>. The following message appears in the display screen.



3 Set the desired internal distance for the internal product detect setting and press the ENTER key.

Active Level

This selection determines whether the product detector will activate on a high or low level.

Do the following tasks to set the active level:

- 1 Navigate to Frame <07 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print > 06 Print > 07 Print). See Figure 4-14.
- **2** Press the F3 key to toggle <Active Level> to a High or Low level.

Select the Encoder

The procedures in this section show you how to set the printer for the type of encoding most appropriate for your application, and how to enter the settings for the type of encoding most appropriate for your application.

There are four encoding settings available: Internal, Direct, Reduced, and Auto. Refer to Table 4-2 below to select the appropriate setting for your application.

If the Product Speed:	The Encoder Type Should be Set to:
is constant	<int> Internal</int>
varies with conveyor	<reduced> External</reduced>
	<direct> External</direct>
varies and an external encoder cannot be used	<auto> Automatic</auto>

Table 4-2:Selecting the Appropriate Encoding Type

Note: Direct and Reduced are the only settings that are used with an external encoder.

Do the following tasks to select the encoder setting:

1 Navigate to Frame <04 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print). See Figure 4-15.

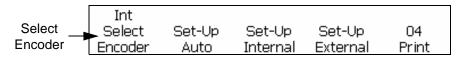


Figure 4-15: <04 Print> Frame

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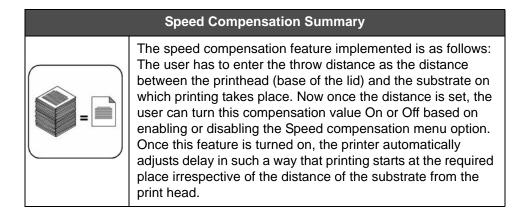
2 View the current setting above <Select Encoder>. Press the F1 key to change the setting (settings: Int, Auto, Direct, and Reduced). Refer to Table 4-3 on page 4-15 to complete the next step.

If <select ENCODER> is set to:</select 	Select:	Use the Keypad to Enter the Following Values:
<int></int>	<set-up internal=""> press (F3 key) and <line speed=""> press (F3 key)</line></set-up>	Enter Feet/Minute (1-9999)-> <use cancel="" change="" exit="" no="" to="" with=""></use>
<reduced></reduced>	<set-up exter-<br="">nal> press (F4 key) and <encoder Resolution>. press (F3 key)</encoder </set-up>	Enter Enc. PPI (3-25397)-> <use cancel="" change="" exit="" no="" to="" with=""></use>
	<set-up exter-<br="">nal> press (F4 key) and <reduction Factor>. press (F4 key)</reduction </set-up>	
<direct></direct>	<set-up exter-<br="">nal> press (F4 key) and <encoder Resolution>, press (F3 key)</encoder </set-up>	Enter Enc. PPI (3-25397)-> <use cancel="" change="" exit="" no="" to="" with=""></use>

Table 4-3: Setting Appropriate Encoder Values

Note: Auto encoder setting can only be selected if the F1 < Product Detector> setting in Frame < 07 Print> is set to External.

- **3** Press the ENTER key.
- 4 This step is optional. Follow these instructions to turn Speed Compensation On: Navigate to frame <01 Auto-E> (04 Edit Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print Set-Up Auto > 01 Auto-E). View the current setting above <Speed Comp>. If desired, press the F1 key to change the setting. (Settings: ON, OFF.) See Figure 4-16 on page 4-16.
- **5** Press the ENTER key. Frame <04 Print> appears in the display screen.



Auto Encoder

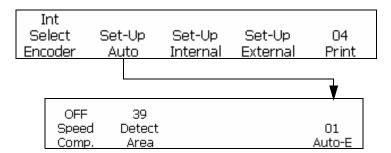


Figure 4-16: <01 Auto-E> Frame

The printer has two options to adjust print pitch. The first is External Encoding (shaft encoder). This is when the product is transported on a conveyor or transport. The shaft encoder must be in a direct relation to the movement of the product for the External Encoder to work properly. If product moves encoder turns, product stops encoder stops.

The second varying speed option is to use Auto Encoder option. This option is used when a shaft encoder cannot be used since there is not way to track the production line movement. The Auto Encoder option requires a very accurate detector to sense the leading and trail edge of each product and adjust the width of code for every product.

Set the Line Speed

Line speed is the speed of conveyer belt in Feet/Min [or Meters/Min] on which the product moves.

Navigate to Frame <01 Int-E> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print - Set-up Internal > 01 Int-E). See Figure 4-17 on page 4-17. Press the F1 key to toggle to change the settings (Settings: ON, OFF).

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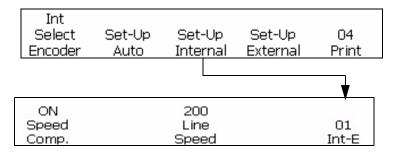


Figure 4-17: <01 Int-E> Frame

Set the Encoder Resolution

Encoder resolution is number of pulses generated in a unit distance. 1/100 pulses per mm [or Pulses Per Inch].

Navigate to Frame <01 Ext-E> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print - Set-up External > 01 Ext-E). See Figure 4-18.

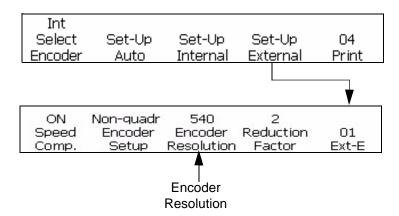


Figure 4-18: <01 Ext-E> Frame

Set Reduction Factor

When the encoder is of Reduced type, the value set in the menu option "Reduction Factor" is considered as the required width.

Reduction Factor = Encoder resolution (ppi) / Required no. of dots per inch (dpi) printed.

Navigate to Frame <01 Ext-E> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print - Set-up External > 01 Ext-E). See Figure 4-19 on page 4-18.

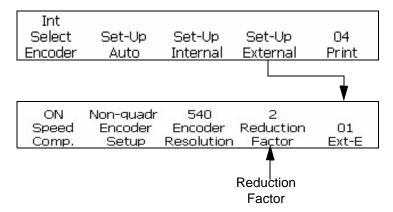


Figure 4-19: <01 Ext-E> Frame

Set the Internal System Clock

The procedures in this section show you how to set the internal clock. The clock controls the update of important variable information inserts: time, date, timer, hour of the week, and week of the year are all based on the settings entered in the internal clock.

Note: It is important that the time and date are entered into the system accurately so that the message inserts are accurate.

Complete the procedures listed below to accurately set the system clock:

- "Set the System Time" on page 4-18
- "Set the System Date" on page 4-19
- "Set Week of the Year and Hour of the Week" on page 4-20
- "Set the Programmable Date Roll Over" on page 4-22

Set the System Time

This procedure shows you how to set the internal system time clock. The system time clock is important, because time inserts, date inserts, and timer inserts are based on the system time clock. The time of day that appears in the display screen is also based on the internal system time clock.

The system time clock is set in Frame <01 System>.

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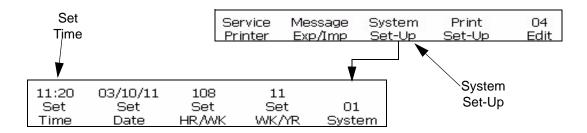
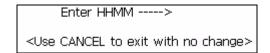


Figure 4-20: <01 System> Frame

Procedure

Do the following tasks to set the system time:

- 1 Navigate to Frame <01 System > (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System). See Figure 4-20.
- **2** Press the F1 key to select <Set Time>. The following message appears in the display screen:



3 Enter 24-hour clock time, the two-digit hour-of-the-day (HH) followed by the two-digit minute (MM).

Example: If the time is 9:45 AM, enter 0945; 09 is the hour and 45 is the minute. If the time is 4:02 PM, enter 1602; 16 is the hour and 02 is the minute.

4 Press the ENTER key. The time appears in the display screen above <Set Time>. It also appears in the upper right corner of the display screen at all times.

Set the System Date

This procedure shows you how to set the system date. The system date is important, because date inserts that you print in messages are based on the system date that you enter here.

The system date is set in Frame <01 System>.

Note: The year range is from 00 to 99 (representing the range 2000 to 2099).

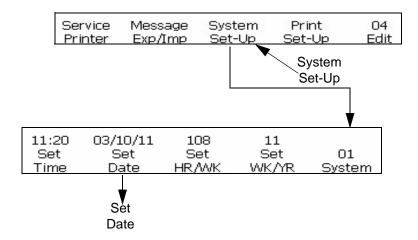
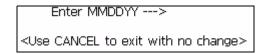


Figure 4-21: <01 System> Frame

Do the following tasks to set the system date:

- 1 Navigate to Frame <01 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System). See Figure 4-21.
- **2** Press the F2 key to select <Set Date>. The following message appears in the display screen:



3 Enter two digits for the current month (MM), followed by two digits for the current day of the month (DD), and two digits for the current year (YY).

Example: If the date is February 9, 2008, enter 020908; 02 is the month, 09 is the day of the month and 08 is the year.

4 Press the ENTER key. The date appears in the display screen above <Set Date>.

Set Week of the Year and Hour of the Week

This procedure shows you how to enter the correct settings so that the system can determine the current week of the year insert and hour of the week insert values. The current week of the year is displayed in Frame <01 System>.

Note: For Europe, there must be minimum four days in a week.

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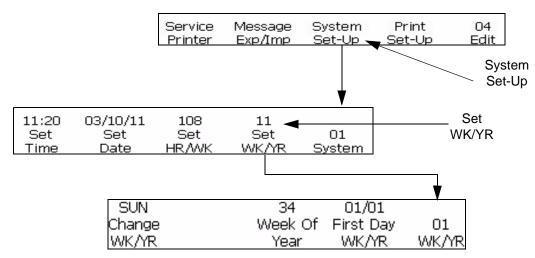


Figure 4-22: <01 WK/YR> Frame

Do the following tasks to set the week of the year and hour of the week:

- 1 Navigate to Frame <01 WK/YR> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System Set WK/YR > 01 WK/YR). See Figure 4-22.
- 2 Is the system date set? (Refer to <Set Date> in Frame <01 System>)
 The current date appears above <Set Date> if it has been set;
 otherwise, it will be set to a default date.

Has the date been set?

- If YES, proceed to step 3.
- If NO, follow the procedure to set the system date in "Set the System Date" on page 4-19. After you complete the procedure, return to this page and proceed to step 3.
- **3** Press the F4 key to select <Set WK/YR>. Frame <01 WK/YR> appears in the display.
- **4** In Frame <01 WK/YR>, complete the following steps to automatically enter the week of the year.
 - a. View the current setting above <Change WK/YR>. This is the day of the week upon which the week of the year will advance. If desired, press the F1 key and move the cursor to change the setting. (Settings: MON, TUE, WED, THU, FRI, SAT, SUN.)

Example: If you set the <Change WK/YR> to occur on MON, the week of the year setting will start at 12:00 A. M. on Monday morning (if the F2 <Set DayRoll> value in Frame <03 System> is set to the default 00:00).

b. Press the F4 key to select <First Day WK/YR>. The following appears in the display screen.

Enter 1st Day Wk. MMDD ->

<Use CANCEL to exit with no change>

Enter the starting day of the year in MMDD format: two digits for the month (MM), and two digits for the day of the month (DD).

Example: If the start of the year is to be January 3, enter 0103; 01 for the month and 03 for-day-of-the-month.

Note: February 29 cannot be used for the starting date of WK/YR.

- **5** Press the ENTER key. The week of the year appears above <Week Of Year> in the display screen.
- **6** Press the ENTER key again to return to Frame <01 System>.
- 7 Refer to "To Insert the Week of the Year" on page 5-41 for the procedure to insert the current week-of-the-year into a message.

Set the Programmable Date Roll Over

The programmable date roll-over feature allows you to program certain date inserts to advance at a time other than midnight (the default value). The printer will then update its date to the next day when the system clock reaches that day roll time, instead of at midnight. All day functions, including expiration date, expiration day, expiration month, expiration year, expiration alpha month, hour/week insert and julian insert will roll over at the time setup by this function.

Note: Rollover from A.M. (midnight to noon) rolls over to today's date, and the rollover for P.M. rolls over to tomorrow's date.

For Example,

Today is March 20th and it's 2.45 P.M. A message has to be printed which incorporates the date.

With a rollover time of 4 A.M. Between midnight and 4 A.M, the printer would have printed "March 19". At 4 AM, the date rollover occurred and the printer is now printing "March 20th" (and will continue to do so until 4 A.M tomorrow morning).

With a rollover time of 11 P.M: Until 11 P.M, the printer will print "March 20". At 11 PM, the date rollover will occur and the printer will print "March 21st" (until 11pm tomorrow).

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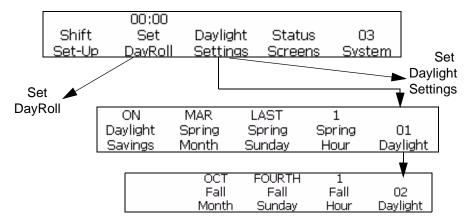


Figure 4-23: Setting the Programmable Date Rollover

Do the following tasks to setup the programmable date roll over:

- 1 Navigate to Frame < 03 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System > 02 System > 03 System). See Figure 4-23 on page 4-23.
- **2** Press the F2 key to select <Set DayRoll>. The following message appears in the display screen.

- **3** Enter the time for the date roll-over to start; two digits for the hour and two digits for the minutes.
- **4** Press the ENTER key. The time at which certain date inserts will roll-over appears above <Set Day Roll> in the display screen.
- **5** Press the ENTER key again to return to Frame <01 System>.

Set Daylight Savings

Daylight savings is advancing clocks so that afternoons have more daylight and mornings have less. Typically clocks are adjusted forward one hour near the start of spring and are adjusted backward in autumn.

Do the following tasks to set the daylight savings:

- 1 Navigate to Frame < 03 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System > 02 System > 03 System). See Figure 4-23 on page 4-23.
- **2** Press the F3 key to set the daylight savings.

Set the Baud Rate

This procedure shows you how to set the Comm 2 baud rate for external data transmission. This is used with the RS-232 interface.

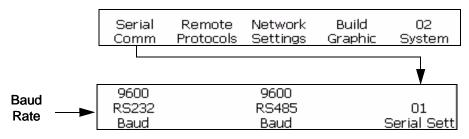


Figure 4-24: <02 System> Frame

Do the following tasks to set the baud rate:

- 1 Navigate to Frame < 02 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System > 02 System). See Figure 4-24.
- **2** Press the F1 key to select <Serial Comm>. The <01 Serial Sett> frame appears.
- 3 View the current setting above <RS232 Baud>. Press SHIFT+ F1 keys at the same time to change the setting. The allowed settings are: 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200).

Set the Network

Note: After you complete the network settings, restart the printer for the changes to take effect.

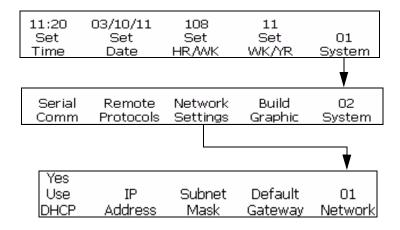


Figure 4-25: <01 Network> Frame

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Smart Chip Data

You can view the details of the ink, make-up fluid and Ink system using <Ink Data>, <Makeup Data>, and <Core Data> respectively in the <01 Service>.

Do the following tasks to view the smart chip data:

- 1 Navigate to Frame < 01 Service> (01 Edit > 02 Edit > 03 Edit > 04 Edit Service Printer > 01 Service). See Figure 4-26 on page 4-25.
- **2** Press the F2 key to select <Printer Log> and Frame <01 Log> appears. You can view <Core Data>.
- **3** Press the F2 key to select <Ink Data > to view the Ink Data and Makeup Data.

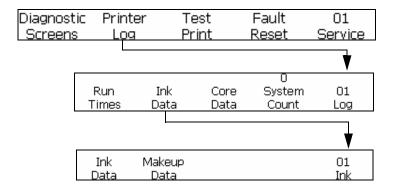


Figure 4-26: <01 Ink> Frame

Set Auto Repeat

This procedure shows you how to set a message to print repeatedly. The automatic repeat function enables you to set the number of times that a message will print after it receives a product detect signal.

Repeat delay is the delay between the leading edge of first product to the leading edge of second product.

Note: Auto repeat uses print delay value to delay the start of the first print. This delay changes how the continuous print feature is processed.

Note: Be careful not to confuse this function with the <Repeat Count> option in Frame <02 Serial> in the Insert mode. The serializer repeat count allows you to print the same serializer value upon successive product detects signals; the automatic repeat function described in this section allows you to print the same message multiple times on the same product after receiving a single product detect signal.

Example: The auto repeat function is used effectively when marking wires or cables because there is no break in the product to provide separate product detect signals. One product detect is received and the same message prints continuously (to a maximum of 255 times) along the length of the wire or cable.

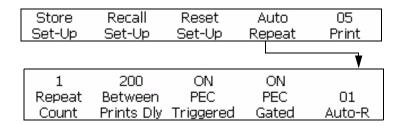


Figure 4-27: <01 Auto-R> Frame

Do the following tasks to set the auto repeat function:

- 1 Navigate to Frame <05 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print). See Figure 4-27.
- 2 Press the F4 key to select < Auto Repeat >. Frame < 01 Auto-R > appears in the display screen.
- **3** Press the F1 key to select <Repeat Count>. The following appears in the display screen:

- **4** Enter the number of times (from 1-255) that a message must print for each product detect signal.
- **5** Press F3 key to select PEC Triggered that allows you to see the rising or falling edge on the photocell to start the print.
- **6** Or, select PEC Gated that allows you to see a steady signal (i.e. substrate) to keep printing.
 - If PEC Gated is set to On, printing will stop if the product detector becomes uncovered. If PEC Gated is set to Off, the printer will print the required number of prints, whether the product detector is covered or not (regardless of whether there is a substrate on which to print).
- **7** Press the ENTER key. Frame <01 Auto-R> reappears on the display screen.
- **8** Press the F2 key to select <Between Prints Dly>.

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9 In this frame you can make adjustments to the amount of space in between each message. The following message appears in the display screen.

```
Enter 1/100 In.(8-7500)->
<Use CANCEL to exit with no change>
```

Enter a number between 8-7500. This value represents the distance (in 1/100ths of an inch) between each message.

Example: A value of 100 equals 1 inch $(100 \times 1/100 = 1)$.

Note: This delay value represents the distance from start of the first message to the start of the next message.

10 Press the ENTER key to save the entry. Frame <01 Auto-R> reappears in the display screen.

Service Status

This procedure shows you how to view the Diagnostic Screens 1, 2 and 3, that include the following

- Ink Pressure Set
- Actual Ink Pressure
- Motor PWM
- Current Phase
- Manual Phase
- High Voltage
- Nozzle Drive
- Head Temperature
- Warnings and alarms and so on (refer to Chapter 7, "Diagnostics Screen").

Note: Use Ctrl + S shortcut keys to toggle between the three diagnostic screens.

These settings cannot be changed in this frame; this is done in the Service mode. The software allows you to monitor the settings while the system is printing, rather than turning printing off to check settings in the Service mode.

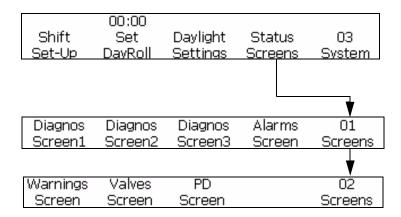


Figure 4-28: < Status Screens> Frame

- 1 Navigate to Frame <03 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-up > 01 System > 02 System > 03 System). See Figure 4-28.
- **2** Press the F4 key to select < Status Screens>. Service Status frame appears in the display screen (see Figure 4-28). View the current readings above each of the labels in this frame (values may differ depending upon the printer status).
- 3 Press the ENTER or CANCEL key to escape this frame. Frame <03 System> appears in the display screen.

Set Print Delay

The print delay function is used to change the position of a printed message on a product. The number you enter represents the number of 1/100 inch units that are used to delay the message prior to printing. The delay can be a maximum of 7500 units, which equals 75 inches (7500 x 1/100" = 75 inches). Keep in mind that each unit is 1/100 inch when the display units are set to inches.

When Would You Use Print Delay?

In some applications, it is easier to enter a print delay to change the position of a message than to change the product detect set-up information, or to add spaces at the beginning of a message.

The print delay is set in Frame <01 Print>.

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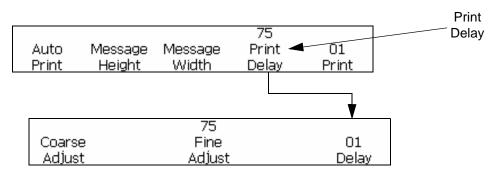


Figure 4-29: <01 Delay> Frame

Do the following tasks to set the print delay:

- 1 Navigate to Frame <01 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-up > 01 Print). See Figure 4-29.
- **2** Press the F4 key to select < Print Delay>.
- 3 In this frame you can make coarse and fine adjustments to the distance allowed (delay) before the message is printed:

To make a coarse adjustment to the delay, press the F1 key to select <Coarse Adjust>. The following message appears in the display screen:

```
Enter 1/100 In.(0-7500)->
<Use CANCEL to exit with no change>
```

This value represents the distance (in inches) allowed before the message is printed.

Example: A value of 100 equals 1 inch $(100 \times 1/100 = 1)$.

• To make a fine adjustment to the delay, press the F3 key to select <Fine Adjust>. The following message appears in the display screen:

Enter 1/100 In.->75 <Use Cursors to change value>

Note: The fine adjustment may be made while printing so that the adjustment may be made dynamically.

Note: Use the arrow keys to adjust the values. The Up and Down arrow keys increase/decrease the value by 1 unit. The Right and Left keys increase/decrease the value by 10 units.

4 Press the ENTER key to save the entry.

Set Print Set-up Parameters

The procedures in this section show you how to store, recall, and reset parameters that you have set in the Print Set-up mode. Up to two sets of parameters can be stored with this feature. The recall feature allows you to apply the set-up parameters to different messages. This saves you from reentering the same information repeatedly as your applications change.

The following values are stored in memory when you store the print setup parameters. Refer to the page numbers listed below for the specific procedures.

Procedures found in Chapter 5, "User Interface":

- "To Reverse a Message" on page 5-29
- "To Invert a Message" on page 5-30
- "To Reverse a Character" on page 5-16
- "To Change the Message Multi-Stroke (Bold)" on page 5-28
- "To Adjust the Height of a Message" on page 5-25
- "To Adjust the Width of a Message" on page 5-26

Procedures found in this chapter:

- Encoder set-up (Refer to procedure from "Select the Encoder" on page 4-14)
- Set Auto Repeat (Refer to "Set Auto Repeat" on page 4-25)
- Set Print delay ("Set Print Delay" on page 4-28)

Note: Product count and Print count values are not stored in memory when you store the set-up parameters.

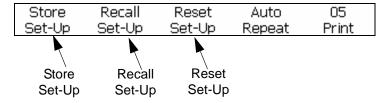


Figure 4-30: <05 Print> Frame

Store Set-up Parameters

Do the following tasks to set the print set-up parameters.

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1 Navigate to Frame <05 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print). Refer Figure 4-30.

Note: Complete this procedure after you have entered all appropriate settings in the Print Set-up modes.

2 Press the F1 key to select <Store Set-Up>. The following message appears in the display screen.

Enter Set-up name -> <Use CANCEL to exit with no change>

- **3** Enter a value 1 through 5 or enter a name (8 characters) to indicate the number of the storage location.
- **4** Press the ENTER key.

Recall Setup Parameters

Do the following tasks to recall print set-up parameters:

- 1 Navigate to Frame <05 Print>. Refer Figure 4-30 on page 4-30.
- **2** Press the F2 key to select <Recall Set-Up>. The following appears in the display screen:

Set-up to Recall -> <Use CANCEL to exit with no change> Shift-ENTER to Load Shift-DELETE to Delete

- **3** Enter a value 1 through 5 to indicate the number of the storage location.
- **4** Press the ENTER key.

Note: You can enter the assigned name of the setup and it appears on the display screen automatically.

Reset Set-up Parameters

This procedure shows you how to reset print set-up parameters. This function resets the values to the factory default parameters.

Note: The ink jet must be off to reset parameters.

Do the following tasks to reset the print set-up parameters:

1 Navigate to Frame <05 Print>. Refer Figure 4-30 on page 4-30.

2 Press the F3 key to select <Reset Set-Up>. All values in the Print Setup mode (except product count and print count) will reset to the default values. The message "Reset Value Restored" appears on the display screen.

Reset Values Restored

System Backup

You can make a backup copy of all configured settings and messages to a USB drive.

Note: You can perform a full system backup after you have set up the system.

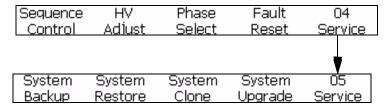


Figure 4-31: <05 Service> Frame

Do the following tasks to make a system backup:

- 1 Navigate to Frame < 05 Service> (01 Edit > 02 Edit > 03 Edit > 04 Edit Service Printer > 01 Service > 02 Service > 03 Service > 04 Service > 05 Service). Refer Figure 4-31.
- **2** Press the F1 key to select <System BackUp>. The following message appears in the display screen.

Enter to continue, Esc to exit

3 Press the ENTER key. Backup is finished when the display message reads "Backup complete".

System Restore

You can restore all configured settings and messages, from the backup copy on the USB drive.

Note: For example, when a CBS has failed, you can run a full system restore to recover the lost settings.

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Do the following tasks to restore the configured settings and messages:

- 1 Navigate to Frame < 05 Service> (01 Edit > 02 Edit > 03 Edit > 04 Edit Service Printer > 01 Service > 02 Service > 03 Service > 04 Service > 05 Service). Refer Figure 4-31.
- **2** Press the F2 key to select <System Restore>. The following message appears in the display screen.

Overwrite all (Y=yes)? Make Sure USB stick is in the slot

3 Press the "Y" key.

The following message appears in the display screen.

Completed, Printer restart.

: in the slot

Please power cycle the printer!

System Clone

This procedure shows you how to make an identical copy of the current configured settings and messages to the USB drive located in the USB connector.

Note: You can perform a system clone to transfer messages between two systems.



Warning

Do not transfer settings data like viscosity parameters to other printers.

- 1 Navigate to Frame < 05 Service> (01 Edit > 02 Edit > 03 Edit > 04 Edit Service Printer > 01 Service > 02 Service > 03 Service > 04 Service > 05 Service). Refer Figure 4-31 on page 4-32.
- **2** Insert a USB drive into the USB connector.
- **3** Press the F3 key to select <System Clone>. The following message appears in the display screen:

continue (Y=yes)? Make Sure USB stick is in the slot

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4 Press the "Y" key if a blank USB drive is in USB connector.

The system displays "Backup complete". The system will not allow a backup if a USB drive is not in the USB connector.

System Upgrade

You can upgrade the current configured settings and messages from the USB drive located in the USB connector.

Do the following tasks to upgrade the configured settings and the messages:

- 1 Navigate to Frame < 05 Service> (01 Edit > 02 Edit > 03 Edit > 04 Edit Service Printer > 01 Service > 02 Service > 03 Service > 04 Service > 05 Service). Refer Figure 4-31 on page 4-32.
- **2** Verify if the USB drive is in the USB connector.
- **3** Press the F4 key to select <System Upgrade>. The following message appears in the display screen.

Note: You can perform a software upgrade to upgrade only the required settings and selected elements. The options are:

- All
- Fonts
- Application software version
- Messages move all the messages
- Settings HV calibration, viscosity
- Rasters

Upgrade --> Messages Make Sure USB stick is in the slot

4 Press the ENTER key. The following message appears in the display screen.

System Updated
Press Esc to exit
Make Sure USB stick is in the slot
Please power cycle the printer!

How to Install and Print Custom Fonts

This procedure shows how to work with Custom font and print messages. The custom font file must be installed in the printer.

- Custom Font height must match with the height of the standard font available in the printer. Following are the list of the available font height.
 - 5-high
 - 7-high
 - 9-high
 - 12-high
 - 16-high
 - 24-high
 - 34-high
- Custom font file must be in *.abf2 format.
- The naming convention of the font must be in xxhigh_custom.abf2. xx represents the height of the font. (Ex: A 16-high custom font file must be named as 16high_custom.abf2).

Installation

Do the following tasks to install a custom font:

- 1 Navigate to Frame < 02 Info> (01 Edit > 02 Edit > 03 Edit > 04 Edit -System Set-up > 01 System > 02 System > 03 System > 04 System -System Info > 01 Info > 02 Info).
- **2** Copy the custom font you wish to install to the root of a USB Flash Drive.
- **3** Insert the USB Flash Drive in the USB socket on the side of the printer.
- **4** Press the F3 key to select <Update From USB>.
- **5** Select the required font file from the USB.

```
Copy From USB ->
<Use Cursors to change value>
```

6 Press the ENTER key. The following message appears in the display screen.

System Updated Press Esc to exit <Use Cursors to change value>

Note: User must wait for few seconds until the note appears to power cycle the printer.

7 Press *Esc* and power cycle the printer.

Create and Print a Message

Do the following tasks to create and print a message using custom font:

- 1 Navigate to <01 Font> (01 Edit > 02 Edit Font Setup> 01 Font).
- 1 Press F4 key to set the <Custom Font>.
- **2** Press F2 key to select < Print Matrix >.

Note: Set the font height to match the custom font height. For example, if the custom font is 16-high, select either the 10×16 print matrix with the character height set to Double, or the 30×34 print matrix with the character height set to Single.

3 Enter the message in the message editor. The characters are displayed in custom font.

Note: If you require the fonts in 'Standard' font, turn off the Custom Font feature. All subsequent characters entered will appear in standard font.

- **4** Navigate to <01 Edit> or <03 Edit>.
- **5** Press F4 to print the message.

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 a Ink Core Level High error and low ink viscosity. To prevent this problem, INK ON and stop must be used.

Press the main power switch to turn off the printer.

Note: It is recommended to start the printer once in every 10 days. If the printer is shutdown for more than 10 days, it is recommended to follow the extended shutdown routine. Refer to "How to Prepare for Long-term Shutdown (Storage) or Transportation" on page 6-2 for the procedure.

Introduction

This chapter provides information on the tasks you can perform using the 1520 Excel User Interface. The tasks you can perform using this interface are as follows:

- Create messages
- Add inserts into messages
- Store messages
- Print messages

Content Presentation

Refer to "User Interface Terminology" on page 1-4 for information on the different writing styles used to indicate UI elements and different keys on the control panel.

User Interface

When you turn on the printer, Frame <01 Edit> appears on the display screen. Each set of commands visible on the printer display screen at one time is called a frame. The Figure 5-1 on page 5-2 shows the Frame <01 Edit>.

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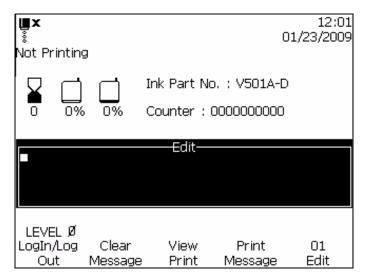


Figure 5-1: <01 Edit> Frame

The different frames of the software, and the navigation through these frames is illustrated in the software summary chart (refer to Appendix B, "Software Summary Chart").

To Select the Frames and Menus

To select the menus, and navigate through different frames, you can use the "F" keys.

F Keys

The F keys (F1, F2, F3, F4, and F5) allow you to select a particular menu in a frame, or, in certain cases, to move from one frame to the next. Move from frame to frame in the software by pressing the F keys located below the display screen. The illustration in Figure 5-2 shows how the F keys are positioned in relation to the words on the display screen.

Note: Arrow keys are used to toggle the values.

5-2 Introduction Rev AA

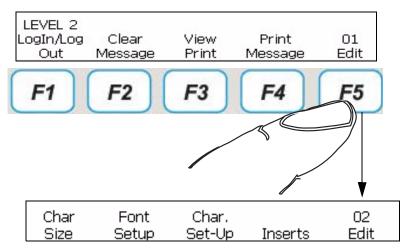


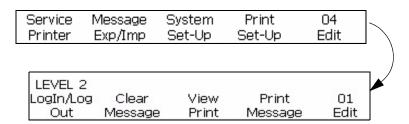
Figure 5-2: F Keys

Enter Key

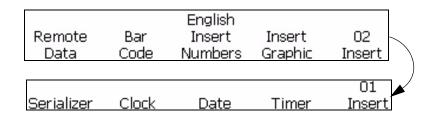
You can come back to the first level screen, if you press the ENTER key.

For example:

• If you are in the frame <04 Edit>, and you press the ENTER key, you come to frame <01 Edit>.



• If you are in <02 Insert>, and you press the ENTER key, you come to <01 Insert>.



Esc Key

To exit from a menu without any change in the settings, press the Esc key.

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To Enter Text, Numbers and Toggle Values

Text	Use the keypad to enter the required text or special characters.
Numerical values	Use the keys 0 to 9.
Toggle values (for example, On or Off)	Press the specific F key to switch from On or Off states

To Change the Case of the Fonts

To enter a character into the message, press the key for that character. The printer will place the uppercase version of that character into the message at the current location of the cursor.

If in uppercase mode and you want to create a lowercase character, press the CAPS LOCK key or the SHIFT key and the key for the desired character at the same time.

The required message may contain both upper and lower case characters. Table 5-1 shows the keys on the keypad that control the case of characters being typed.

Key	Function
caps 🔒	Pressing the CAPS LOCK key changes the default case.

Table 5-1: Keys to Change Case of Text

Password

You must enter the password on power-up, unless password protection has been disabled.

There are 4 levels of password:

- Level 0 Password not required. Provides minimal access to menus.
- Level 1 Provides access to the Print Set-up menu and some basic service functions.
- Level 2 Provides access to the menus which are accessible at Level 1 and to the System menu.
- Level 3 Provides full access to menus. Level 3 access is usually provided to Videojet Service personnel.

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Password is not required to access Level 0. The user with Level 2 access can change the password to Level 1 or Level 2. It is possible to disable password protection to access Level 2 without entering the password.

To Enter the Password

Do the following tasks to enter the password:

1 Press the F1 key in the <01 Edit> frame.

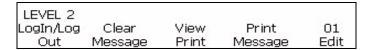


Figure 5-3: 01 Edit Menu

2 Enter the password and press the Enter key.

Main Software Menu Groups

The Videojet 1520 Excel software can be divided into the following menu groups:

Note: Refer to 'Appendix B, "Software Summary Chart" for complete information on the software menu groups.

- Edit
 - Character Setup
 - Insert
- Service
- System Setup
- Print Setup

Edit Menu

The software is in the Edit menu when the printer is turned on. The frames in the Edit menu are used to enter, edit, select, create, edit and store messages. The Edit menu is shown in Figure 5-4.

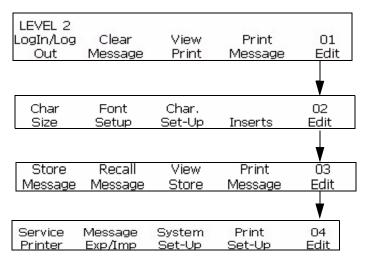


Figure 5-4: Edit Menu

Character Setup Menu

Use this menu to change the orientation and appearance of individual characters in a message.

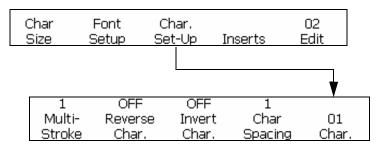
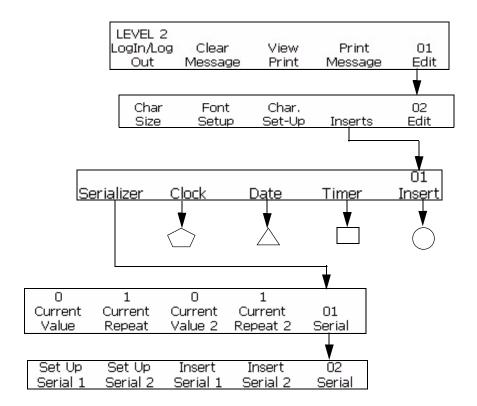
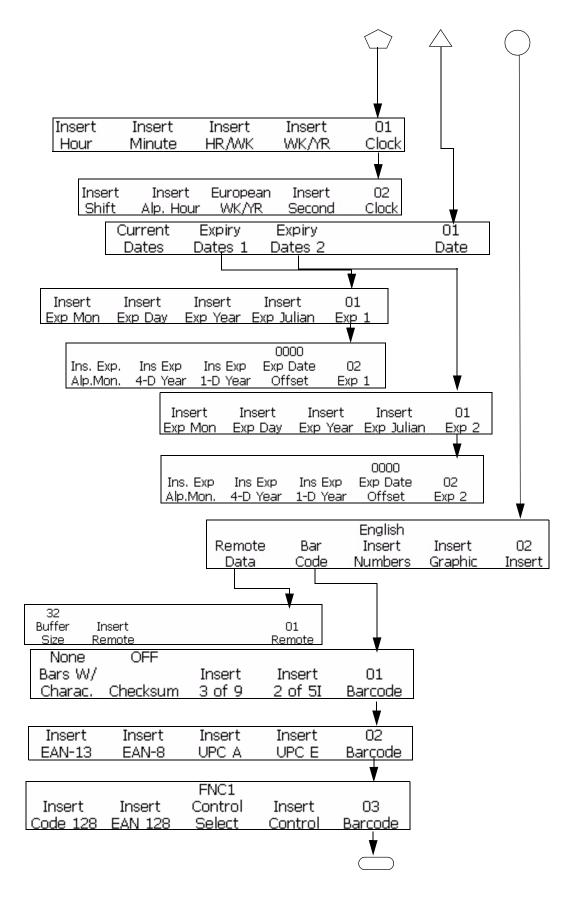


Figure 5-5: Character Set-up Menu

Insert Menu

An insert is an element containing variable information that can be placed into a message. The insert menu is shown in the Figure 5-6 on page 5-9.





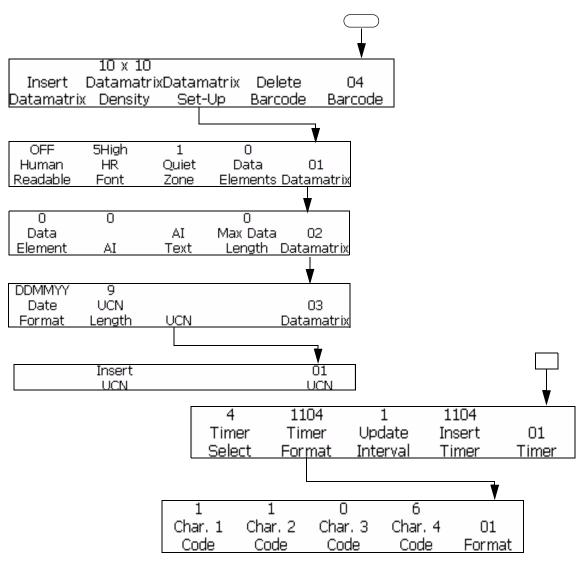


Figure 5-6: Insert Menu

Service Menu

The Service menu is intended for use by personnel who have the proper training and experience to work with this equipment and are aware of the hazards to which they will be exposed. Qualified personnel should refer to the Videojet 1520 Excel Service Manual for information on the Service menu. Level 3 provides full access and level 0 allows no access.

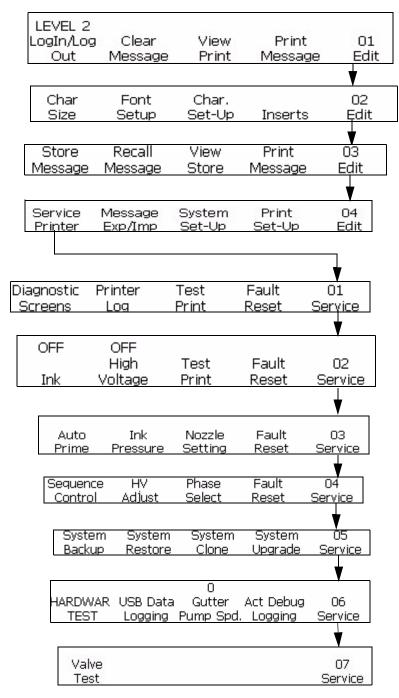
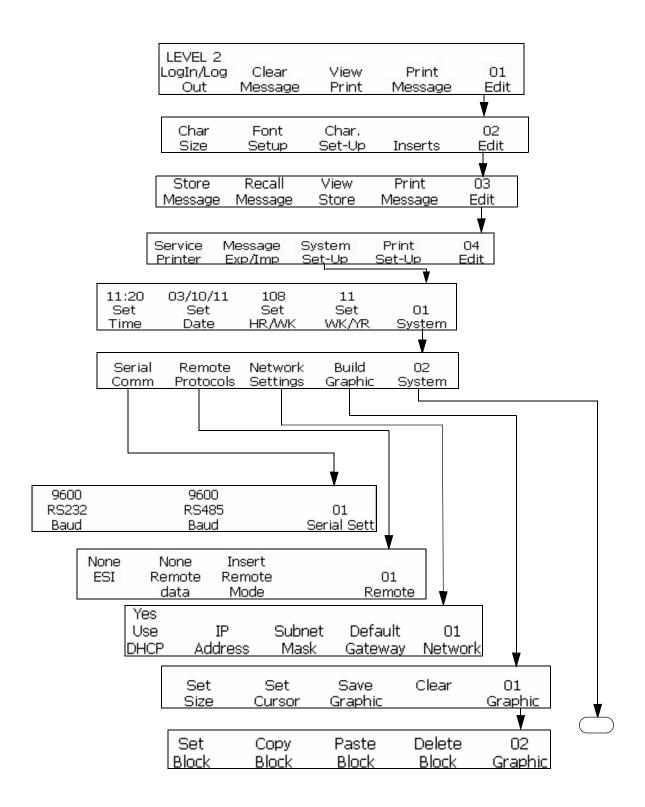
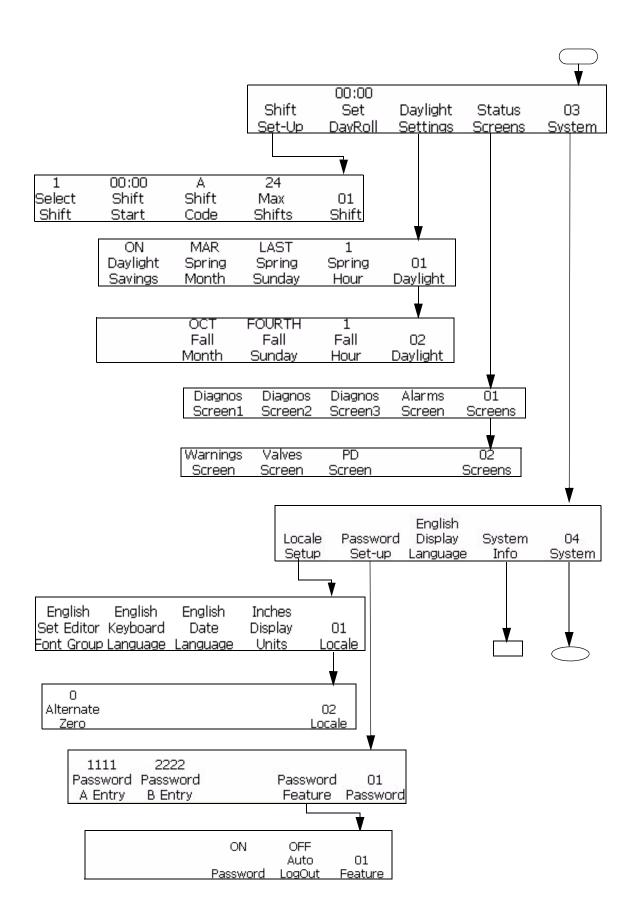


Figure 5-7: Service Menu

System Setup Menu

The System Set-up menu is used during printer installation to enter parameters such as date and time, which become part of the printer memory. The System Set-up menu is shown in Figure 5-8 on page 5-13. Level 3 provides full access and level 0 allows no access.





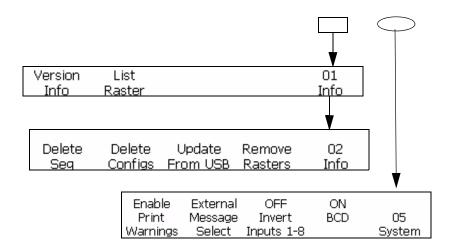
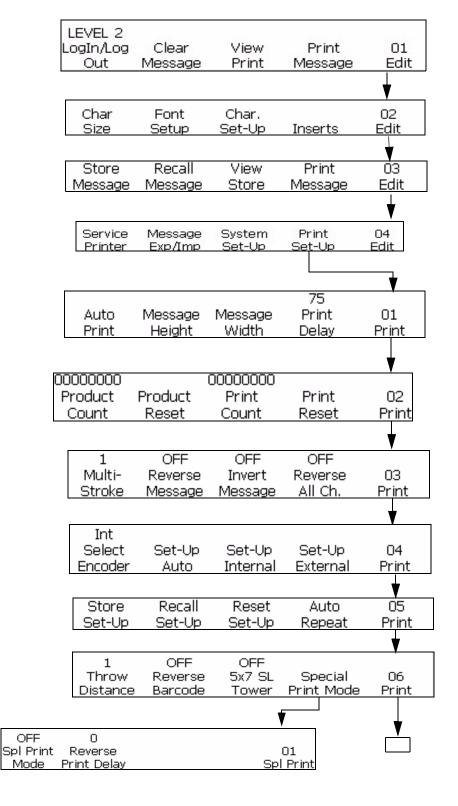


Figure 5-8: System Set-Up Menu

Print Set-up Menu

The Print Set-up menu allows the operator to set specific printing parameters that apply to the entire message. The Print Set-up menu is shown in Figure 5-9 on page 5-15.



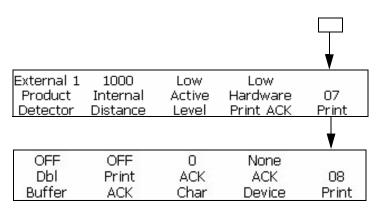


Figure 5-9: Print Set-Up Menu

Manage Text

The procedures in this section show you how to create characters that are reversed or inverted, or bold within a message. The procedure to change character spacing in messages is also explained in this section.

Note: To apply reverse, invert, bold, or Reverse All Characters to an entire message, refer to "To Apply Attributes to Messages" on page 5-27.

You can create a character that is a combination of these features. For example, you can create a character that is both reversed and inverted at the same time, or you can create a character that is reversed and bold at the same time.

Note: Reverse message, invert message, and bold message settings do not override individual character settings. The two settings are combined.

To Change the Character Multi-Stroke (Bold)

You can change the multi-stroke value of an individual character within a message. Changing the multi-stroke (bold) value makes the character bolder by increasing the number of vertical strokes of ink drops used to create each character.

When you increase the multi-stroke value, the thickness (darkness) of the character changes. Only new characters can be made bold; you cannot change an existing character in the message to bold type.

Do the following tasks to change the multi-stroke value of an individual character:

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- 1 Use the arrow keys to move the cursor to the location in the message where you want the character to appear.
- **2** Begin in Frame <01 Char> (01 Edit > 02 Edit Char Set-Up > 01 Char). Refer to Figure 5-10.

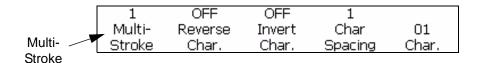


Figure 5-10: <01 Char> Frame

3 View the current setting above <Multi-Stroke>. If desired, press the F1 key to change the setting (Settings: 1, 2, 3, 4.). Table 5-2 lists the multi-stroke settings and their descriptions.

Multi-Stroke Setting	Description
<1>	This indicates the normal (default) setting.
<2>	This indicates that the character will be twice as bold as the normal (default) setting
<3>	This indicates that the character will be three times as bold as the normal (default) setting.
<4>	This indicates that the character will be four times as bold as the normal (default) setting.

Table 5-2: Multi-Stroke (Bold) Values

4 Enter the new character into the message. The character will appear in the display screen as bold.

Note: The next character entered will have the same multi-stroke (bold) value setting as the previous character unless you press the F1 key to change the setting before entering the next character.

To Reverse a Character

This procedure explains how to reverse individual characters within a message. Reversing a character creates a mirror image of the character. It does not rotate the character. Refer to Figure 5-11. Only new characters can be reversed. You cannot reverse an existing character in the message.

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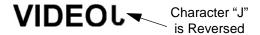


Figure 5-11: Reversing the Character

Do the following tasks to reverse a character:

- 1 Use the arrow keys to move the cursor to the location in the message where you want the character to appear.
- 2 Begin in Frame <01 Char> (01 Edit > 02 Edit Char Set-Up > 01 Char). Refer to Figure 5-12.

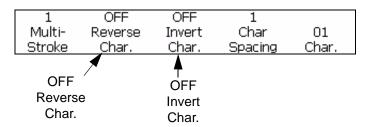


Figure 5-12: <01 Char> Frame

- **3** View the current setting above <Reverse Char>. Is it set to <ON>?
 - If NO, press the F2 key to change the setting to <ON>.
 - If YES, continue to the next step.
- **4** Enter the new character into the message. The character appears in the display screen reversed.

Note: The next character entered will also be reversed unless you press the F2 key to change the setting to <OFF> before entering the character.

To Invert a Character

This procedure explains how to invert an individual character within a message. Inverting a character causes the character to appear upside down. Refer to Figure 5-13. Only new characters can be inverted; you cannot invert an existing character in the message.



Figure 5-13: Inverting the Character

Do the following tasks to invert a character:

1 Use the arrow keys to move the cursor to the location in the message where you want the character to appear.

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- **2** Begin in Frame <01 Char>. See Figure 5-12 on page 5-17.
- **3** View the current setting above <Invert Char>. Is it set to <ON>?
 - If NO, press the F3 key to change the setting to <ON>.
 - If YES, continue to the next step.
- **4** Enter the new character into the message. The character appears in the display screen inverted.

Note: The next character entered will also be inverted unless you press the F3 key to change the setting to <OFF> before entering the character.

To Change the Character Spacing

This procedure explains how to change the character spacing of an individual character within a message. Changing the character space value makes the character gap increase by the number of vertical strokes used to create each space.

When you increase the character spacing value, the distance between the characters increases. Only new characters can have character spacing; you cannot change the existing characters in the message to have different character spacings.

Do the following to change the character spacing:

- 1 Use the arrow keys to move the cursor to the location in the message where you want the character spacing to appear.
- **2** Begin in Frame <01 Char> (01 Edit > 02 Edit Char Set-Up > 01 Char). See Figure 5-14.



Figure 5-14: <01 Char> Frame

3 View the current setting above <Char Spacing>. If desired, press the F4 key to change the setting. The settings are 1, 2, 3, 4, 5, 6, 7, 8, and 9.

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T 11 F 0 1 ()	1 .	•		1 (1 .	1
Table 5-3 lists the	e character si	ทลดาทศ ร	ettings a	na their	descriptions -
Tuble of the tile	c criaracter b	Pacific		iid tiitii	descriptions.

Character Spacing Setting	Description
<1>	This indicates the normal (default) space setting.
<2>	This indicates a character spacing of 2.
<3>	This indicates a character spacing of 3.
<4>	This indicates a character spacing of 4.
<5>	This indicates a character spacing of 5.
<6>	This indicates a character spacing of 6.
<7>	This indicates a character spacing of 7.
<8>	This indicates a character spacing of 8.
<9>	This indicates a character spacing of 9.

Table 5-3: Character Spacing (Character Gap) Values

4 Enter the new character into the message. The character appears in the display screen with a proportional character spacing.

Note: The next character entered has the same character spacing value setting as the previous character unless you press the F1 key to change the setting before entering the next character.

Manage Messages

To Create a Message

Do the following tasks to create a message:

- 1 If you require to know about the last message printed, refer to "To View the Last Message Printed" on page 5-21.
- **2** Do one of the following tasks:
 - a. If there is a message on the display screen, clear the message. Refer to "To Clear an Existing Message" on page 5-20.
 - b. If there is no message on the screen, continue to the next step.

Note: Before selecting a print matrix, check that the correct Editor Font Group and Keyboard Language have been selected. If you change the Editor Font Group, a power-cycle is required.

- **3** Choose the message format print matrix. Refer to "To Select a Print Matrix (Message Format)" on page 5-21 for further information.
- **4** Create the desired message. You can include one or more of the following in the message:
 - Alphabets, numbers, and special characters. Refer to "To Enter Text, Numbers and Toggle Values" on page 5-4.
 - Inserts. Refer to "To Apply Attributes to Messages" on page 5-27.
 - Characters in different orientations. Refer to "To Print Reverse Image Bar Codes" on page 5-69.
 - Messages in different orientations. Refer to "To Print Reverse Image Bar Codes" on page 5-69.
- **5** Edit the message, if required.
- **6** Load the message into the printer. For further information, refer to:
- "To Store a Message" on page 5-23
- "To Recall a Stored Message" on page 5-23
- "To View a Stored Message" on page 5-24

The message is now ready to be printed. Refer to "Print a Message" on page 4-4 for further information on printing the message.

To Clear an Existing Message

To clear the existing message, do the following tasks:

- 1 Make sure that the message you want to clear appears in the display screen.
- **2** Begin in Frame <01 Edit>. See Figure 5-15 on page 5-20.

Note: To reach Frame <01 Edit>, press the Enter key until the frame appears on the display screen.

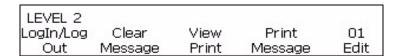


Figure 5-15: <01 *Edit*> *Frame*

- **3** Press SHIFT+F2 to clear the existing message from the display screen.
- **4** You can clear a message from any frame by pressing the backspace key.

To View the Last Message Printed

This procedure explains how to view the last message that was printed.

Note: The message that is currently appearing in the display screen (before performing this procedure) may not necessarily be the last message that was printed by the printer.

Procedure

1 Begin in Frame <01 Edit>. See Figure 5-16.

Note: To reach Frame <01 Edit>, press the ENTER key until the frame appears in the display screen.

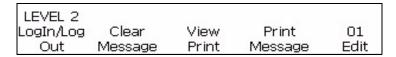


Figure 5-16: <01 Edit> Frame

2 Press the F3 key to select <View Print>. The last message that was printed appears in the display screen.

View Print View Print shows next message to be printed <Date and Timer information will advance>

Figure 5-17: <View Print>

3 Press the Enter key or the Esc key to go back to Frame <01 Edit> after you see the message.

To Select a Print Matrix (Message Format)

This procedure explains how to select the print matrix (also called message format) of the message. The print matrix specifies the number of lines in the message, as well as the size of the printed characters. Character size is the number of dots high by the number of dots wide of the character. For example, choosing a 5×7 SL (Single Line) print matrix would allow you to create a message containing one printed line which contains the characters that are 5 dots high by 7 dots wide.

With print matrices, keep in mind the following guidelines:

• If a message already exists on the screen that consists of a different matrix than you would like, you must clear this message before you can select a different matrix type.

- After the print matrix has been selected, you can enter characters and inserts into the message.
- Once a character or insert has been entered into the message, you cannot change the print matrix (unless you clear the message first).

To Select Print Matrix Type

The printer provides you a variety of print matrices (message formats).

The print matrix is selected in Frame <01 Font> (01 Edit > 02 Edit - Font Setup > 01 Font). See Figure 5-18.

In addition, there is the <Char. Size> option which is used along with the print matrix type. This option is used to change the size of characters when you are using a mixed format matrix type. If it is not possible to change the character size in a message (i.e. in a single line message), Frame <02 Edit> will leave the <Char. Size> blank.

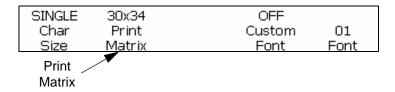


Figure 5-18: Print Matrix

Do the following tasks to select the print matrix for a message:

- 1 If a message already exists on the display screen, do the following tasks:
 - a. Navigate to the <01 Edit>.
 - b. Press SHIFT+ F2 to select <Clear Message>. The existing message disappears from the display screen.

Note: The printer will not let you change the print matrix setting unless the message has been cleared first.

- **2** Press the F5 key to go to <02 Edit>.
- 3 Press the F2 key to go to <01 Font>. Refer to Figure 5-18 on page 5-22.
- **4** See the current setting above <Print Matrix>. If required, press the F2 key to change the setting.
- **5** View the current setting above <Char. Size>. If required, press the F1 key to change the setting. If it is not possible to change the size of the characters within the message, the field above the <Char. Size> appears blank.
- **6** You can now enter characters and/or inserts into the message.

To Store a Message

Use this feature to store a message. After you create a new message or change an existing message, you can choose to store that message in any one of 100 storage locations in the printer.

Note: The printer can store 103 messages. 100 user saved messages and 3 are default messages.

Do the following tasks to store a message

1 Begin in Frame <03 Edit> (01 Edit > 02 Edit > 03 Edit). Refer to Figure 5-19.

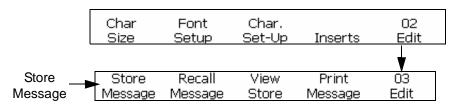
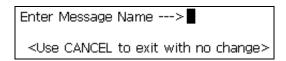


Figure 5-19: <03 Edit> Frame

- **2** Make certain the message to be stored currently appears in the display screen.
- **3** Press the F1 key to select <Store Message>. The following message appears in the display screen:



- **4** Enter in an alphanumeric name, from 1 to 8 characters long.
- **5** Press the ENTER key. The message that appears in the display screen will be stored in the location entered.

To Recall a Stored Message

This procedure explains how to recall a stored message. Once you know the storage name of a particular message, you can recall that message so that it can be loaded into the printer and printed.

If you do not know the name of the message to be recalled, turn to "To View a Stored Message" on page 5-24 for further information.

Do the following tasks to recall the stored message:

1 Begin in Frame <03 Edit> (01 Edit > 02 Edit > 03 Edit). See Figure 5-20.

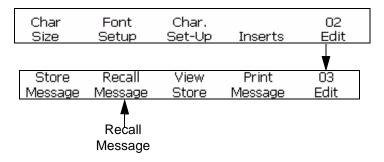
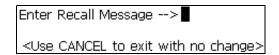


Figure 5-20: <03 Edit> Frame

2 Press the F2 key to select <Recall Message>. The following appears in the display screen:



- **3** Enter in the name of the message to be recalled. Message name cannot be more than 8 characters long.
- **4** Press the ENTER key. The message stored by that name will appear in the display screen.

Note: Remember that you must load the message into the printer before you can print the message.

To View a Stored Message

This procedure explains how to view the messages currently stored in the printer memory. The printer can store up to 100 messages. You can use the cursors to view the contents of stored messages. The user also has the capability of loading and deleting messages from View Stored Messages. If you do not know the storage location name of a particular message, you can search through the storage locations message names using the arrow keys.

Do the following to view the stored message:

1 Begin in Frame <03 Edit> (01 Edit > 02 Edit > 03 Edit). See Figure 5-21.

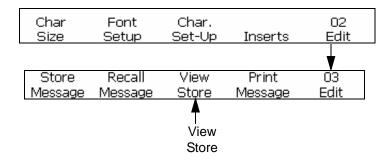


Figure 5-21: <03 Edit> Frame

2 Press the F3 key to select <View Store>. The following screen appears in the display screen:

3 Use the right and left arrow keys to view the contents of all the stored messages.

The following guidelines apply to the arrow keys when changing the storage message:

Arrow Key	Description
(Press this key to increment to the next message.
(Press this key to decrement to the next message.

Table 5-4: Changing Values Using the Arrow Keys

Once the stored message appears in the display screen, the user can select SHIFT+ENTER to load that message. Another option is to select SHIFT+DELETE to delete the message from storage.

To Adjust the Height of a Message

You can adjust the height of a message. The message height is adjusted in Frame <01 Print>. See Figure 5-22.

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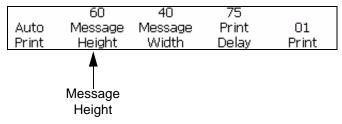


Figure 5-22: <01 Print> Frame

Do the following to adjust the height of the message:

- 1 Begin in Frame <01 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-Up > 01 Print). See Figure 5-22.
- **2** Press the F2 key to select <Message Height>. The following message appears in the display screen.

- **3** Use the arrow keys to adjust the height of the printed message. The entry must be between from 1-100.
- **4** Press the ENTER key. Frame <01 Print> reappears in the display screen.

To Adjust the Width of a Message

You can adjust the width of the message. The message width is adjusted in Frame <01 Print>. Refer to Figure 5-23 on page 5-26.

• The width of the message can be adjusted if the printer is set up for internal, auto encoding. Refer to "Select the Encoder" on page 4-14 for more information on different types of encoder settings.

Do the following tasks to adjust the width of the message:

1 Begin in Frame <01 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-Up > 01 Print). See Figure 5-23.

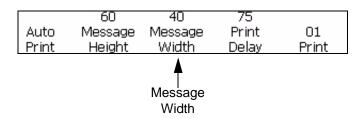


Figure 5-23: Width Adjustment Setting

2 Press the F3 key to select <Message Width>. The following message appears in the display screen.

Width Adjustment Setting	->40
<use ch<="" cursors="" th="" to=""><th>nange value></th></use>	nange value>

3 Use the arrow keys to adjust the width of the printed message. The entry must be between from 0-100.

Note: As the values increase in increments of 10, the characters per inch increase in increments of 0.5 for the characters having width as 6 dots wide (font height of 5 x 7 high). Refer to Table 5-5 on page 5-27.

4 Press the ENTER key. The Frame <01 Print> reappears in the display screen.

Table 5-5 lists the width adjustment settings for the characters having width as 6 dots wide (font height of 5×7 high).

Width Adjustment Setting	Characters Per Inch	Characters Per Centimeter
100	7.0	2.8
90	7.5	3.0
80	8.0	3.2
70	8.5	3.4
60	9.0	3.5
50	9.5	3.7
40	10.0	3.9
30	10.5	4.1
20	11.0	4.3
10	11.5	4.5
0	12.0	4.7

Table 5-5: Width Adjustment Settings

To Apply Attributes to Messages

The procedures in this section show you how to create a reversed, inverted, or bold message, and how to adjust the height and width of a message.

You can create a message that is a combination of these features. For example, you can create a message that is both reversed and inverted at

the same time, or you can create a message that is reversed and bold at the same time.

Figure 5-24 shows the frame used in this section (01 Edit > 02 Edit > 03 Edit > 04 Edit - Print Set-Up > 01 Print > 02 Print > 03 Print).

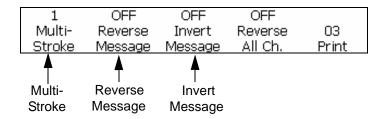


Figure 5-24: <03 Print> Frame

To Change the Message Multi-Stroke (Bold)

You can change the multi-stroke (bold) value for the entire message. The multi-stroke (bold) setting is used to adjust the number of vertical strokes of drops used to create a character. As this value increases, the width of the character increases, making the character appear more bold.

This setting will override any change to make an individual character bold (made in Frame <01 Char>). Refer to "To Change the Character Multi-Stroke (Bold)" on page 5-15 for further information.

Do the following tasks to change multi-stroke value for the entire message:

- 1 Begin in Frame <03 Print>. Refer to Figure 5-25 for information on accessing Frame <03 Print>.
- **2** Load the message into the printer. This can be an existing message, or you can create a new message.
- **3** View the current setting above <Multi-Stroke>. If desired, press the F1 key to change the setting. The settings are 1, 2, 3, 4.

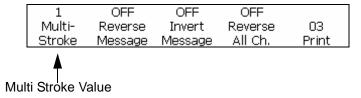


Figure 5-25: Changing the Multi-Stroke Value of a Messages

When selecting the multi-stroke level that you want your message to show, you can choose from the values listed in Table 5-6. Table 5-6 lists the multi-stroke (bold) settings and descriptions.

Multi-Stroke Setting	Description
1	This indicates the normal (default) setting.
2	This indicates that the characters will be twice as bold as the normal (default) setting
3	This indicates that the characters will be three times as bold as the normal (default) setting.
4	This indicates that the characters will be four times as bold as the normal (default) setting.

Table 5-6: Multi-Stroke (Bold)

Note: The message will not appear bold in the display screen; however, it will be bold when printed.

To Reverse a Message

This procedure explains how to reverse an entire message. Reversing the message rotates the order of the characters, printing the last character first, and the first character last. Refer to Figure 5-26.

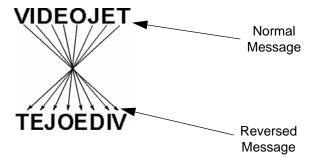


Figure 5-26: Reversing the Message - Example

Procedure

- 1 Load the desired existing message into the printer or create a new message and load it into the printer. Refer to "To Recall a Stored Message" on page 5-23.
- **2** Begin in Frame <03 Print>. See Figure 5-24 on page 5-28.
- **3** View the current setting above <Reverse Message>. Is it set to <ON>?
 - If NO, press the F2 key to change the setting to <ON>.
 - If YES, the message is already set to be reversed.

Note: Setting Reverse Message to <*ON*> only reverses the order in which the characters are printed.

- **4** View the current settings above <Reverse All Ch>. Is it set to <ON>?
 - If NO, press F4 key to change the setting to <ON>.
 - If YES, it is already set to produce the mirror image of the original message.

Note: The message will not appear reversed in the display screen, however it will be reversed when printed.

Note: When the product is moving past the printhead from left to right, it is necessary to reverse all characters and reverse the entire message for the code to print correctly on the product.

To Invert a Message

This procedure explains how to invert an entire message. Inverting a message flips each character 180 degrees, producing an "upside-down" message. Refer to Figure 5-27 on page 5-30 for an example.

Inverted messages are typically used when the printhead has been positioned upside down in relation to the product, or the product is upside down, but you do not wish to print upside down. This enables the message to be printed in the proper direction on the product.

This setting will override any change made to invert the character individually (from Frame <01 Char>). Refer to "To Invert a Character" on page 5-17 for further information.

The setting does not override any character setting already set in the message. For example, if a single character is inverted in a message and the message is inverted, the character will appear the correct way up itself.

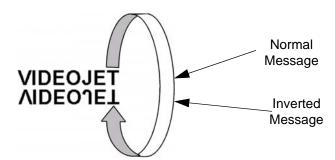


Figure 5-27: Inverting the Message - Example

Procedure

- 1 Load the desired (existing) message into the printer or create a new message and load it into the printer.
- **2** Begin in Frame <03 Print>. Refer to Figure 5-24 on page 5-28.
- **3** View the current setting above <Invert Message>. Is it set to <ON>?
 - If NO, press the F3 key to change the setting to <ON>. This will invert the entire message.
 - If YES, the message is already set to be inverted.

Note: The message will not appear inverted in the display screen, however it will be inverted when printed.

Reversed and Inverted Message

Figure 5-28 shows an example of a message which is reversed, then inverted.

VIDEOJET VIDEOJET

Reversed Message

Reversed Message Inverted

Figure 5-28: Reversed and Inverted Message

To Set 5 x 7 SL Tower

This procedure shows you how to use the 5×7 SL Tower function. This allows you to print a message onto a substrate with the effect of printing in a vertical direction, rather than the usual horizontal direction. This application is useful for marking wires and cables. See Figure 5-29.

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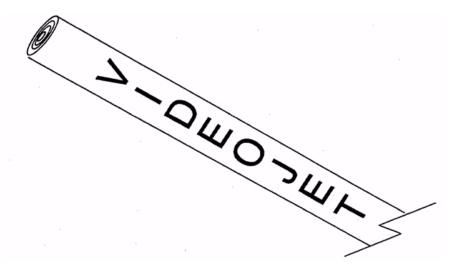


Figure 5-29: Sample Application for Tower Font Printing.

Note: The tower font is available only in the 5×7 SL print matrix. It will have no effect on other print matrices.

The tower print font rotates each character of the normal 5 x 7 font 90 degrees counterclockwise. Therefore, the print matrix actually becomes 7 drops wide by 5 drops high, and the characters are printed "sideways." Refer Figure 5-30.

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Message Printed in Standard Horizontal Direction



Message Printed in 5 x 7 SL Tower (Vertical Direction)

Figure 5-30: Tower Printing Example

Do the following tasks to enable 5X7 SL Tower function:

- 1 Load the desired existing message into the printer or create a new message and load it into the printer.
- 2 Begin in Frame <06 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-Up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print > 06 Print). See Figure 5-31.

1	OFF	OFF			5X7 SL
Throw	Reverse	5x7 SL	Special	06	Tower
Distance	Barcode	Tower	Print Mode	Print	

Figure 5-31: <06 Print> Frame

- **3** View the current setting above $<5 \times 7$ SL Tower>. Is it set to <ON>?
 - If NO, press the F3 key to change the setting to <ON>. This will print the entire message in the tower font.
 - If YES, the message is already set to print in the tower font.
- **4** Press the ENTER key to return to Frame <01 Print>.

Note: The message will not appear in the tower font in the display screen; however, it will print in the tower font orientation.

Manage Inserts

This section describes the procedures you must follow to add inserts into messages.

An insert is defined as a segment of information that is added into the message and automatically changed by the printer as messages are printed.

You can set the language for the alpha inserts at <Date Language> on <01 Locale>.

There are three types of inserts, Type 1, 2, and 3.

Table 5-7 lists the types of inserts and their characteristics.

Insert Type	Insert Characteristics	
Type 1	Inserts where the parameters (information that appears in the message) are defined by you, not by the printer's internal clock. The insert is updated according to the settings made during set-up.	
Type 2	Inserts where the parameters (information which appears in the message) are determined by the current reading of the printer's internal clock. The printer automatically updates the insert as the printer's internal clock changes.	

Table 5-7: Insert Types

Insert Type	Insert Characteristics	
Type 3	Inserts which are a combination of Type 1 and Type 2. With these types of inserts, you need to define one or more parameters (information which appears in the message) before inserting them into the message. However, the insert is automatically updated as the printer's internal clock changes.	

Table 5-7: Insert Types (Continued)

With some inserts you can include as many (of that type) in the message as space allows, whereas with other inserts you can have only one per message.

Refer to Table 5-8 on page 5-34 for a listing of each insert that you can place into a message.

When you are finished adding inserts into a message, you must load the message into the printer before you can print it. Otherwise, the insert(s) added will not appear in the message. For further information, refer to:

- "To Store a Message" on page 5-23
- "To Recall a Stored Message" on page 5-23
- "To View a Stored Message" on page 5-24

Table of Inserts

Refer to Table 5-8 below for a complete list of the:

- Number of inserts available
- Types of inserts
- Maximum number of inserts of a type that you can insert in a single message
- Page references for specific information on that insert

Note: SLO = Space Limitations Only (meaning you can add as many of this type of insert into the message as space allows).

Insert	Max. Digits per Insert	Туре	Max. per Message*	Page
Alpha Hour	1	2	SLO	5-42
Alpha Month	3	2	SLO	5-46
Hour of Day	2	2	SLO	5-39

Table 5-8: Insert Information

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Insert	Max. Digits per Insert	Туре	Max. per Message*	Page
Minute of Hour	2	2	SLO	5-40
Hour of Week	3	2	SLO	5-41
Week of Year	2	2	SLO	5-41
Month of Year	2	2	SLO	5-44
Day of Month	2	2	SLO	5-45
Year		2	SLO	5-45
Julian Date	3	2	SLO	5-46
Expiration Alpha Month	3	2	SLO	5-52
Expiration Month of Year	2	3	SLO	5-49
Expiration Day of Month	2	3	SLO	5-47
Expiration Year	2	3	SLO	5-49
Expiration Julian Date	3	3	SLO	5-51
Serializer	8	1	*2	5-35
Timer	4	3	1	5-54
Programmable Shift Timer	1	3	SLO	5-66
Remote Data	32	1	1	5-57
S	Message length	1	SLO	5-72
Bar Codes	**BLO	3	SLO	5-59

Table 5-8: Insert Information

Serializer

To Insert a Serializer

You can insert a serializer into a message.

A serializer is an alphanumeric value which is added into a message and is automatically changed by the printer as product detect signals are

^{*}One Serializer 1 insert and one Serializer 2 insert can be added to a message. Multiple copies of these same serializer inserts can be added to the same message depending upon the space allowed in the message.

^{**}BLO = Bar code Limitations Only (meaning certain bar codes have size and data content limitations)

received (products are printed upon). It is a counter that will update as messages are printed. You may add two separate serializer inserts (serializer 1 and serializer 2) per message.

Serializer parameters are defined by you, rather than the printer's internal clock. Before inserting a serializer into the message, you must set the following serializer parameters for either serializer used.

Table 5-9 lists the serializer insert parameters.

Parameters	Explanation
Start Value	This is the first value to be printed. The value must be less than the max count (ending value) and from 0000000099999999 (if content is numeric). The starting value determines the alphanumeric arrangement and length of the end value. Starting value can also be configured for uppercase and lowercase alpha mode.
Max Count (End Value)	The value that the counter reaches at the end of the count. The value must be greater than the starting value, and from 00000001999999999 (if starting value is numeric). End value length and alphanumeric arrangement are dependent upon the Start Value configuration. The value can also be configured in an uppercase and lowercase alpha mode.
Count Up/ Down	Set the serializer to <up> to update the value in a positive (upward) direction or to <down> to update the value in a negative (downward) direction.</down></up>
Constant	Number by which the counter is incremented or decremented. The setting must be from 199.
Repeat Count	Set the number of times you want to print the message with the same serializer value before updating the value. The setting must be from 19999.
Off Increment Serializer	5. Set the second serializer to increment after the first serializer has rolled over (reached its End value).
Current Value	Allows the Starting Value to be changed to a current value. Changes to current value also need to match the starting value alphanumeric arrangement and length.
Current Repeat	Allows changing the Repeat Count value to a current value. The setting ranges from 1-9999.

Table 5-9: Serializer Insert Parameters

Once inserted into the message, the serializer will be updated (according to the parameter settings) as messages are printed. The serializer in the display screen will not change as the serializer is updated; however, it will change in the printed message. Serializers will store their current values unless the F4<Print Message> button is pressed, which resets the serializer.

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Do the following tasks to insert a serializer into a message:

1 Begin in Frame <01 Serial 1> (01 Edit > 02 Edit - Inserts > 01 Insert - Serializer > 01 Serial > 02 Serial - Set Up Serial 1 > 01 Serial 1). Refer to Figure 5-32 on page 5-37.

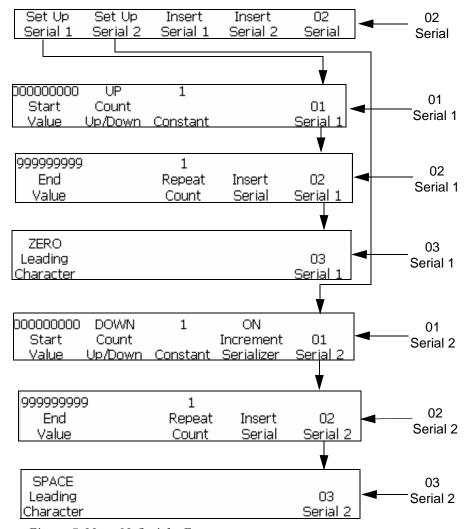


Figure 5-32: <02 Serial> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the serializer to appear.
- **3** Press the F1 key to select <Start Value>. The following appears in the display screen:

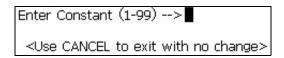
Enter Start Value -->

<Use CANCEL to exit with no change>

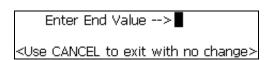
4 Enter the starting value. The starting value determines the alphanumeric arrangement and length of the end value. In alphanumeric mode, 0=a or 0=A and 9=j or 9=J

Note: When entering the starting value, you may enter letters instead of numbers.

- **5** Press the ENTER key. Frame <01 Serial 1> reappears in the display screen.
- **6** View the current setting above <Count Up/Down>. If desired, press the F2 key to change the setting. (Settings: Up, Down).
- **7** Press the F3 key to select <Constant>. The following appears in the display screen:



- **8** Enter the constant. The entry must be from 1-99.
- **9** Press the ENTER key. Frame <01 Serial 1> reappears in the display screen.
- **10** Press the F5 key to go to Frame <02 Serial 1>. Refer to Figure 5-32 on page 5-37.
- 11 Press the F1 key to select End Value. The following appears in the display screen:



12 Enter the end value (the value the serializer will either stop at or rollover). The end value length and alphanumeric arrangement must match the starting value. In alphanumeric mode, 0=a or 0=A and 9=j or 9=J.

Note: If the starting value is 0AA85, then the ending value could be something like 9ZZ99. Both the starting and the ending values need the same alphanumeric arrangement and length.

- **13** Press the ENTER key. Frame <02 Serial 1> reappears in the display screen.
- **14** Press the F3 key to select <Repeat Count>. The following appears in the display screen:

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Enter Repeat Cnt.(1-65000)->■

<Use CANCEL to exit with no change>

- **15** Enter the repeat count.
- **16** Press the ENTER key. Frame <02 Serial 1> reappears in the display screen.
- 17 Press the F4 key to select <Insert Serial>. The starting value of the serializer appears in the message.
- **18** Press the F5 key to go to Frame <03 Serial 1>.
- 19 To insert a second serializer in the message, repeat steps 1 through 18 but begin in Frame <01 Serial 2>.
- **20** Press the F4 key and change the <Increment Serializer> value to ON.

Clock

To Insert the Hour of the Day

This procedure explains how to place an hour of day insert into a message. The hour of day insert is a two-digit number representing the current hour of the day in a 24-hour format. The value for this insert is determined by the printer's internal clock, and is updated as the internal clock changes.

Table 5-10 lists the hour of day inserts.

Value	Time of Day	Value	Time of Day
00	12:00 a.m. (midnight)	12	12:00 p.m. (noon)
01	1:00 a.m.	13	1:00 p.m.
02	2:00 a.m.	14	2:00 p.m.
03	3:00 a.m.	15	3:00 p.m.
04	4:00 a.m.	16	4:00 p.m.
05	5:00 a.m.	17	5:00 p.m.
06	6:00 a.m.	18	6:00 p.m.
07	7:00 a.m.	19	7:00 p.m.
08	8:00 a.m.	20	8:00 p.m.
09	9:00 a.m.	21	9:00 p.m.

Table 5-10: Hour of Day Insert Values

Value	Time of Day	Value	Time of Day
10	10:00 a.m.	22	10:00 p.m.
11	11:00 a.m.	23	11:00 p.m.

Table 5-10: Hour of Day Insert Values (Continued)

Do the following tasks to place an hour of a day insert into a message.

1 Begin in Frame <01 Clock> (01 Edit > 02 Edit - Inserts > 01 Insert - Clock > 01 Clock). Refer to Figure 5-33.

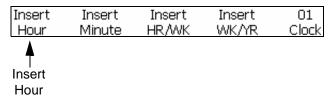


Figure 5-33: <01 Clock> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F1 key to select <Insert Hour>. The insert appears in the message.

To Insert Minute

You can place minute inserts into messages. The minute insert is a two-digit number representing the current minute. The value of this insert is determined by the printer's internal clock, and is updated as the printer's internal clock changes.

Do the following tasks to place the insert minute into a message:

1 Begin in Frame <01 Clock> (01 Edit > 02 Edit - Inserts > 01 Insert - Clock > 01 Clock).

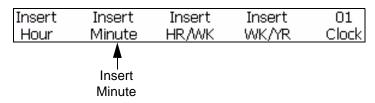


Figure 5-34: <01 Clock> Frame

2 Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.

3 Press the F2 key to select <Insert Minute>. The insert appears in the message.

To Insert the Hour of the Week

This procedure explains how to place an hour of the week insert into a message. The hour of the week insert is a three-digit number representing the current hour of the week. A value of 001 indicates the first hour of the week, and a value of 168 indicates the last hour of the week.

The value for this insert is determined by the printer's internal clock and the user entry made in "Set the Programmable Date Roll Over" on page 4-22. Hour of the Week Insert is updated as the printer's internal clock changes.

Do the following tasks to insert the hour of the week into the message:

1 Begin in Frame <01 Clock> (01 Edit > 02 Edit - Inserts > 01 Insert - Clock > 01 Clock). Refer to Figure 5-35.

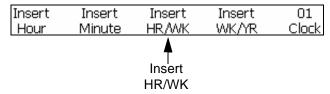


Figure 5-35: <01 *Clock> Frame*

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F3 key to select <Insert HR/WK>. The insert appears in the message.

To Insert the Week of the Year

You can insert the week of the year insert into a message. The week of the year insert is a two-digit number representing the current week of the year. A value of 01 indicates the first week of the year, and a value of 53 or 54 indicates the last week of the year.

The value for this insert is determined by the printer's internal clock and the entries made in "Set Week of the Year and Hour of the Week" on page 4-20. Week of the Year is updated as the printer's internal clock changes.

Do the following tasks to insert hour of the week into the message:

1 Begin in Frame <01 Clock> (01 Edit > 02 Edit - Inserts > 01 Insert - Clock > 01 Clock). See Figure 5-36.

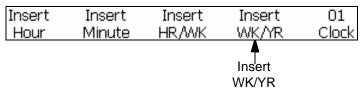


Figure 5-36: <01 Clock> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F4 key to select <Insert WK/YR>. The month appears in the message.

To Insert the Work-Shift Code

Do the following tasks to insert your work-shift code into a message:

1 Begin in Frame <02 Clock> (01 Edit > 02 Edit - Inserts > 01 Insert - Clock > 01 Clock > 02 Clock). See Figure 5-37.

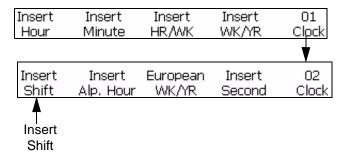


Figure 5-37: Inserting a Work-shift Code into a Message

- **2** Press the F1 key to select <Insert Shift>. Your work-shift code is now inserted at the current location of the cursor.
- **3** Repeat the Set-up Procedure and Step 1 of this procedure for every work-shift code you wish to enter.

To Insert Alpha Hour

This procedure explains how to place an Alpha Hour insert into a message. The Alpha Hour insert is a one-digit character representing the current hour of the day in a 24-hour format. The character (A-X) for each hour is fixed and cannot be changed.

The value for this insert is determined by the printer's internal clock, and is updated as the internal clock changes.

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Table 5-11 lists the alpha hour value inserts.

Value	Time of Day	Value	Time of Day
Α	12:00 a.m. (midnight)	М	12:00 p.m. (noon)
В	1:00 a.m.	N	1:00 p.m.
С	2:00 a.m.	0	2:00 p.m.
D	3:00 a.m.	Р	3:00 p.m.
Е	4:00 a.m.	Q	4:00 p.m.
F	5:00 a.m.	R	5:00 p.m.
G	6:00 a.m.	S	6:00 p.m.
Н	7:00 a.m.	Т	7:00 p.m.
1	8:00 a.m.	U	8:00 p.m.
J	9:00 a.m.	V	9:00 p.m.
K	10:00 a.m.	W	10:00 p.m.
L	11:00 a.m.	Х	11:00 p.m.

Table 5-11: Alpha Hour Insert Values

Do the following tasks to place an alpha hour insert into a message:

1 Begin in Frame <02 Clock> (01 Edit > 02 Edit - Inserts > 01 Insert - Clock > 01 Clock > 02 Clock). See Figure 5-38.

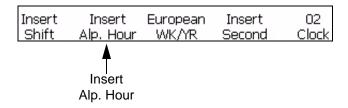


Figure 5-38: <02 Clock> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F2 key to select <Insert Alp. Hour>. The insert appears in the message.

Date

To Insert Month

You can place month insert in messages. The month insert is a two-digit number representing the current month of the year. The value for this insert is determined by the printer's internal clock, and is updated as the printer's internal clock changes.

Table 5-12 lists the values of month inserts.

Value	Month	Value	Month
01	January	07	July
02	February	08	August
03	March	09	September
04	April	10	October
05	May	11	November
06	June	12	December

Table 5-12: Month Insert Values

Do the following tasks to insert the month into the message:

1 Begin in Frame <01 Current> (01 Edit > 02 Edit - Inserts > 01 Insert - Date > 01 Date - Current Dates > 01 Current). Refer to Figure 5-39.

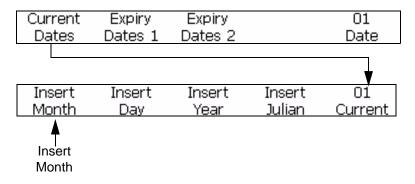


Figure 5-39: <01 Current> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F1 key to select <Insert Month>. The insert appears in the message in two-digit format.

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To Insert Day of the Month

You can insert the day of the month into a message. The day of the month insert is a two-digit number representing the current day of the month. The value for this insert is determined by the printer's internal clock, and is updated as the printer's internal clock changes.

Do the following tasks to insert the day of the month:

- 1 Begin in Frame <01 Current> (01 Edit > 02 Edit Inserts > 01 Insert Date > 01 Date Current Dates > 01 Current). See Figure 5-40 on page 5-45.
- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F2 key to select <Insert Day>. The insert appears in the message in two-digit format.

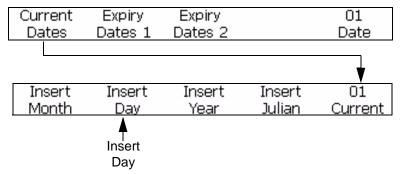


Figure 5-40: <01 Current> Frame

To Insert Year

You can insert the year into a message. The year insert is a two-digit number representing the last two numbers of the current year.

The value for this insert is determined by the printer's internal clock, and is updated as the printer's internal clock changes.

Example: The insert for the year "2007" will appear as "07".

Procedure

- 1 Begin in Frame < 01 Current > (01 Edit > 02 Edit Inserts > 01 Insert Date > 01 Date Current Dates > 01 Current). See Figure 5-41.
- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F3 key to select <Insert Year>. The year is inserted in the message in two-digit year format.

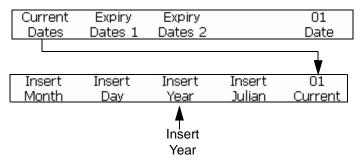


Figure 5-41: <01 Current> Frame

To Insert Julian Date

You can insert Julian date into a message. The Julian date insert is a three-digit number representing the current day of the year. A value of 001 indicates the first day of the year, and a value of 365 or 366 indicates the last day of the year.

The value for this insert is determined by the printer's internal clock, and is updated as the printer's internal clock changes.

Do the following tasks to insert julian date:

1 Begin in Frame <01 Current> (01 Edit > 02 Edit - Inserts > 01 Insert - Date > 01 Date - Current Dates > 01 Current). See Figure 5-42.

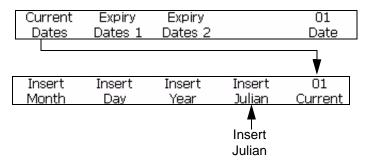


Figure 5-42: <01 Date> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F4 key to select <Insert Julian>. The insert appears in the message.

To Insert Alpha Month

This procedure explains how to place an Alpha Month insert into a message. The Alpha Month insert is a three-digit character representing the current month of the year. The characters (Jan. - Dec) for each month are fixed and cannot be changed.

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The value for this insert is determined by the printer's internal clock, and is updated as the internal clock changes.

Table 5-13 lists the alpha month insert values.

Value	Month of Year	Value	Month of Year
JAN	January	JUL	July
FEB	February	AUG	August
MAR	March	SEP	September
APR	April	ОСТ	October
MAY	May	NOV	November
JUN	June	DEC	December

Table 5-13: Alpha Month Insert Values

Do the following tasks to place an alpha month insert into a message:

1 Begin in Frame <02 Current> (01 Edit > 02 Edit - Inserts > 01 Insert - Date > 01 Date - Current Dates > 01 Current > 02 Current). Refer to Figure 5-43.

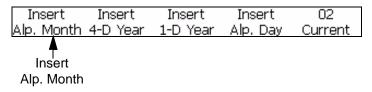


Figure 5-43: <02 Current> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F1 key to select <Insert Alp. Month>. The insert appears in the message.

To Insert Expiration Day of the Month

You can insert expiration day of month into a message. The expiration day of month insert is a two-digit number representing the day of the month in which a product will expire.

Note: You must set the offset units and values before you set up the expiry dates. The offset settings work for all the date inserts under Expiry Date 1.

Note: To set the date of expiry, you must set the offset value for the units (days, months, or years) from the current date (depends on the internal clock of the printer). The printer maintains the expiration day (based on the offset unit and

value) from the current date. Also, you can add two expiration dates (Expiry Date 1 and Expiry Date 2) in a message.

Example: If the current date is January 24th and you set the expiration date of the product to be 14 days from the current date, then the printer will print 07 for the expiration day of year insert. The value 07 represents February 7 (which is the day of the month 14 days from the current date).

Do the following tasks to insert the expiration day of the month:

1 Begin in Frame <01 Exp 1> (01 Edit > 02 Edit - Inserts > 01 Insert - Date > 01 Date - Expiry Dates 1 > 01 Exp 1). Refer to Figure 5-44.

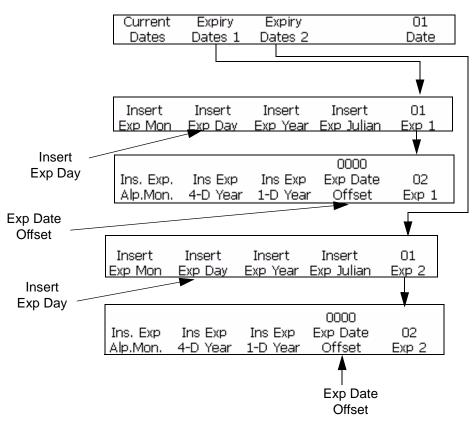


Figure 5-44: Frame <01 Exp 1> and <01 Exp 2>

- **2** Press the F5 key to go to Frame <02 Exp 1>.
- **3** Press the F4 key to select <Exp Date Offset>.
- 4 Enter the number of days that can pass before the product expires. The entry must be between 1-2048 (2048 days is about 5½ years).

Enter Offset Days(1-2048)->

<Use CANCEL to exit with no change>

- **5** Press the ENTER key to return to <01 Exp 1>.
- **6** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **7** Press the F2 key to select <Insert Exp Day>. The insert appears in the message.
- **8** To add a second expiration month insert, repeat steps 1 through 8 but begin in Frame <01 Date -Expiry Dates 2>.

To Insert Expiration Month of the Year

You can insert expiration month of the year insert into a message. The expiration month of year insert is a two-digit number representing the month of the year in which a product will expire.

Note: You must set the offset units and values before you set up the expiry dates. The offset settings work for all the date inserts under Expiry Date 1.

Note: To set the date of expiry, you must set the offset value for the units (days, months, or years) from the current date (depends on the internal clock of the printer). The printer maintains the expiration day (based on the offset unit and value) from the current date. Also, you can add two expiration dates (Expiry Date 1 and Expiry Date 2) in a message.

Example: If the current date is January 24th and you set the expiration date of the product to be 14 days from the current date, the printer will print 02 for the expiration month of year insert. The value 02 represents the month of February (which is the month 14 days from the current date).

Do the following tasks to insert expiration month of the year:

- 1 Begin in Frame <01 Exp 1> (01 Edit > 02 Edit Inserts > 01 Insert Date > 01 Date Expiry Dates 1 > 01 Exp 1). Refer to Figure 5-47 on page 5-54.
- **2** Press the F1 key to select <Insert Exp Mon.>. The insert appears in the message.
- **3** To add a second expiration month insert, begin in Frame <01 Date Expiry Dates 2>.

To Insert Expiration Year

You can insert expiration year into a message. The expiration year insert is a two-digit number representing the year in which a product will expire.

Note: You must set the offset units and values before you set up the expiry dates. The offset settings work for all the date inserts under Expiry Date 1.

Note: To set the date of expiry, you must set the offset value for the units (days, months, or years) from the current date (depends on the internal clock of the printer). The printer maintains the expiration day (based on the offset unit and value) from the current date. Also, you can add two expiration dates (Expiry Date 1 and Expiry Date 2) in a message.

Example: If the current date is November 24th, 2007 and you set the expiration date of the product to be 60 days from the current date, then the printer will print 08 for the expiration year insert. The value 08 represents the year 2008 (60 days from the current date).

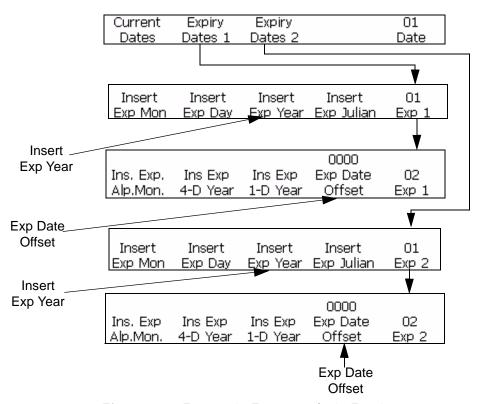


Figure 5-45: Frame <01 Exp 1> and <01 Exp 2>

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Do the following to insert expiration year into a message:

- 1 Begin in Frame <01 Exp 1> (01 Edit > 02 Edit Inserts > 01 Insert Date > 01 Date Expiry Dates 1 > 01 Exp 1). See Figure 5-45.
- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F3 key to select <Insert Exp Year>. The insert appears in the message.
- **4** To add a second expiration month insert, begin in Frame <01 Date Expiry Dates 2>.

To Insert Expiration Julian Date

This procedure explains how to place an expiration julian date insert into a message. The expiration julian date insert is a three-digit number representing the day of the year in which a product will expire. A value of 001 indicates the first day of the year, and a value of 365 (or 366) indicates the last day of the year.

Note: You must set the offset units and values before you set up the expiry dates. The offset settings work for all the date inserts under Expiry Date 1.

Note: To set the date of expiry, you must set the offset value for the units (days, months, or years) from the current date (depends on the internal clock of the printer). The printer maintains the expiration day (based on the offset unit and value) from the current date. Also, you can add two expiration dates (Expiry Date 1 and Expiry Date 2) in a message.

Example: If the current Julian date is 012 (January 12) and you set the expiration date of the product to be 14 days from the current date, then the printer will print 026 for the expiration Julian date insert. The value 026 represents January 26 (which is 14 days from the current date).

Do the following tasks to insert expiration Julian Date:

1 Begin in Frame <01 Exp 1> (01 Edit > 02 Edit - Inserts > 01 Insert - Date > 01 Date - Expiry Dates 1 > 01 Exp 1). Refer to Figure 5-46.

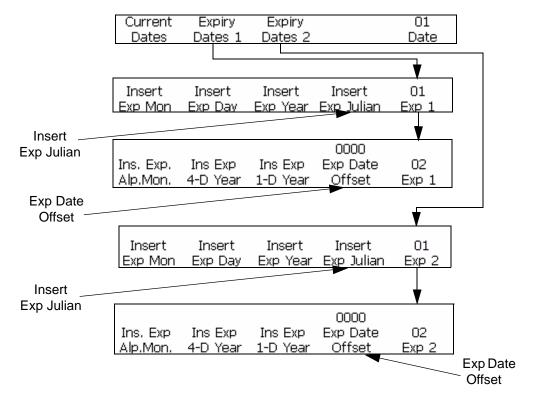


Figure 5-46: <01 Exp 1> and <01 Exp 2> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F4 key to select <Insert Exp Julian>. The insert appears in the message.
- **4** To add a second expiration julian date insert, begin in Frame <01 Date -Expiry Dates 2>.

To Insert Expiration Alpha Month

This procedure explains how to place an expiration alpha month insert into a message. The expiration alpha month insert is a three-digit character representing the month of the year in which a product will expire. The characters (Jan. - Dec) for each month are fixed and cannot be changed.

Note: You must set the offset units and values before you set up the expiry dates. The offset settings work for all the date inserts under Expiry Date 1.

Note: To set the date of expiry, you must set the offset value for the units (days, months, or years) from the current date (depends on the internal clock of the

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printer). The printer maintains the expiration day (based on the offset unit and value) from the current date. Also, you can add two expiration dates in a message.

Table 5-14 lists the values for expiration alpha month insert.

Value	Month of the Year	Value	Month of the Year
JAN	January	JUL	July
FEB	February	AUG	August
MAR	March	SEP	September
APR	April	ОСТ	October
MAY	May	NOV	November
JUN	June	DEC	December

Table 5-14: Expiration Alpha Month Insert Values

Example: If the current date is January 24 and you set the expiration date of the product to be 70 days from the current date, the printer will print APR for the expiration month of year insert. The month April (APR) is the month that is 70 days from the current date.

Do the following tasks to insert the expiration alpha month:

1 Begin in Frame <02 Exp 1> (01 Edit > 02 Edit - Inserts > 01 Insert - Date > 01 Date -Expiry Dates 1 > 01 Exp 1 > 02 Exp 1). See Figure 5-47.

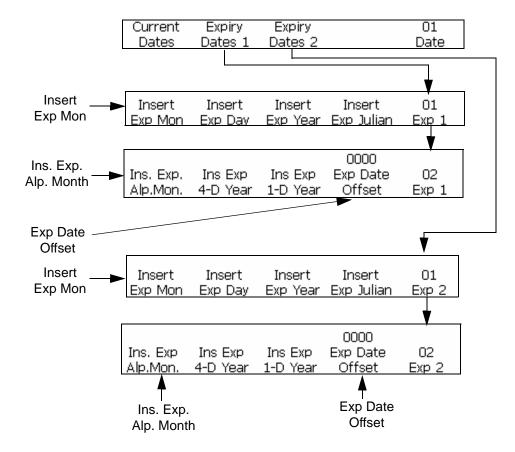


Figure 5-47: <02 Exp1> and <02 Exp 2>Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F1 key to select <Insert Exp Alp. Mon.>. The insert appears in the message.
- **4** To add a second expiration month insert, begin in Frame <01 Date Expiry Dates 2>.

Timer

To Insert Timer

You can place a timer into a message. You can use only one timer insert per message.

A timer insert is a numeric or alphabetic representation (or a combination of both) of the time of the day. This is different from the hour and minute inserts in the sense that the time can be disguised as a "code." This keeps the information confidential so that it can be understood only by those who know the code.

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This insert is still generated by the printer's internal clock; however, you must set the parameters before inserting it into the message. The printer will automatically update the insert (according to the setting made in the <Update Interval> option) as the printer's internal clock changes.

Note: With the timer select set to 2, this insert operates as a counter that prints the number of time intervals that have elapsed in a day.

If the timer select is set to 4, this insert operates as a timer that prints the time of day at a specified interval.

Table 5-15 lists the timer insert parameters.

Parameters	Explanation
Timer Select	Choose the total number of digits or characters that you want to have in the insert. You have two choices available: • Two (2) • Four (4)
Timer Format	Choose if you want each digit in the insert to remain as a digit or appear as an alphabetic character (representing that digit). • This can be selected for each digit individually. • Use to code the time by substituting digits with alphabetic characters. Character/digit cross-reference: A=0 B=1 C=2 D=3 E=4 F=5 G=6 H=7 I=8 J=9
Update Interval	Choose the interval (in minutes) of when the insert will be updated. Your selections are: • 15, 30, or 60 minutes for a two-digit insert • Every minute or every 15, 30, or 60 minutes for a four-digit insert

Table 5-15: Timer Insert Parameters

Note: Since an insert that is to be updated every one minute will provide a number greater than two digits (because there are more than 99 minutes in a day), the printer will not allow you to set the interval to 1 when using a two-digit insert.

Timer Example: If the printer's internal clock shows the current time of the day as 8:45 a.m., and the timer parameters are set to the following:

<Timer Select> = 4

 $\langle Update Interval \rangle = 30$

<Timer Format> Parameters:

- <Char. 1 Code> is set to an alphabetic character
- <Char. 2 Code> is set to a digit

- <Char. 3 Code> is set to an alphabetic character
- <Char. 4 Code> is set to a digit

The insert in this example will appear in the message as <A8D0>. This can be decoded as 0830 (08:30 a.m. using a 24-hour clock) since A=0 and D=3. The following is a cross-reference of alphabetic characters to digits (assigned by the printer):

Since the <Update Interval> is set to 30 (meaning every 30 minutes), the insert will not be updated again until the time reaches 9:00 a.m. At that point, the insert will read <A9A0> which is decoded as 0900 (9:00 a.m. using a 24-hour clock). The timer insert will be updated every 30 minutes.

Procedure

1 Begin in Frame <01 Timer> (01 Edit > 02 Edit - Inserts > 01 Insert - Timer > 01 Timer). See Figure 5-48.

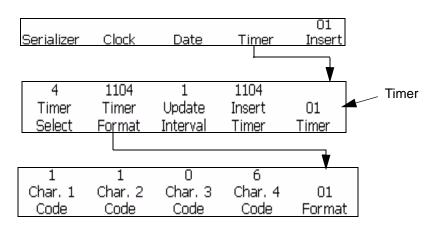


Figure 5-48: <01 Timer> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- 3 View the current setting above <Timer Select>. If desired, press the F1 key to change the setting. (Settings: 2, 4.)
- **4** View the current setting above <Update Interval>. If desired, press the F3 key to change the setting. (Settings: 1, 15, 30, 60).
 - *Note: If the <Timer Select> option is set to 2, the printer will not allow 1 as one of the setting choices for the <Update Interval> option.*
- **5** Press the F2 key to select <Timer Format>. The Frame <01 Format> appears in the display screen. Refer to Figure 5-48 on page 5-56.

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Note: If the <Timer Select> option is set to 2, the options <Char 1 Code> and <Char 2 Code> will be inactive (since it is only a two-digit insert). If set to 4, all of the options in the frame will be active.

- 6 View the current setting located above each of the active options in Frame <01 Format>. If you want to change the setting from a digit to an alphabetic character (or vice versa), press the function key located below that option.
- 7 Press the ENTER key. Frame <01 Timer> appears in the display screen.
- **8** Press the F4 key to select <Insert Timer>. The timer insert appears in the message.

To Insert Remote Data

This procedure explains how to place a remote data insert into a message. A remote data insert is used to download fixed or variable information from a host personal computer (PC) into the message.

This insert can be used only if a host PC has been connected to the printer using an RS-232 or RS-485 serial interface.

You can use only one remote data insert per message.

Procedure

1 Begin in Frame <01 Remote> (01 Edit > 02 Edit - Inserts > 01 Insert > 02 Insert - Remote Data > 01 Remote). Refer to Figure 5-49.

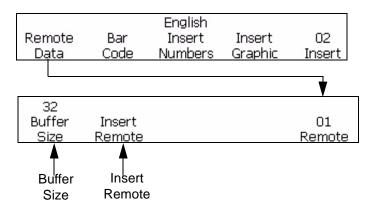


Figure 5-49: Accessing Frame <01 Remote>

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** Press the F1 key to select <Buffer Size>. The following appears in the display screen:

Enter Buffer Size (1-32)--> <Use CANCEL to exit with no change>

4 Enter the buffer size. The entry must be from 1 to 32.

The buffer size is the maximum number of characters that appear in the longest line of the remote.

Example: The longest line is eight characters. You must enter eight as the buffer size (carriage return is not required).

- **5** Press the ENTER key. Frame <01 Remote> reappears in the display screen.
- **6** Press the F2 key to select <Insert Remote>. The insert will appear in the message as "insert remote symbols". Refer to Figure 5-50 on page 5-58.

An insert remote symbol will appear for each character entered in <Buffer Size>. If the <Buffer Size> option is set to 8, eight insert remote symbols will appear in the message where the remote information will be printed. Refer to Figure 5-50.

Message before insert is added:

VIDEOJET SYSTEMS



Message after insert was added: (buffer size entered was 8)

VIDEOJET SYSTEMS



Remote Symbol

Figure 5-50: Message with a Remote Insert

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To Insert Bar Codes

You can insert a bar code into a message. There are eight types of bar code inserts you can add into the message.

Bar code can be inserted in a message only if the message matrix size is greater than or equal to 7×9 high. Human readable bar code can be turned on, only if the matrix size is greater than 16 high.

	Table 5-16 lists	the bar	code types	and their	descriptions.
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Bar Code Type	Description		
3 of 9	Can be used for both uppercase alphabetic and numeric characters.		
2 of 5 Interleaved (2 of 5I)	Can be used for an even number of numeric characters.		
EAN-8	Can be used for numeric characters only.		
EAN-13	Can be used for numeric characters only.		
UPC-A	Can be used for numeric characters only.		
UPC - E	Can be used with numeric characters only		
Code 128	Can be used for both alphabetic and numeric characters.		
EAN 128	Can be used for both alphabetic and numeric characters.		
2D Data Matrix	Can be used for both alphabetic and numeric characters.		

Table 5-16: Bar Code Types

You can use as many bar code inserts in the message as space allows.

Fixed length bar codes that do not have the correct amount of data added, will have zeroes appended to the beginning of the bar code value.

Correct checksums are automatically included in each bar code. Code 128 and EAN 128 bar codes do not display the checksum, but their checksum values are encoded in the printed bar pattern.

To activate the human readable bar code, press the F1 key above the selection <Bars W/ Charac.> until it reads "Below".

Note: The fully constructed bar code image can be seen in the editor display as the data is entered.

Note: Whether <Bars W/ Charac.> is None or Below, human readable data will always be displayed above the bar code in the editor. This allows the user to verify the bar code content. However, the printed bar code will have either printed human readable data below, or not at all, depending upon the <Bars W/ Charac.> setting.

While adding an insert to a bar code, verify if the insert contains the proper data content and the length required for the selected bar code. To delete a bar code, place the cursor inside the bar code and press the F4 <Delete Barcode> located in Frame <04 Barcode>.

Note: Bar codes can be configured to print in a reverse image bar code mode where bars, for a normal bar code, are now printed as spaces, and spaces for a normal bar code, are now printed as bars.

To Insert 3 of 9 or 2 of 5l Bar Codes

Do the following tasks to insert 3 of 9 or 2 of 5I Bar Codes:

1 Begin in Frame <01 Barcode> (01 Edit > 02 Edit - Inserts > 01 Insert > 02 Insert - Bar Code > 01 Barcode). See Figure 5-53.

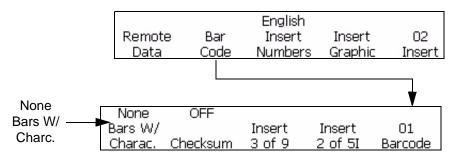


Figure 5-51: <01 Barcode> Frame

- **2** Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
- **3** You can now choose to add a 3 of 9 or 2 of 5I bar code into the message. The length of these bar codes is only dependent upon the message length:
 - To insert a 3 of 9 bar code, press the F3 key to select <Insert 3 of 9>. Enter the desired uppercase alphanumeric data for this bar code. In the editor, the bar code image for that data will be displayed.
 - To insert a 2 of 5I bar code, press the F4 key to select <Insert 2 of 5I>. Enter the desired numeric data for this bar code. In the editor, the bar code image for that data will be displayed.
- **4** Use the appropriate keys on the keyboard to enter the information that is to appear in the bar code.

Note: The 2 of 5I code requires an even number of digits entered. Uneven entries would have a "0" added to the beginning of the data to create an even numbered code. For example, a code of "12345" would print as "012345" (not including the checksum).

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3 of 9 Bar Code



Figure 5-52: Messages with Bar Code Inserts

To Insert EAN-8 and EAN-13 Bar Codes

Do the following tasks to insert EAN-8 or EAN-13 Bar Codes:

1 Begin in Frame <02 Insert> (01 Edit > 02 Edit - Inserts > 01 Insert > 02 Insert). See Figure 5-53.

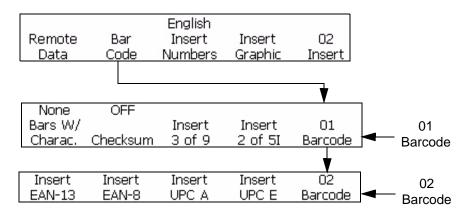


Figure 5-53: <02 Barcode> Frame

- 2 Press the F2 key to select <Bar Code>. Then press the F5 key. Frame <02 Barcode> appears in the display.
- **3** Use the arrow keys to move the cursor to the location in the message where you want the bar code insert to appear.
- **4** You can now choose to add a bar code into the message:

To insert an EAN-13 bar code, press the F1 key to select <Insert EAN-13>. Enter 12 numeric digits for this bar code (the 13th digit checksum will be automatically calculated). In the editor, the bar code image for that data will be displayed. Refer to Figure 5-54.

To insert an EAN-8 bar code, press the F2 key to select <Insert EAN-8>. Enter seven numeric digits for this bar code (the 8th digit checksum will be automatically calculated). In the editor, the bar code image for that data will be displayed. Refer to Figure 5-54.

EAN-8 Bar Code



EAN-13 Bar Code



Figure 5-54: Messages with Bar Code Inserts

5 Use the appropriate keys on the keyboard to enter the information which is to appear in the bar code.

To Insert UPC-A and UPC-E Bar Codes

Do the following to insert UPC-A and UPC-E Barcodes:

1 Begin in Frame <02 Insert> (01 Edit > 02 Edit - Inserts > 01 Insert > 02 Insert). Refer to Figure 5-55.

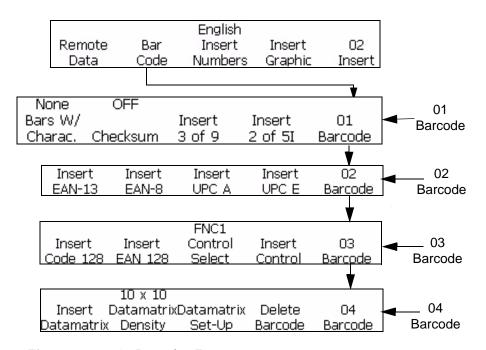


Figure 5-55: <04 Barcode> Frame

- 2 Press the F2 key to select <Bar Code>. Then press the F5 key. Frame <02 Barcode> appears in the display.
- **3** Use the arrow keys to move the cursor to the location in the message where you want the bar code insert to appear.
- **4** You can now choose to add a bar code into the message.

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To insert an UPC-A bar code, press the F3 key to select <Insert UPC-A>. Enter the 11 numeric digits for this bar code (the 12th digit checksum will be automatically calculated). In the editor, the bar code image for that data will be displayed.

To insert an UPC-E bar code, press the F4 key to select <Insert UPC-E>. Enter the 7 numeric digits for this bar code (the 8th digit checksum will be automatically calculated). In the editor, the bar code image for that data will be displayed.

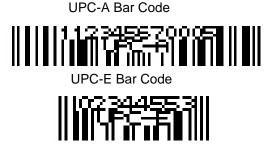


Figure 5-56: Messages with Bar Code Inserts

5 The first digit of the UPC-E bar code must be 0 which will automatically insert a 0 in the first position.

To Insert Code 128 and EAN 128 Bar Codes

Do the following tasks to insert code 128 and EAN 128 bar codes:

- 1 Begin in Frame <02 Insert> (01 Edit > 02 Edit Inserts > 01 Insert > 02 Insert).
- **2** Press the F2 key to select <Bar Code>. Then press the F5 key two times. Frame <03 Barcode> appears in the display. Refer to Figure 5-55 on page 5-62.
- **3** Use the arrow keys to move the cursor to the location in the message where you want the bar code insert to appear.
- **4** You can now choose to add a bar code into the message:
 - To insert a Code 128 bar code, press the F1 key to select <Insert Code 128>. Enter the desired alphanumeric data for this bar code. In the editor display, the bar code image for that data will be displayed. Refer to Figure 5-57 on page 5-64.
 - To insert an EAN 128 bar code, press the F2 key to select <Insert EAN 128>. Enter the desired alphanumeric data for this bar code. In the editor display, the bar code image for that data will be displayed. The EAN 128 bar code does not need a leading FNC1 function code inserted. This is already included in the bar code.

Code 128 Bar Code



EAN 128 Bar Code



Figure 5-57: Messages with Bar Code Inserts

5 Use the appropriate keys on the keyboard to enter the information that is to appear in the bar code.

Control Select, Insert Control, and Function Characters



When you enter a Code 128 bar code, you may use the <Control Select> option to include FNC1, FNC2, FNC3 or FNC4 function code. Typically, the function codes are not needed for the Code 128 bar code. For the EAN 128 bar code, the FNC1 control code is automatically added to the beginning of the bar code so it is not necessary for the user to include another.

<Insert Control> uses four special function codes, designated as FNC1, FNC2, FNC3, and FNC4. Their use is determined by the Code 128 application:

- Only FNC1 may be inserted into a Code EAN 128 bar code.
- Before inserting the function codes, the user should have advanced knowledge of their functionality or undesired effects in the bar code may happen.
- F3<Control Select> selects the function character.
- F4<Insert Control> inserts the character into the message.
- **6** The user can enter in the desired data to construct the Code 128 and EAN 128 bar code without having to use switch codes. The printer automatically configures the data into the proper formats.

To Insert Graphic

Procedure describes how to insert saved graphics (created in the Frame F4 <Build Graphic> section) into a message:

- 1 In the current message, set the cursor position where the graphic will be inserted.
- **2** Select Frame F4 <Insert Graphic> in Frame <02 Insert>.
- **3** The following message appears in the display screen:

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Graphic Name -> fdsf <Use Cursors to change value>

- **4** Use the right/left cursor keys to select up to 25 possible graphic names.
- **5** When the desired graphic name is shown, press ENTER to insert the graphic image into the message at the cursor location.

Note: If the desired graphic name is not shown, then the print matrix for the current display does not match the graphic's print matrix.

Manage System Setup

To Set up an Alternative Zero

This section explains how to change the version of the zero character in the display and printed message.

Procedure

1 Begin in Frame <04 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit - System Set-Up > 01 System > 02 System > 03 System > 04 System - Locale Setup > 01 Locale > 02 Locale). Refer to Figure 5-58.

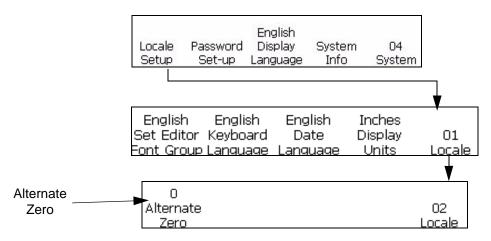


Figure 5-58: Frame <01 Locale> - Alternate Zero

2 Press the F1 key to select <Alternate Zero>. The following message appears in the display screen:

Alternative zero symbol -> 0 <Use Cursors to change value>

- **3** Use the right or left cursors to change the zero symbol.
- **4** Press the ENTER key to save the selection.

To Set up a Programmable Shift Timer

This procedure explains how to insert a programmable time-based (shift timer) code into a message.

A programmable time-based code allows you to insert a 1 to 24 character alphanumeric work-shift code (A-Z, a-z, 0-9) in a printed message. This "code" is based on a work-shift time. You may insert up to 24 shifts, using 26 letter choices and 24 number choices.

The computer has default shifts, codes, and times set-up for you. The computer's internal clock starts at midnight (00:00) and ends at 11:59 p.m. (23:59). The default 24-shift starting times and codes are as follows:

Shift	Timer	Shift	Timer
Shift 1(A)	00:00	Shift 13 (M)	12:00
Shift 2(B)	01:00	Shift 14 (N)	13:00
Shift 3(C)	02:00	Shift 15 (O)	14:00
Shift 4(D)	03:00	Shift 16 (P)	15:00
Shift 5(E)	04:00	Shift 17 (Q)	16:00
Shift 6(F)	05:00	Shift 18 (R)	17:00
Shift 7 (G)	06:00	Shift 19 (S)	18:00
Shift 8 (H)	07:00	Shift 20 (T)	19:00
Shift 9 (I)	08:00	Shift 21 (U)	20:00
Shift 10 (J)	09:00	Shift 22 (V)	21:00
Shift 11 (K)	10:00	Shift 23 (W)	22:00
Shift 12 (L)	11:00	Shift 24 (X)	23:00

Table 5-17: Shift Timer

Note: If you would like to use the default shift settings shown above for your shift values without making a change, go directly to the next section "To Insert the

Work-Shift Code" on page 5-42 for instructions on inserting a shift code into your message. It is not necessary to complete the next procedure.

Setup Procedure

Do the following tasks to modify a programmable time-based (shift timer) code insert from the default setting or from a previous setting:

1 Begin in Frame <03 System> (01 Edit > 02 Edit> 03 Edit > 04 Edit _ System Set-Up > 01 System > 02 System > 03 System). See Figure 5-59.

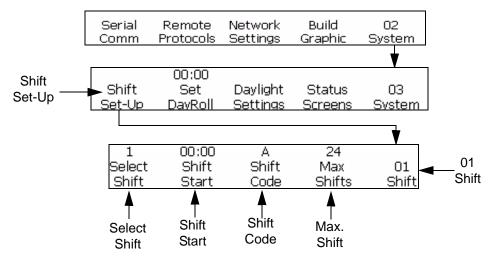


Figure 5-59: <01 *Shift> Frame*

- **2** Press the F1 key to access <Shift Setup>. The Frame <01 Shift> appears.
- 3 Press the F4 key to access <Max Shifts>. This allows you to set how many shifts you will have. You may create up to 24 "shifts". The following appears in the display screen:

```
Enter Shifts Used(1-24)->■
<Use CANCEL to exit with no change>
```

- **4** Enter the number of shifts you want to be available. The entry must be from 1-24.
- **5** Press the ENTER key. The number you entered appears above the F4 key <Max. Shifts> in the display screen.
- 6 Press the F1 key to access <Select Shift>. This allows you to select the work-shift number you want to edit. You can create up to 24 work-shifts by number. The following appears in the display screen:

Enter Shifts Number(1-xx)->

<Use CANCEL to exit with no change>

7 Enter the shift number. The entry must be from 1-24 (or whatever is the maximum number located above the F4 <Max Shifts>).

Note: The largest shift number allowed is dependent upon the maximum shifts value. If the maximum shifts value is 12, then the largest shift number entered can be 12.

- **8** Press the ENTER key. The number you entered appears above <Select Shift> in the display screen.
- **9** Press the F2 key to access <Shift Start>. This allows you to enter the starting time for the work-shift. The following appears in the display screen:

Enter HHMM ----> <Use CANCEL to exit with no change>

- **10** Enter the starting time for the current work-shift number.
- 11 Press the ENTER key. The number you entered appears above <Shift Start> in the display screen. Frame <01 Shift> appears.

Note: Make sure that every starting time (shift) you enter is in ascending order. For instance, enter 0100 for shift 1, 0200 for shift 2, and 0400 for shift 3. Do not enter irregular sequences like 0100 for shift 1, 0400 for shift 2, and 0200 for shift 3. This rule does not apply to the shift code, which may be any character in any order.

12 Press the F3 key to access <Shift Code>. This allows you to enter a single alpha-numeric work-shift code (A-Z, a-z, or 1-24) which is single-character and alpha-numeric. The following appears in the display screen:

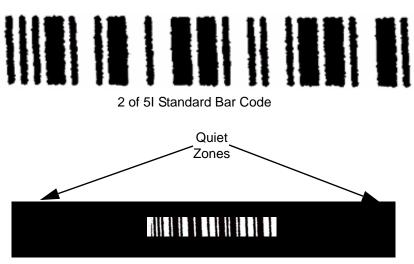
Enter Alphanumeric Code -> <Use CANCEL to exit with no change>

- 13 Enter the single, alphanumeric work-shift code (A-Z, a-z, or 1-24).
- 14 Press the ENTER key. The number or letter you entered appears above <Shift Code> in the display screen. Frame <01 Shift> appears.

Manage Bar Codes

To Print Reverse Image Bar Codes

This procedure shows you how to print a reverse image bar code. This means that instead of printing the lines of a bar code with dark ink on a light-colored background, the printer will print, what was previously a space of the non-reversed bar code, with a line on a reversed bar code. In addition, what was previously a line on a non-reversed bar code, will appear as a space on a reversed bar code. Refer Figure 5-60 on page 5-69 for an example of a reverse image bar code.



2 of 5I Reverse Image Bar Code

Figure 5-60: Reverse Image Bar Code

All bar codes that are 10x16 high or greater print matrix sizes may be printed in reverse images.

Note: The reverse bar code function has no effect on any type of message other than a bar code message.

Do the following tasks to reverse the image bar code:

- 1 Load the desired existing message into the printer or create a new message and load it into the printer.
- 2 Begin in Frame <06 Print> (01 Edit > 02 Edit > 03 Edit > 04 Edit Print Set-Up > 01 Print > 02 Print > 03 Print > 04 Print > 05 Print > 06 Print). See Figure 5-61.



Figure 5-61: <06 Print> Frame

- **3** View the current setting above <Reverse Barcode>. Is it set to <ON>?
 - If NO, press the F2 key to change the setting to <ON>. This will print the bar code in reverse image.
 - If YES, the message is already sent to print the bar code in reverse image.
- **4** Press the ENTER key to return to Frame <01 Print>.

Note: The bar code symbols will not appear in reverse image in the display screen. However, the bar code message will be printed in reverse image.

To Define 2D Data Matrix Barcodes

The Videojet 1520 Excel supports 2D Data Matrix bar codes in matrix size from 10x10 to 24x24. This provides a highly condensed code for use in a wide range of applications where space is limited.

Inserting a 2D Data Matrix Barcode into a message is very similar to inserting any 1D bar code (like EAN128 or UPCA) into a message. There are few considerations to take into account when forming the message to include the bar code. First, select the minimum font height to contain the 2D bar code.

For the 2D Data Matrix bar codes, choose the Print Matrix and Char Size.

Data Matrix Density	Char Size	Print Matrix	
26 x 26	Double	30X34 high	
32 x 32 Double 30		30X34 high	
8 x 18	Single, Double, Double, Single, Single	7 x 9, 9 x 12, 10 x 16, 16 x 24, 30 x 34	
8 x 32	Single, Double, Double, Single, Single	7 x 9, 9 x 12, 10 x 16, 16 x 24, 30 x 34	
12 x 26	Double, Double, Double, Single	9 x 12, 10 x 16, 16 x 24, 30 x 34	

Table 5-18: 2D Data Matrix Considerations

Data Matrix Density	Char Size	Print Matrix
12 x 36	Double, Double, Double, Single	9 x 12, 10 x 16, 16 x 24, 30 x 34
16 x 36	Double, Double, Single	10 x 16, 16 x 24, 30 x 34
16 x 48	Double, Double, Single	10 x 16, 16 x 24, 30 x 34
10x10, 12x12, 14x14, and 16x16	Double	10x16 or 16x24
18x18, 20x20, 22x22, and 24x24	Triple	16x24

Table 5-18: 2D Data Matrix Considerations

Do the following tasks to insert 2D Data Matrix Barcodes:

- 1 In <02 Edit> Frame, press F2 . The <01 Font> frame appears.
- **2** Press the F2 key until the desired Print Matrix is displayed (10x16 or 16x24).
- **3** Press F1 < Char Size > until the desired Char Size is displayed.
- 4 In <04 Barcode> Frame (01 Edit > 02 Edit Inserts > 01 Insert > 02 Insert Bar Code > 01 Barcode > 02 Barcode > 03 Barcode > 04 Barcode), press F2 <Data Matrix Density> to select the desired Data Matrix Density. Refer to Figure 5-62 on page 5-72.

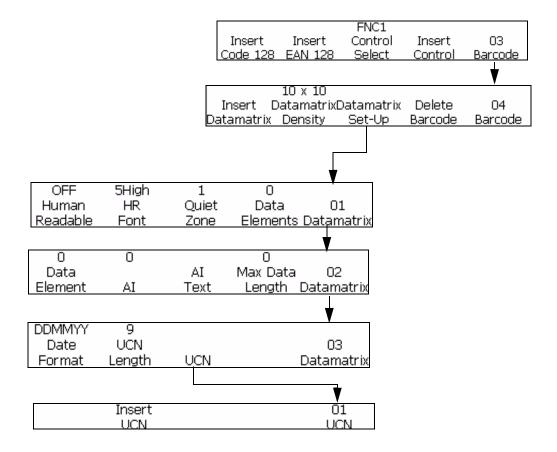


Figure 5-62: Datamatrix Setup

- **5** Press F3 < Data Matrix Set-Up> to set the required parameters.
- **6** Press F1 <Insert Data Matrix> to insert Data Matrix bar code.
- 7 Enter the desired data into the Data Matrix bar code.
- **8** To change back to standard text entry, move off of the bar code.

Manage Graphics

This section allows the operator to create and insert graphic symbols (such as logos or custom characters).

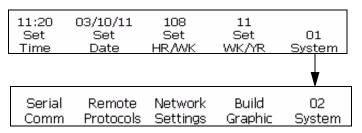


Figure 5-63: <02 System> Frame

To Create a Graphic

To create a graphic symbol, proceed as follows:

Note: Font size and character size of the graphic should be set to the desired values before creating the graphics.

- 1 Begin in Frame <02 System> (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-Up > 01 System > 02 System). Refer to Figure 5-63.
- **2** Press F4 to select <Build Graphic>. The following message appears in the display screen:

- 3 Press ENTER to select a New Graphic, if a new graphic insert is desired. Otherwise use the right/left arrow keys to select a stored graphic name in this field.
- **4** Press ENTER to open the Graphic Editor to create and save new graphics or custom characters.
- **5** Press F1 to set the size of the graphic. Use left and right arrows to change the values.

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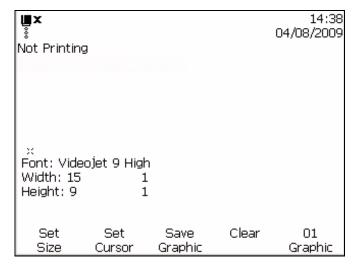


Figure 5-64: Graphic Editor

- **6** Create the graphic by controlling the cursor position using a combination of keys from the keypad. Refer to Table 5-20 on page 5-77 for the key combinations and their functions.
- 7 Text can be typed after using the <Set Cursor> option in the <01 Graphic> menu.
- 8 The font size for typed text in the graphic is determined by the print matrix size selected in the F2 <Print Matrix > located in the <01 Font > frame.
- **9** Graphic editing tasks can be achieved by using Copy Block and Paste Block located in the <02 Graphic> frame.
- **10** Crop the graphic to the desired size by cutting out the extra space at the edges (refer to "To Crop a Graphic" on page 5-75 for instructions).
- 11 Press the F3 <Save Graphic> in the <01 Graphic> frame to save the name of your graphic.

To Change a Graphic Size

After inserting the graphic, the size can be changed. To change the height and width of the graphic, proceed as follows:

1 Begin in <01 Graphic> and select the F1 <Set Size>. Show the graphic screen after set size activated.

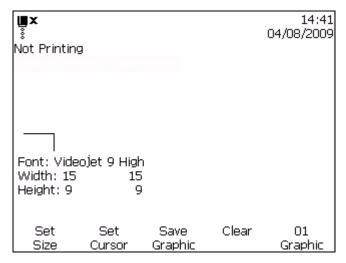


Figure 5-65: Editor Attributes

- **2** Change the height of the graphic to the required size, using the up/down arrow keys.
- **3** Change the width of the graphic to the required size, using the right/left arrow keys.

To Crop a Graphic

Cropping is the process of trimming the edges of a graphic to eliminate the empty space that surrounds it.

- 1 Select the F1<Set Size> in the <01 Graphic> frame.
- **2** Press ENTER to see the appearance of a frame depicting the current boundaries of the graphic.

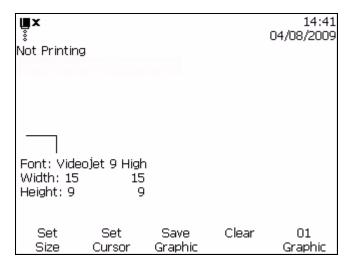


Figure 5-66: Cropping Graphic

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3 Adjust the size of the frame using a combination of controls; until boundaries of the graphic are as required. Refer to Table 5-19 on page 5-76 for the controls used and their functions.

Table 5-19 lists the key combinations and their functions used to define the boundary.

Key Combinations	Functions	
♠ , ♠ , ♠ and ♦	Adjust the frame size one dot at a time	
\bigcirc and \bigcirc	Adjust the frame size ten dots at a time	

Table 5-19: Keys to Crop Graphic

4 Go to F3<Save Graphic> in the <01 Graphic> frame to save the graphic.

To Use Block Editing Functions

Selecting a rectangular area of the graphic called the "block", within the graphic editor allows you to delete the block or make a copy.

To select a block after the creation of a graphic, proceed as follows:

- 1 Press the F1 key to select <Set Block> in the <02 Graphic> frame.
- **2** Notice an outline of a block appearing in the graphic editor.

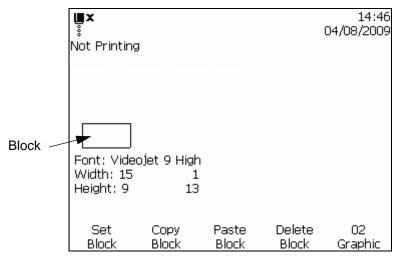


Figure 5-67: Block Editor

3 Position and resize the outline using a series of key combinations on the keypad (refer to Table 5-20 for the various key combinations).

Table 5-20 lists the key combinations and their functions.

Key Combinations	Functions
caps 📦 + 🜓 or 🅟	Move the right-hand edge
+ () or ()	Move the left-hand edge
+ or •	Move the top edge
caps → or →	Move the bottom edge
♠ , ♠ , ♠ and ♦	Move the whole outline by one dot at a time
+ or •	Move the whole outline by ten dots at a time

Table 5-20: Key Combinations and Functions

4 Press ENTER when you have completed positioning and resizing the block's outline.

Note: The outline rectangle disappears at this point.

This enables selecting a block, following the creation of a graphic.

To Copy and Paste a Selected Block

Do the following tasks to copy and paste the selected block

- 1 Select the F1<Set Block> in the <02 Graphic> frame.
- **2** Press ENTER to see the selected block appear in the window.
- **3** Select the F2<Copy Block> in the <02 Graphic> frame.
- 4 Move the cursor to the desired location where you want to paste the contents of the selected block (the upper left hand corner of the graphic is pasted at the cursor location).
- **5** Select the F3<Paste Block> in the <02 Graphic> frame.

6 In the Graphic Editor screen, press ENTER to paste the contents of the selected block in the desired location.

To Delete a Selected Block

Do the following tasks to delete a selected block:

- 1 Select the F1<Set Block> in the <02 Graphic> frame. See the block appear in the editor.
- **2** Select the F4<Delete Block> in the <02 Graphic> frame to clear the contents of the selected block.

To Create a Logo in Microsoft Paint Application

Note: Font size and character size of the graphic should be set to the desired values before creating the graphics.

- 1 Open the Microsoft Paint application. A new page opens by default.
- 2 Navigate to *View* > *Zoom* > *Custom*. The *Custom Zoom* (Figure 5-68) dialog box appears.
- **3** Select 800% under *Zoom to*. Click the *OK* button.

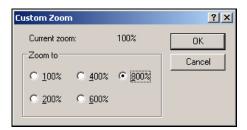


Figure 5-68: Custom Zoom

- 4 Navigate to *View* > *Zoom* > *Show Grid* to activate the grid for the page.
- 5 Navigate to *Image > Attributes* to set the size of the message. Set the necessary message size. The message height should not be more than 34. This menu allows the user to:
 - a. Verify the format of the existing messages.
 - b. Pre-set the message size to avoid editing the image later
 - c. Select the color format of the image as *Black and White*.(See Figure 5-69 on page 5-79)

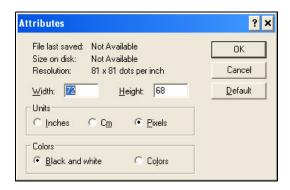


Figure 5-69: Image Attributes

6 Create the required logo on the page (see Figure 5-70).

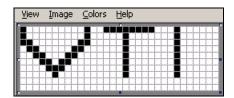


Figure 5-70: Logo Created on Microsoft Paint

Note: If the logo size is bigger than required, navigate to Image > Stretch/ Skew. Enter the appropriate values to stretch/skew the images in vertical and horizontal directions (Figure 5-71). Ensure to enter equal values in horizontal and vertical columns.

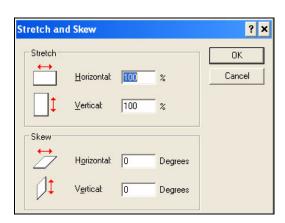


Figure 5-71: Image stretch and skew

- 7 Save the created logo as monochrome bitmap file in the USB.
- **8** Insert the USB drive into the USB port on the printer.
- 9 In <02 Info> Frame (01 Edit > 02 Edit > 03 Edit > 04 Edit System Setup > 01 System > 02 System > 03 System > 04 System-System Info >

01 Info > 02 Info), press F4 to select Update From USB. (See Figure 5-72)

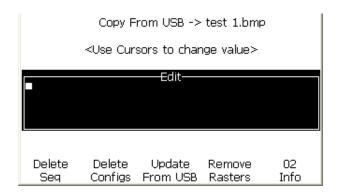


Figure 5-72: 02 Info

- **10** Use the left and right arrow keys to select the saved bitmap.
- 11 Press the *Enter* key. Follow the prompts. Press *Esc* key when the system is updated.
- 12 Navigate to <02 System> Frame (01 Edit > 02 Edit > 03 Edit > 04 Edit System Setup > 01 System > 02 System), and press F4 to select build graphic.

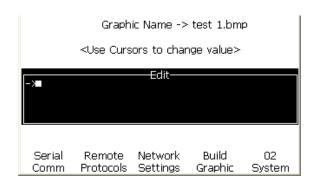


Figure 5-73: 02 System

- 13 Use the left and right arrow keys to select the image.
- 14 Press the *Enter* key and the logo appears on the screen. (See Figure 5-74)

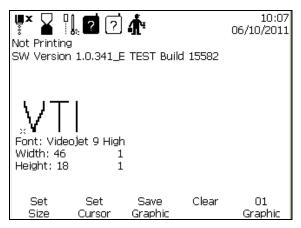


Figure 5-74: Logo on menu screen

Maintenance

Introduction

The maintenance of the printer includes the procedures that an operator or a service technician can perform. This chapter 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.



Warning

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

Maintenance Schedule

Table 6-1 shows the maintenance schedule.

Interval	Task	
When the printer is commissioned or if the make-up cartridges are empty	Replace the smart cartridge. Refer "Replace Smart Cartridges" on page 6-4.	
As Required	Clean the following parts of the printhead: • Deflector Plate • Gutter Note: Check the quality of the print before you do the maintenance. Refer "Inspect the Printhead" on page 6-6, and "Clean the Printhead" on page 6-7. Clean the printer cabinet.	
	Olean the printer cabinet.	
Every 2000 Hours	Replace the back filter.	

Table 6-1: Maintenance Schedule

Rev AA Introduction 6-1

Preparation for Long-term Shutdown (Storage) or **Transportation**

Note: Long term Shutdown procedure should be used when the printer will not be used for more than 10 days.

Parts/tools Requirement

Parts/Tool	Quan- tity	Part Number
Make-up Cartridges matching existing make-up in ink core which will be flushed	4	-
Empty Cartridges	6	SP399246
Nozzle Bypass Manifold (Loop Connector) Kit with gasket	1	399247

Table 6-2: Parts and Tools

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

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

- 1 Perform a Clean Stop.
- **2** Run three nozzle flushes.
- 3 Remove the Nozzle Manifold, and attach the Nozzle Bypass Manifold (with gasket) to it. Perform Empty Core Procedure.

Note: Printhead needs to be placed over a wash station or a suitable container to capture any overspill.

4 After core procedure completes, run the *Flush Ink Core* procedure and follow the printer instructions.

Note: The total time to complete this process is approximately three hours. It will require four sets of cartridges, each cartridge set is attached for 30 to 45 minutes. Each set, upon completion, will be half full with mixed fluids.

5 Remove the Nozzle Bypass Manifold and fix the Nozzle Manifold with the gasket from the print engine deck.

The printer is now ready for storage or transportation.

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

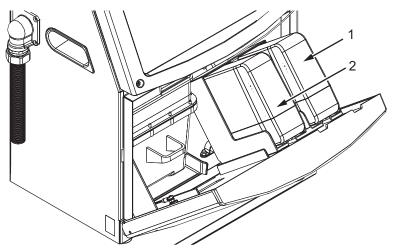
Note: While preparing the printer for long term shut down, for Level 3 password, please contact Videojet Technologies Inc. Customer Service Department at 800.843.3610 (United States only), or contact the local Videojet Technologies Inc. representative for more information. Alternatively, you can visit www.videojet.com>Support>Videojet Password Generator.

Replace Smart Cartridges

There are two types of smart 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.



- 1. Ink Cartridge
- 2. Make-up Fluid Cartridge

Figure 6-1: Smart Cartridges

To add or replace the cartridges, do the following tasks:

- 1 Open the door of the ink compartment, and keep the door in the position shown in the Figure 6-1.
- 2 If the ink and make-up fluid cartridge indicators show empty status



3 If the ink or make-up fluid cartridge is not loaded icon appears



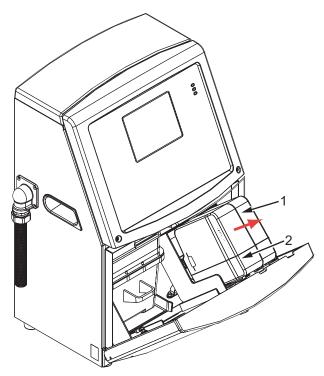


Warning

PERSONAL INJURY. All fluids like the ink, solvent and make-up fluid are volatile and flammable. They must be stored and handled according to local regulations. Work only in areas with good ventilation. The cleaning solution is poisonous if taken internally. Do not drink. Seek medical attention immediately if ingested.

4 Pull the old ink cartridge (item 1, Figure 6-2 on page 6-5) and the old make-up fluid cartridge (item 2) out of the printer cabinet.

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



- 1. Ink Cartridge
- 2. Make-up Fluid Cartridge

Figure 6-2: Pull out the Cartridges

- 5 Insert the new ink cartridge into the ink cartridge holder by aligning the cartridge key with the correct holder slot (see Figure 6-3 on page 6-6).
 - a. Make sure that the cartridge is engaged completely in the holder.

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

- b. Make sure that the icon that indicates "ink cartridge not loaded" disappears. The icon can take some seconds to disappear.
- c. Make sure that the cartridge level indicator 100% full appears



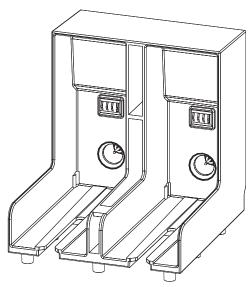


Figure 6-3: Cartridge Holder Slot

- **6** Insert the new make-up fluid cartridge into the make-up fluid cartridge holder by aligning the cartridge key with the correct holder slot.
 - a. Make sure that the cartridge is engaged completely on the holder.
 - b. Make sure that the icon that indicates "make-up fluid cartridge not loaded" disappears. The icon can take some seconds to disappear.
 - c. Make sure that the icon that indicates "cartridge level 100% full" appears .

Inspect the Printhead

Do the following tasks to inspect the printhead:

- 1 Stop the ink jet and wait for the printer to completely shutdown.
- **2** Disconnect the printer from the power supply.
- **3** Loosen the printhead screw (item 2, Figure 6-4 on page 6-9) and remove the printhead cover (item 3).

4 Inspect the printhead and the inside of the printhead cover for any ink deposits. Clean if necessary (refer "Clean the Printhead" on page 6-7).

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

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.

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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.

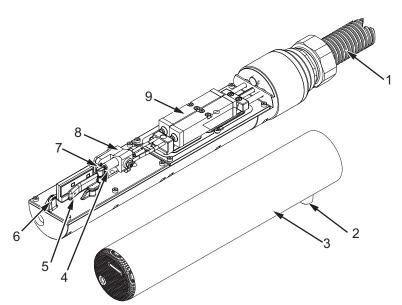


Caution

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.

6-8 Clean the Printhead Rev AA



- 1. Umbilical
- 2. Printhead Screw
- 3. Printhead Cover
- 4. Nozzle
- 5. Deflector Plate
- 6. Gutter Sensing Tube
- 7. Charge Electrode
- 8. Printhead Engine
- 9. Printhead Valve Module

Figure 6-4: Printhead

- 1 Put the printhead into the wash station (part number 399085).
- **2** Use a cleaning agent and a tissue or a soft brush to clean the following parts of the printhead:
 - Gutter Sensing Tube (item 6, Figure 6-4)
 - Charge electrode (item 7)
 - Deflector plate (item 5) (see "Clean the Deflector Plate" on page 6-10)
 - Nozzle (item 4)

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

3 Allow the printhead to dry and make sure that the slot in the charge electrode is free of cleaning agent.

Note: Use a hand blower or compressed air to dry the printhead quickly. The air pressure must not be more than 20 psi.

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Caution

EQUIPMENT DAMAGE. The printhead must be dry before you try to start the printer. The failure to follow this caution can damage the printhead.

4 Refit the printhead cover and tighten the knurled screw.

Clean the Deflector Plate

To prevent the deposits of ink, clean the contoured surfaces of the deflector plate with the solvent, and clean dry air (CDA).

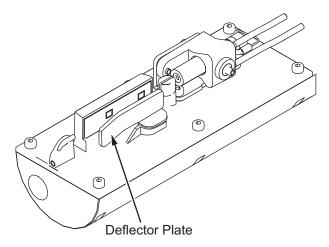


Figure 6-5: Clean the Deflector Plate

Clean the Printer Cabinet

To clean the printer cabinet, do the following tasks:



Warning

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

1 Remove the dust from the printer with a vacuum cleaner, or soft brush.

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.

Introduction

This chapter contains the troubleshooting and fault diagnosis information for the everyday users of the printer.

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 main 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 main 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 heater is installed. The failure to follow this warning can cause the personal injury.

Rev AA Introduction 7-1

The Printer Does Not Start

- 1 Make sure that the printer is turned on. To turn on the printer, press the green push button.
- **2** Check the system status LEDs (see Table 7-1) to see if a system fault has occurred or if the user interference is required.

Illuminated	Diagnosis
RED	Any fault that prevents the printing. For example, jet not running, deflector plate trip.
AMBER and GREEN	The printer requires user interference to prevent a system fault. For example, ink or make-up fluid low
GREEN	The printer can print correctly

Table 7-1: System Status LEDs

- **3** If the red or amber LEDs are illuminated, inspect the display to see that icons and related message are displayed. Refer to "Printer Status Icons" on page 7-7.
- **4** If the green LED is illuminated, and the printer does not print:
 - 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 VTI @ 1-800-843-3610 (within United States only). The customers outside the US must contact a Videojet subsidiary office or the local Videojet distributor.
- **5** If the system status LEDs do not illuminate, check the main electrical supply as follows:
 - a. Make sure that the main electrical supply is available.
 - b. Make sure that the main input connector is fitted correctly.
 - c. Make sure that the main power supply button is in the ON position (looks pressed in).
 - d. If the problem continues, report the fault to VTI @ 1-800-843-3610.

Incorrect Print Position

1 Make sure that the *Product Delay* value set in the Print Delay menu is correct. See "Set Print Delay" on page 4-28.

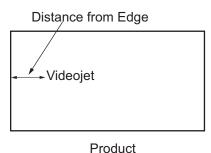


Figure 7-1: Print Position

2 Make sure that there are no additional spaces at the start of the message. See "Manage Messages" on page 5-19.

Incorrect Print Size

- 1 Make sure that the set character height is correct. Refer to "To Adjust the Height of a Message" on page 5-25.
- 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.

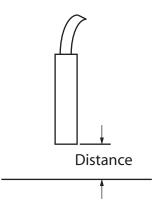


Figure 7-2: Distance from Product

3 Make sure that the correct font is selected in the message.

Note: Refer to Table A-6 on page A-7 for information on the print height.

- **4** If the message width appears stretched, decrease the width value set in the *Message Parameters* menu. Refer to "To Adjust the Width of a Message" on page 5-26.
- **5** If the message width appears compressed, increase the Width value set in the *Message Parameters* menu.

Print Not Complete

- 1 Make sure that the *Max Printed Dots* value set in the *Message Parameters* menu is equal to the maximum number of dots required for a raster/ stroke (depends on the model). Refer to Appendix A, "Specifications" for more information on the different models of the printer.
- **2** You must check for any ink deposits on the printhead and clean the printhead if necessary. Refer to "Clean the Printhead" on page 6-7.

Poor Print Quality

PRINT QUALITY TEST

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

print.

Table 7-2 describes the samples of bad printing, their causes and the steps required to correct the fault.

Sample and Cause	Remedy
Jet not aligned correctly, or nozzle has a partial block. Note bottom drops clipping the edge of the gutter. Possible EHT too low.	Clean the printhead. Perform the nozzle flush procedure, wash the nozzle with wash down. Make sure that the gutter is clean.
Phasing error. The correct placement of drop is not good. You see a good amount of splashing in the area around.	Clean and completely dry the printhead. Make sure there is enough time available between prints to phase.

Table 7-2: Samples of Bad Printing

Sample and Cause	Remedy
Incorrect modulation, too many satellites, charging process not correct.	Backflush nozzle and check for correct breakup.
F동토디나 설립되는 보다 나는 등다 Pressure too high, drops not deflected correctly, drops "run in" to one another, small print.	Check for jet alignment. Refer to the service manual for more information.
PRINT QUALITY TEST PRINT QUALITY TEST Pressure too low, the drops are over- deflected or incorrectly positioned. Possible loss of most deflected drops.	Check for jet alignment. Refer to the service manual for more information. Decrease the distance from the
Printhead too far from the substrate. The drops are affected by air currents and are spaced too far apart vertically.	substrate, or select a more correct font.
### Printhead slot not vertical to the substrate travel.	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. View A

Table 7-2: Samples of Bad Printing (Continued)

Alarms Screen

Do the following tasks to view the current alarms:

Rev AA Alarms Screen 7-5

- 1 Begin in <02 Screens> frame (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-Up > 01 System > 02 System > 03 System Status Screens> 01 Screens).
- **2** Press the F4 key. The following message appears.

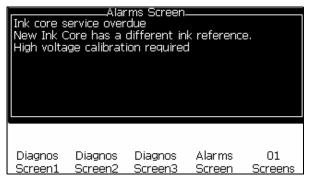


Figure 7-3: Current Alarms Screen

3 Move the cursor to view the other option.

Warnings Screen

Do the following tasks to view the current warnings:

- 1 Begin in <02 Screens> frame (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-Up > 01 System > 02 System > 03 System Status Screens> 01 Screens > 02 Screens).
- **2** Press the F1 key. The following message appears.
- **3** Move the cursor to view the other options.

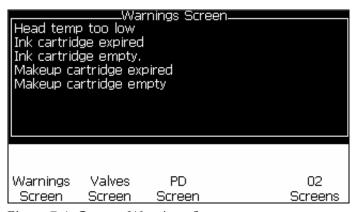


Figure 7-4: Current Warnings Screen

7-6 Warnings Screen Rev AA

Printer Status Icons

The printer status icons are divided into three groups:

- The indicator icons. The indicator icons show the status of the ink jet.
- The fault (alarm) icons. When a fault condition occurs, the prints stops printing.
- The warning icons. When a warning condition occurs, the printer continues to print until the warning condition becomes a fault condition.

Indicator Icons

lcon	Name	Description
*** 	Jet Running	The ink jet is running and the machine is ready to print. When the machine starts, the icon flashes.
X	Jet Stopped	Indicates that the ink jet is stopped.

Table 7-3: Indicator Icons

Fault (Alarm) Icons

Icon	Name	Remedial Action
\$	EHT Trip	The deflector plate arcing is sensed. Clean the deflector electrodes, within the printhead. If this action does not correct the fault, contact Videojet maintenance engineer.
Ľ	Gutter Fault	Ink is not entering the gutter. Back flush the nozzle. If this action does not correct the fault, report the fault to Videojet maintenance engineer.

Table 7-4: Fault (Alarm) Icons

Rev AA Printer Status Icons 7-7

Icon	Name	Remedial Action
Ū.	Ink Core Empty	Check whether the ink and make-up cartridges are empty. If the cartridge is empty, then replace it and the ink core is refilled. Check the remaining ink core life. If this action does not correct the fault, report the fault to Videojet maintenance engineer.
X	Pump Fault	Report the fault to Videojet maintenance engineer.
	Cabinet Too Hot	The printer cabinet temperature is more than 80 degrees Celsius. To prevent any damage, the printer stops automatically. The printer starts after the temperature decreases. Report all overheating incidents to Videojet maintenance engineer.
1 *	Ink System Service Overdue	The ink core module is in use for more than 9000 hours and requires maintenance. Refer Table 7-6 on page 7-13 for ink core life.Contact Videojet maintenance engineer.
-	Unable to control viscosity	Check whether the make-up cartridge is not empty. If the cartridge is empty, then replace it. If this action does not correct the fault, report the fault to Videojet maintenance engineer.
-	Mod Driver Chip Over Temperature	Mod amplifier hardware shutdown because of amplifier over temperature. Contact Videojet maintenance engineer.
8	Rasters Memory Overflow Detected	Contact Videojet maintenance engineer.
1 *	Valve Error	Hardware error in valve hit / hold drive circuit. Contact Videojet maintenance engineer.
-	Bad Phasing	Phase data cannot be obtained during startup. Contact Videojet maintenance engineer.
-	Modulation Readback Failed	Hardware error. Contact Videojet maintenance engineer.

Table 7-4: Fault (Alarm) Icons (Continued)

7-8 Printer Status Icons

Icon	Name	Remedial Action
-	Pump Fault	Pump near max RPM and pressure low. Contact Videojet maintenance engineer.
	Ink Core Expired	The ink core has expired and needs to be replaced.

Table 7-4: Fault (Alarm) Icons (Continued)

Warning Icons

Icon	Name	Remedial Action
	Head Temp Too High	The measured printhead temperature is more than 3° Celsius above the target temperature. Contact Videojet maintenance engineer.
\otimes	Incorrect Raster or Raster Family Name	Requested raster table not loaded into system. Contact Videojet maintenance engineer.
	Head Temp Too Low	The measured printhead temperature is more than 3° Celsius below the target temperature. Contact Videojet maintenance engineer.
-	TOF Too High	The measured jet velocity is more than 10% above the target velocity. Contact Videojet maintenance engineer.
-	TOF Too Low	The measured jet velocity is more than 10% below the target jet velocity. Contact Videojet maintenance engineer.
-	No Signal Fault Shutdown	The warning is disabled by entering Service mode and enabled by leaving Service mode.
**************************************	Printhead Cover Open	The printhead cover is not closed correctly. The printer continues to run but will not print. If this icon appears when the printhead cover is closed correctly, report the fault to a maintenance engineer
5	Phase Threshold Error	The printer is unable to acquire a phase profile with the phase threshold set to the minimum value. Contact Videojet maintenance engineer.

Table 7-5: Warning Icons

Rev AA Printer Status Icons 7-9

Icon	Name	Remedial Action
٥	Ink Viscosity Too High	Pressure setpoint for correct velocity is greater than calculated pressure by > 0.1 bar. Contact Videojet maintenance engineer.
O	Ink Viscosity Too Low	Pressure setpoint for correct velocity is less than calculated pressure by > 0.1 bar. Contact Videojet maintenance engineer.
P	Pressure Too High	The actual pressure is > 0.2 bar above the target pressure. Contact Videojet maintenance engineer.
(Pressure Too Low	The actual pressure is > 0.2 bar below the target pressure. Contact Videojet maintenance engineer.
×	No Ink Cartridge	No ink cartridge present. Insert a new ink cartridge.
?	Wrong Ink Cartridge	The cartridge inserted into the ink cartridge holder contains the wrong ink type. Fluid REF and fluid TYPE must match ink core module specifications.
-	Ink Cartridge Expired	Ink past expiry date. Insert a new ink cartridge.
×	Ink Cartridge Removed	Ink cartridge smartchip data reads no cartridge present. Refit an empty ink cartridge.
-	Ink Insertions Exceeded	The current ink cartridge inserted more than ten times. Insert a new ink cartridge.
X	No Make-up Cartridge	No make-up fluid available for addition to the ink core module. Insert a new make-up cartridge.
?	Wrong Make-up Cartridge	The cartridge inserted into the make-up fluid cartridge holder contains the wrong make-up fluid type. Insert a new make-up cartridge.

Table 7-5: Warning Icons (Continued)

7-10 Printer Status Icons

Icon	Name	Remedial Action
Û	Make-up cartridge low	Insert a new make-up fluid cartridge. The part number of the make-up fluid is displayed also. If the icon flashes after replenishment, contact a maintenance engineer.
-	Head Start / Stop Inhibited	Viscosity is too low, so Head Start / Stop is inhibited to prevent solvent addition. Contact Videojet maintenance engineer.
-	Makeup Insertions Exceeded	The current make-up cartridge is inserted more than ten times. Insert a new make-up cartridge.
Û	Ink Core Level High	Ink level in the ink core module is very high. The icon must not be illuminated after a short interval of time. If the icon is displayed for more than 5 minutes, report the fault to a maintenance engineer. Refer to the service manual for more information.
Û	Ink Core Level Low	Check whether the ink cartridge is empty. If an empty ink cartridge is replaced with a full cartridge while the jet is running, the printer will automatically top-up the core.
	Cabinet Hot	Electronics compartment is above 70 degrees Celsius. Contact Videojet maintenance engineer.
-	Ink Core Insertions Exceeded	The ink core module has been disconnected / reconnected more than ten times. Insert a new ink core module.
D ,	Pump RPM Near Max	Pump RPM setpoint greater than 98% to achieve set pressure. Contact Videojet maintenance engineer.
	No Ink Core	No data from ink core module smartchip - ink core module not plugged in. Contact Videojet maintenance engineer.
	Ink Core Service Soon (0.5% left)	Ink core module nearing end of service life. 0.5% left. Refer Table 7-6 on page 7-13. Contact Videojet maintenance engineer.

Table 7-5: Warning Icons (Continued)

Rev AA Printer Status Icons 7-11

Icon	Name	Remedial Action
	Ink Core Service Soon (2% left)	Ink core module nearing end of service life. 2% left. Refer Table 7-6 on page 7-13. Contact Videojet maintenance engineer.
	Ink core service soon (5% left)	Ink core module nearing end of service life. 5% left. Refer Table 7-6 on page 7-13. Contact Videojet maintenance engineer.
	Ink core service soon (10 % left)	Ink core module nearing end of service life. 10% left. Refer Table 7-6 on page 7-13. Contact Videojet maintenance engineer.
₩ •	Product Delay Too Short	Contact Videojet maintenance engineer.
→! [•] !← El E	Inter-print Gap Too Short	Insufficient time to compile between prints. Contact Videojet maintenance engineer.
10000	Print Queue Too Deep	Too many products between PEC and the printhead. Contact Videojet maintenance engineer.
!	Print Overlap	Print starts before end of current print. Contact Videojet maintenance engineer.
5⊘	No Time to Phase	Contact Videojet maintenance engineer.
	No time for TOF	The printer is unable to get an "actual velocity" and thus cannot perform TOF velocity control.
ABCD × AB∵	Overspeed	The Shaft encoder speed is very high to get the print width that you need. If the print width is not acceptable, report the fault to a maintenance engineer.

Table 7-5: Warning Icons (Continued)

7-12 Printer Status Icons

Icon	Name	Remedial Action
-	Maximum Print Rate Exceeded	Contact Videojet maintenance engineer.
-	No Valid Ink Parameters	Contact Videojet maintenance engineer.
-	Possible Ink Coefficient Update	Ink cartridge coefficients do not match ink core module coefficients. Contact Videojet maintenance engineer.
1	USB Connection Is Over Current	External USB device requesting excessive current. Contact Videojet maintenance engineer.
-	Suspected Head Heater Failure	Contact Videojet maintenance engineer.
-	Creating Raster Catalog	Software busy. Raster being replaced. Cannot print. Contact Videojet maintenance engineer.
-	Bad Nozzle!!! Please Replace Or Repair	Contact Videojet maintenance engineer.
-	Tank Not Filling	Ink core module still LOW after 5 attempts to add ink to increase level. Contact Videojet maintenance engineer.
4 *	DAC Overflow	hardware fault. Contact Videojet maintenance engineer.
1 **	DAC Comms Error	hardware fault. Contact Videojet maintenance engineer.
x	Yellow Beacon Indicator	Message prompts user to refit cartridge.

Table 7-5: Warning Icons (Continued)

Ink Core Life

Videojet 1520	12000 Hours
---------------	-------------

Table 7-6: Ink Core Life

Rev AA Printer Status Icons 7-13

Fault Messages

Fault messages are displayed at the bottom left of the screen to supplement the printer fault icons. The messages are arranged so that, if more than one fault is found, only the most serious fault message is displayed.

Diagnostics Screen

The diagnostic screens show the current value of different parameters which help you in troubleshooting the printer.

Do the following tasks to view the diagnostic screens:

- 1 Begin in <01 Screens> Frame (01 Edit > 02 Edit > 03 Edit > 04 Edit System Set-Up > 01 System > 02 System > 03 System Status Screens > 01 Screens).
- **2** Press F1, F2 and F3 keys to view the Diagnos Screen1, Diagnos Screen2, Diagnos Screen3 parameters respectively.

Note: Diagnostic Screens can also be accessed from the <Service 01> frame. You can toggle between the Diagnostic Screen 1, Diagnostic Screen 2, Diagnostic Screen 3 and Alarm Screen by pressing Ctrl+S.

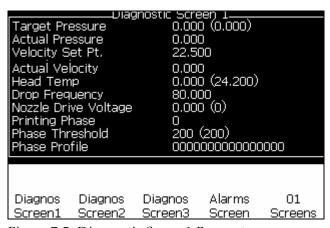


Figure 7-5: Diagnostic Screen1 Parameters

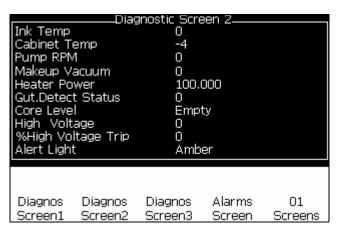


Figure 7-6: Diagnostic Screen2 Parameters

InkSystem Core Hour Software Software Firmware Chrg.Table Gutter Pu InkExp. Da MakeupEx Inkbot. Re Makeupbo InkAdd Pu MakeupAd	Life s Remainir Version Build Version e Version mp ate p. Date t. Refit lses	1.0.3 1558 255. 0.1.1 Yes 21/1	.2 24 341_E TES 32 255.255	Т
Diagnos	Diagnos	Diagnos	Alarms	01
Screen1	Screen2	Screen3	Screen	Screens

Figure 7-7: Diagnos Screen3 Parameters

Rev AA Diagnostics Screen 7-15

Specifications



Electrical Specifications

The electrical specifications of the printer are shown in Table A-1.

Voltage	100 V AC to 240 V AC
Frequency	50 Hz to 60 Hz
Power Consumption	120 watts Maximum

Table A-1: Electrical Specifications

Weight

The dry weight specification of the printer is shown in Table A-2.

Dry weight	18 kg
------------	-------

Table A-2: Weight Specifications

Dimensions

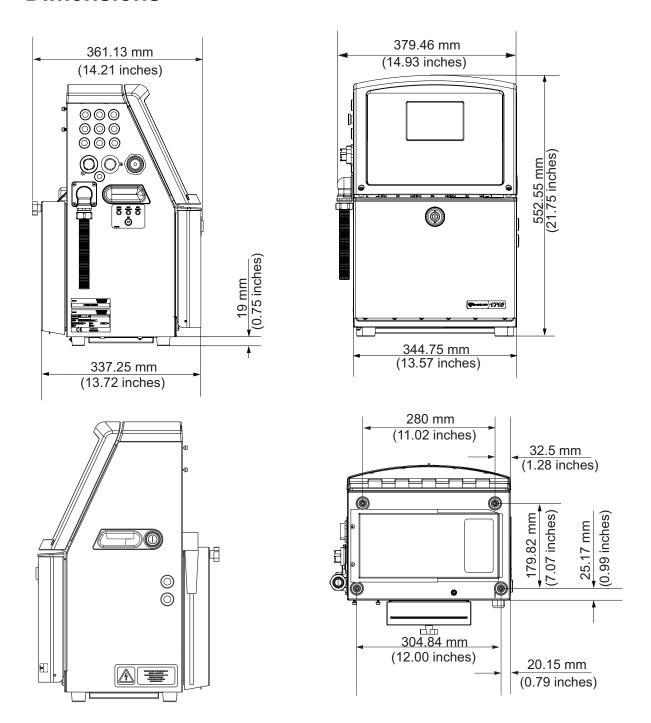


Figure A-1: Printer Dimensions (Videojet 1520)

A-2 Dimensions

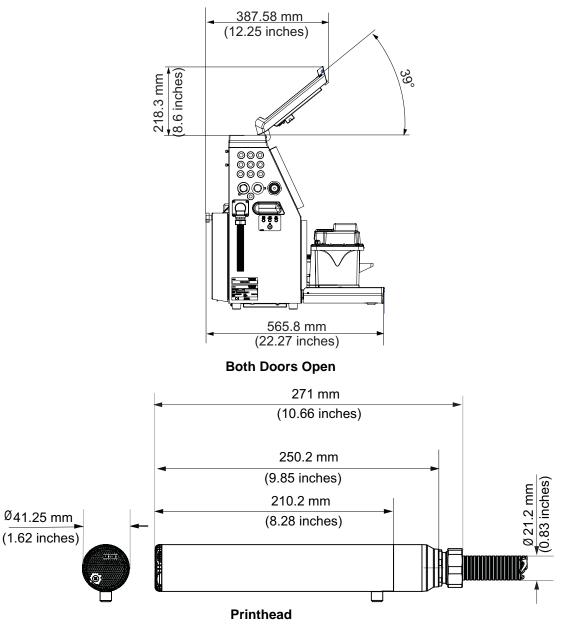


Figure A-2: Printer Dimensions (Videojet 1520) (continued)

The dimensions of the printer are shown in Table A-3.

Cabinet	Width	345 mm
	Height	533 mm
	Depth	338 mm

Table A-3: Printer Dimensions

Rev AA Dimensions A-3

Printhead	Diameter	Ø41.3
	Diameter of the nozzle orifice	60//70 Microns
Umbilical length	1520 3 Meter Standard 6 Meter Optional	-
Cabinet Variations	Standard IP55 Optional IP65 (1520 Only)	-

Table A-3: Printer Dimensions (Continued)

Optional Accessories

Mobile Printer Stand

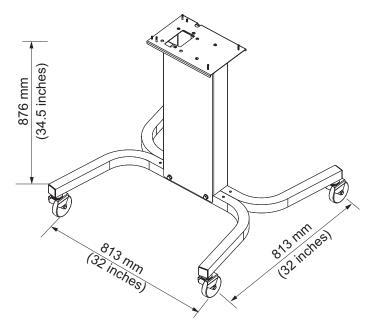


Figure A-3: Mobile Printer Stand

Static Printer Stand

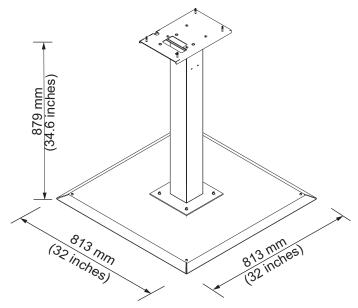


Figure A-4: Static Printer Stand

Printhead Stand

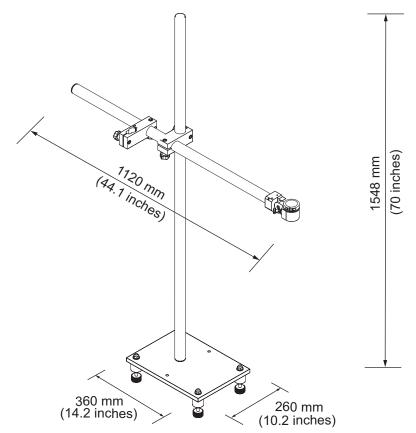


Figure A-5: Printhead Stand

Environmental Specifications

The environmental specifications of the printer are shown in Table A-4

Operating temperature	5 °C to 45 °C (41 °F to 113 °F)*
Rate of change of ambient temperature	10 °C (18 ° F) per hour maximum
Relative humidity	0% to 90 % non-condensing*
Storage temperature	5 °C to 50 °C (41°F to 122 °F) in original packaging
Industrial-protection rating	IP55 is standard for Videojet 1520 Excel.IP65 is optional for Videojet 1520 Excel

Table A-4: Environmental Specifications

*Note: When the printer is operated in an environment with elevated humidity, or with certain inks (including water sensitive inks), air dryers or other items may be required. Please contact Videojet Technologies Inc. customer service department at 800.843.3610 (United States only), or contact the local Videojet Technologies Inc. for more information.

Ink and Make-up Fluid Capacity

The ink and solvent capacity of the printer are shown in Table A-5.

Ink Cartridge	750 milliliters
Make-up Fluid Cartridge	750 milliliters

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

Print Height

The minimum and maximum height of the message for the print matrix is shown in Table A-6.

2 mm	Minimum
12 mm	Maximum

Table A-6: Print Height

Font Specifications and Line Speeds

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

Note: The optimum value is 11mm. The range is 5 to 15 mm.

Note: The line speeds listed in the Table A-7 and Table A-8 are for 60 dpi only.

Line	Height	Width	Cal Speeds			
Mode			70 Micron		60 Micron	
			ft/min	m/min	ft/min	m/min
1	5	5	914	279	914	279
1	7	4	960	293	960	293
1	7	5	800	244	800	244
1	9	7	356	108	356	108
1	12	9	256	78	256	78
1	16	10	200	61	194	59
1	24	16	96	29	96	29
1	34	25	53	16	56	17
2	5	5	256	78	256	78
2	7	4	240	73	320	98
2	7	5	200	61	267	81
2	9	7	119	36	125	38
2	12	9	85	26	85	26
2	16	10	53	16	56	17
3	5	5	119	36	125	38
3	7	4	108	33	108	33
3	7	5	90	27	90	27
3	9	7	53	16	56	17
4	5	5	85	26	85	26
4	7	4	64	20	67	20
4	7	5	53	16	56	17
5	5	5	53	16	56	17

Table A-7: Line Speeds

Barcode Specifications

The available barcode types are shown in Table A-8.

Note: Barcode specification and Data Matrix are listed in the Table A-8 and Table A-9. Barcodes run at single line speed based on height selected at 60 dpi.

Barcode Type
UPCA
UPCE
EAN8
EAN13
Code 128 (A, B and C)
UCC/EAN 128
2 of 5I
Code 39
2D Data Matrix
2D Data Matrix rectangular (*GS1)

Table A-8: Barcodes Matrix

Data Matrix
10 x 10
12 x 12
14 x 14
16 x 16
18 x 18
20 x 20
22 x 22
24 x 24
26 x 26
32 x 32
8 x 18
8 x 32
C-1.1 - A O. D-1-

Table A-9: Data Matrix Code Sizes

Data Matrix
12 x 26
12 x 36
16 x 36
16 x 48

Table A-9: Data Matrix Code Sizes (Continued)

Note: The 60 Micron Nozzle is recommended to print datamatrix codes at 16 high or taller.

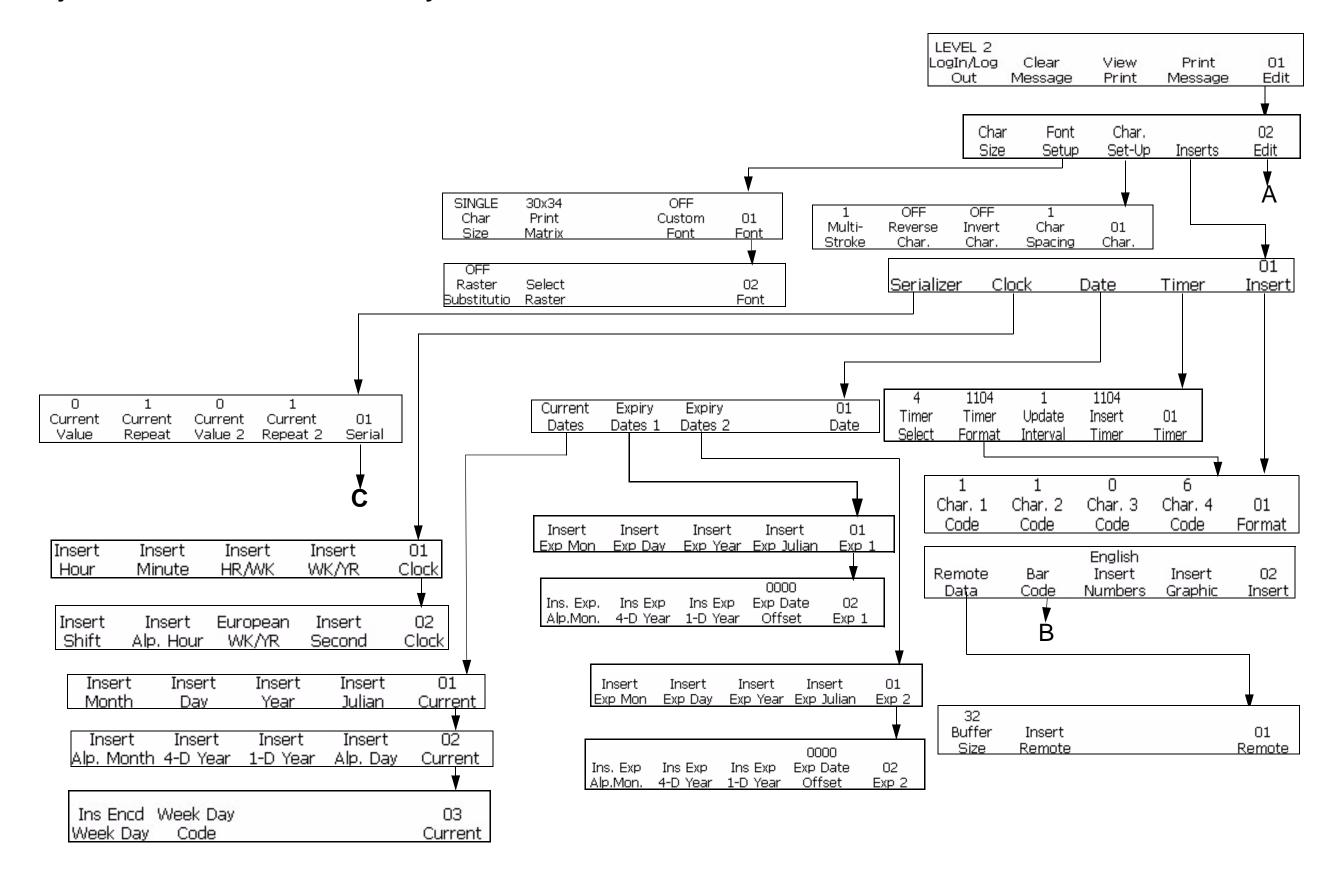
Software Summary Chart

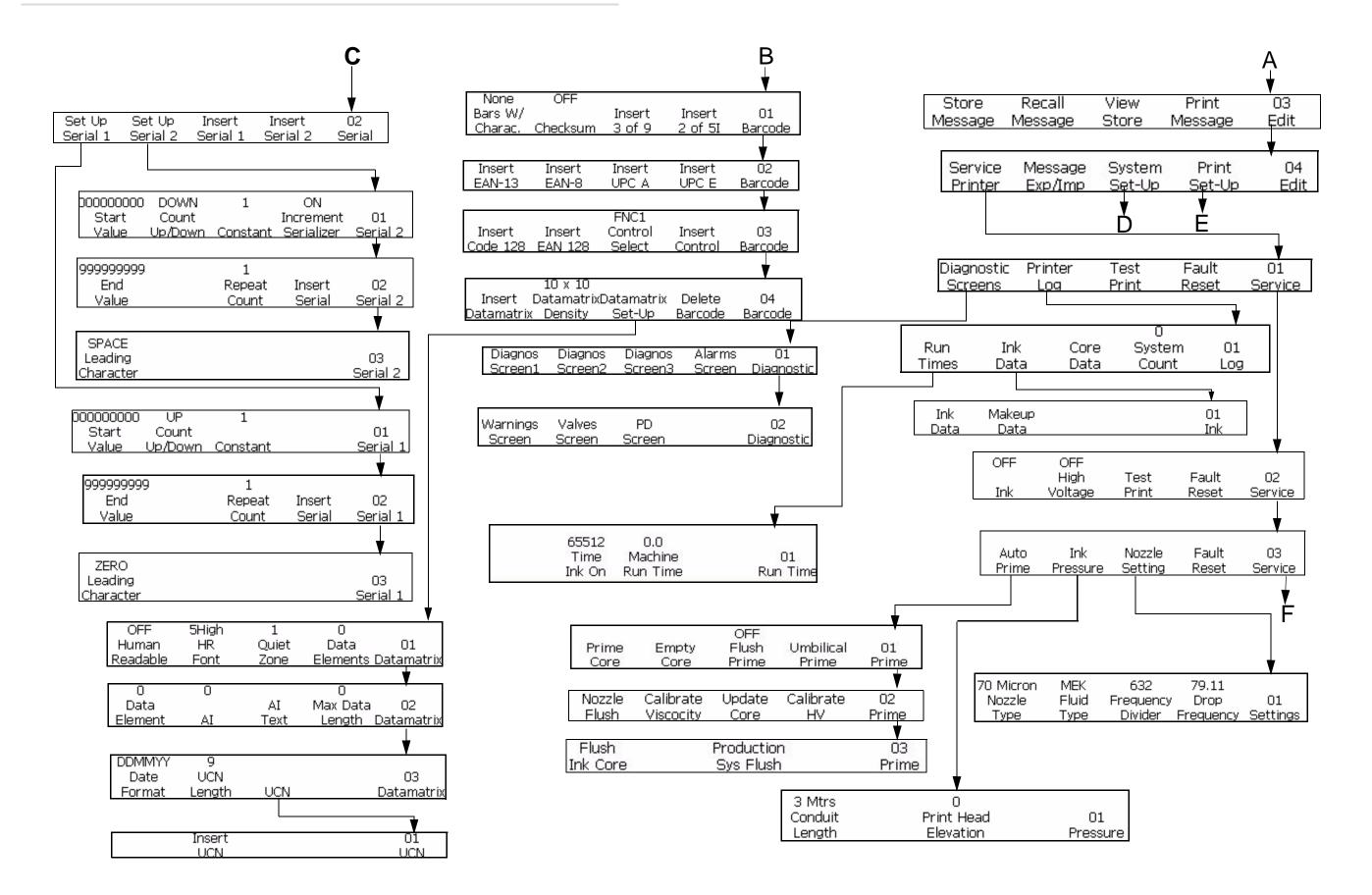
Introduction

Software Summary describes the navigational steps to access the different frames in the Videojet 1520 Excel User Interface.

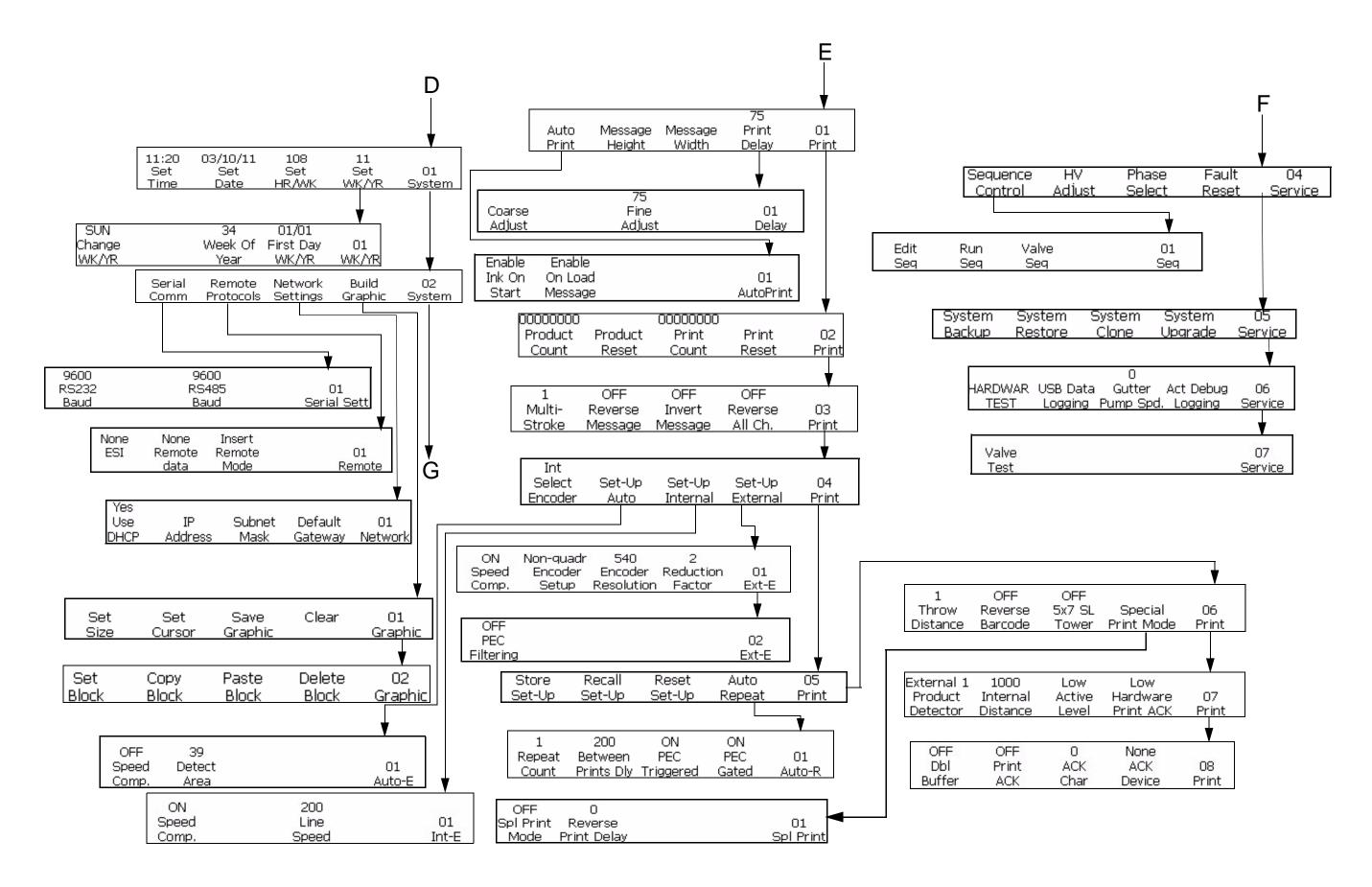
Rev AA Introduction B-1

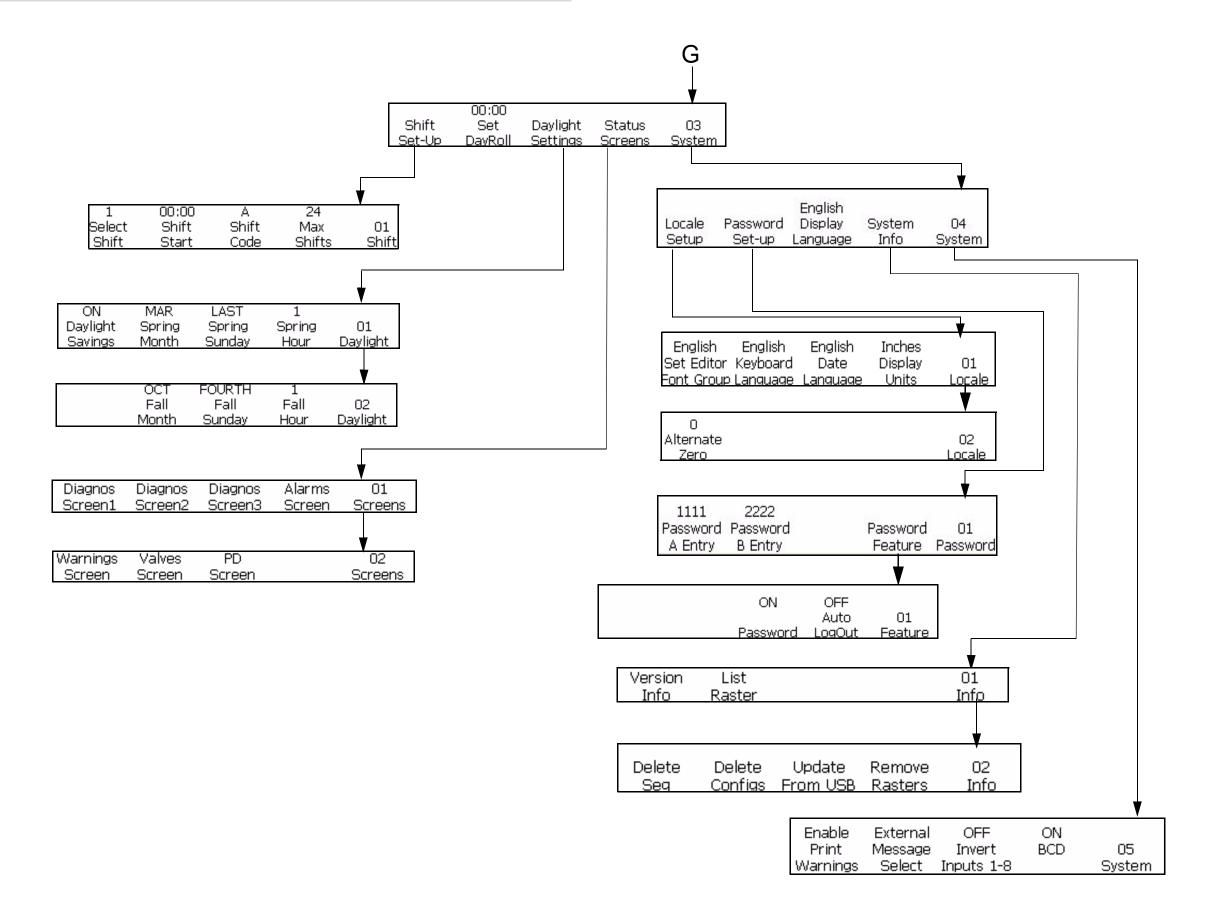
Videojet 1520 Excel Software Summary Chart





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