

OWNER'S MANUAL

VIDEOJET[®]

EXCEL[®]

170i Ultra Printer

P/N 365226-21
Rev. BA 06/02



recycled paper



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Videojet Printer Compliance Information

Safety

For all customers

This equipment is UL listed in the U.S.A., CSA certified in Canada, and certified by TUV Product Service for safety in the European Union. It meets the requirements of the low voltage directive in the European Union.

Electromagnetic Compatibility

For customers in the U.S.A.

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

For customers in Canada

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Pour la clientèle du Canada

Cet appareil de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

For customers in the European Union

This printer complies with all requirements of the Electromagnetic Compatibility directive of the European Union. All Videojet accessories designed to be used with this printer maintain this compliance. If non-Videojet accessories are attached to the printer, it is the sole and full responsibility of the customer to ensure that they meet the requirements of this directive. Attaching non-compliant accessories may increase the risk of injury, and cause the printer to exceed the limits of the Electromagnetic Compatibility directive.

Total SourceSM

What is *TotalSource*?

TotalSource, TOTAL SERVICE PLUS RELIABILITY, is VIDEOJET's commitment to provide to you—our customer—the complete service you deserve.

The VIDEOJET *TotalSource* Commitment

The VIDEOJET **TotalSource** 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 centre
- technical support
- field service
- extended hours phone assistance
- parts and supplies
- repair service
- inks, make-up fluids, and supplies

If You Need Assistance

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

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Introduction

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

The intended use of the EXCEL 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 guide-lines provided in this chapter are intended to educate the operator on all safety issues in order to operate the printer in a safe manner.

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Introduction

In this chapter you will find:

- a brief description of the intended use of the product
- who this manual is intended for, how it is organized, and the writing conventions that are used to present information
- a recommended order of steps to follow for first time or inexperienced users when getting ready to operate the printer



WARNING: Read *Chapter 2, Safety* before attempting to operate the equipment.

Refer to page 1-2 for a chapter-level Table of Contents.

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Introduction

The VIDEOJET EXCEL[®] 170i Ultra printer is a non-contact ink jet printer designed to print small character messages onto a product. This equipment is typically used for industrial marking, coding, and overprinting.

References to the EXCEL 170i Ultra Printer

For ease of reading, the VIDEOJET EXCEL 170i Ultra printer will be referred to as the "EXCEL printer" or "printer" throughout the remainder of this manual.

Regulatory Certification

This printer is UL listed in the U.S.A., CSA certified in Canada, and GS certified in Germany. It meets all of the requirements for safety in all European Union countries.

It also meets the electromagnetic compatibility requirements for the U.S.A, Canada, and the European Union countries.

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

Use of fluids or accessories not approved for use with this printer voids these approvals and may expose the operator to severe safety risks.

Printer Supplies

Due to the large variety of VIDEOJET inks available for use with this product, this printer can print on virtually any surface, texture, contour, or shape.



CAUTION: For Continued Protection Against Possible Fire Hazard, Use Only VIDEOJET MEK, Alcohol or Water-based Liquids With a Flashpoint No Lower Than -6°C (21°F) and Boiling Point No Lower Than 56°C (133°F).

Contact your VIDEOJET sales representative or distributor if you have any questions regarding supplies selection (inks, make-up fluids, and cleaning solutions) or product applications.

Who Should Use This Manual?

Introduction

This manual is for you, the customer. This manual only contains information about operating the printer.

Unless otherwise noted, all procedures in this manual can be performed by the operator of the printer.



WARNING: Customers who intend to service and maintain the printer themselves must only have qualified personnel perform those procedures. Qualified personnel are considered to be those persons who have the proper technical training, (successful completion of a training course covering this printer), have experience to work on this equipment, and are aware of the hazards to which they will be exposed. The Service Manual is intended to be a supplement (and not a replacement) to training.

Keep this manual in a safe location where it can be easily accessed for reference.

How to Use this Manual

If Using This Printer for the First Time . . .

If you are using this printer for the first time or have had little experience operating it, follow the procedure in *Getting Started* on page 1-7. This section will guide you through the best way to learn about the printer by having you read information in a specific order.

If Already Familiar with the Printer . . .

If you are already familiar with the printer, use the information in this manual for reference as needed. This manual is organized so that you can quickly and easily find the information you need.

Writing Conventions Used in this Manual

Introduction

The following ways of presenting information are commonly used throughout this manual. These writing conventions are used to set specific types of key information apart from the common text.

Note: Refer to *Chapter 2, Safety*, for examples of Warning and Caution statements.

Printer Keys and Status Lights

All keys and status lights on the keyboard are shown in bold type when referred to within the text.

For example:

Press the **ON** key to turn the printer On. The **HEAD** light will flash to indicate that the printer start-up sequence has begun.

Notes

The word **Note** is used to support a particular step or piece of information.

For example:

1. Turn the ink pressure regulator knob clockwise until the pressure gauge reads between 17-20 psi (1.16-1.37 bar).

Note: Set the ink pressure to approximately 17 psi (1.16 bar) if you are using an alcohol/ketone based ink or to approximately 20 psi (1.37 bar) if using a water/poly based ink.

Display Screen Text

Any word, character, or symbol which appears in the display screen is shown surrounded by the arrow symbols (<,>) when referred to within the text.

For example:

1. Press the **F3** key to select <VIEW PRINT>. This will display the last message that was loaded into the printer.

EXCEL 170i Ultra Service Manual

Introduction

Included with the printer is the *EXCEL 170i Ultra Printer Service Manual*. The service manual includes information about installing, setting up, maintaining, troubleshooting, and servicing the printer. Also included in the service manual are sections about theory of operation, component identification, component removal and replacement, specifications, accessories and spare parts, and an illustrated parts breakdown.

Who Should Use the Service Manual?



WARNING: Customers who intend to service and maintain the printer themselves must only have qualified personnel perform those procedures. Qualified personnel are considered to be those persons who have the proper technical training, (successful completion of a training course covering this printer), have experience to work on this equipment, and are aware of the hazards to which they will be exposed. The Service Manual is intended to be a supplement (and not a replacement) to training.

Keep the service manual for future reference, even if you should choose to have VIDEOJET (or one of its distributors) maintain and service your printer.

VIDEOJET Customer Training

Introduction

For customers who intend to service and maintain the printer, VIDEOJET highly recommends the completion of a Customer Training Course covering the VIDEOJET 170i Ultra printer. The service manual is intended to be a supplement (and not a replacement) to VIDEOJET Customer Training.

For more information on VIDEOJET Customer Training Courses, call 708-860-7300 (within the U.S. only). Outside the U.S., customers should contact a VIDEOJET subsidiary office or their local VIDEOJET distributor for further information.

Getting Started

Introduction

Before using your printer, read the sections of this manual listed below to gain a better understanding of the printer and learn how to print a message onto a product.

Note: At this point, it is assumed that the printer has already been installed by a qualified service technician and the system parameters have been set.

1. Review *Writing Conventions Used in this Manual*, on page 1-5 in this chapter.
2. Read *Chapter 2, Safety* to become aware of the safety issues for this product and the supplies used with it. Do this before you unpack the supplies or operate the printer.
3. Read *Chapter 3, Using the Keyboard* to become familiar with the keyboard and the function of each key and keypad.
4. Read *Chapter 4, Printer Start-Up and Shutdown* to become familiar with the general guidelines and procedures to turn the printer On and turn the printer Off after you are finished using it.
5. Read *Chapters 5, 6, and 7* to become familiar with the how to use the printer software to operate the printer.

Safety

In this chapter you will find:

- important safety guide-lines to follow when operating the equipment
- important safety guide-lines to follow when working with inks, make-up fluids, and cleaning solutions
- what to do in case of a medical emergency
- safety conventions used in this manual



WARNING: Read this chapter thoroughly before attempting to operate this product.

Refer to page 2-2 for a chapter-level Table of Contents.

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Safety Conventions Used in this Manual

Introduction

Specific safety information is listed throughout this manual in the form of Warning and Caution statements.

- *Warning statement* below
- *Caution statement* turn to page 2-5

Pay close attention to these statements as they contain important information on avoiding potential hazards to yourself or to the equipment.

Warning Statements

Warning statements:

- are used to indicate hazards or unsafe practices which **COULD** result in severe personal injury or death
- appear in **bold** type
- have a triangular symbol with an exclamation point to the immediate left
- are preceded by the word **WARNING**
- are always found before the step or piece of information to which they refer

For example:



WARNING: Customers who intend to service and maintain the printer themselves must only have qualified personnel perform those procedures. Qualified personnel are considered to be those persons who have the proper technical training, (successful completion of a training course covering this printer), have experience to work on this equipment, and are aware of the hazards to which they will be exposed. The Service Manual is intended to be a supplement (and not a replacement) to training.

Caution Statements

Caution statements:

- are used to indicate hazards or unsafe practices which **COULD** result in minor personal injury or product or property damage
- appear in **bold** type
- are always preceded by the word CAUTION
- are always found before the step or piece of information to which they refer

For example:



CAUTION: For Continued Protection Against Possible Fire Hazard, Use Only VIDEOJET Fluids With a Flashpoint No Lower Than -6°C (21°F) and Boiling Point No Lower Than 56°C (133°F).

Equipment Safety Guide-lines



WARNING: Always observe the following safety guide-lines when operating the printer and associated equipment.



Comply with Electrical Codes

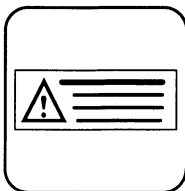
All electrical wiring and connections must comply with applicable local codes. Consult the appropriate regulatory authority for further information.



Avoid Breathing Exhaust Vapours

During operation, the printer exhausts vapours through the muffler. These vapours may be flammable and present a health hazard. For these reasons, do not allow the exhaust to be confined to an area that does not have proper ventilation or near a source of ignition. Printer exhaust fumes are generally heavier than air, so keep all sources of ignition away from low areas where fumes may travel or accumulate.

If any of these circumstances apply, it may be necessary to vent the printer exhaust to outside air. Consult the appropriate regulatory authority concerning emission permitting and venting system requirements before venting printer exhaust to outside air.



Do Not Remove Warning Labels

Do not, under any circumstances, remove or obstruct any warning or instruction labels in the printer.

Placement of Printer



WARNING: Do not place the printer in an explosive atmosphere.

Ink Safety Guide-lines



WARNING: Always observe the following safety guide-lines when working with any ink, make-up fluid, or cleaning solution.

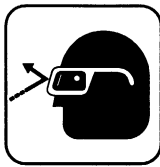


CAUTION: For Continued Protection Against Possible Fire Hazard, Use Only VIDEOJET Fluids With a Flashpoint No Lower Than -6°C (21°F) and Boiling Point No Lower Than 56°C (133°F).



No Smoking

Do not smoke when near the printer or printhead. Explosion or fire may result if the printer exhaust fumes are subjected to an ignition source.



Wear Safety Glasses

Wear safety glasses with side shields (or equivalent eye protection) when handling any ink, make-up fluid or cleaning solution. If splashed into your eyes, flush eyes with water for 15 minutes and see a doctor immediately.



Avoid Skin Contact

Wear butyl rubber gloves when handling any ink, make-up fluid or cleaning solution. Avoid contact with skin and mucous membranes (nasal passage, throat). Upon contact with skin, remove any contaminated clothing and wash area with soap and water. See a doctor if irritation persists.



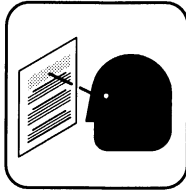
Avoid Breathing in Vapours

Avoid prolonged exposure to vapours. Consult the Material Safety Data Sheet (MSDS) for recommendations on engineering controls and personal protective equipment.



Dispose of Ink Properly

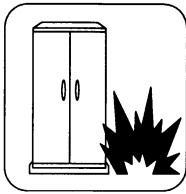
Do not pour any ink, make-up fluid, or cleaning solution into sinks, sewers, or drains. Waste disposal must comply with local regulations; contact the appropriate regulatory authority for further information.



Read the Material Data Safety Sheets (MSDS)

Read and understand the Material Safety Data Sheet (MSDS) before using any ink, make-up fluid, or cleaning solution. A MSDS exists for each type of ink, make-up fluid, and cleaning solution; the appropriate sheet or sheets are supplied with the product when shipped.

Make certain to retain all MSDSs for future reference. Additional copies of MSDSs are available upon request and can be obtained by contacting the VIDEOJET Customer Service Department at 800-843-3610. Outside the U.S., customers should contact a VIDEOJET subsidiary office or their local VIDEOJET distributor.



Store Inks Properly

Certain inks, make-up fluids, and cleaning solutions are flammable and must be stored appropriately. Storage must comply with local regulations; contact the appropriate regulatory authority for further information. The label on the bottle or the Material Safety Data Sheet (MSDS) will indicate if a particular fluid is flammable.

Medical Emergencies



WARNING: In the event of a medical emergency, contact a doctor immediately.

Emergencies Involving Printer Fluids

If the incident involves an ink, make-up fluid, or cleaning solution, bring the bottle and/or Material Safety Data Sheet (MSDS) with you to the doctor's surgery. These items contain important information which the doctor may require in order to provide treatment.

Rocky Mountain Poison Control Center

All of VIDEOJET's inks, make-up fluids, and cleaning solutions are also registered with the Rocky Mountain Poison Control Center, located in the United States. If the bottle or MSDS cannot be located, the doctor can contact the Rocky Mountain Poison Control Center to obtain the information required.

**Rocky Mountain Poison Control Center
(303) 623-5716**

Note: Persons outside the United States requiring medical attention can have a doctor contact the Rocky Mountain Poison Control Center in the United States or a poison control centre or hospital in their own area.

Notes:

[illegible]

3

Using the Keyboard

In this chapter you will find:

- a description of the main sections of the keyboard
- how to lock the keyboard to prevent others from using it
- how to change the contrast of the display screen
- an explanation of what each key and group of keys is used for and what happens when a key is pressed

Refer to page 3-2 for a chapter-level Table of Contents.

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Introduction

If Using This Printer for the First Time . . .

This chapter shows you how to use the keyboard to operate the printer. If you are using the printer for the first time or have had little experience using it, read this entire chapter first before using the keyboard. This will provide you with the basic knowledge required to operate the printer.

If Already Familiar with the Printer . . .

If you are already familiar with the printer and know how to use the keyboard, use the information in this chapter as reference. The information is organized so that you can choose a particular key or group of keys and quickly go to that section to find out its function.

Keyboard Description

This section describes the keys on the keyboard. The keyboard is located on the front of the printer cabinet. (Refer to Figure 3-1.) The keyboard is organized into many sections, each of which contains keys dedicated to perform a specific printer function. (Refer to Figure 3-2).

The keyboard contains the following components:

- *Control Keys* turn to page 3-8
- *Display Screen* turn to page 3-15
- *Status Lights* turn to page 3-17
- *Function Keys* turn to page 3-19
- *Arrow Keys* turn to page 3-21
- *Alpha Keypad* turn to page 3-23
- *Numeric Keypad* turn to page 3-24

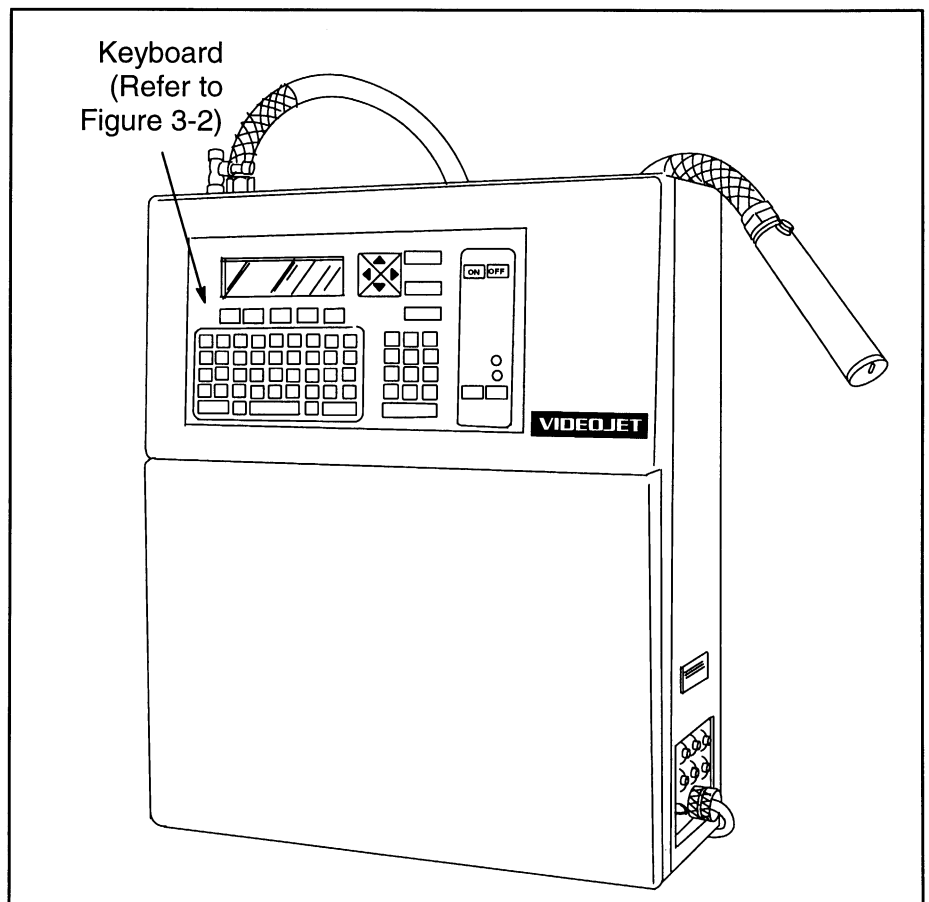


Figure 3-1. VIDEOJET EXCEL 170i Printer

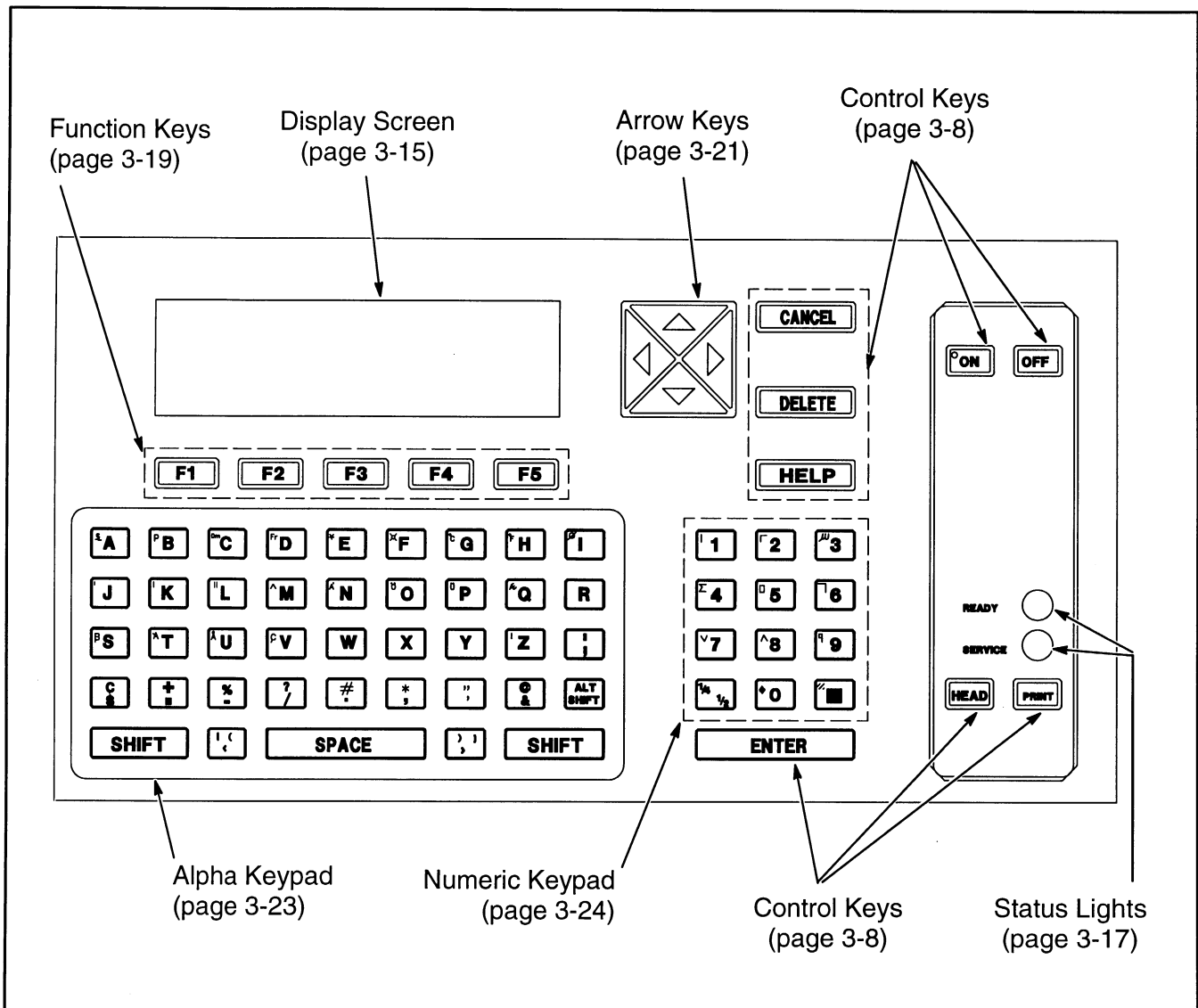


Figure 3-2. Keyboard

Keyboard Lock and Display Contrast Features

Keyboard Lock Feature

The printer keyboard lock feature allows you to prevent others from using the keyboard. The keyboard lock feature is located to the right of the fluid pan, once the front door has been opened (refer to Figure 3-3).

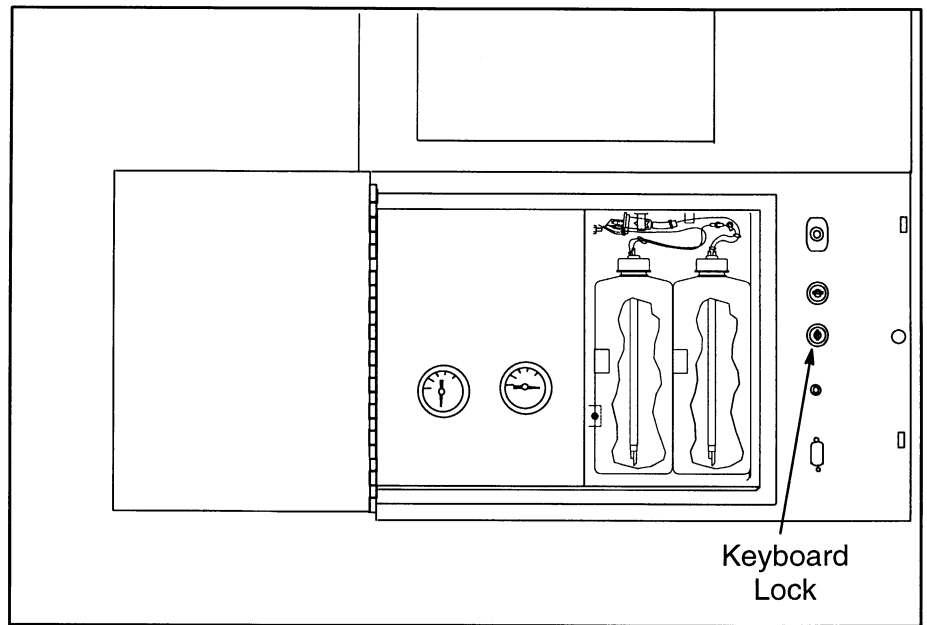


Figure 3-3. Keyboard Lock

To lock the keyboard:

Insert the brass key (supplied with the printer) into the keyboard lock slot and turn it clockwise one-quarter turn (refer to Figure 3-4). This will prevent unwanted users from using the keyboard.

To unlock the keyboard:

Insert the key into the keyboard lock slot and turn it counterclockwise one-quarter turn (refer to Figure 3-4).

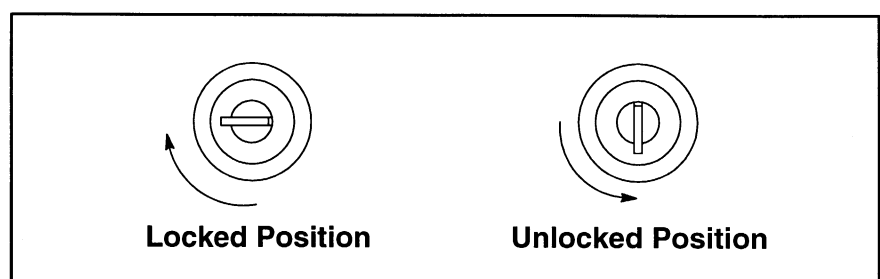


Figure 3-4. Locking and Unlocking the Keyboard

Even when the keyboard is locked, you can still turn the printer On and Off, and control the printing of messages. Therefore, the following keys remain active when the keyboard is locked:

- **ON** key
- **OFF** key
- **HEAD** key
- **PRINT** key

Display Contrast Feature

The display contrast feature allows you to control the contrast (brightness) of the display screen. The display contrast feature is located to the right of the fluid pan, once the front door has been opened. (Refer to Figure 3-5). To adjust the contrast (brightness) of the display screen, turn the display contrast knob in the appropriate direction. Turn the knob clockwise for a brighter display, and anti-clockwise for a darker display.

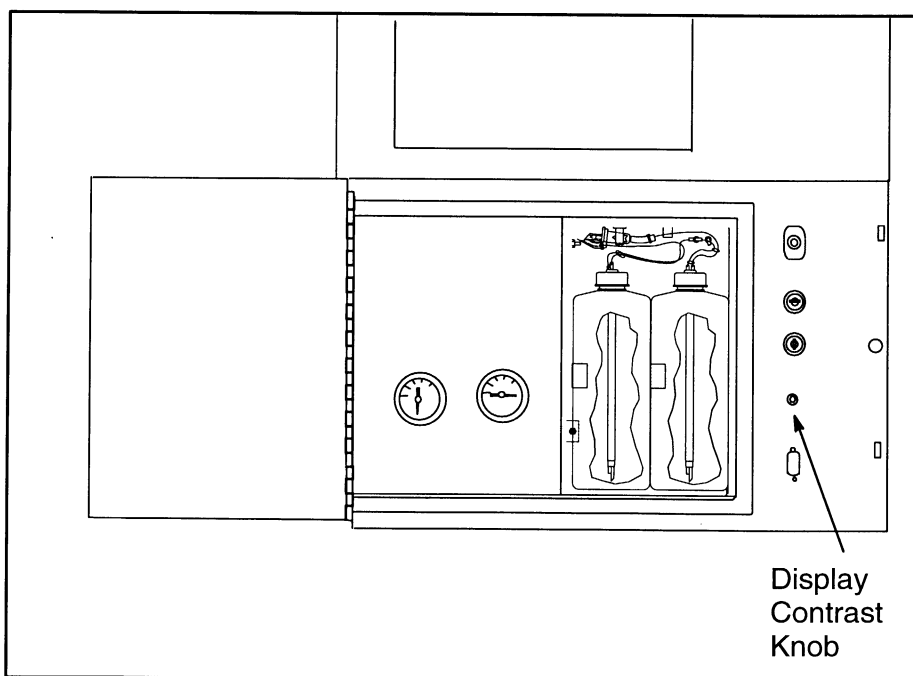


Figure 3-5. Display Contrast

Control Keys

Control Key Identification

The control keys are the keys most often used to operate the printer. The following keys are considered to be control keys: (Refer to Figure 3-6.)

- **ON** key turn to page 3-9
- **CANCEL** key turn to page 3-10
- **DELETE** key turn to page 3-11
- **OFF** key turn to page 3-11
- **ENTER** key turn to page 3-12
- **HELP** key turn to page 3-13
- **HEAD** key turn to page 3-13
- **PRINT** key turn to page 3-14

Control Key Description

To find out more about a particular control key, refer to Figure 3-6 (or any of the other figures in this section) and find the item number of that control key. Then refer to the corresponding item number in the text to learn more about that particular key.

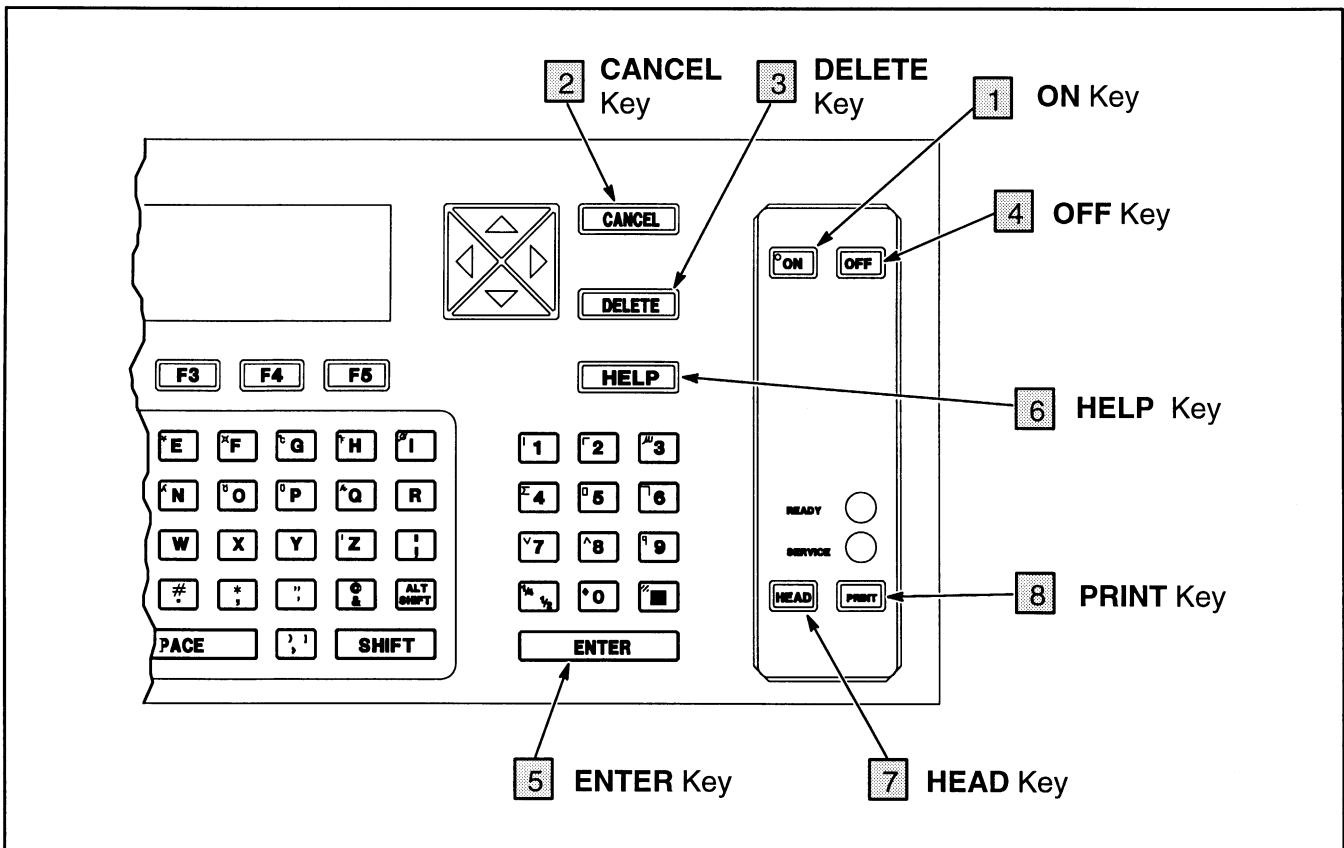


Figure 3-6. Control Keys on the Keyboard

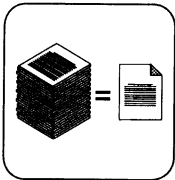
1 ON Key

The **ON** key is used to turn the printer On. The **ON** key is active only if the AC power switch (located on the lower right side of the printer) is in the On (I) position, otherwise it cannot be used.

What Happens When the ON Key is Pressed?

Once the **ON** key is pressed, several things occur simultaneously:

- the **ON** key light turns On
- the light on the **HEAD** key flashes
- the display screen turns on
- the message <STARTUP> flashes at the top of the display screen, and the initial software screen (<01 EDIT>) appears in the display screen
- the printer begins its 97-second start-up sequence (see definition below)



ON Key Summary

Light is On: This indicates that the 97-second printer start-up sequence is in progress or is completed. The keyboard is active during the 97-second start-up sequence. The printer is active only when the printer start-up sequence is completed.

Light is Off: This indicates that the printer is Off, and the keyboard is not active.

Start-up Sequence: Definition

The printer start-up sequence is the elapsed time from when the **ON** key is pressed to the time that the printer is prepared for use. The sequence lasts 97 seconds.

During the printer start-up sequence, the printer system verifies that everything is operating properly. Hydraulics, pneumatics, and electronics are enabled, systems checks are performed, printer faults are monitored, and the ink stream stabilizes.

Once the 97-second start-up sequence is completed, the light on the **HEAD** key stops flashing and lights, and the message <HEAD ON> appears at the top of the display screen. Refer to the **Head** key on page 3-13 for further information.

If you press the **OFF** key while the printer is performing the start-up sequence, the printer will stop the start-up sequence and automatically start the four-minute shutdown sequence (which turns the printer Off).



WARNING: Even though the light on the ON key is Off, Mains power is still applied to the printer unless the Mains power cord or main circuit breaker is disconnected.

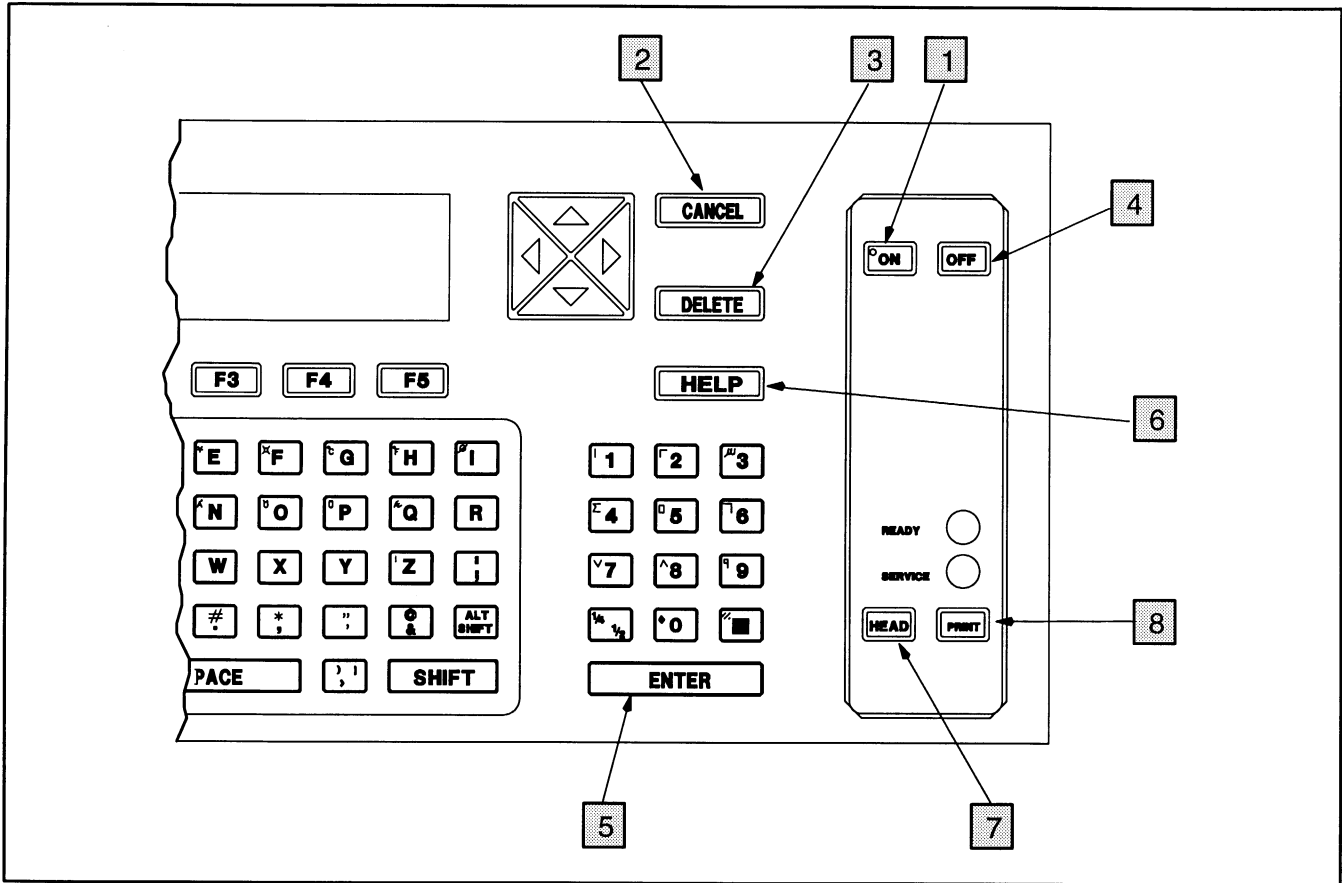


Figure 3-7. Control Keys on the Keyboard

2 CANCEL Key

The **CANCEL** key is used to:

- cancel any changes to existing data. Pressing the **CANCEL** key after you have made changes to specific data will cause the printer to ignore the changes, and return to the beginning of that software frame.
- stop the printer shutdown sequence. Pressing the **CANCEL** key while the printer is performing the four-minute shutdown sequence will stop the shutdown sequence and automatically begin the printer start-up sequence.
- turn the optional alert light Off (if installed) once it has been activated. Pressing the **CANCEL** key when the alert light is On will turn the Alert light Off, reset the warning condition, and turn the **SERVICE** light Off.

The **CANCEL** key is active only if the light on the **ON** key is lit. Otherwise, the printer will ignore it when the key is pressed.

3 DELETE Key

The **DELETE** key is used to:

- delete a character in the message. To delete a character, use the arrow keys to position the cursor (dark, blinking box) on the character to be removed, then press the **DELETE** key. Once the character is removed, all subsequent characters will shift to the left.
- delete an insert in the message. To delete an insert, use the arrow keys to position the cursor on the first character of the insert to be removed, then press the **DELETE** key.

The **DELETE** key is active only if the light on the **ON** key is lit. Otherwise, the printer will ignore it when the key is pressed.

4 OFF Key

The **OFF** key is used to turn the printer Off. The **OFF** key is active only if the AC power switch (located on the lower right side of the printer) is in the ON (I) position.

Once the **OFF** key is pressed, the printer will begin its four-minute printer shutdown sequence, and the message <SHUTDOWN RUNNING> will flash at the top of the display screen. Once the four-minute sequence is completed, the printer will turn Off.

Shutdown Sequence: Definition

The printer shutdown sequence is the elapsed time it takes the printer to turn Off. The sequence lasts four minutes.

During the printer shutdown sequence, the printer turns the ink and high voltage Off. The vacuum remains On to draw ink from the ink return line back into the reservoir (in the ink module), then turns the power supplies Off.

CAUTION: To turn the printer Off, press the Off key on the keyboard and allow the printer to complete the four-minute shutdown sequence. Then toggle the Mains power switch to the Off position. Failure to follow this shutdown procedure properly prevents the printer from drawing the ink in the ink return line back into the reservoir. This may cause the ink to dry in the line, resulting in problems at printer start-up.

You can interrupt the four-minute shutdown sequence by pressing the **CANCEL** key at any time during the shutdown sequence. This will stop the shutdown sequence and automatically start the 97-second printer start-up sequence.

If you press the **ON** key while the printer is performing the shutdown sequence, your attempt to turn the printer back On will be ignored.

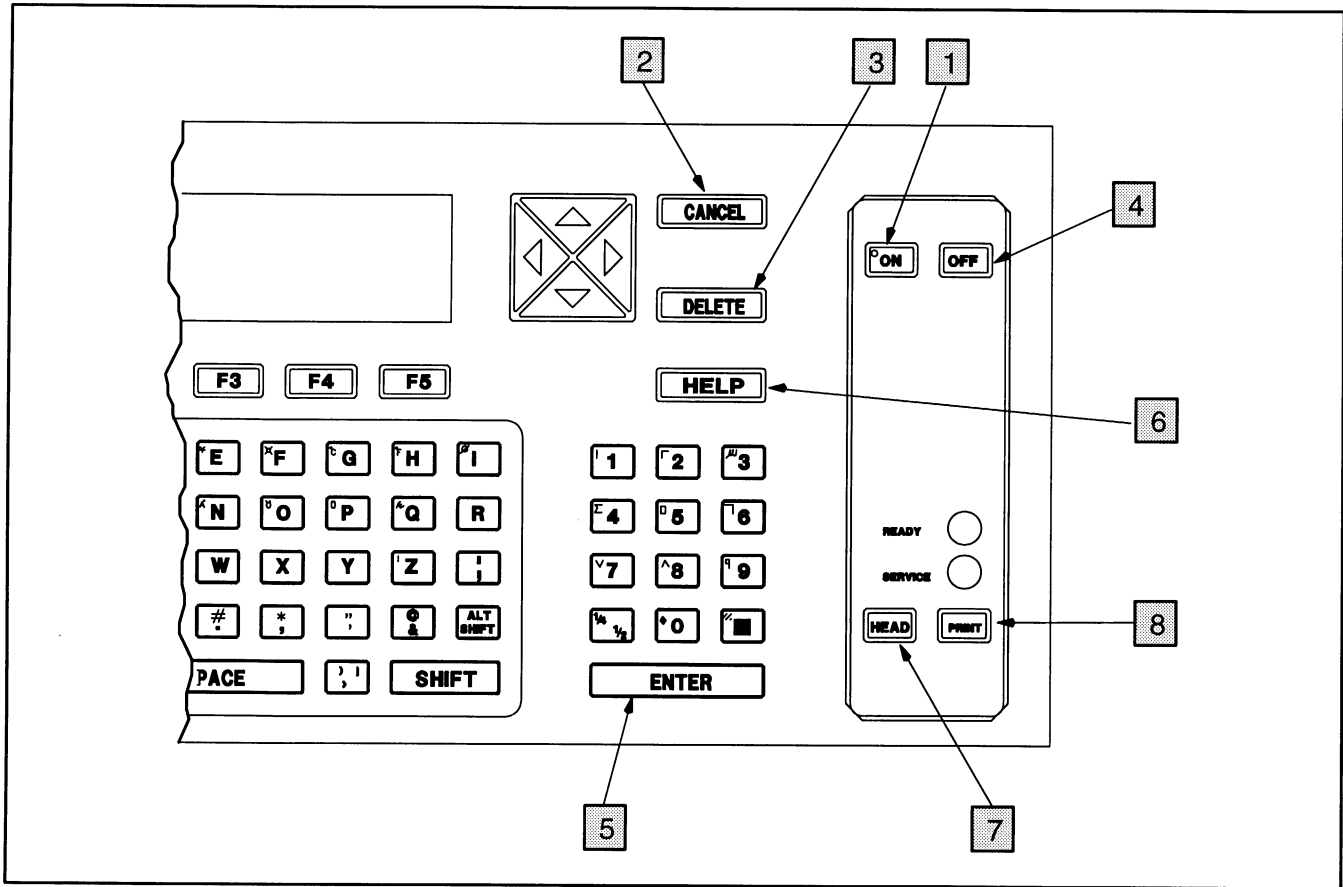


Figure 3-8. Control Keys on the Keyboard

5 ENTER Key

The **ENTER** key is used to:

- save new values and message information made to the printer
- return to the previous software frame. Pressing the **ENTER** key while a frame appears in the display screen will return the display screen to the first frame of the same mode. If you are in the initial frame of software modes INSERT, SERVICE, SYSTEM SET-UP or PRINT SET-UP, pressing the **ENTER** key will return the display screen to the last frame in the Edit mode (04 EDIT screen). Refer to Chapter 5, *Operation*, for a description of the software modes.

The **ENTER** key is active only if the light on the **ON** key is lit. Otherwise, the printer will ignore it when the key is pressed.

6 HELP Key

The **HELP** key is used to diagnose printer faults that have occurred in the printer. The printer does not provide diagnosis information for warning conditions.

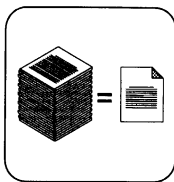
Pressing the **HELP** key while the **SERVICE** light is flashing will display printer fault information in the display screen.

The **HELP** key is active only when the **SERVICE** light is flashing. Otherwise, the printer will ignore it when the key is pressed.

7 HEAD Key

The **HEAD** key is used to turn the printhead, not the printer, On or Off. The printhead is On only when both the ink and high voltage are On. The **HEAD** key must be On, in addition to the **PRINT** key light, for the printer to be able to print a message. When the printhead is Off, or the **HEAD** key light is Off, the printer cannot print.

The **HEAD** key can only be On if the **ON** key light is On. Otherwise, the printer will ignore it when the key is pressed. **The HEAD key is not active while the printer is in the Service mode.**



HEAD Key Summary

Light is ON: This indicates that the printer has completed the start-up sequence, and the printhead is now active (ink is On, High Voltage is On). To print a message, press the **PRINT** key (refer to the *Print Key* on page 3-14 for further information). To make the printhead inactive, press the **HEAD** key.

CAUTION: High Voltage is applied to the printhead when the **HEAD** key is On.

Light is FLASHING: This indicates that the printer is currently performing the printhead start-up sequence (ink is On, High Voltage is Off). Once the printhead start-up sequence is completed, the light will stay On. To stop the start-up sequence while in progress, press the **HEAD** key.

Light is OFF: This indicates that the printhead is not active (ink is Off, High Voltage is Off), therefore it cannot print a message. To make the printhead active (start the printhead start-up sequence), press the **HEAD** key and wait until the light on the key is lit (solid, not flashing).

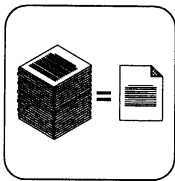
8 PRINT Key

The **PRINT** key is used to make the printer ready to print a message. The printer can print a message only if the printhead is active. Therefore, the **PRINT** key is active only if the light on the **HEAD** key is On first (indicating that the printhead is active).

Note: The **HEAD** key is not active while the printer is in the Service mode, unless the Ink is turned On in the Service mode.

If you press the **PRINT** key when the **HEAD** key light is flashing or Off, your attempt to print will be ignored. (The **PRINT** key will flash if it is pressed during the start-up sequence. It will remain flashing until the printer has completed the start-up.)

Once the **PRINT** key is pressed (when the light on the **HEAD** key is already On), the **READY** light will turn On, indicating that the printer is now ready to print a message once it receives a product detect signal.



PRINT Key Summary

Light is ON: This indicates that the printer is ready to print a message onto the product whenever a product detect signal is received. The **READY** light will also be on when the light on the **PRINT** key is On. To stop printing, press the **PRINT** key.

Light is OFF: This indicates that the printer is not ready to print a message. To make the printer ready to print a message, press the **PRINT** key (but only after the light on the **HEAD** key is On). This will cause the **READY** light to turn On.

Light is Flashing: This indicates that the **Print** key has been pressed during the start-up sequence. The light will remain flashing until the printer has completed the start-up.

Display Screen

Introduction

The display screen (refer to Figure 3-9) shows messages, fault and warning information, software frames, and operational commands for the printer. The display screen is On only when the light on the **ON** key is lit.

Information in the Display Screen

The display screen shows messages, faults, warnings, and software commands to help you move from one software frame to another.

Messages can be modified by using the arrow keys, **DELETE** key, alpha keypad, and numeric keypad. Refer to the appropriate section in this chapter for further information on those keys. Information (options) which appears in software frames can be selected by using the function keys (refer to *Function Keys* on page 3-19 for further information).

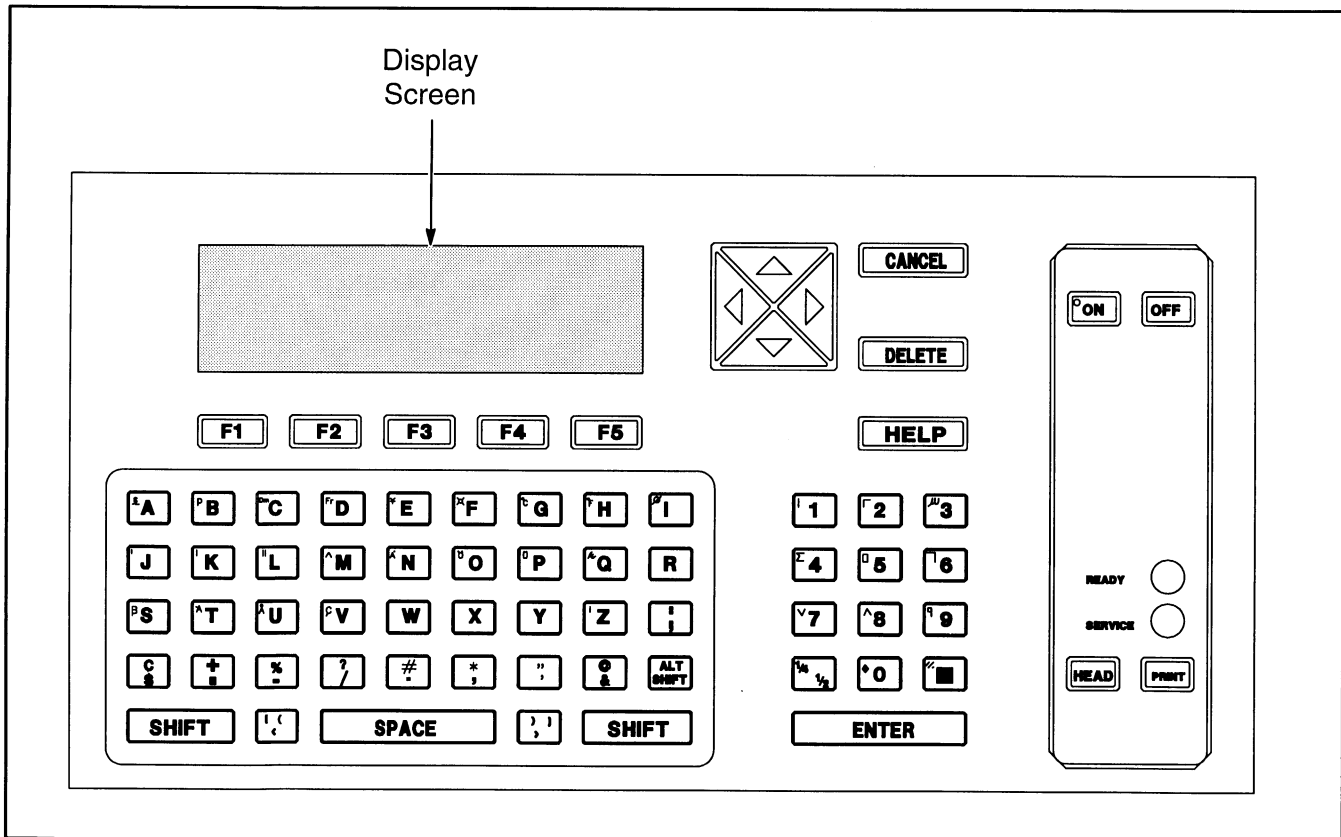


Figure 3-9. Display Screen

continued

Cursor

The cursor is the black, blinking graphic object in the display screen (refer to Figure 3-10). The cursor helps you locate your position within a message; wherever the cursor is placed is where the next character or insert will be entered into the message.

When the cursor is placed on a character and the **DELETE** key is pressed, the selected character is deleted from the message. The displayed message moves to the left to fill the deleted character's space.

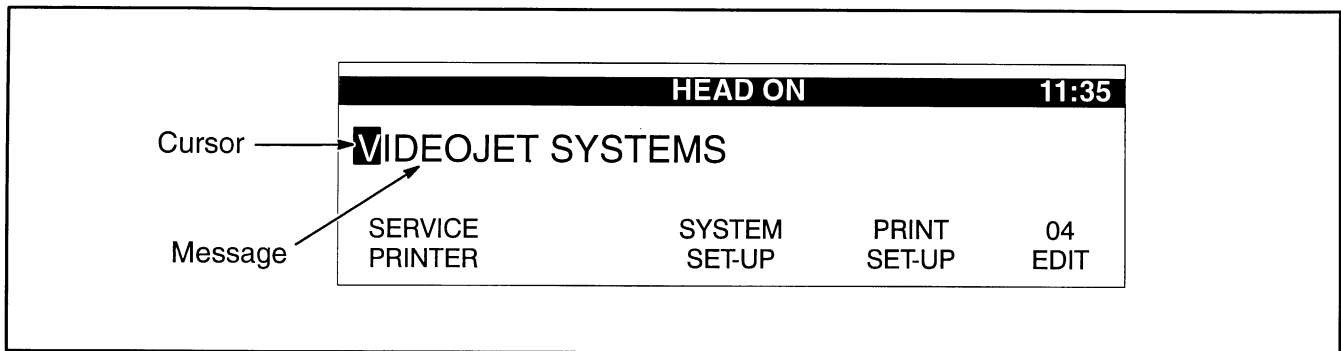


Figure 3-10. Cursor

Status Lights

Overview

Status lights indicate the current status of the printer, and are active only when the printer is On (the light on the **ON** key is lit). These are the two status lights on the keyboard (refer to Figure 3-11):

- **READY** Light turn to page 3-18
- **SERVICE** Light turn to page 3-18

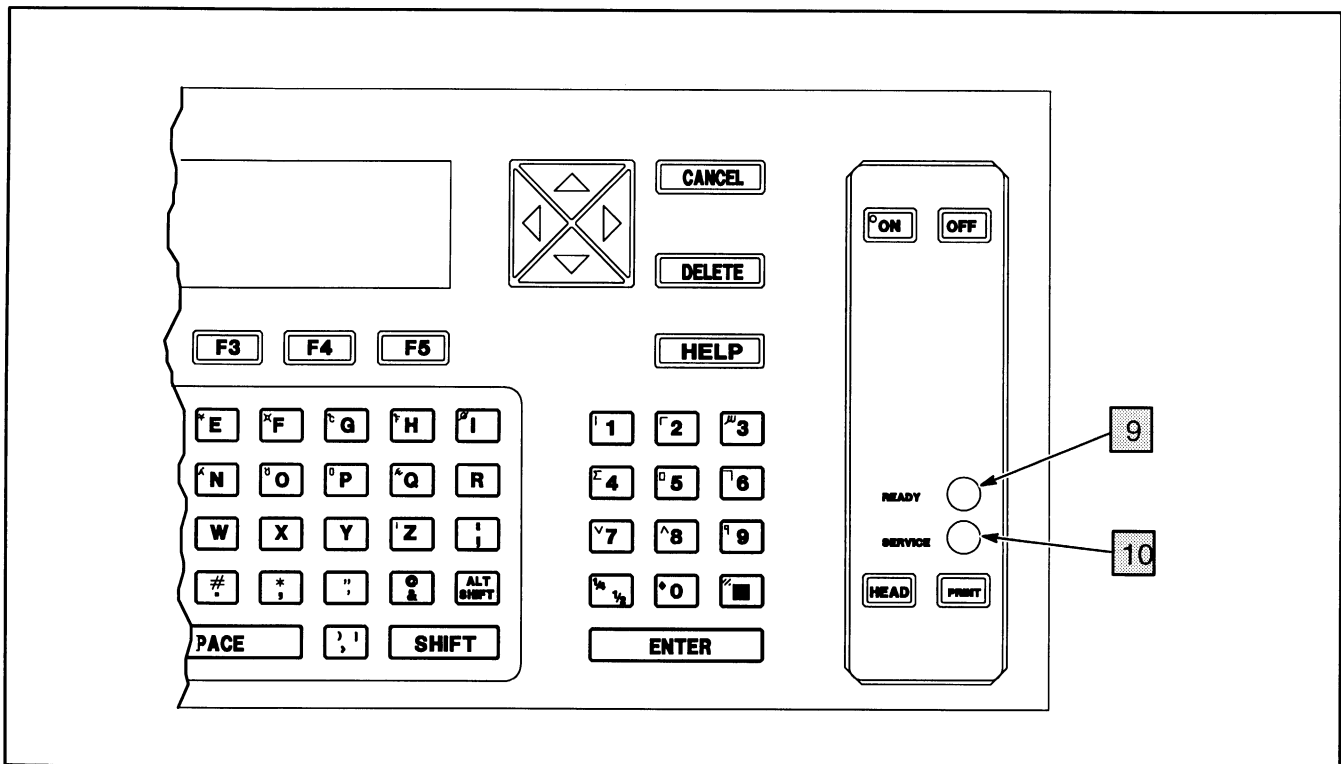
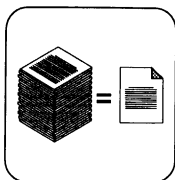


Figure 3-11. Status Lights on the Keyboard

continued

9 READY Light



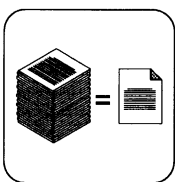
The **READY** light indicates whether or not the printer is ready to print a message (whenever a product detect signal is received). The **READY** light turns On only when the lights on both the **HEAD** key and **PRINT** key, respectively, are On.

READY Light Summary

Light is On (green): This indicates that the printer is ready to print a message onto the product whenever a product detect signal is received.

Light is Off: This indicates that the printer is not ready to print a message. To make the printer ready to print a message, press the **HEAD** key (if the light on the **HEAD** key is Off), then press the **PRINT** key. If the **HEAD** key light is already On, press the **PRINT** key. This will cause the **READY** light to turn On.

10 SERVICE Light



The **SERVICE** light indicates that a fault or warning has occurred to the printer. If the **SERVICE** light is flashing it indicates that a printer fault has occurred. If the **SERVICE** light is lit (solid, not flashing) it indicates that a printer warning has occurred.

If the **SERVICE** light is flashing, call for a qualified service technician. The printer does not provide diagnosis information for warning conditions. Therefore, the **HELP** key is inactive if the **SERVICE** light is lit (solid, not flashing).

SERVICE Light Summary

Light is On (yellow): This indicates that the printer has experienced a warning condition.

Light is Flashing (yellow): This indicates that the printer has experienced a fault condition.

Light is Off: This indicates that the printer is operating normally (without any problems).

Function Keys

Introduction

The function keys (**F1**, **F2**, **F3**, **F4**, and **F5**) are used to select the options that appear in the software frames in the display screen (refer to Figure 3-12).

The function keys are active only if the **ON** key light is lit.

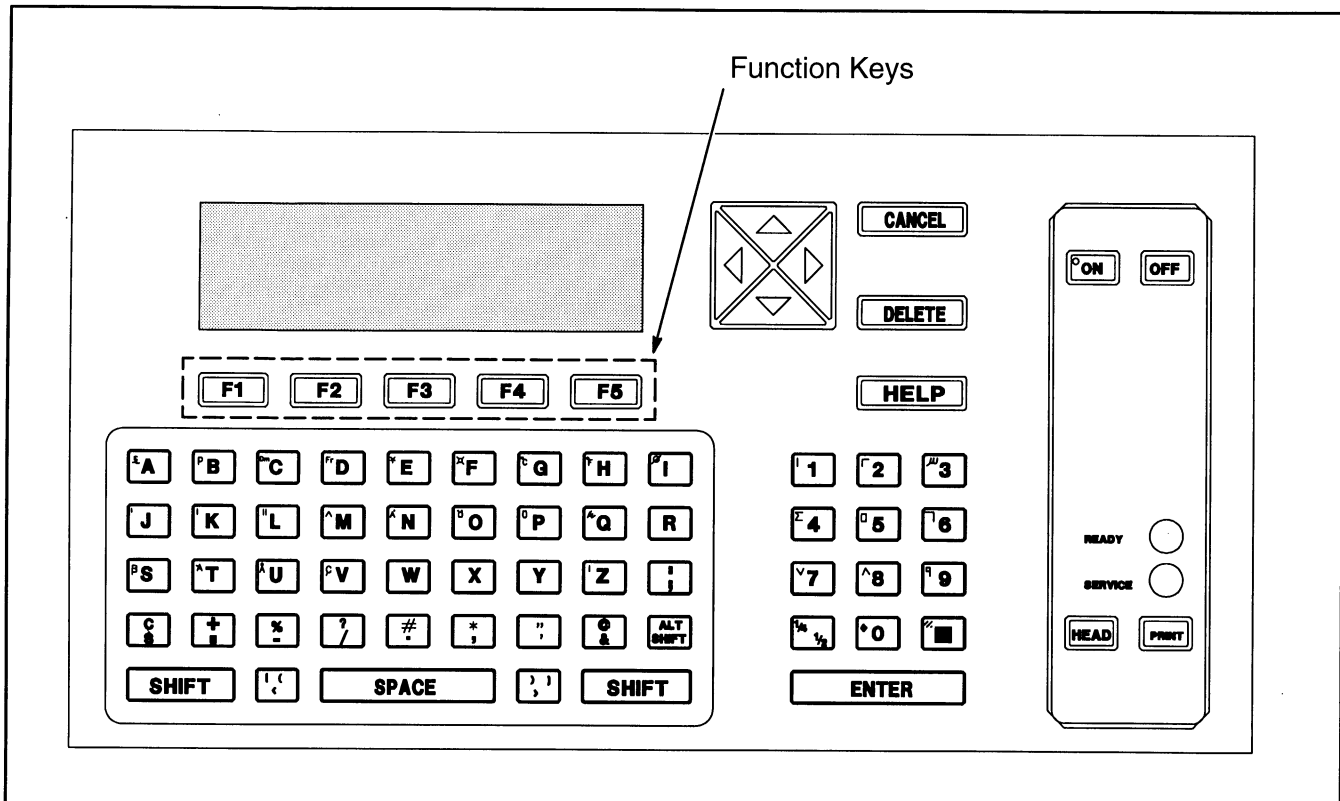


Figure 3-12. Function Keys

continued

Using the Function Keys

An option appearing in the display screen can be selected by pressing the function key located directly below it. Once a function key is pressed, the display screen will change to another software frame containing additional information or choices for that option. Refer to *Chapter 5, 6, and 7* for complete instructions for using the system software.

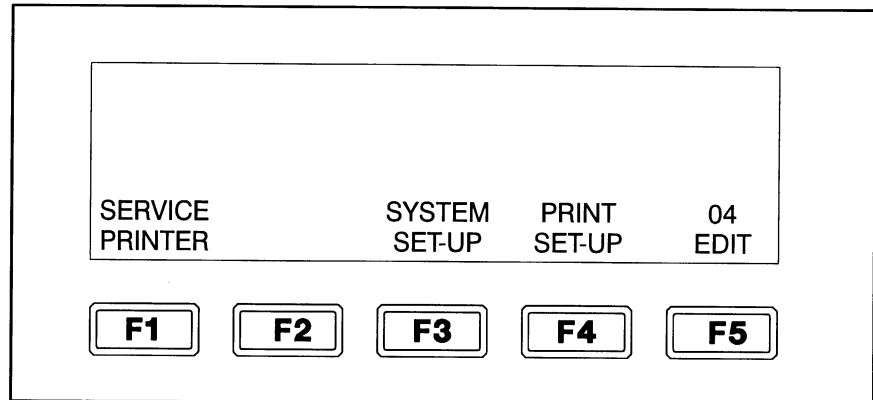


Figure 3-13. 04 EDIT Software Frame

For example:

This example applies to the software frame shown in Figure 3-13 above.

- Pressing the **F1** key will select the <SERVICE PRINTER> option (and change the display screen to the 01 SERVICE frame).
- The **F2** key is inactive since there is not an option located directly above it.
- Pressing the **F3** key will select the <SYSTEM SET-UP> option (and change the display screen to the 01 SYSTEM frame).
- Pressing the **F4** key will select the <PRINT SET-UP> option (and change the display screen to the 01 PRINT frame).
- Pressing the **F5** key will change the software frame to the next frame in that mode (in this case, the <01 EDIT> frame).

Arrow Keys

Introduction

The location of the arrow keys is shown in Figure 3-14. The arrow keys are used to:

- move the cursor within a message in the display screen
- increase and decrease values in certain software frame options

The arrow keys are active only if the light on the **ON** key is lit. Otherwise, the printer will not respond when these keys are pressed.

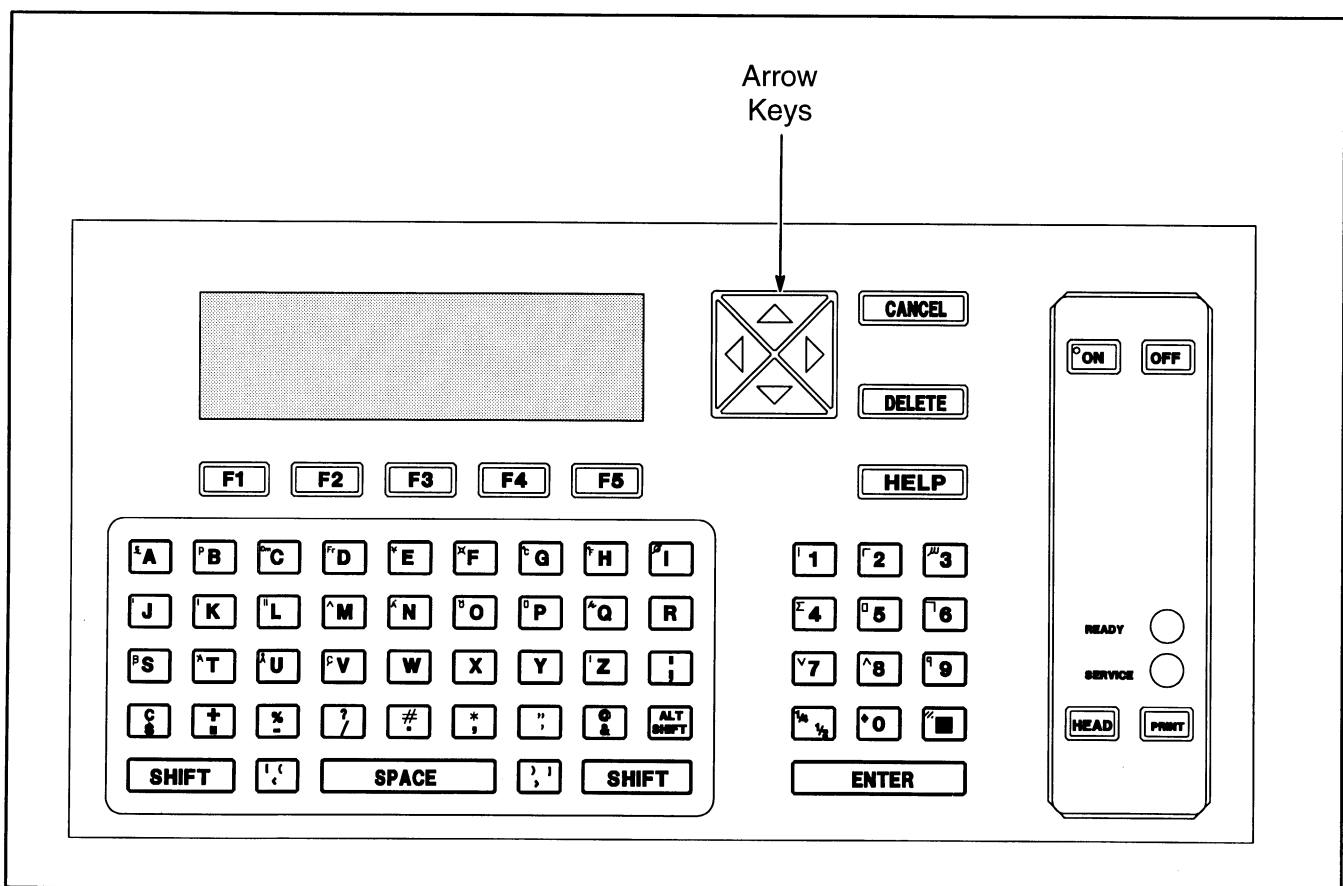


Figure 3-14. Arrow Keys

continued

Using the Arrow Keys

When using the arrow keys, the following guidelines apply:

- use the up (▲) and down (▼) arrow keys to move the cursor vertically within a multi-line message
- use the right (▶) and left (◀) arrow keys to move the cursor horizontally within a line in a message
- when a particular software option contains a value (shown inside a black box), use the arrow keys to increase or decrease the value as desired (refer to Figure 3-15)

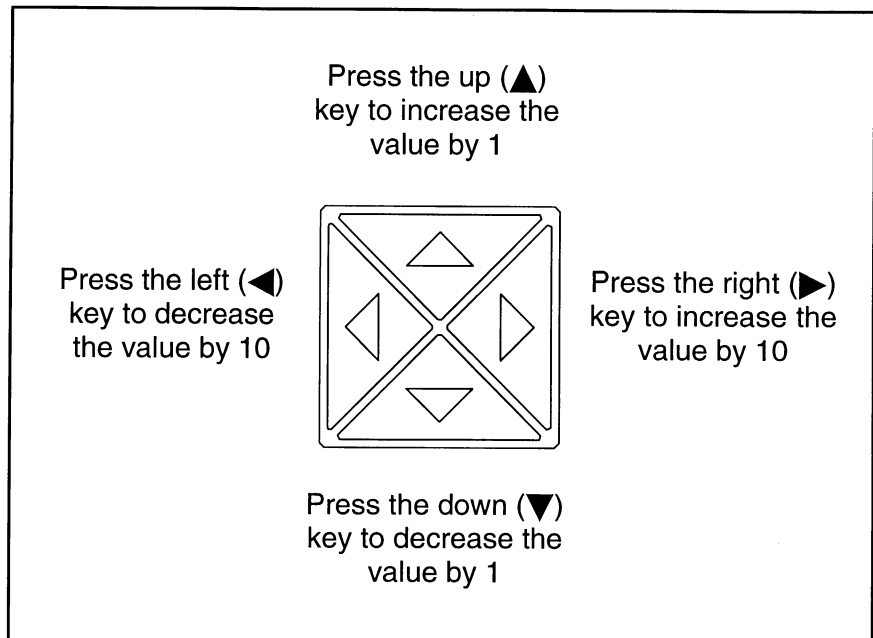


Figure 3-15. Changing Values Using the Arrow Keys

Alpha Keypad

Introduction

Use the alpha keypad to enter alphabetic and special characters into the message appearing in the display screen (refer to Figure 3-16). Special characters are those characters which appear on the keyboard in green and red.

Creating Alphabetic Characters

To enter an alphabetic 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.

To create a lowercase character, press the **SHIFT** key and the key for the desired character at the same time. Notice that the character will appear in the display screen as a small capital letter. However it will print as a lowercase character.

Creating Special Characters

Special characters are those characters which appear on the keyboard in green and red. To enter a special character into the message, follow these guidelines:

- for special characters shown in green, press and hold the **SHIFT** key while pressing the key for that character
- for special characters shown in red, press and hold the **ALT SHIFT** key while pressing the key for that character

The printer will place the special character into the message at the current location of the cursor.

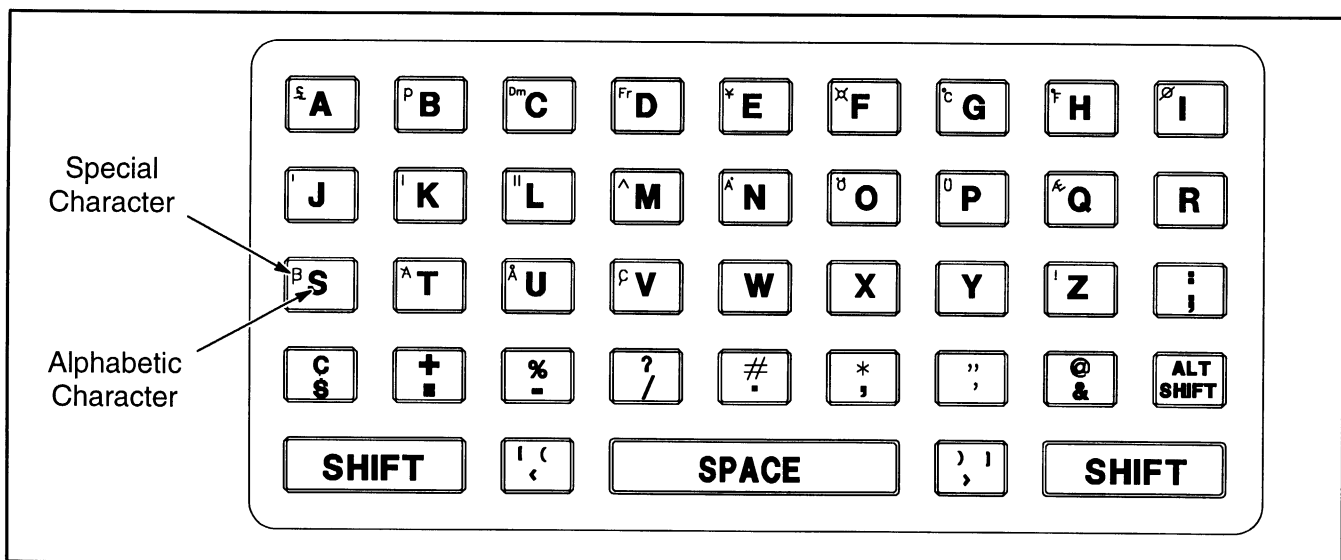


Figure 3-16. Alpha Keypad

Numeric Keypad

Introduction

Use the numeric keypad to enter numeric and Arabic numerals into the message appearing in the display screen (refer to Figure 3-17). Those characters which appear on the numeric keypad in red are referred to as Arabic numerals.

Creating Numeric Characters

To enter a numeric character (number) into the message, press the key for that character. The printer will place the number into the message at the current location of the cursor.

Creating Arabic Numerals

Those characters which appear on the numeric keypad in red are referred to as Arabic numerals. To enter an Arabic numeral into the message, press and hold the **ALT SHIFT** key while pressing the key showing the desired Arabic numeral. The printer will place the Arabic numeral into the message at the current location of the cursor.

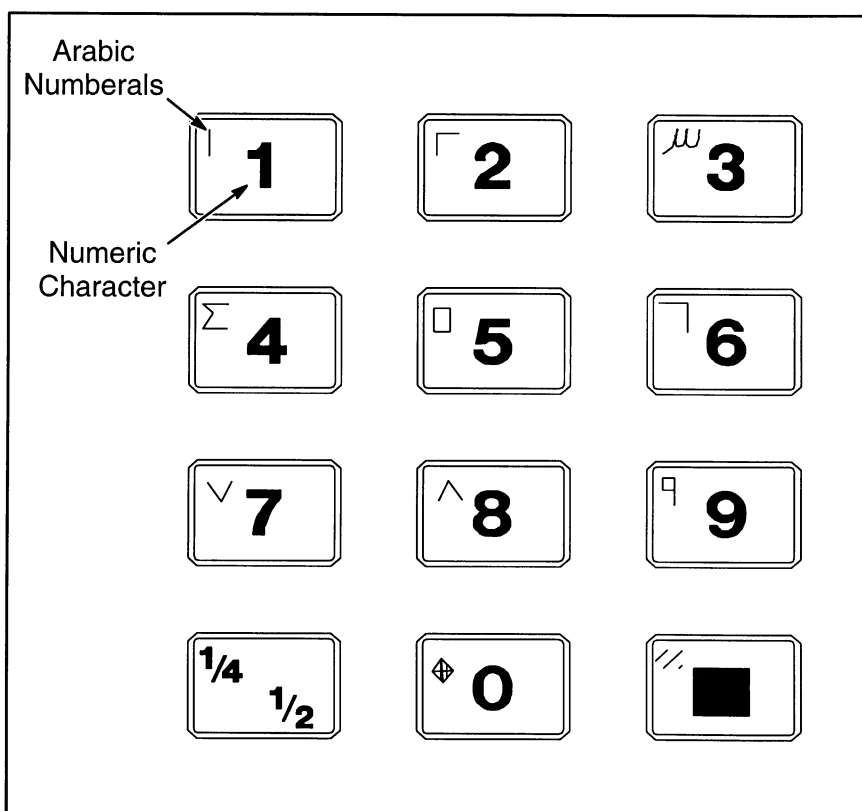


Figure 3-17. Numeric Keypad

4

Printer Start-up and Shutdown

In this chapter you will find:

- how to turn the printer On for daily operation
- how to turn the printer Off after you are finished using it
- the general guide-lines for using the printer

Refer to page 4-2 for a chapter-level Table of Contents.

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 Introduction 4-8

 Procedure 4-8

Guide-lines for Using the Printer

Introduction

The printer is designed for continuous use; however, you should follow the guide-lines below when using the printer:

If Printer is Used Periodically

If you use the printer only periodically where there is typically five or more days in between use, you should circulate the ink in the printer every fifth day for approximately one hour, or you may experience poor printer operation.

Extended Shutdown

If you do not intend to use the printer for an extended period of time, you should prepare the printer for extended shutdown (storage). The period of time that the printer can sit before you should consider preparing it for extended shutdown depends on the ink type used, the application, and when the printer will be used next. Generally, if the printer is not going to be used for more than five days and you do not expect to use it again soon, you should prepare the printer for extended shutdown (storage).

If you do not prepare the printer for extended shutdown, you may experience poor printer operation, or the ink may dry, causing clogged lines and/or a build-up of dried ink in the components.

To prepare the printer for extended shutdown, contact service or maintenance personnel.



WARNING: Customers who intend to service and maintain the printer themselves must only have qualified personnel perform those procedures. Qualified personnel are considered to be those persons who have the proper technical training, (successful completion of a training course covering this printer), have experience to work on this equipment, and are aware of the hazards to which they will be exposed. The Service Manual is intended to be a supplement (and not a replacement) to training.

This procedure requires access to areas of the printer which must be serviced or maintained by a service technician. Only those who have the proper training and experience to work with this equipment and are aware of the hazards to which they are exposed are authorized to perform this procedure.

All the procedures in this chapter begin with the assumption that the printer has already been installed and the system parameters have been set.

Preparing to Turn the Printer On

Introduction

This section contains a list of things to do prior to turning the printer On at the beginning of each day or each work shift. These steps are essential to maintain optimal printer performance.

Procedure

1. Check the fluid levels in the ink and make-up fluid bottles. If levels are low, replace them with new bottles of fluid. Refer to Figure 4-1 for the location of the ink and make-up fluid bottles.

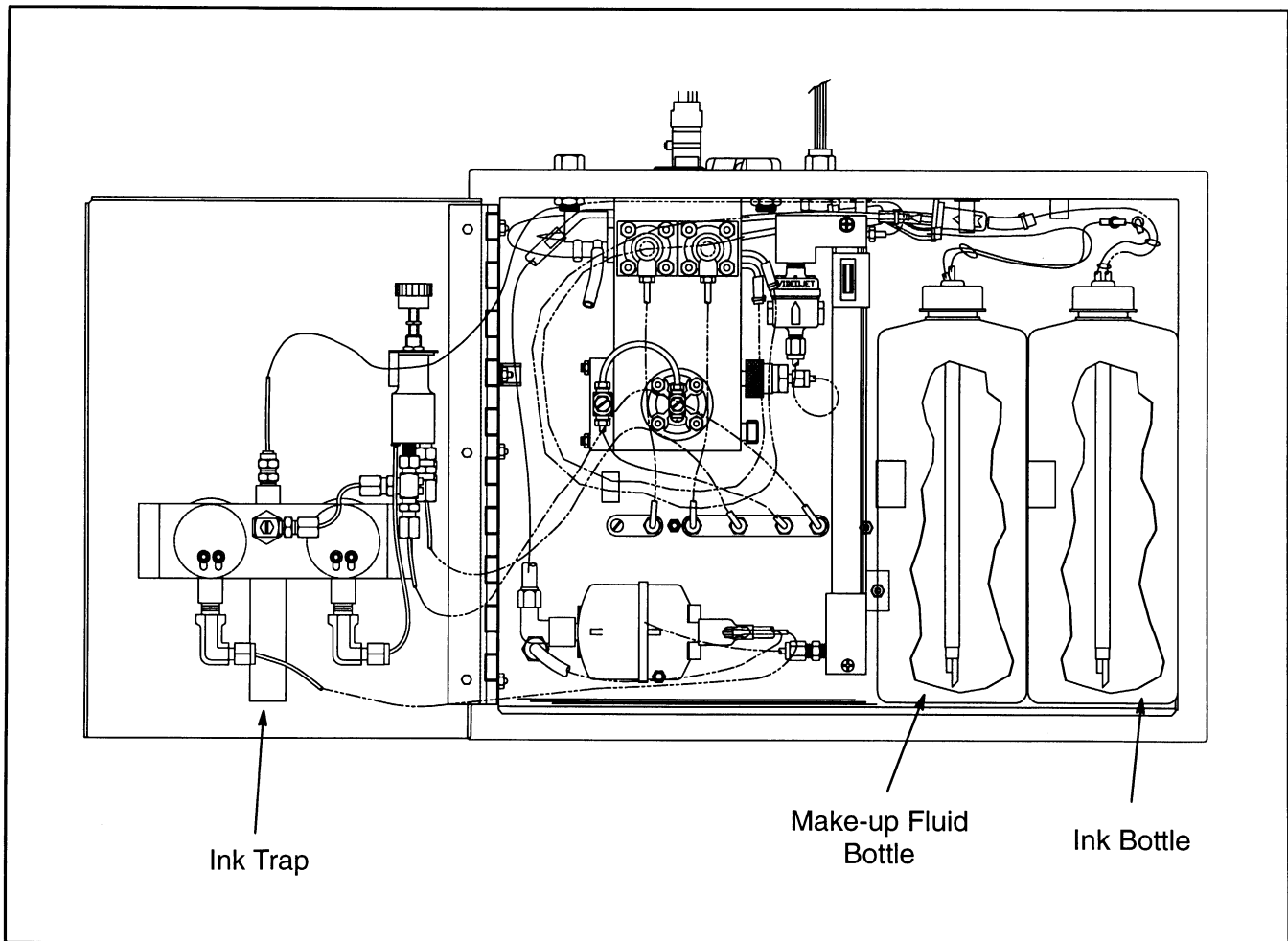


Figure 4-1. Fluid Pan

2. Inspect fluid tube connections for leaks. If you find a leak, tighten the connection one-quarter turn.
3. Clean the ink trap, if necessary. Refer to Figure 4-1 on the previous page for the location of the ink trap.

CAUTION: The next step, *Cleaning the Printhead*, must be performed by service or maintenance personnel who have the proper training and experience to work in this equipment and are aware of hazards to which they are exposed.

4. Clean the printhead. Refer to the *Caution* above. This step must be performed by service or maintenance personnel only.
5. Properly align the printhead to its mounting.

You are now ready to turn the printer On. Refer to *Turning the Printer On* on the next page for further information.

Turning the Printer On

Introduction

This procedure contains the steps to properly turn the printer On. It is recommended that you follow the steps in *Preparing to Turn the Printer On* on page 4-4 before beginning the procedure.

Procedure

Perform the following steps to turn the printer On:

1. Turn the mains power switch On. The mains power switch is located on the side of the printer. (Refer to Figure 4-2 for the location of the mains power switch.)

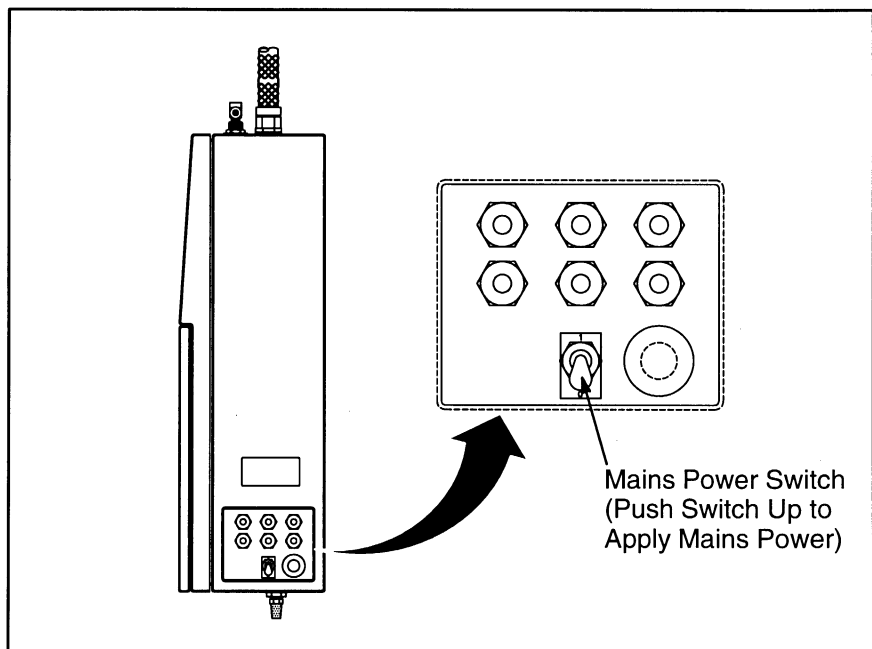


Figure 4-2. Mains Power Switch

2. Press the **ON** key on the keyboard to begin the 97-second start-up sequence. Refer to Figure 4-3 for the location of the **ON** key. Refer to the Start-up Sequence Summary on the next page for a complete explanation of the start-up sequence.

You are now ready to enter a message. Refer to *Chapter 6* in this manual for instructions to enter a new message or change an existing message.

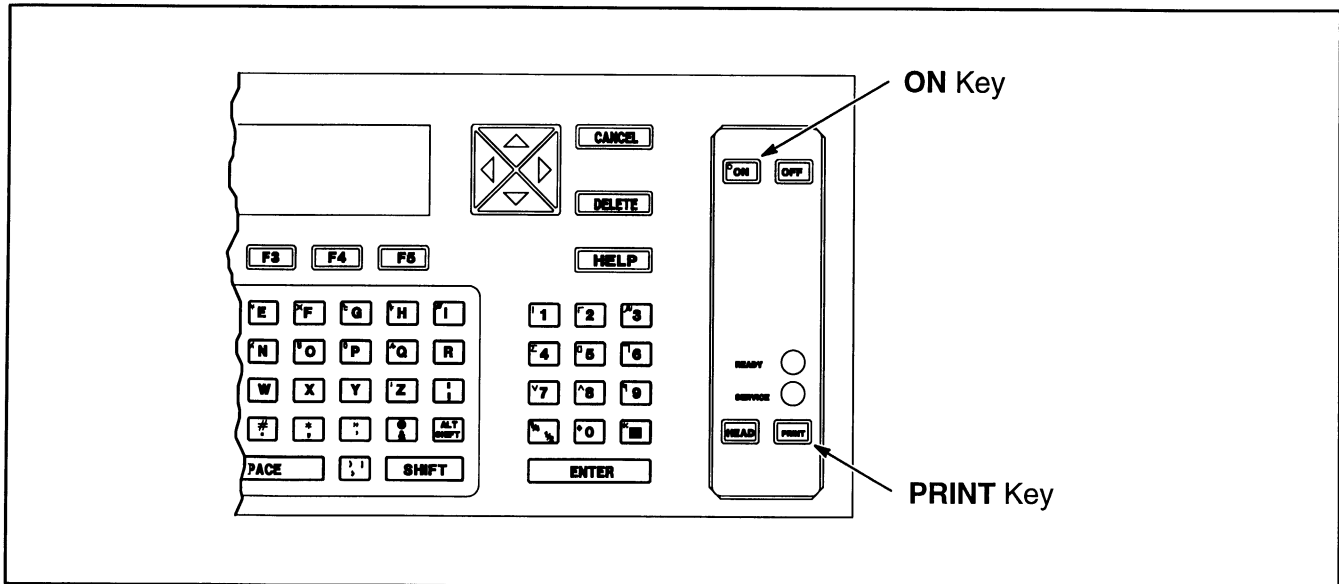


Figure 4-3. Location of ON and PRINT Keys

Start-up Sequence Summary

The printer start-up sequence is the elapsed time from when the **ON** key is pressed to the time that the printer is prepared for use. It lasts 97 seconds.

During the printer start-up sequence, the printer verifies that everything is operating properly. Hydraulics, pneumatics, and electronics are enabled, systems checks are performed, printer faults are monitored, and the ink stream is allowed to stabilize.

Once the 97-second start-up sequence is completed, the light on the **HEAD** key stops flashing and becomes lit (solid), and the message <HEAD ON> appears at the top of the display screen. Refer to the **HEAD** key on page 3-13 for further information.

If you press the **OFF** key while the printer is performing the start-up sequence, the printer will stop the start-up sequence and automatically start the four-minute shutdown sequence which turns the printer Off.



WARNING: Even though the light on the **ON** key is Off, Mains power is still applied to the printer unless the Mains power switch is in the OFF (O) position and the mains cable is disconnected.

Turning the Printer Off

Introduction

This procedure describes how to turn the printer Off after you are finished using it at the end of the day or end of each work shift.



CAUTION: Do not clean the printhead at shutdown. At shutdown, the ink dries and forms a “cap” over the orifice in the nozzle. This “cap” prevents air from entering the nozzle, where it can dry the ink inside the nozzle and clog the printhead.

Cleaning the printhead prior to start-up will remove the ink “cap” from the nozzle orifice.

Procedure

Perform the following steps to turn the printer Off:

1. Press the **OFF** key to begin the shutdown sequence. (See Figure 4-4 for the location of the **OFF** key.) Refer to the next page for an explanation of the Printer Shutdown sequence.

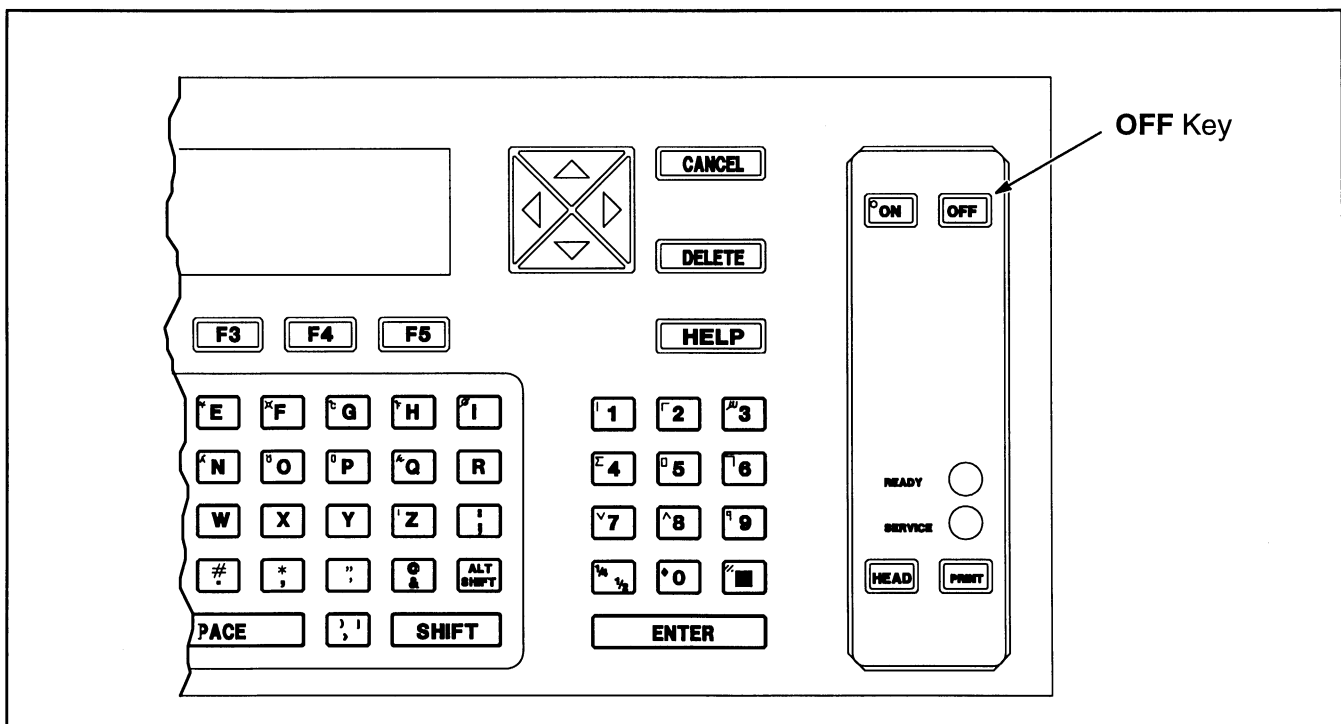


Figure 4-4. OFF Key



CAUTION: Never turn the printer Off by switching the Mains power switch to the OFF (O) position before pressing the OFF key and allowing the printer to complete the four-minute shutdown sequence. Failure to follow this shutdown procedure properly prevents the printer from drawing the ink in the ink return line back into the reservoir. This may cause the ink to dry in the line, resulting in problems when you turn the printer On.

2. Turn the mains power switch (located on the side of the printer) Off.

Shutdown Sequence Summary

The printer shutdown sequence is the elapsed time it takes the printer to turn Off. It lasts four minutes.

During the printer shutdown sequence, the printer turns the ink and high voltage Off, but the vacuum remains On to draw ink from the ink return line back into the reservoir (in the ink module), then turns the power supplies Off.



CAUTION: To turn the printer Off, press the Off key on the keyboard and allow the printer to complete the four-minute shutdown sequence. Failure to follow this shutdown procedure properly prevents the printer from drawing the ink in the ink return line back into the reservoir. This may cause the ink to dry in the line, resulting in problems when you turn the printer On.

You can interrupt the four-minute shutdown sequence by pressing the **CANCEL** key at any time during the shutdown sequence. This will stop the shutdown sequence and automatically start the 97-second printer start-up sequence.

If you press the **ON** key while the printer is performing the shutdown sequence, your attempt will be ignored.

Notes:

[illegible]

5

Software Summary Chart

In this chapter you will find:

- the Software Summary chart
- an explanation of how to use the Software Summary chart
- explanations of each of the modes on the Software Summary chart

Refer to page 5-2 for the Table of Contents for this chapter.

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 Service Mode 5-7

 System Set-up Mode 5-7

 Print Set-up Mode 5-8

Software Summary Chart

Introduction

This chapter describes how to use the colour-coded Software Summary chart, the map of the software which is located at the end of this chapter.

Frame: Definition

Each set of commands visible on the printer display screen at one time are called frames. Each frame available in the software is shown on the Software Summary chart.

When you turn the printer On, Frame <01 EDIT> appears in the display screen. The Software Summary chart, therefore, begins with this frame. Refer to the top of the Software Summary chart at the end of this chapter to locate Frame <01 EDIT>. Also refer to Figure 5-1 below for illustrations of Frame <01 EDIT>.

Note: The name of the frame, such as "Frame <01 EDIT>," is the text that appears in the frame above the F5. (Refer to Figure 5-1.)

Note the colours on the Software Summary chart: white, yellow, red, blue, and green. Each colour denotes a different mode: Edit, Insert, Service, System Set-up, and Print Set-up, respectively. The modes are described in more detail on the following pages.

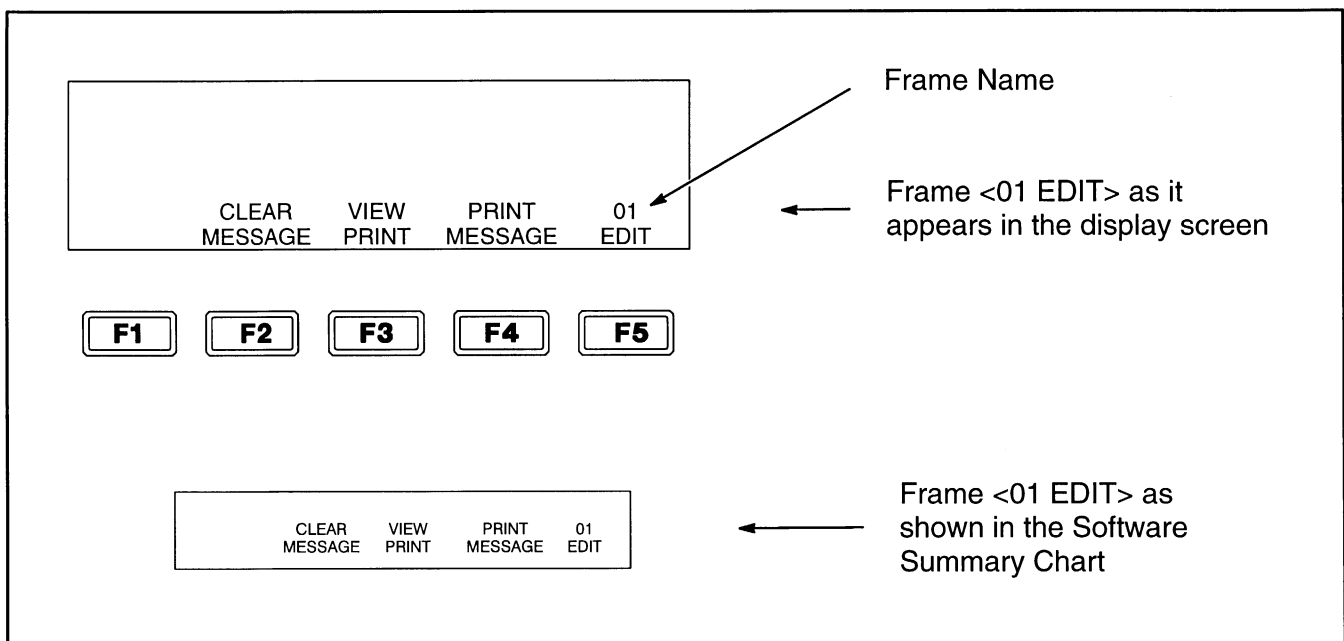


Figure 5-1. Frame <01 EDIT>

F Keys

The **F** keys (**F1**, **F2**, **F3**, **F4**, and **F5**) allow you to move from one frame to the next. The lines that connect the frames on the Software Summary chart indicate the appropriate **F** key to press to move to the next frame. Refer to Figure 5-2.

Move from frame to frame in the software by pressing the **F** keys located below the display screen. The lower illustration in Figure 5-2 shows how the **F** keys are positioned in relation to the words on the display screen.

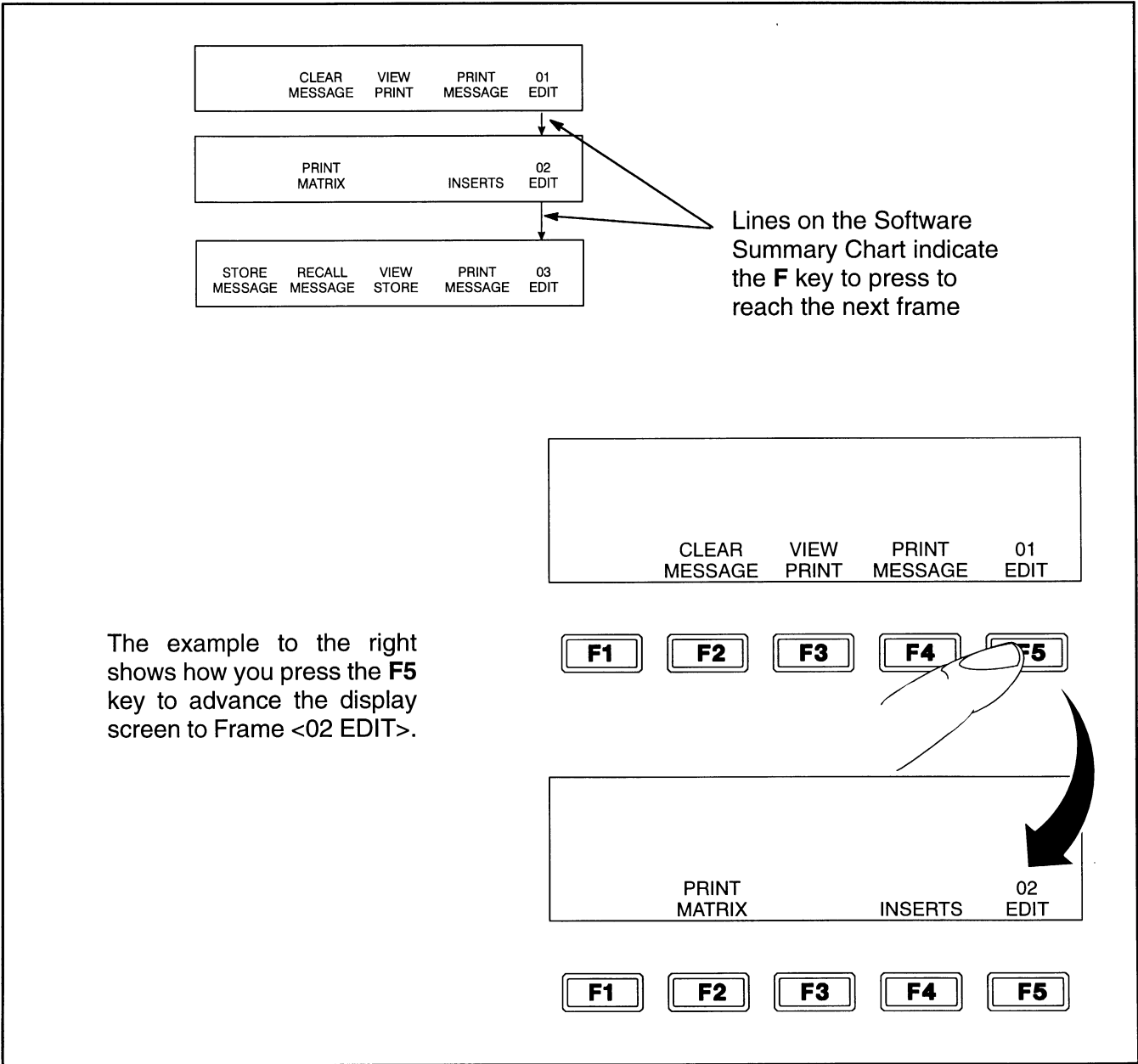


Figure 5-2. Software Summary Chart

Software Summary Chart Modes

Introduction

This section describes each of the five sections in the Software Summary chart, which are called modes.

- *Edit mode* below
- *Insert mode* turn to page 5-6
- *Service mode* turn to page 5-7
- *System Set-up mode* turn to page 5-7
- *Print Set-up mode* turn to page 5-8

Edit Mode

Function: The software is in the Edit mode when the printer is turned On. The frames of the Edit mode are used to enter, edit, and store messages. The Edit mode is shown in Figure 5-3.

Chart Colour: white

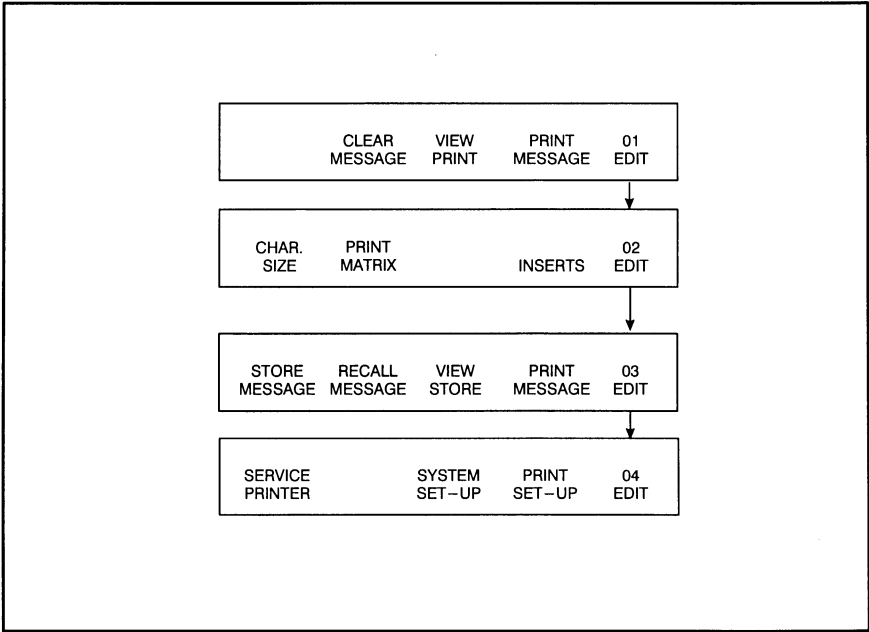


Figure 5-3. Edit Mode

Insert Mode

Function: An insert is an element containing variable information that can be placed into a message. The insert mode is shown in Figure 5-4.

Chart Colour: yellow

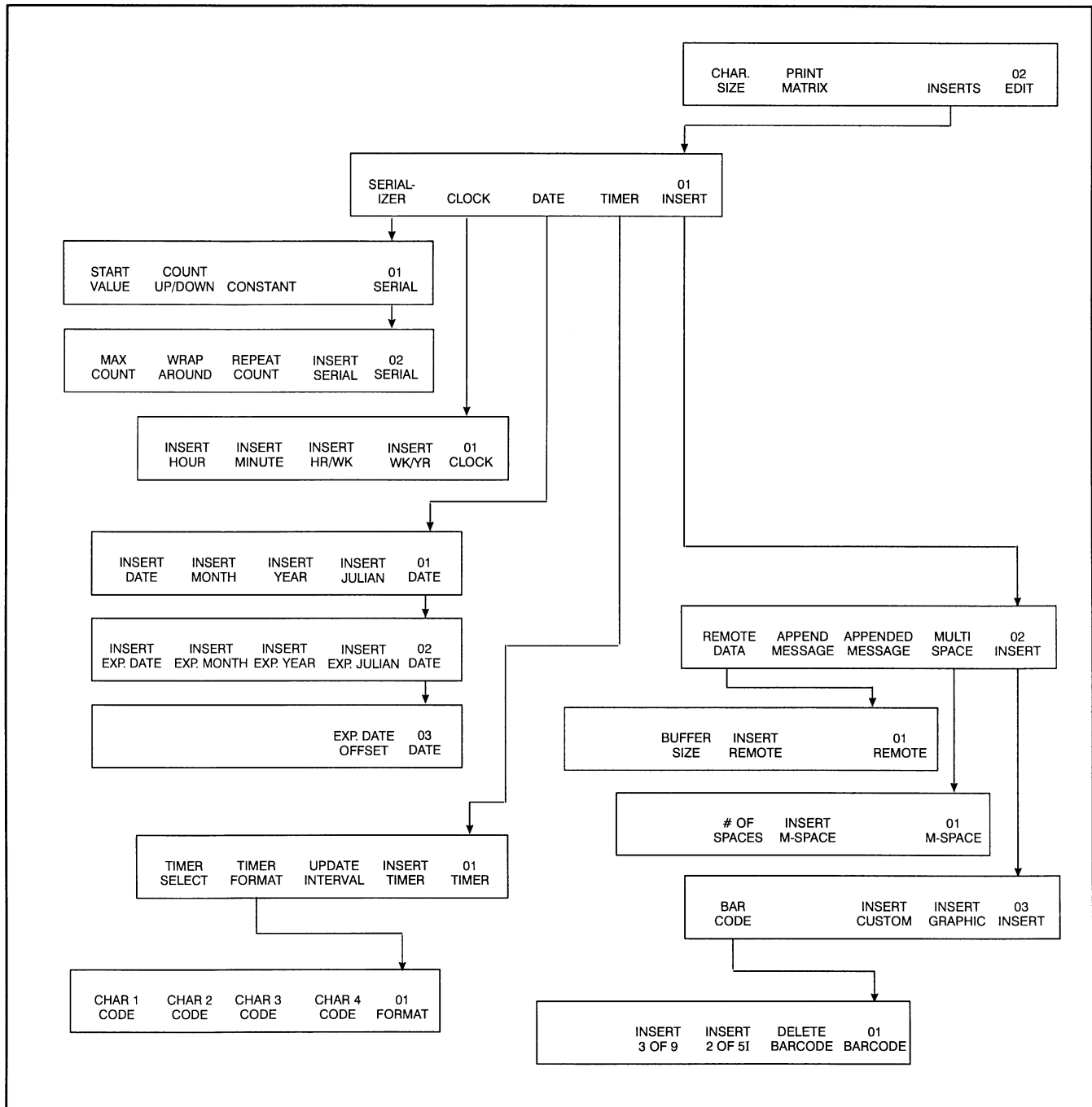


Figure 5-4. Insert Mode

Service Mode

Function: The Service mode is intended for use by personnel who have the proper training and experience to work with this equipment and are aware of hazards to which they are exposed. Qualified personnel should refer to the *VIDEOJET 170i Ultra Printer Service Manual* for information on the Service mode.

Chart Colour: red

System Set-up Mode

Function: The System Set-up mode is used during printer installation to enter parameters such as date and time, which become part of the printer memory. The System Set-up mode is shown in Figure 5-5.

Chart Colour: blue

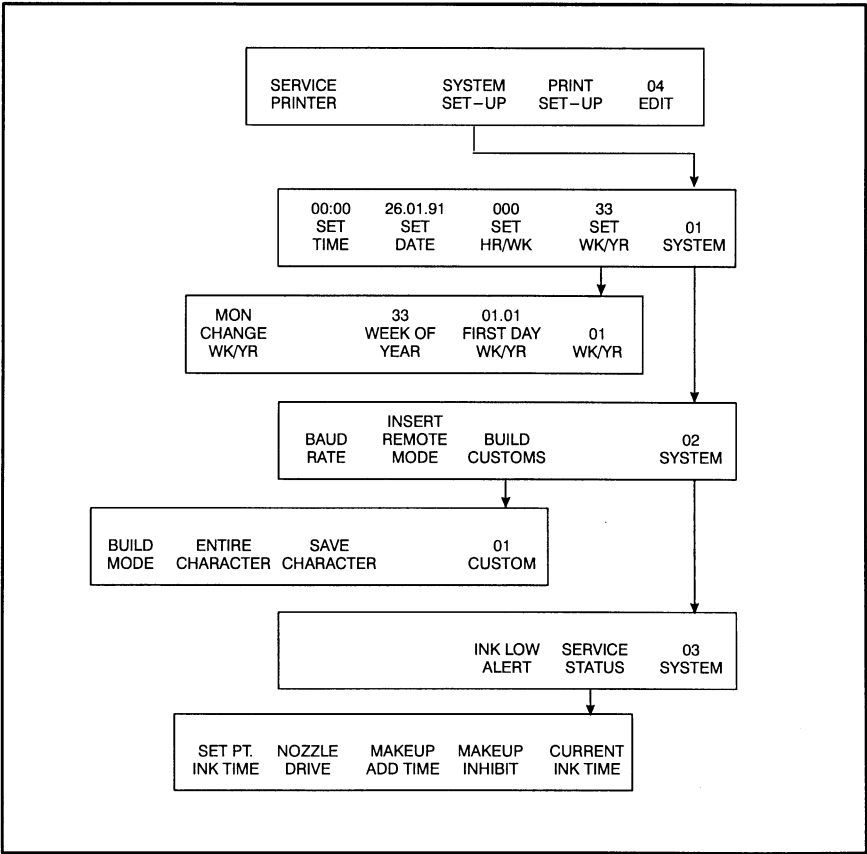


Figure 5-5. System Set-up Mode

Print Set-up Mode

Function: The Print Set-up mode allows the operator to set specific printing parameters that apply to the entire message. The Print Set-up mode is shown in Figure 5-6.

Chart Colour: green

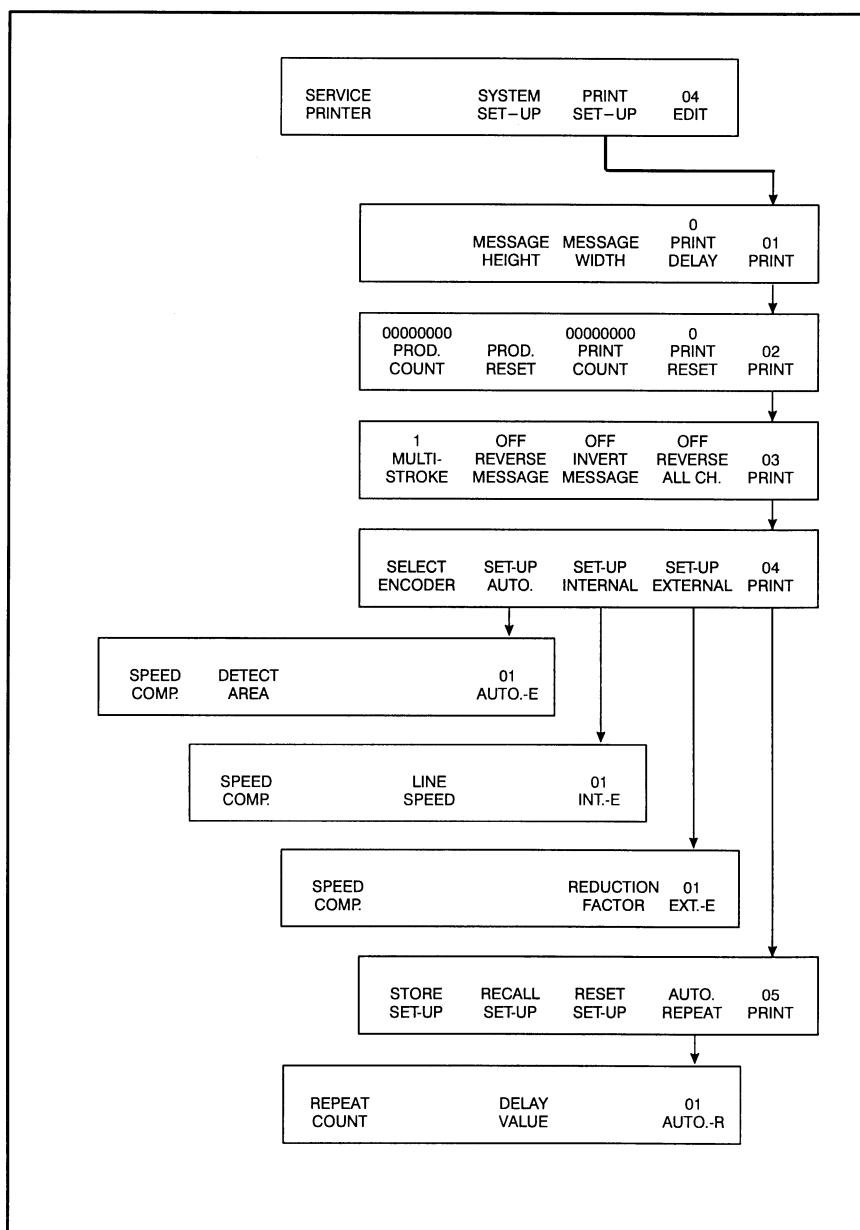


Figure 5-6. Print Set-up Mode

6

Creating and Printing Messages

In this chapter you will find:

- complete instructions to perform all message entry and printing functions

Refer to page 6-2 for the Table of Contents for this chapter.

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Introduction

Overview

This chapter contains all the procedures required to create and edit all types of messages, store messages, recall messages, and print messages.

If at any time you have difficulty locating a procedure or an explanation of how to use one of the commands in the software, refer to the Index in the back of this manual. All keyboard commands are available in the index so you can quickly find a particular procedure.

Sections in this Chapter

Turn to the first page of each section for a detailed listing of the sections covered in this chapter.

- *Creating Messages* turn to page 6-4
- *Storing Messages* turn to page 6-50
- *Printing Messages* turn to page 6-53

Software Illustration Conventions

The illustration in Figure 6-1 shows how to use the software illustrations provided for each procedure to find your way through the software.

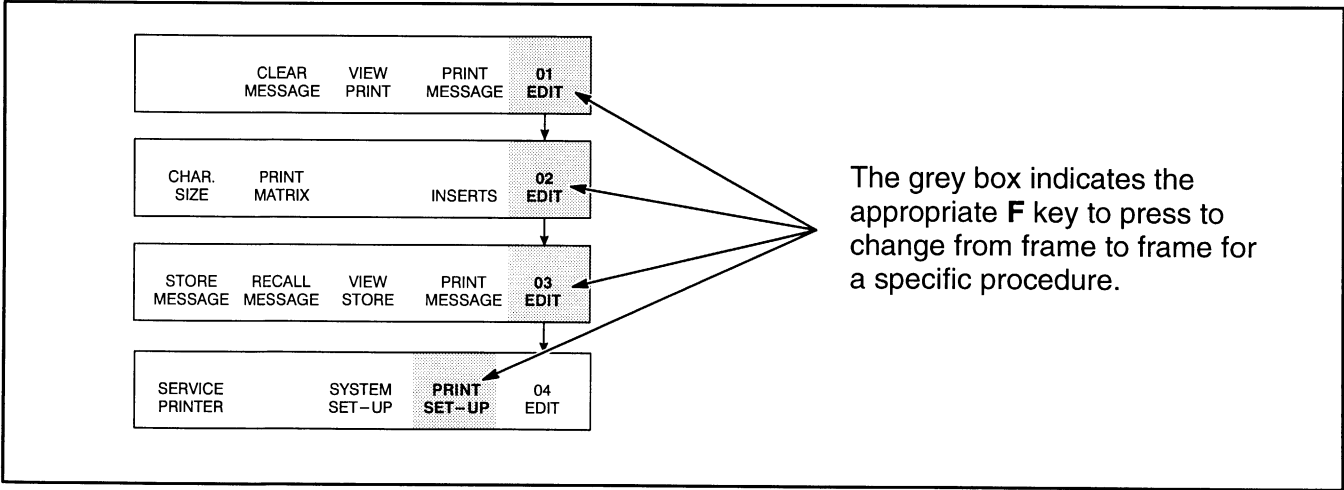


Figure 6-1. Software Illustration Example

Creating Messages

Introduction

The procedures in this section explain how to do the following:

- *View the last message printed* turn to page 6-5
- *Clear the existing message* turn to page 6-5
- *Selecting a print matrix (message format)* turn to page 6-6
- *Change the message (orientation, bold value, width, and height)* turn to page 6-9
- *Add an insert into the message* turn to page 6-16
- *Remove an insert from the message* ... turn to page 6-48
- *Load a message into the printer* turn to page 6-49

Create a New Message

When creating a new message, you must complete the following steps in the order shown:

1. Does an existing message appear in the display screen?
 - If YES, clear the existing message. Refer to *Clearing an Existing Message* on page 6-5 for further information.
 - If NO, continue to the next step.
2. Choose the message format (print matrix). Refer to *Selecting a Message Format (Print Matrix)* on page 6-6 for further information.
3. Create the desired message. When creating a message, keep in mind that you can include one or all of the following in the message:
 - alphabetic, numeric, and special characters (shown on the alpha and numeric keypads)
 - inserts
4. Load the message into the printer. Refer to *Loading the Message into the Printer* on page 6-49 for further information.

The message is now ready to be printed. Refer to *Printing Messages* on page 6-53 for further information on printing the message.

View the Last Message Printed

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

The message presently 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>. Refer to Figure 6-2.

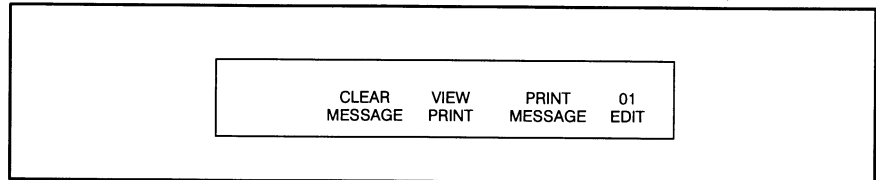


Figure 6-2. Frame <01 EDIT>

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

2. Press **F3** to select <VIEW PRINT>. The last message that was printed appears in the display screen.
3. Press the **ENTER** key to go back to Frame <01 EDIT> after the message has been viewed.

Clear an Existing Message

This procedure explains how to clear the message currently appearing in the display screen. Keep in mind that this may not necessarily be the last message that was loaded into the printer.

Procedure

1. Make certain the message you want to clear appears in the display screen.
2. Begin in Frame <01 EDIT>. Refer to Figure 6-3.

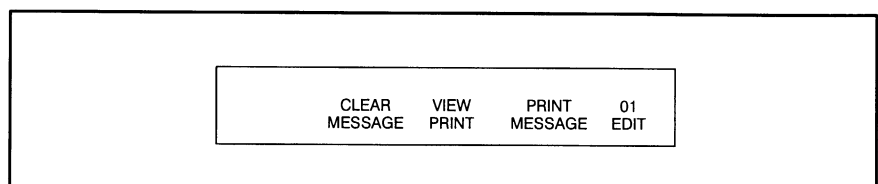


Figure 6-3. Frame <01 EDIT>

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

3. Press **F2** and the **SHIFT** key at the same time to select <CLEAR MESSAGE>. The existing message disappears from the display screen.

Selecting a Message Format (Print Matrix)

Introduction

This procedure explains how to select the print matrix (message format) of the message. The print matrix is the number of lines and size of characters of the message. The print matrix is also commonly referred to as the “message format.”

With print matrices, keep in mind the following guidelines:

- You must clear the entire message before you can select a new print matrix.
- You must choose a print matrix before creating a new message.
- Once 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).

Message Formats Available

The printer provides you with a variety of print matrices (refer to Table 6-1).

Print Matrix	Description
5 x 7 STL	This is a single line message only. Each character is 5 drops wide and 7 drops high.
7 x 9 SL	This is a single line message only. Each character is 7 drops wide and 9 drops high.
10 x 16	<p>This message can be single line or double line (depending on the selection made in the <CHAR. SIZE> option). Refer to Table 6-2 for further information. The size of each character also depends on the selection made in the <CHAR. SIZE> option.</p> <p>Note: In this matrix, you can include both single and double size characters in the same message. To do this, press the F1 key to change the <CHAR. SIZE> setting before entering the character.</p>
16 x 24	<p>This message can be single line, double line, or triple line (depending on the selection made in the <CHAR. SIZE> option). Refer to Table 6-2 for further information. The size of each character also depends on the selection made in the <CHAR. SIZE> option.</p> <p>Note: In this matrix, you can include single, double, or triple size characters in the same message. To do this, press the F1 key to change the <CHAR. SIZE> setting before entering the character.</p>

Table 6-1. Print Matrix Descriptions

The print matrix is selected in Frame <02 EDIT> (refer to Figure 6-4). The <PRINT MATRIX> option is used to select the print matrix, and the <CHAR. SIZE> option is used to select the size of the character that appears in the matrix (in a 10 x 16 or 16 x 24 matrix only). Refer to Table 6-2 for examples of each print matrix/char. size combination.

Note: You cannot change the size of the characters in a 5 x 7 STL or 7 x 9 SL matrix (since they are both single line matrices). Therefore, the <CHAR. SIZE> option does not even appear in Frame <02 EDIT> when either of these matrices are selected.

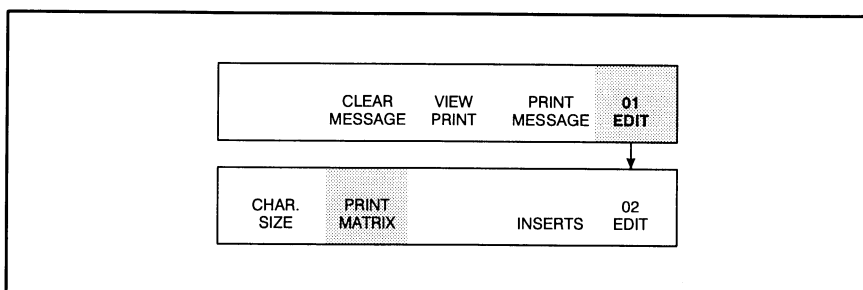


Figure 6-4. Frame <02 EDIT>

Print Matrix	Frame <02 EDIT>					Example of Print Matrix
5 x 7 STL	5X7 STL PRINT MATRIX	CHAR. SET-UP	INSERTS	02 EDIT		VIDEOJET
7 x 9 SL	7X9 SL PRINT MATRIX	CHAR. SET-UP	INSERTS	02 EDIT		VIDEOJET
10 x 16 (with Single char. size)	SINGLE CHAR. SIZE	10X16 PRINT MATRIX	CHAR. SET-UP	INSERTS	02 EDIT	VIDEOJET VIDEOJET
10 x 16 (with Double char. size)	DOUBLE CHAR. SIZE	10X16 PRINT MATRIX	CHAR. SET-UP	INSERTS	02 EDIT	VIDEOJET
16 x 24 (with Single char. size)	SINGLE CHAR. SIZE	16X24 PRINT MATRIX	CHAR. SET-UP	INSERTS	02 EDIT	VIDEOJET VIDEOJET VIDEOJET
16 x 24 (with Double char. size)	DOUBLE CHAR. SIZE	16X24 PRINT MATRIX	CHAR. SET-UP	INSERTS	02 EDIT	VIDEOJET VIDEOJET
16 x 24 (with Triple char. size)	TRIPLE CHAR. SIZE	16X24 PRINT MATRIX	CHAR. SET-UP	INSERTS	02 EDIT	VIDEOJET

Table 6-2. Print Matrices with Examples

Continued on next page ►

Procedure

Complete the following steps to select the print matrix for a message:

1. Does an existing message appear in the display screen?
 - If YES, clear the existing message. Refer to *Clearing an Existing Message* on page 6-5 for further information.
 - If NO, continue to the next step.
2. Begin in Frame <02 EDIT>. Refer to Figure 6-5.

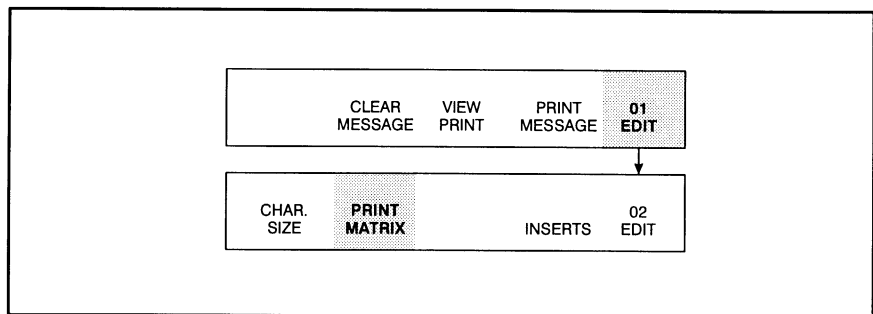


Figure 6-5. Accessing Frame <02 EDIT>

3. View the current setting above <PRINT MATRIX>. If desired, press **F2** to change the setting. (Settings: 5 x 7 STL, 7 x 9 SL, 10 x 16, 16 x 24.)

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

4. View the current setting above <CHAR. SIZE>, if any. If desired, press **F1** to change the setting.

Note: If the 5 x 7 STL or 7 x 9 SL print matrix has been chosen, the <CHAR. SIZE> option will not appear in the display screen.

5. You can now enter characters and/or inserts into the message.

Note: You can change the <CHAR. SIZE> setting (in a 10 x 16 or 16 x 24 print matrix only) at any time while you are entering characters into the message. This enables you to place different sized characters into the same message. To do this, press **F1** until the desired setting appears above <CHAR. SIZE> before entering the character.

Applying Reverse, Invert and Bold to Entire Messages

Introduction

The procedures in this section show you how to create a reversed, inverted, or bold message, how to reverse all characters (individually) within the message, and how to adjust the message 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, etc.

Procedures in this Section The procedures in this section explain how to do the following:

- *Reverse a Message* turn to page 6-10
- *Invert a Message* turn to page 6-11
- *Reverse All Characters (Individually)* ... turn to page 6-12
- *Change the Message*
Multi-stroke (Bold) turn to page 6-13

Refer to Figure 6-6 for an illustration of the frames used in this section.

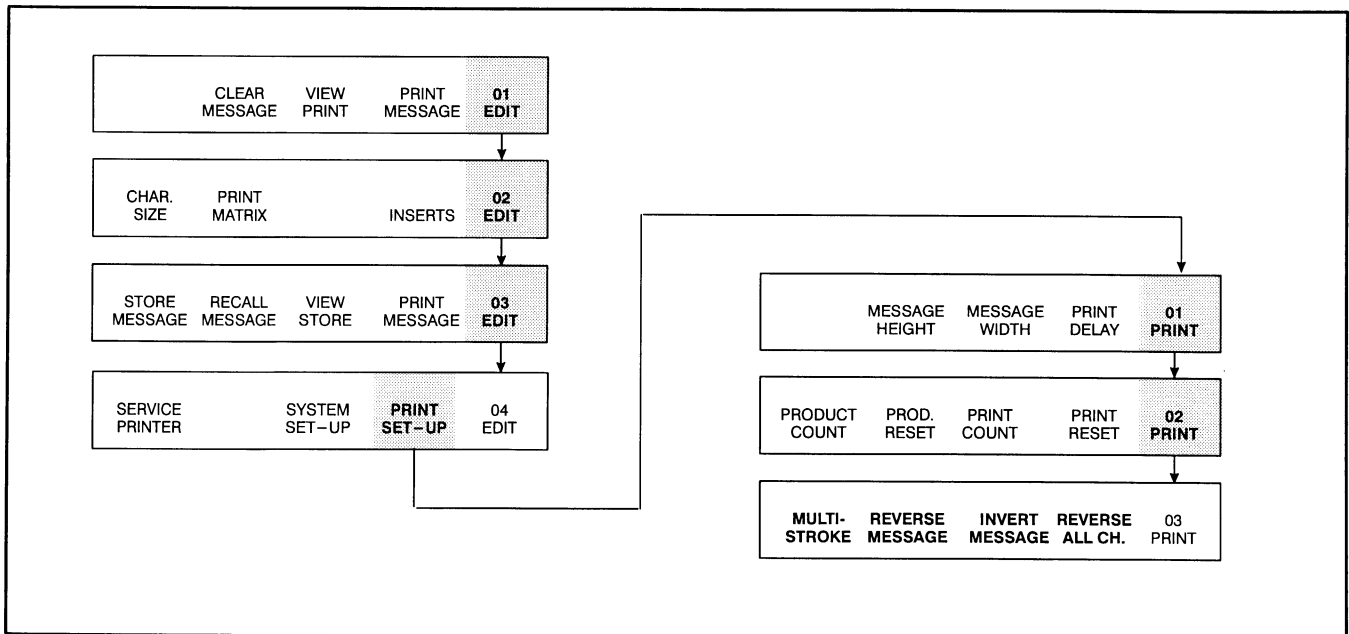


Figure 6-6. Accessing Frame <03 PRINT>

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 6-7.

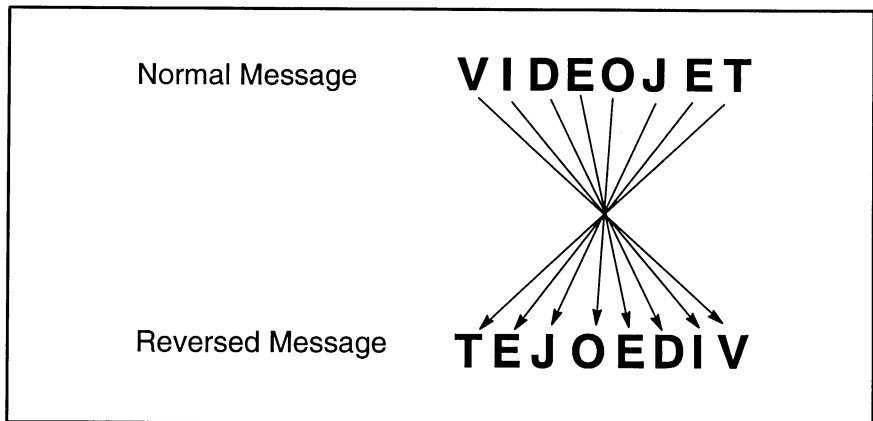


Figure 6-7. Reversing the Message - Example

Procedure

1. Load the desired existing message into the printer or create a new message and load it into the printer.
2. Begin in Frame <03 PRINT>. Refer to Figure 6-6 on page 6-9.
3. View the current setting above <REVERSE MESSAGE>. Is it set to <ON>?
 - If NO, press **F2** to change the setting to <ON>. This will reverse the entire message.
 - If YES, the message is already set to be reversed.

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

Invert a Message

This procedure explains how to invert an entire message. Inverting a message rotates each character 180 degrees forward, producing an “upside-down” message. Refer to Figure 6-8 for an example.

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

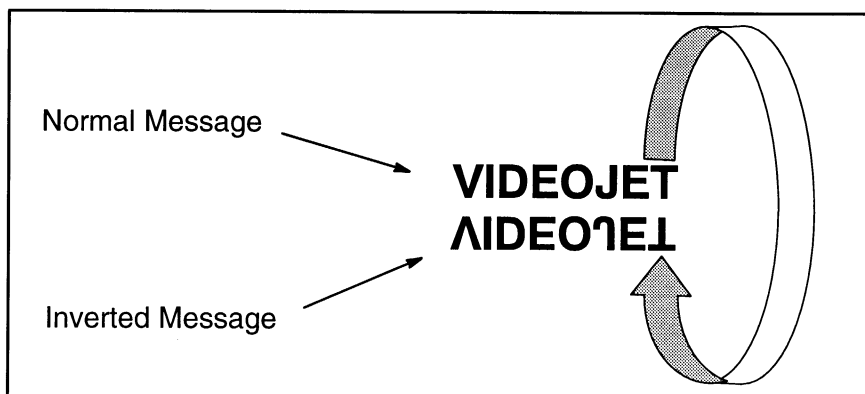


Figure 6-8. Inverting the Message - Example

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 6-6 on page 6-9.
3. View the current setting above <INVERT MESSAGE>. Is it set to <ON>?
 - If NO, press **F3** 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 (Together)

Figure 6-9 shows an example of a message which is reversed, then inverted.

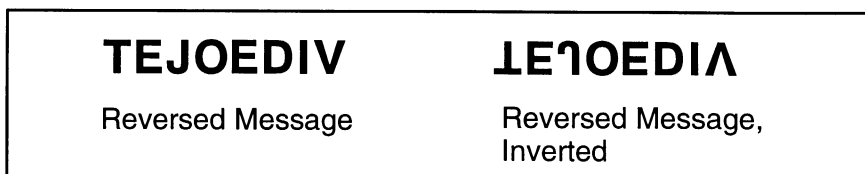


Figure 6-9. Reversed and Inverted Message

Reverse All Characters (Individually)

This procedure explains how to reverse all the characters in a message. Reversing all characters rotates each character horizontally 180 degrees. Refer to Figure 6-10.

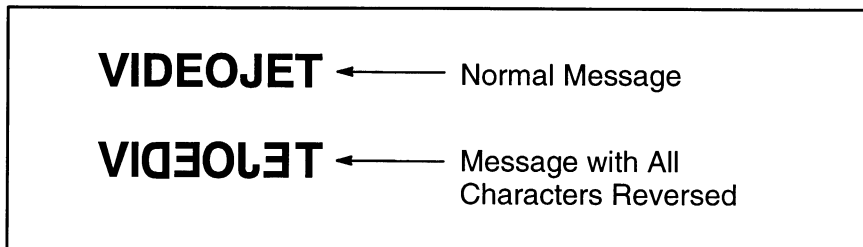


Figure 6-10. Reversing All Characters – Example

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 6-6 on page 6-9.
3. View the current setting above <REVERSE ALL CH.>. Is it set to <ON>?
 - If NO, press **F4** to change the setting to <ON>. This will reverse all characters (individually) in the entire message.
 - If YES, the message is already set to reverse all characters (individually).

Note: The individual characters in the message will not appear reversed in the display screen, however all of the characters will be reversed (individually) when the message is printed.

Inverted Message with all Characters Reversed (Together)

Figure 6-11 shows an example of a message with all characters reversed and inverted.

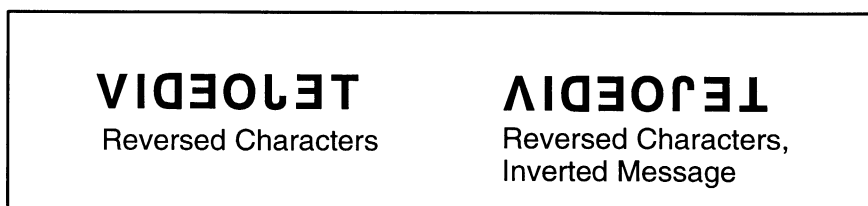


Figure 6-11. Reversed Characters in an Inverted Message

Change the Message Multi-Stroke (Bold)

This procedure explains how to 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.

Procedure

1. Begin in Frame <03 PRINT>. Refer to Figure 6-6 on page 6-9 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 **F1** to change the setting. (Settings: 1, 2, 3, 4.)

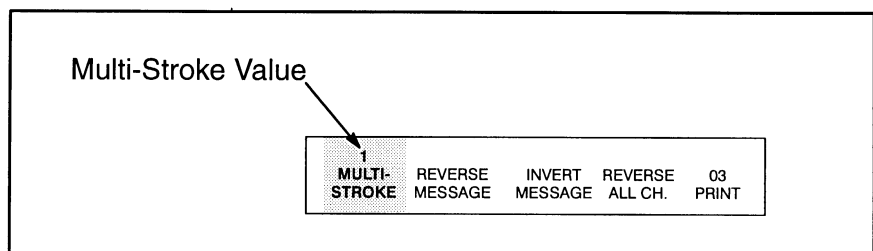


Figure 6-12. Changing the Multi-Stroke Value of a Message

When selecting the multi-stroke level that you want your message to appear, you can choose from these values:

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

Table 6-3. Multi-Stroke (Bold) Values

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

Adjusting the Height of the Message

Introduction

This procedure explains how to adjust the height of a message. The message height is adjusted in Frame <01 PRINT>. Refer to Figure 6-13.

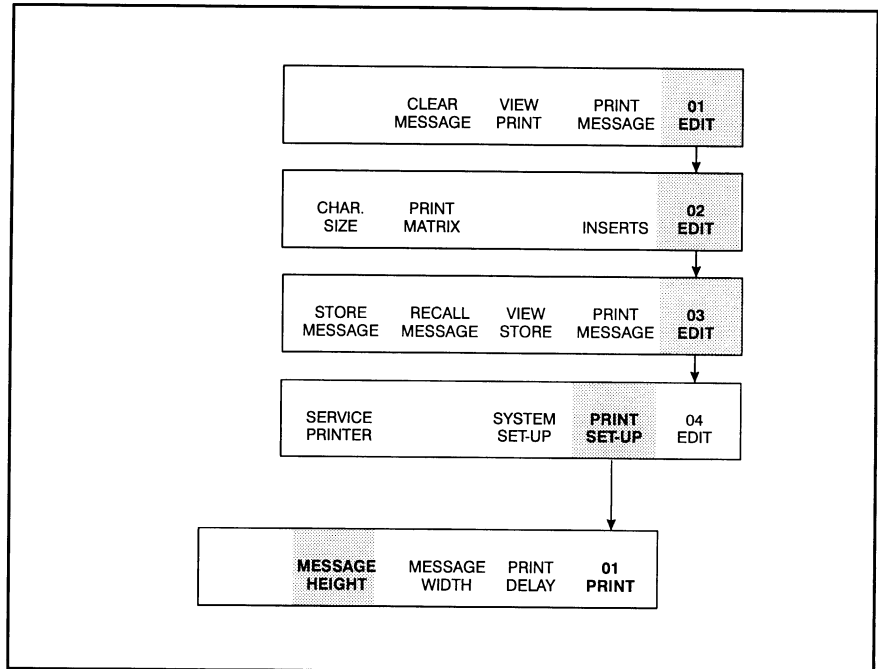


Figure 6-13. Accessing Frame <01 PRINT>

Procedure

1. Begin in Frame <01 PRINT>. Refer to Figure 6-13.
2. Press **F2** to select <MESSAGE HEIGHT>. The following appears in the display screen:

HEIGHT ADJUSTMENT SETTING --- ►

3. Use the arrow keys to adjust the height of the printed message. The entry must be between 0-100.
4. Press the **ENTER** key. Frame <01 PRINT> reappears in the display screen.

Adjusting the Width of the Message

Introduction

This procedure explains how to adjust the width of the message. The message width is adjusted in Frame <01 PRINT>. Refer to Figure 6-14.

The width of the message can be adjusted only if the printer is set up for internal or auto encoding. The message width cannot be adjusted if the printer is set up for external encoding (uses a shaft encoder).

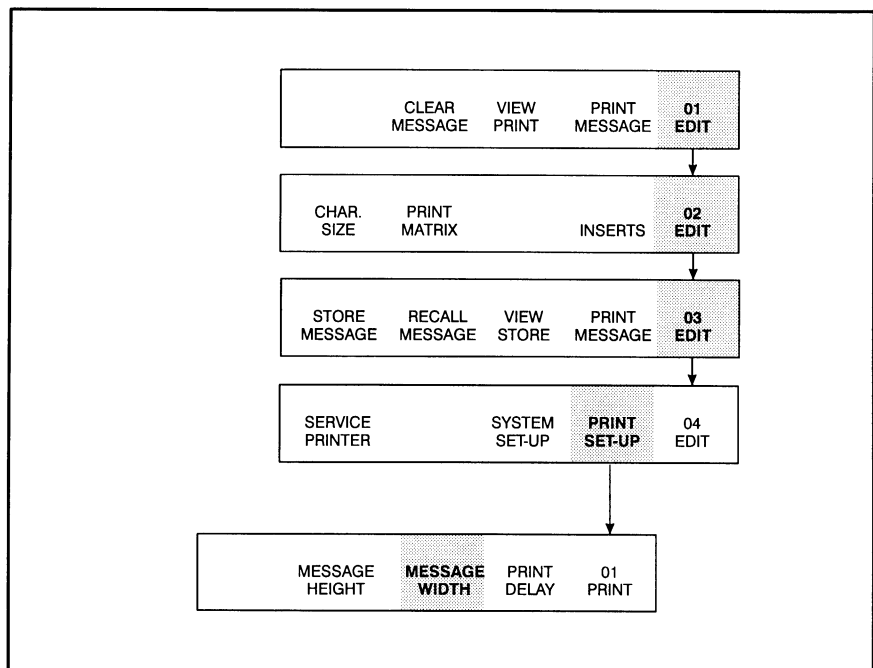


Figure 6-14. Accessing Frame <01 PRINT>

Procedure

1. Begin in Frame <01 PRINT>. Refer to Figure 6-14.
2. Press **F3** to select <MESSAGE WIDTH>. The following appears in the display screen:

WIDTH ADJUSTMENT SETTING --- ►

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

Note: A value of 60 represents approximately 10 characters per inch.

4. Press the **ENTER** key. Frame <01 PRINT> reappears in the display screen.

Adding Inserts Into Messages

Introduction

The procedures in this section show you how to add inserts into a message.

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

Insert Types

There are three types of inserts:

Insert Type	Insert Characteristics
Type 1	Inserts where the parameters (information which 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.
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 6-4. Insert Types

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 6-5 on the next page 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. Refer to *Loading a Message into the Printer* on page 6-49 for further information.

Insert Reference Table

Refer to Table 6-5 below for a complete listing of: 1) each type of insert that you can place into a message, 2) the insert type, 3) the maximum number of inserts of that type you can have in a single message, and 4) the page number of where you can turn to in this manual for specific information about that insert.

Insert	Type	Max. per Message	Page Reference
Hour of Day	2	SLO	6-18
Minute of Day	2	SLO	6-19
Hour of Week	2	SLO	6-20
Week of Year	2	SLO	6-21
Month of Year	2	SLO	6-22
Day of Month	2	SLO	6-23
Year	2	SLO	6-24
Julian Date	2	SLO	6-25
Expiration Month of Year	3	SLO	6-26
Expiration Day of Month	3	SLO	6-27
Expiration Year	3	SLO	6-28
Expiration Julian Date	3	SLO	6-29
Serializer	1	1	6-30
Timer	3	1	6-32
Appended Message	1	1	6-35
Remote Data	1	1	6-38
Blank Space	1	SLO	6-40
Custom Character	1	SLO	6-42
Graphic	1	SLO	6-44
Bar Codes	1	SLO	6-46

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

Table 6-5. Insert Information

Hour-of-Day Insert

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. Refer to Table 6-6.

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.
10	10:00 a.m.	22	10:00 p.m.
11	11:00 a.m.	23	11:00 p.m.

Table 6-6. Hour-of-Day Insert Values

Procedure

1. Begin in Frame <01 CLOCK>. Refer to Figure 6-15.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F1** to select <INSERT HOUR>. The insert appears in the message.

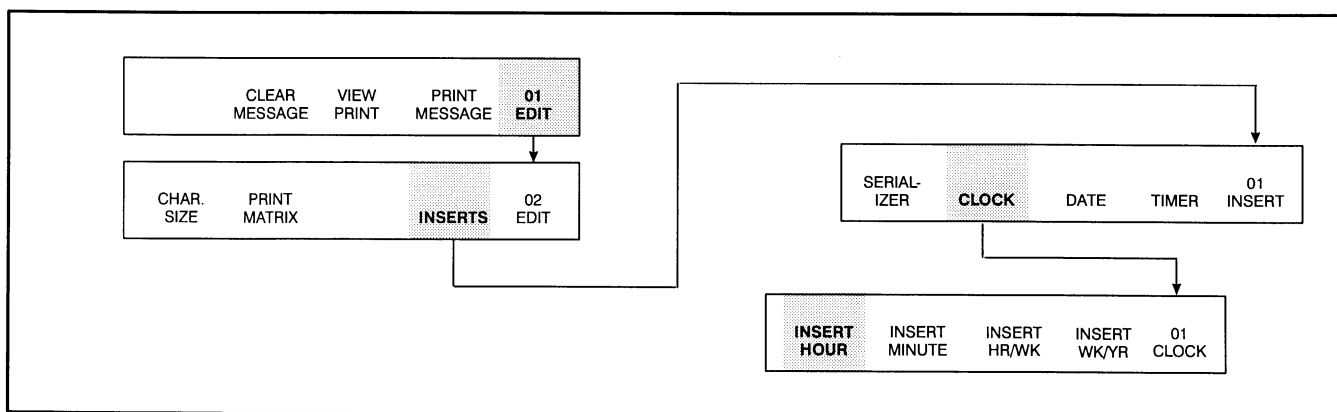


Figure 6-15. Accessing Frame <01 CLOCK>

Minute Insert

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

Procedure

1. Begin in Frame <01 CLOCK>. Refer to Figure 6-16.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <INSERT MINUTE>. The insert appears in the message.

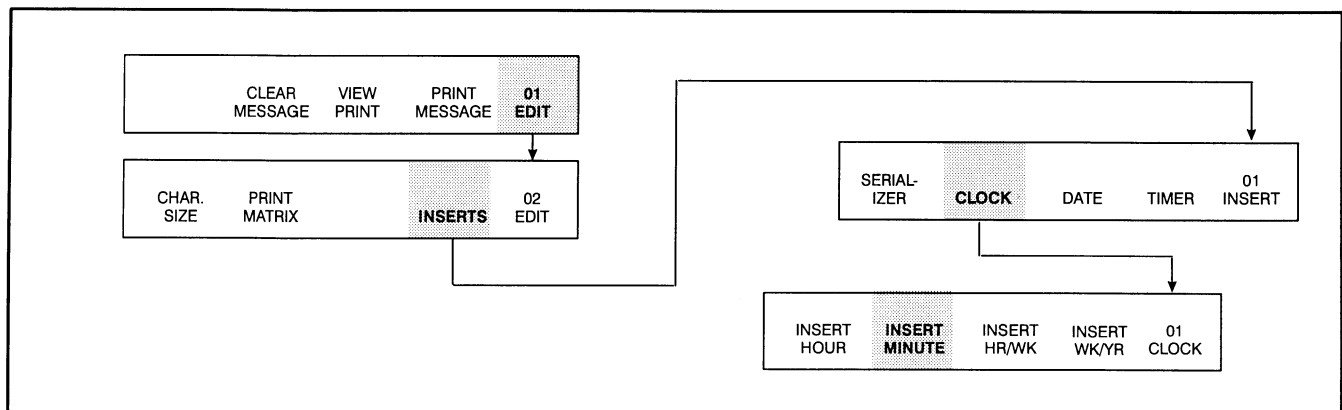


Figure 6-16. Accessing Frame <01 CLOCK>

Hour-of-the-Week Insert

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 is updated as the printer's internal clock changes.

Procedure

1. Begin in Frame <01 CLOCK>. Refer to Figure 6-17.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F3** to select <INSERT HR/WK>. The insert appears in the message.

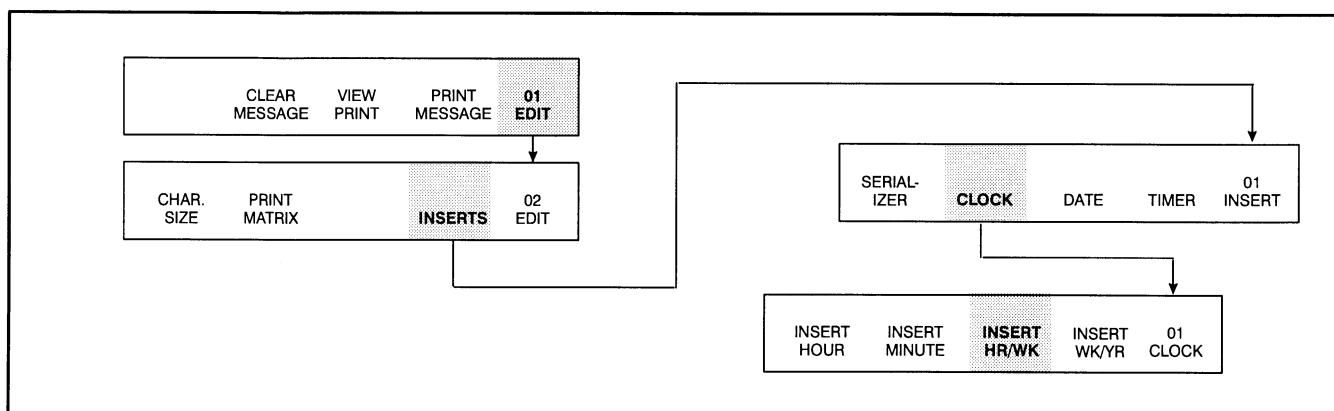


Figure 6-17. Accessing Frame <01 CLOCK>

Week-of-the-Year Insert

This procedure explains how to place a 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 indicates the last week 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.

Procedure

1. Begin in Frame <01 CLOCK>. Refer to Figure 6-18.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F4** to select <INSERT WK/YR>. The insert appears in the message.

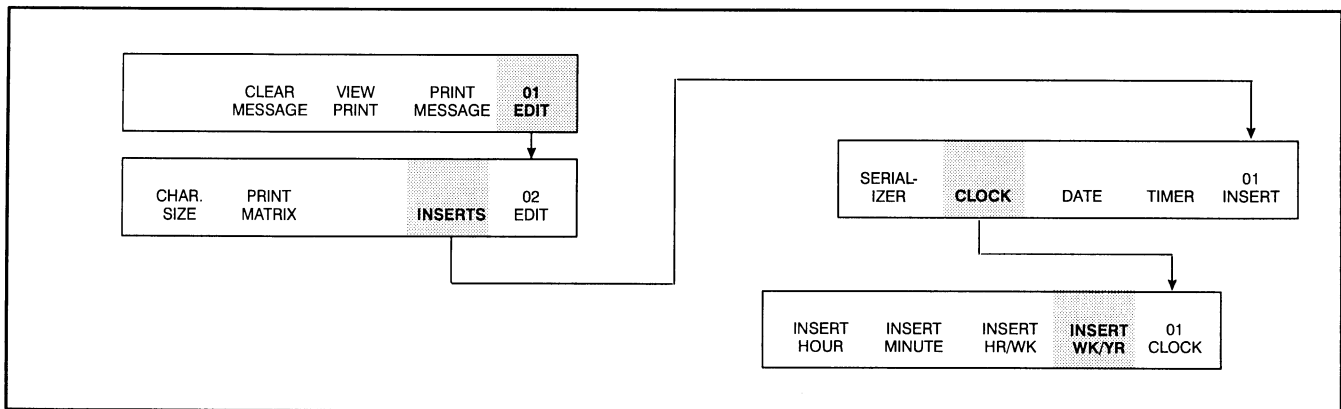


Figure 6-18. Accessing Frame <01 CLOCK>

Month Insert

This procedure explains how to place a month insert into a message. 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.

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 6-7. Month Values

Procedure

1. Begin in Frame <01 DATE>. Refer to Figure 6-19.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <INSERT MONTH>. The insert appears in the message.

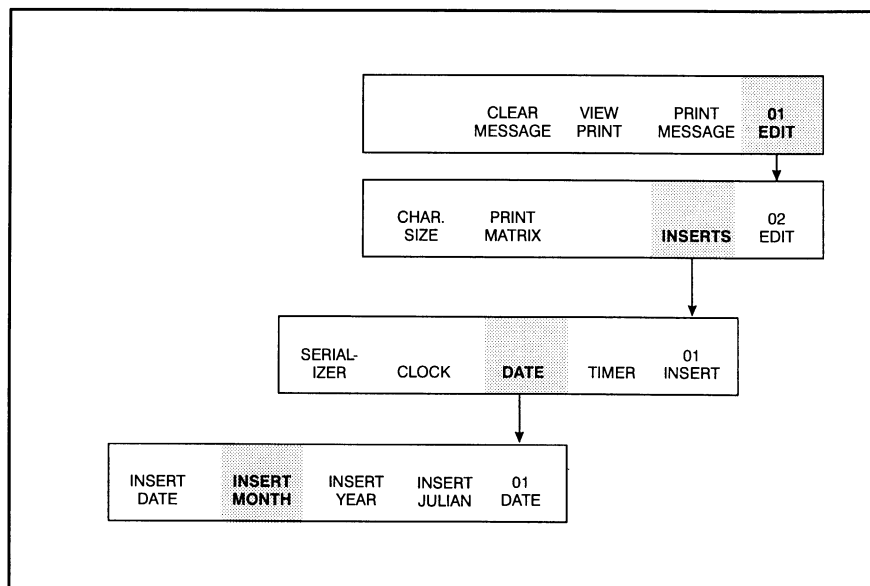


Figure 6-19. Accessing Frame <01 DATE>

Day of Month Insert

This procedure explains how to place a day-of-month insert into a message. The day-of-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.

Procedure

1. Begin in Frame <01 DATE>. Refer to Figure 6-20.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F1** to select <INSERT DATE>. The insert appears in the message.

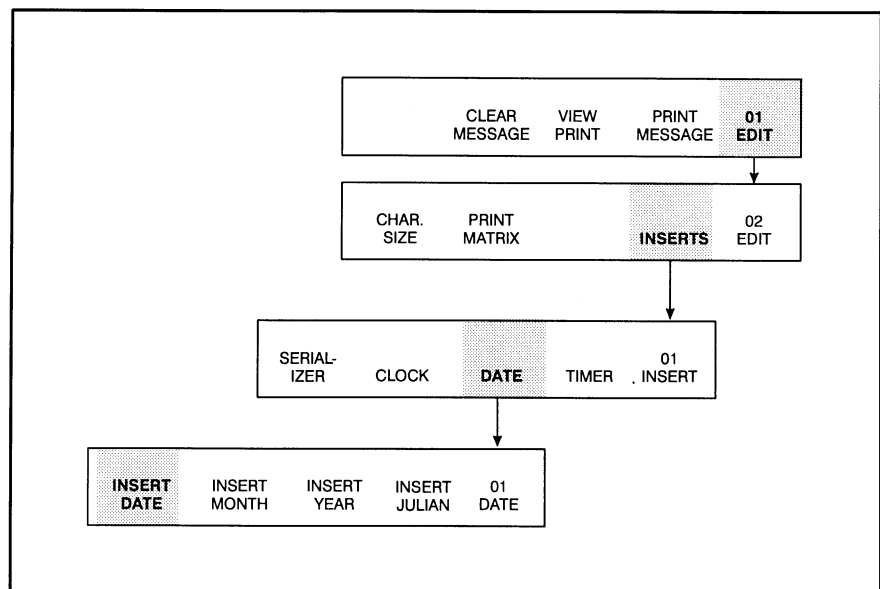


Figure 6-20. Accessing Frame <01 DATE>

Year Insert

This procedure explains how to place a year insert 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.

For example:

The insert for the year "1995" will appear as <95>.

Procedure

1. Begin in Frame <01 DATE>. Refer to Figure 6-21.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F3** to select <INSERT YEAR>. The insert appears in the message.

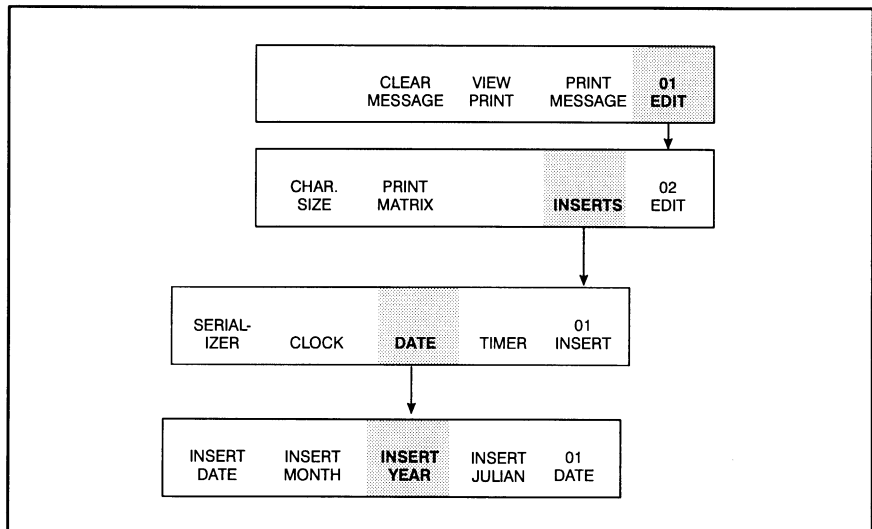


Figure 6-21. Frame <01 DATE>, Year Insert

Julian Date Insert

This procedure explains how to place a Julian date insert 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 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.

Procedure

1. Begin in Frame <01 DATE>. Refer to Figure 6-22.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F4** to select <INSERT JULIAN>. The insert appears in the message.

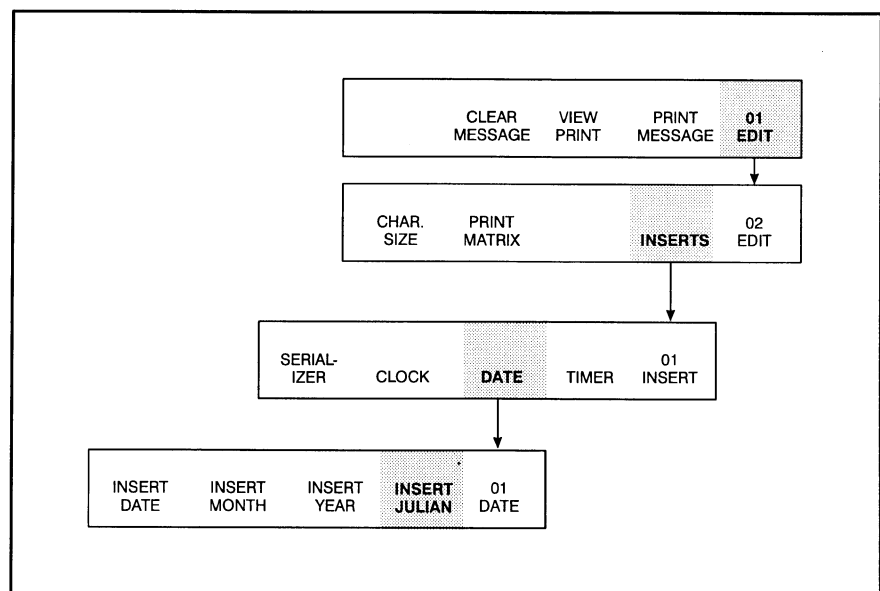


Figure 6-22. Frame <01 DATE>, Julian Date Insert

Expiration Month-of-Year Insert

This procedure explains how to place a expiration month-of-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. The value for this insert is still determined by the printer's internal clock, however you must set the time when it will expire (from the current date). The printer will update the insert as the printer's internal clock changes.

For 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).

Procedure

1. Begin in Frame <02 DATE>. Refer to Figure 6-23.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <INSERT EXP. MONTH>. The insert appears in the message.
4. Press **F5** to go to Frame <03 DATE>. (Refer to Figure 6-23.)
5. Press **F4** to select <EXP. DATE OFFSET>. The following appears in the display screen:

ENTER OFFSET DAYS (1-2048) --- ►

6. Use the numeric keypad to 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).
7. Press the **ENTER** key. Frame <03 DATE> reappears in the display screen.

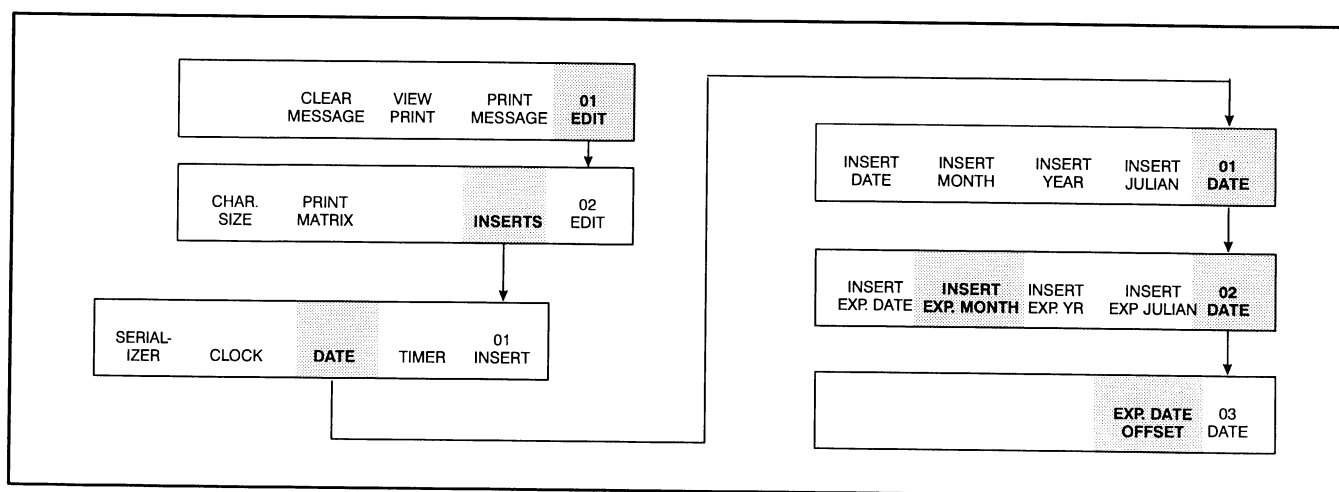


Figure 6-23. Accessing Frame <02 DATE>

Expiration Day-of-Month Insert

This procedure explains how to place an expiration day-of-month insert 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. The value for this insert is still determined by the printer's internal clock, however you must set the time when it will expire (from the current date). The printer will update the insert as the printer's internal clock changes.

For 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 month insert. The value, 07, represents February 7th (which is the day of the month 14 days from the current date).

Procedure

1. Begin in Frame <02 DATE>. Refer to Figure 6-24.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <INSERT EXP. DATE>. The insert appears in the message.
4. Press **F5** to go to Frame <03 DATE>. (Refer to Figure 6-24.)
5. Press **F4** to select <EXP. DATE OFFSET>. The following appears in the display screen:

ENTER OFFSET DAYS (1-2048) --- ►

6. Use the numeric keypad to 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).
7. Press the **ENTER** key. Frame <03 DATE> reappears in the display screen.

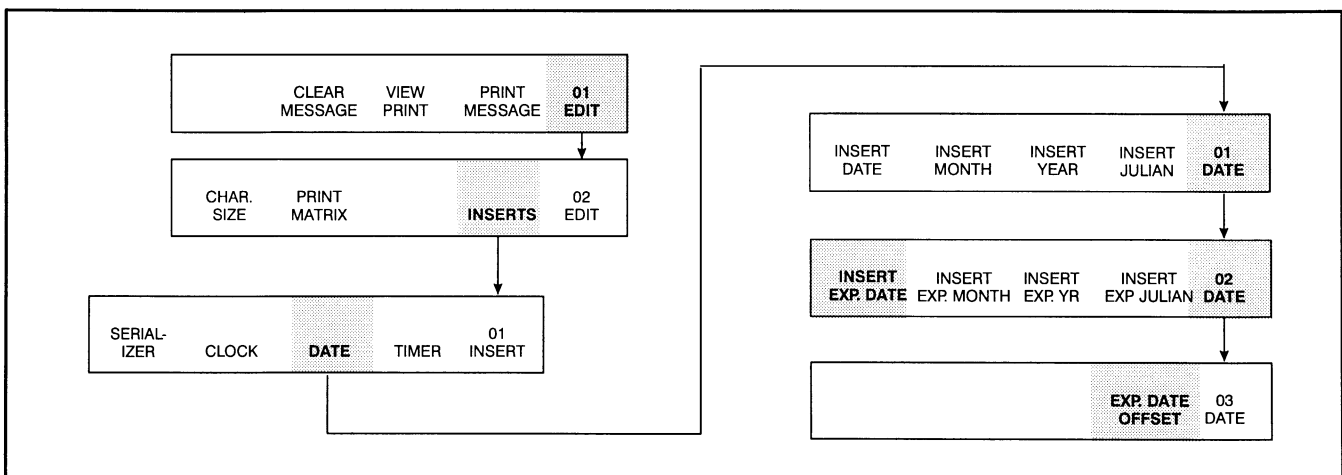


Figure 6-24. Frame <02 DATE> , Expiration Day-of-Month Insert

Expiration Year Insert

This procedure explains how to place an expiration year insert into a message. The expiration year insert is a two-digit number representing the year in which a product will expire. The value for this insert is still determined by the printer's internal clock, however you must set the time when it will expire (from the current date). The printer will update the insert as the printer's internal clock changes.

For example:

If the current date is November 24, 1995 and you set the expiration date of the product to be 60 days from the current date, then the printer will print 96 for the expiration year insert. The value, 96, represents the year 1996 (60 days from the current date).

Procedure

1. Begin in Frame <02 DATE>. Refer to Figure 6-25.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F3** to select <INSERT EXP. YEAR>. The insert appears in the message.
4. Press **F5** to go to Frame, <03 DATE>. Refer to Figure 6-25.
5. Press **F4** to select <EXP. DATE OFFSET>. The following appears in the display screen:

ENTER OFFSET DAYS (1-2048) --- ►

6. Use the numeric keypad to 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).
7. Press the **ENTER** key. Frame <03 DATE> reappears in the display screen.

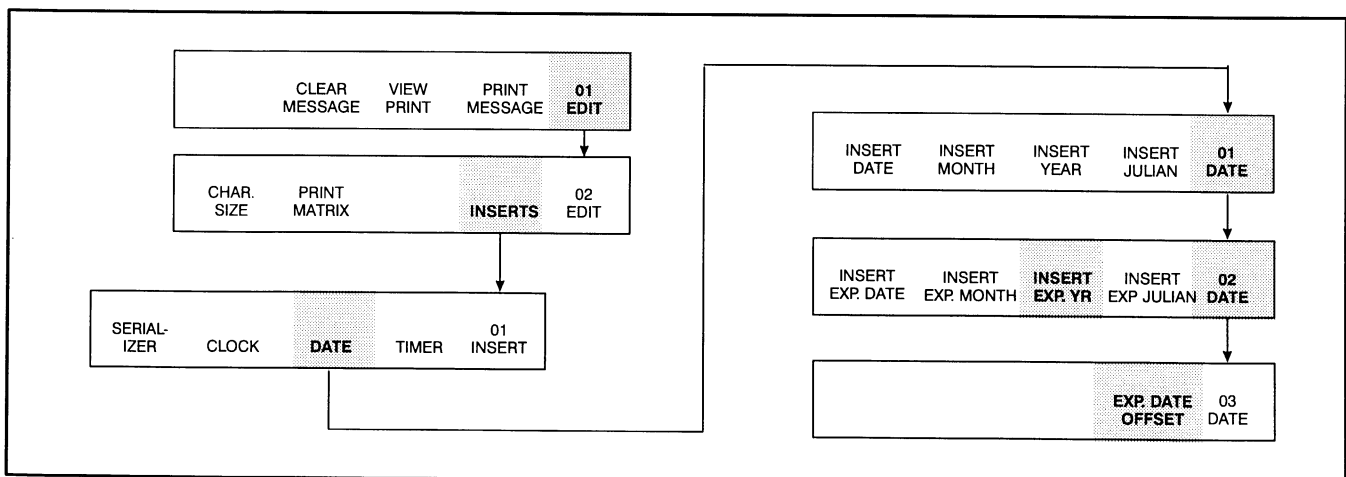


Figure 6-25. Accessing Frame <02 DATE>

Expiration Julian Date Insert

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 indicates the last day of the year.

The value for this insert is still determined by the printer's internal clock, however you must set the time when it will expire (from the current date). The printer will update the insert as the printer's internal clock changes.

For example:

If the current Julian date is 012 (January 12th) 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 26th (which is 14 days from the current date).

Procedure

1. Begin in Frame <02 DATE>. Refer to Figure 6-26.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F4** to select <INSERT EXP. JULIAN>. The insert appears in the message.
4. Press **F5** to go to Frame <03 DATE>. Refer to Figure 6-26.
5. Press **F4** to select <EXP. DATE OFFSET>. The following appears in the display screen:

ENTER OFFSET DAYS (1-2048) --- ►

6. Use the numeric keypad to 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).
7. Press the **ENTER** key. Frame <03 DATE> reappears in the display screen.

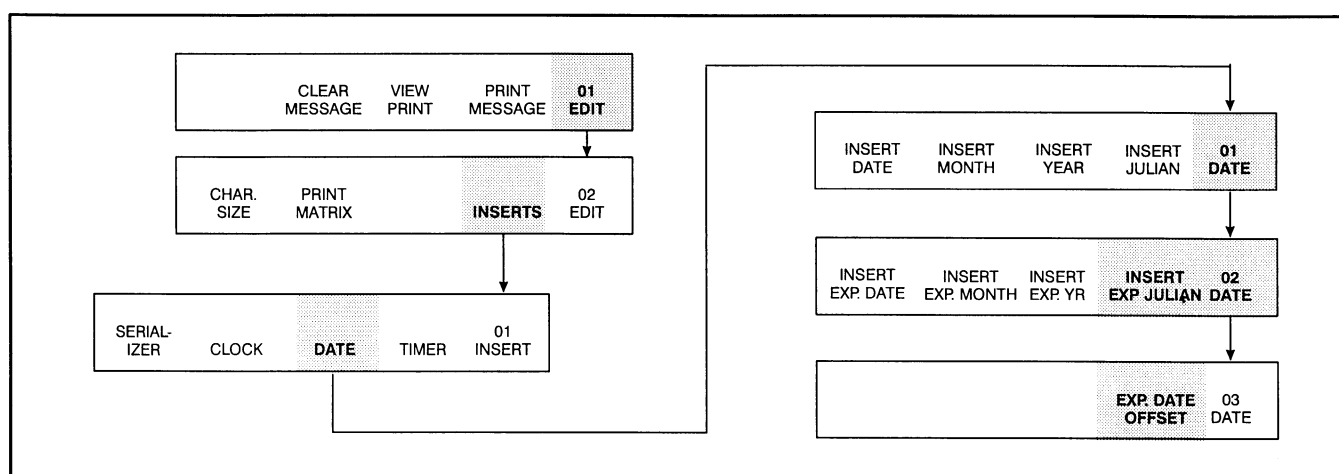


Figure 6-26. Accessing Frame <02 DATE>

Continued on next page ►

Serializer Insert

This procedure explains how to place a serializer insert into a message.

A serializer is a numeric value which is added into a message and automatically changed by the printer as product detect signals are received (products are printed upon). It is a counter which will update as messages are printed. You can use only one serializer insert 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 (refer to Table 6-8).

Parameter	Explanation
Starting Value	This is the first value to be printed. The value must be less than the max count (ending value), and between 00000000-99999999.
Max Count (Ending Value)	This is the maximum value to be printed. The value must be greater than the starting value, and between 00000000-99999999.
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.
Constant	Set the increment at which the value will change when it is updated. The setting must be between 1-99.
Wrap Around	Set the serializer to <ON> to begin again at the starting value after it reaches the max count or to <OFF> to stop printing after it reaches the max count.
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 between 1-9999.

Table 6-8. 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.

Procedure

1. Begin in Frame <01 SERIAL>. Refer to Figure 6-27.
2. Use the arrow keys to move the cursor to the location in the message where you want the serializer to appear.
3. Press **F1** to select <START VALUE>. The following appears in the display screen:

ENTER START VALUE --- ►

4. Use the numeric keypad to enter the starting value. The entry must be between 0-99999999.
5. Press the **ENTER** key. Frame <01 SERIAL> reappears in the display screen.

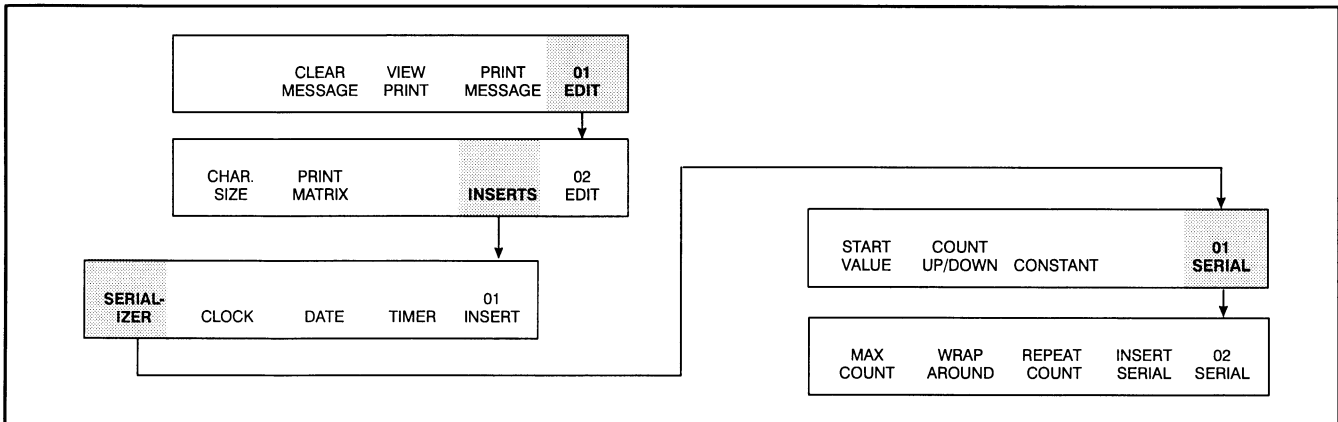


Figure 6-27. Accessing Frame <01 SERIAL>

6. View the current setting above <COUNT UP/DOWN>. If desired, press **F2** to change the setting. (Settings: UP, DOWN.)
7. Press **F3** to select <CONSTANT>. The following appears in the display screen:

ENTER CONSTANT (1-99) --- ►

8. Use the numeric keypad to enter the constant. The entry must be between 1-99.
9. Press the **ENTER** key. Frame <01 SERIAL> reappears in the display screen.
10. Press **F5** to go to Frame <02 SERIAL>. Refer to Figure 6-27.
11. Press **F1** to select <MAX COUNT>. The following appears in the display screen:

ENTER MAXIMUM COUNT --- ►

12. Use the numeric keypad to enter the max count (ending value.) The entry must be between 0-99999999.
13. Press the **ENTER** key. Frame <02 SERIAL> reappears in the display screen.
14. View the current setting above <WRAP AROUND>. If desired, press **F2** to change the setting. (Settings: ON, OFF.)
15. Press **F3** to select <REPEAT COUNT>. The following appears in the display screen:

ENTER REPEAT COUNT (1-9999) --- ►

16. Use the numeric keypad to enter the repeat count. The entry must be between 1-9999.
17. Press the **ENTER** key. Frame <02 SERIAL> reappears in the display screen.
18. Press **F4** to select <INSERT SERIAL>. The starting value of the serializer appears in the message.

Timer Insert

This procedure explains how to place a timer insert 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 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.

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.

Before inserting the timer into the message, you must set the following parameters (refer to Table 6-9):

Parameter	Explanation										
Timer Select	Choose the total number of digits or characters that you want to have in the insert. You have two choices available: <ul style="list-style-type: none">• two• four										
Update Interval	Choose the interval (in minutes) of when the insert will be updated. Your selections are: <ul style="list-style-type: none">• 15, 30, or 60 minutes for a two-digit insert• every minute or every 15, 30, or 60 minutes for a four-digit insert										
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). <ul style="list-style-type: none">• this can be selected for each digit• use to code the time by substituting digits with alphabetic characters <p>Character/digit cross-reference:</p> <table><tr><td>A=0</td><td>B=1</td><td>C=2</td><td>D=3</td><td>E=4</td></tr><tr><td>F=5</td><td>G=6</td><td>H=7</td><td>I=8</td><td>J=9</td></tr></table>	A=0	B=1	C=2	D=3	E=4	F=5	G=6	H=7	I=8	J=9
A=0	B=1	C=2	D=3	E=4							
F=5	G=6	H=7	I=8	J=9							

Table 6-9. 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 is 8:45 a.m., and the timer parameters are set to the following:

<TIMER SELECT> = 4

<UPDATE INTERVAL> = 15

<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 <A8E5>. This can be decoded as 0845 (8:45 a.m. using a 24-hour clock) since A=0 and E=4. The following is a cross-reference of alphabetic characters-to-digits (assigned by the printer):

A=0	B=1	C=2	D=3	E=4
F=5	G=6	H=7	I=8	J=9

Since the <UPDATE INTERVAL> is set to 15 (meaning every 15 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 15 minutes.

Continued on next page ►

Procedure

1. Begin in Frame <01 TIMER>. Refer to Figure 6-28.
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 **F1** to change the setting. (Settings: 2, 4.)
4. View the current setting above <UPDATE INTERVAL>. If desired, press **F3** to change the setting. (Settings: 1, 15, 30, 60.)

Note: If the <TIMER SELECT> option is set to 2, the printer will not display or accept 1 as one of the setting choices for the <UPDATE INTERVAL> option.

5. Press the **F2** key to select <TIMER FORMAT>. Frame <01 FORMAT> appears in the display screen. Refer to Figure 6-28.

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 **F4** to select <INSERT TIMER>. The timer insert appears in the message.

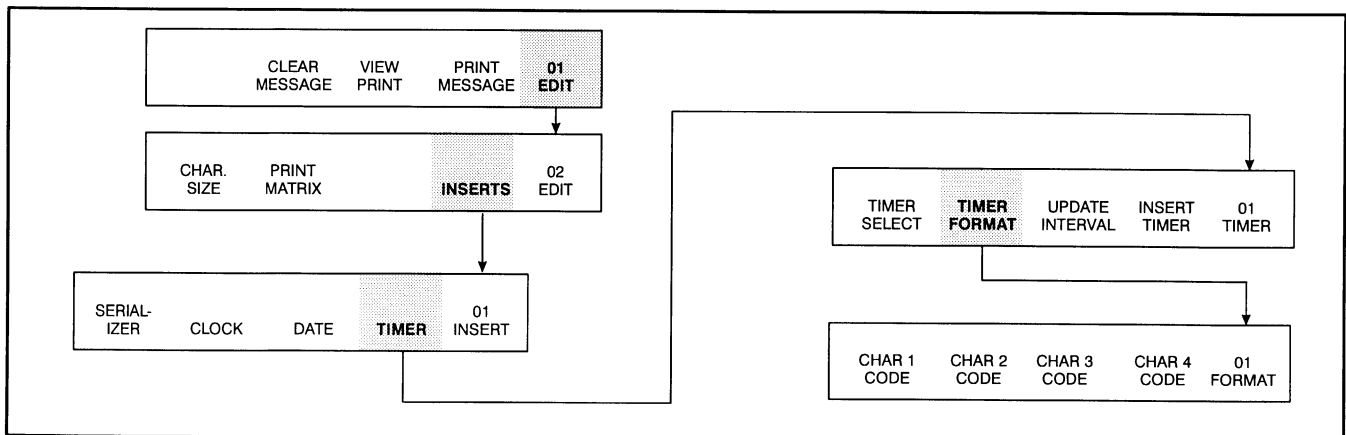


Figure 6-28. Accessing Frame <01 FORMAT>

Appended Message Insert This procedure explains how to place an appended message insert into a message. An appended message insert is an extension of the current message, and only used when the content of the original message exceeds the maximum number of characters allowed in the message (per line).

Note: The maximum number of characters allowed in a message (per line) varies depending on the print matrix (message format) of that message. Refer to *Selecting a Message Format (Print Matrix)* on page 6-6 to find the maximum number of characters for each print matrix.

An appended message insert is a message that is attached to the end of the original message. This enables you to create messages that are twice as long as the specified maximum number of characters for the message (per line).

For example:

The maximum number of characters (per line) for a 7 x 9 single line message is 62. If you were to include an appended message insert in the message, you could create a message that has a total of 124 characters.

You can have only one appended message insert per message. The appended message insert will always appear at the end of the original message when printed, regardless of where the cursor was located in the message when the insert was added.

Procedure

1. Begin in Frame <01 EDIT>. Refer to Figure 6-29.

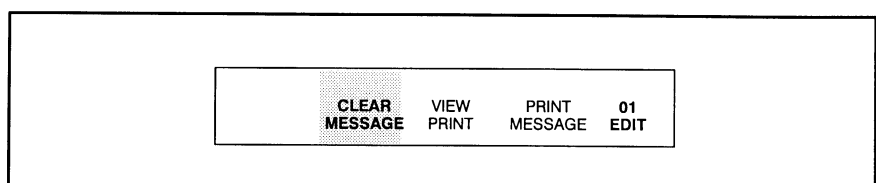


Figure 6-29. Frame <01 EDIT>

2. Press **F2** and the **SHIFT** key at the same time to select <CLEAR MESSAGE>. The existing message (if, any) disappears from the display screen.

Continued on next page ►

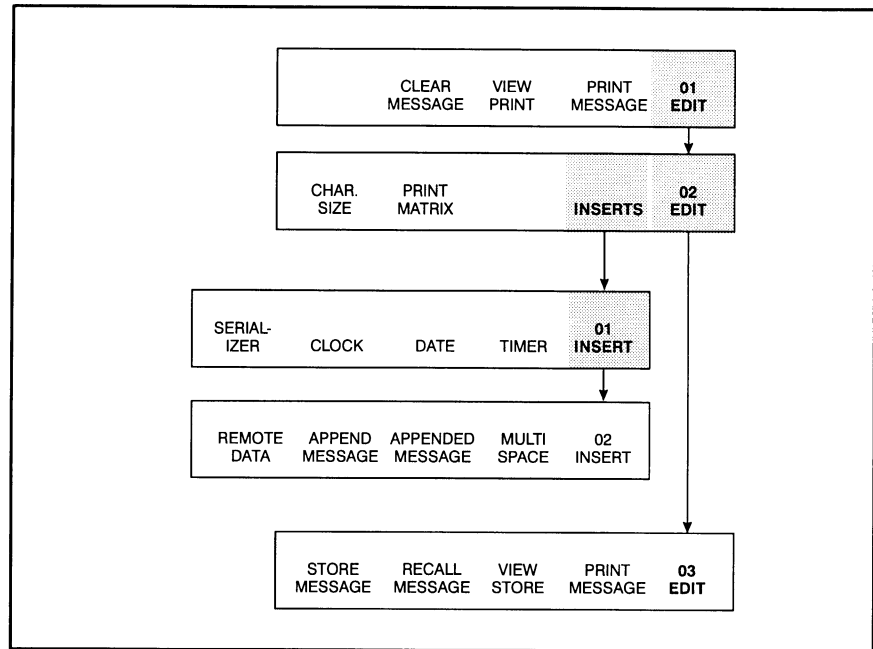


Figure 6-30. Accessing Frame <03 EDIT>

Note: Before creating the information which will appear in the appended message insert, make sure you are using the same print matrix as the one used in the message (that will contain this insert). The printer will not accept the insert unless it has the same print matrix as the message.

3. Use the keyboard to create the information that is to appear in the appended message insert (to be “attached” to the end of the message).
4. Go to Frame <03 EDIT>. Refer to Figure 6-30.
5. Press **F1** to select <STORE MESSAGE>. The following appears in the display screen:

ENTER STORE LOCATION (1-32) --- ►

6. Use the numeric keypad to enter the location you want to store the appended message information. The entry must be between 1-32.
7. Press the **ENTER** key. Frame <03 EDIT> reappears in the display screen, and the appended message that appears in the display screen will be stored in the location entered.

Continued on next page ►

8. Go back to Frame <01 EDIT>. Refer to Figure 6-30.

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

9. Press **F2** and the **SHIFT** key at the same time to select <CLEAR MESSAGE>. The existing message disappears from the display screen.

Note: Before creating the message which will contain the appended message insert, make sure you are using the same print matrix as the one used in the appended message insert. The printer will not accept the message unless it has the same print matrix as the insert.

10. Use the keyboard to create the message that will contain the appended message insert.

11. Go to Frame <02 INSERT>. Refer to Figure 6-30.

12. View the current setting above <APPEND MESSAGE>. Is it set to <ON>?

- If NO, press **F2** to change the setting to <ON>.
- If YES, continue to the next step.

13. Press **F3** to select <APPENDED MESSAGE>. The following appears in the display screen:

MESSAGE TO APPEND (1-32) --- ►

14. Use the numeric keypad to enter the storage location of the appended message insert. (This was determined in step 6.) The entry must be between 1-32.

15. Press the **ENTER** key. Frame <02 INSERT> reappears in the display screen.

Note: The appended message insert is now included into the message. The insert will not appear in the message shown in the display screen, however the insert will appear in the printed message.

16. Load the message into the printer. Refer to *Loading a Message into the Printer* on page 6-49 for further information.

Note: The printer will not allow you to load the message into the printer unless the light on the **PRINT** key is Off. If the light is On, press the **PRINT** key to turn the light Off.

17. Press the **PRINT** key to turn the light on the key back On.

The printer will now print a message with the appended message insert whenever it receives a product detect signal.

Remote Data Insert

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 serial interface.

You can use only one remote data insert per message.

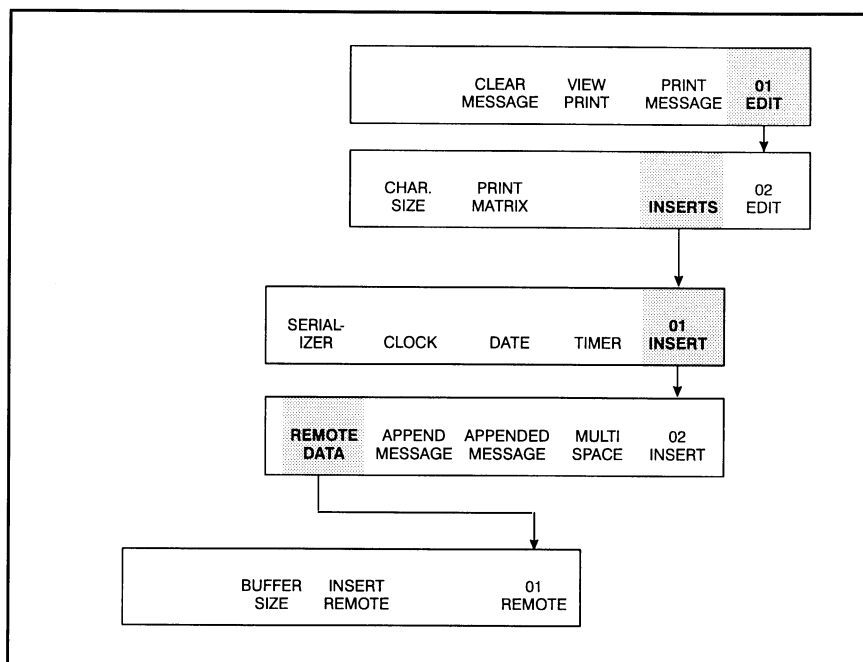


Figure 6-31. Accessing Frame <01 REMOTE>

Procedure

1. Begin in Frame <01 REMOTE>. Refer to Figure 6-31.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <BUFFER SIZE>. The following appears in the display screen:

ENTER BUFFER SIZE (1-32) --- ►

4. Use the numeric keyboard to enter the buffer size. The entry must be between 1-32.

The buffer size is the maximum number of characters that appear in the longest line of the remote information, plus one character for the carriage return (which indicates the end of the message).

For example:

The longest line is 25 characters. You must enter 26 as the buffer size (since you need to consider the carriage return as one character).

5. Press the **ENTER** key. Frame <01 REMOTE> reappears in the display screen.
6. Press **F3** to select <INSERT REMOTE>. The insert will appear in the message as "insert remote symbols." Refer to Figure 6-32.

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 6-32.

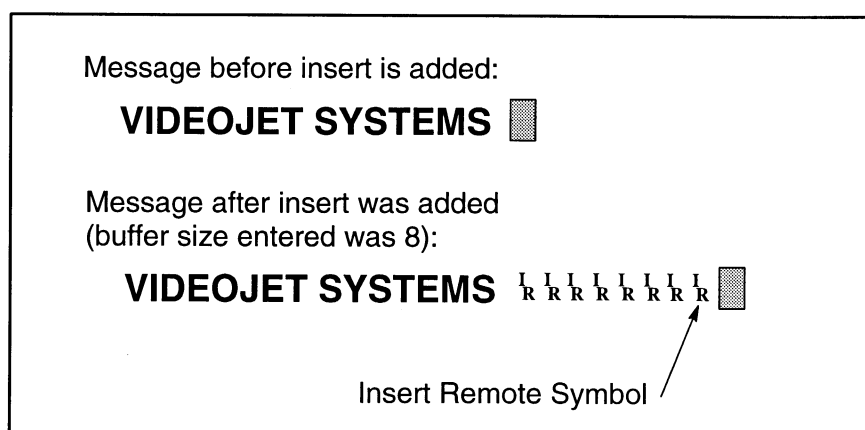


Figure 6-32. Message with a Remote Insert

Space Insert

This procedure explains how to place a space insert into a message. The mult-space insert is used to place spaces into a message. The length of the space is determined by you.

A space insert is better to use than manually adding space (by pressing the **SPACE** key) because it uses less character space in the message. This is best when you are creating messages that are close to using the maximum number of characters allowed for that print matrix.

For example:

A space insert which is 12 characters long will take up only one character space in the displayed message. If you were to add the same amount of space (12 characters) into the message by pressing the **SPACE** key twelve times, it would take up twelve character spaces in the message.

You can have as many blank space inserts in the message as space allows.

Procedure

1. Begin in Frame <01 M-SPACE>. Refer to Figure 6-33.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <# OF SPACES>. The following appears in the display screen:

ENTER # OF SPACES (1-255) --- ►

4. Use the numeric keypad to enter the number of spaces that you want the insert to occupy. The entry must be between 1-255 characters.
5. Press the **ENTER** key. Frame <01 M-SPACE> reappears in the display screen. Refer to Figure 6-33.

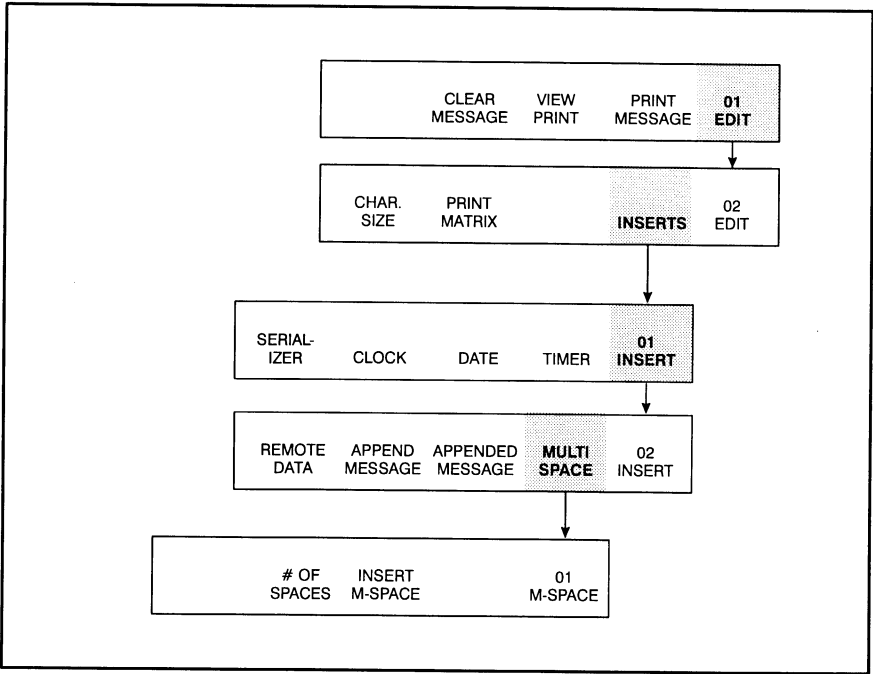


Figure 6-33. Accessing Frame <01 M-SPACE>

6. Press **F3** to select <INSERT M-SPACE>. The insert will appear in the message as a “blank space symbol.” Refer to Figure 6-34.

The blank space symbol that is seen in the message appears the same regardless of how many characters are included in the insert. Only one symbol will appear in the message. Refer to Figure 6-34.

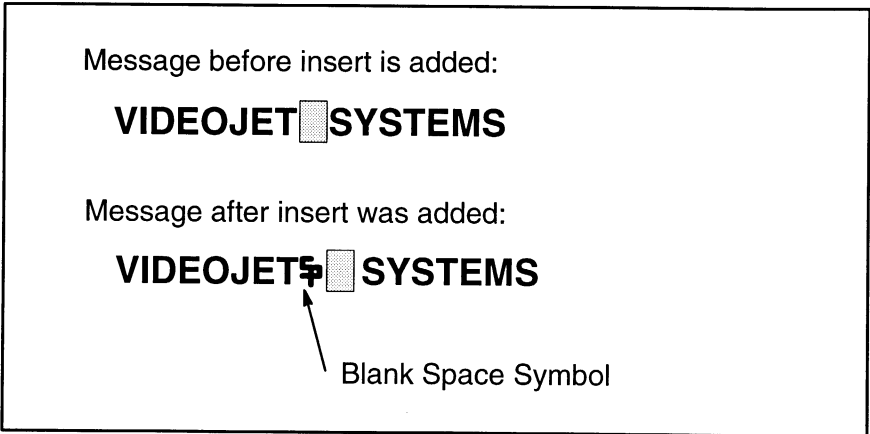


Figure 6-34. Message with a Blank Space Insert

Custom Character Insert

This procedure explains how to place a custom character insert into a message. A custom character insert is a unique character or symbol that is created in the System Set-up mode of the printer.

The custom character must already exist before it can be inserted into the message. Refer to *Building a Custom Character* on page 7-16 for further information.

You can have as many custom character inserts in the message as space allows.

Procedure

1. Begin in Frame <03 INSERT>. Refer to Figure 6-35.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F3** to select <INSERT CUSTOM>. The following appears in the display screen:

ENTER CUSTOM CHARACTER # --- ►

4. Use the numeric keypad to enter the storage location of the custom character created in the System Set-up mode. The entry must be between 0-9.

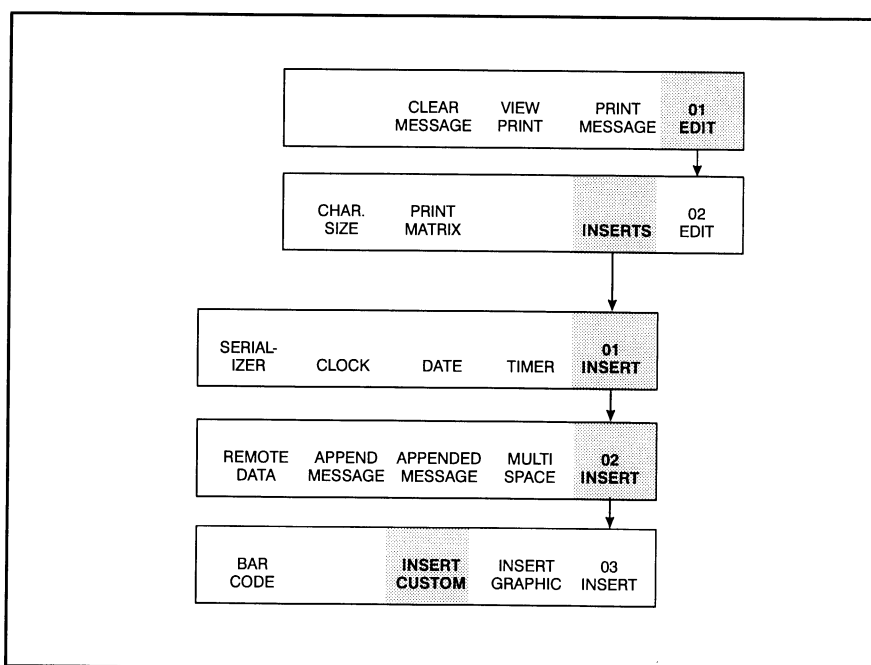


Figure 6-35. Accessing Frame <03 INSERT>

5. Press the **ENTER** key. Frame <03 INSERT> reappears in the display screen, and the insert will appear in the message as a "custom character symbol." (Refer to Figure 6-36.)

The "custom character symbol" that appears in the message differs depending on the entry made in step 4. If the storage location entry for the custom character was 8, the "custom character symbol" will appear as the number eight inside a dark box in the message. Refer to Figure 6-36.

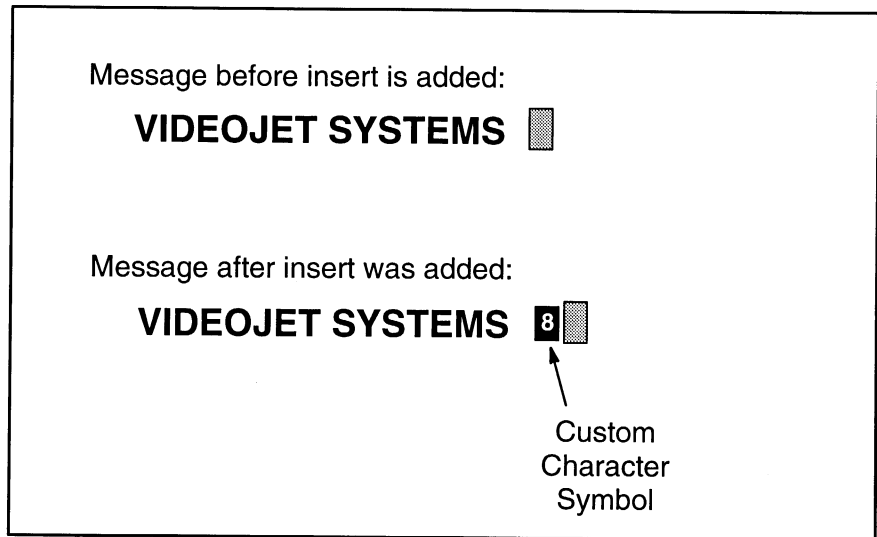


Figure 6-36. Message with a Custom Character Insert

Graphic Insert

This procedure explains how to place a graphic insert into a message. The graphic insert is a graphic symbol designed by VIDEOJET as a special order for a customer.

The graphic symbol is “burned” into a PROM (integrated chip) and the PROM is installed onto the printed circuit board (PCB) in the printer. Therefore, you cannot add a graphic insert into the message unless the PROM containing the graphic has been installed into the printer.

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

Procedure

1. Begin in Frame <03 INSERT>. Refer to Figure 6-37.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.

Note: Graphics are designed for use with a specific print matrix only. Make certain the message which you are adding the graphic insert into has the same print matrix as the graphic itself.

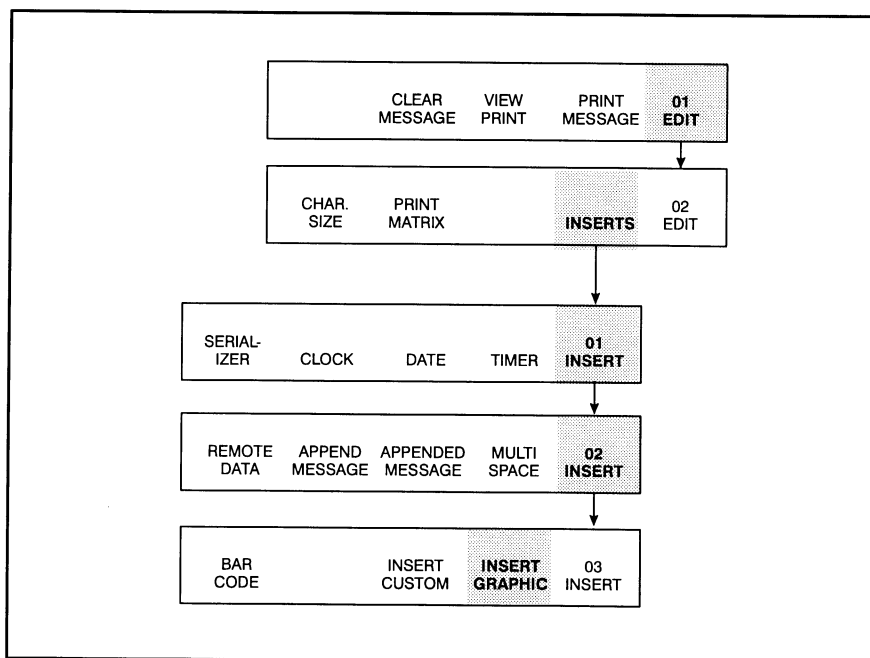


Figure 6-37. Accessing Frame <03 INSERT>

3. Press **F4** to select <INSERT GRAPHIC>. Has more than one graphic been installed into the printer?
 - If NO, the insert will appear in the message as a “graphic symbol.” (Refer to Figure 6-38.) The procedure to add the graphic insert is completed.
 - If YES, the following appears in the display screen:

ENTER GRAPHIC # (1-12) --- ►

4. Use the numeric keypad to enter the storage location of the graphic. The entry must be between 1-12.
5. Press the **ENTER** key. Frame <03 INSERT> reappears in the display screen, and the insert will appear in the message as a “graphic symbol.” Refer to Figure 6-38.

If more than one graphic has been installed into the printer, the “graphic symbol” appearing in the message will differ depending on the entry made in step 4. If the storage location entry for the graphic was 2, the “graphic symbol” will appear as the alphabetic character “B” inside a dark box in the message (instead of “A”).

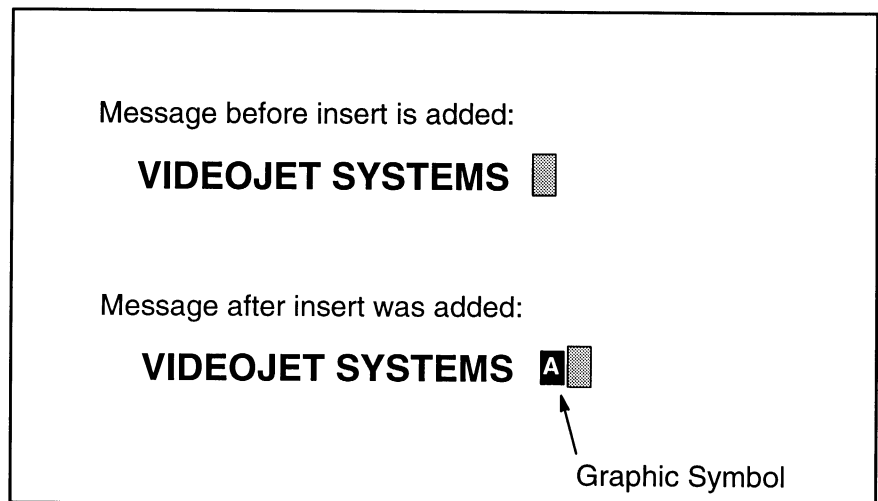


Figure 6-38. Message with a Graphic Insert

Bar Code Insert

This procedure explains how to place a bar code insert into a message. There are two types of bar code inserts you can add into the message:

Bar Code Type	Description
3 of 9	Can be used for both alphabetic and numeric characters.
2 of 5 Interleaved (2 of 5I)	Can be used for numeric characters only.

Table 6-10. Bar Code Types

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

Procedure

1. Begin in Frame <01 BARCODE>. Refer to Figure 6-39.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.

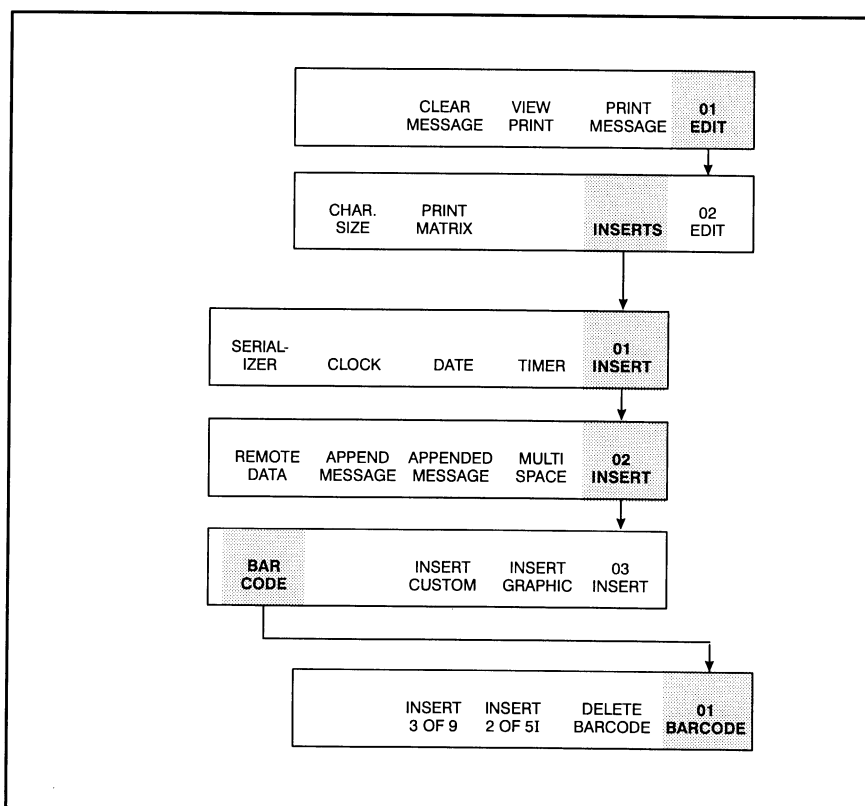


Figure 6-39. Accessing Frame <01 BARCODE>

3. You can now choose to add a 3 of 9 or 2 of 5 Interleaved (2 of 5I) bar code into the message:
 - To insert a 3 of 9 bar code, press **F2** to select <INSERT 3 OF 9>. Two 3 of 9 bar code symbols will appear in the message. Refer to Figure 6-40.
 - To insert a 2 of 5I bar code, press **F3** to select <INSERT 2 OF 5I>. Two 2 of 5I bar code symbols will appear in the message. Refer to Figure 6-40.

Note: The cursor will appear on the last bar code symbol in the message.

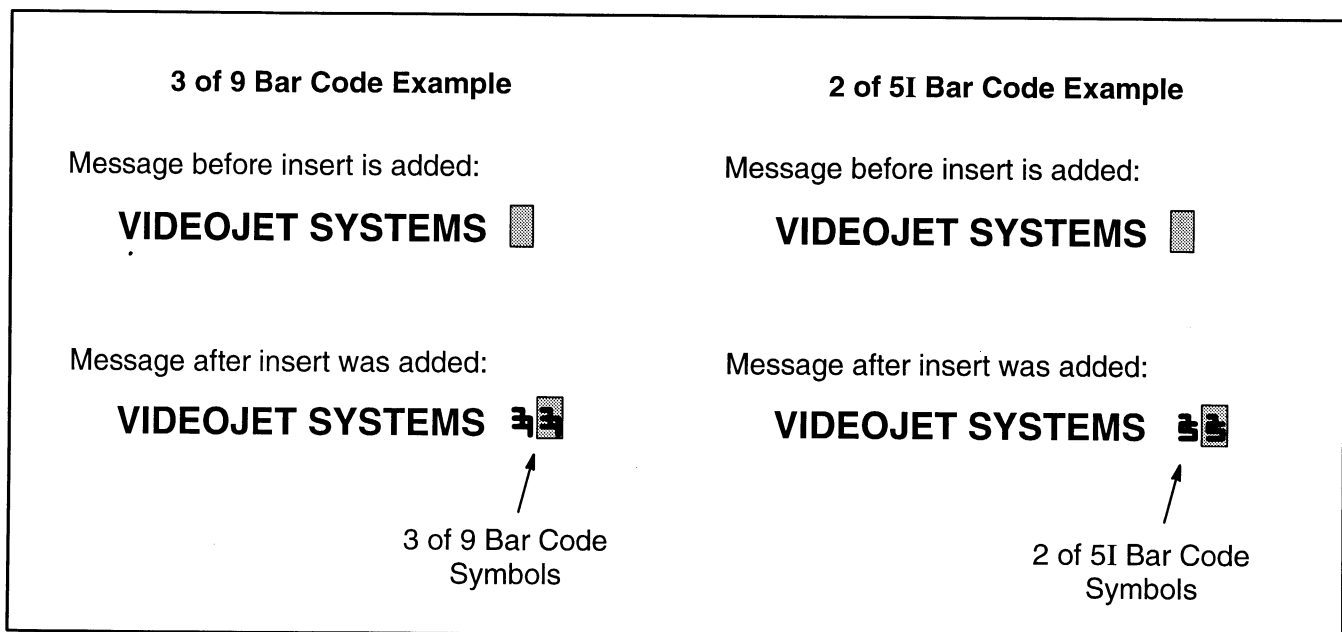


Figure 6-40. Messages with Bar Code Inserts

4. Use the appropriate keypads on the keyboard to enter the information which is to appear in the bar code. Keep in mind that the total number of characters in the insert cannot exceed the maximum number of characters allowed for that print matrix (including characters outside the insert).

Note: If you have selected a 3 of 9 bar code, you can use both the alpha and numeric keypads. If you have selected a 2 of 5I bar code, you can only use the numeric keypad.

Note: The 2 Of 5I bar code requires the entry of an even number of digits. A code "12345" would not be accepted, because it is an odd number of digits. However, "012345" is an acceptable alternative.

The information located between the two bar code symbols will appear as the selected barcode type when the message is printed (after it has been loaded).

Remove an Insert from the Message

This procedure explains how to delete an insert from a message. The procedure to remove an insert from the message is identical for all inserts, except the bar code insert.

Note: If you are removing a bar code insert from the message, refer to the *Remove a Bar Code Insert* section at the bottom of the page. Otherwise, refer to Figure 6-41 and follow the procedure below.

Procedure

1. Use the arrow keys to place the cursor on the insert to be removed.

Note: The printer will only allow you to place the cursor on the first character of an insert.

2. Press the **DELETE** key.

This will remove the entire insert from the message. The position of the cursor will remain unchanged and any subsequent characters, inserts, or spaces in the message line will be shifted to the left until the first remaining character, insert, or space occupies the current position of the cursor.

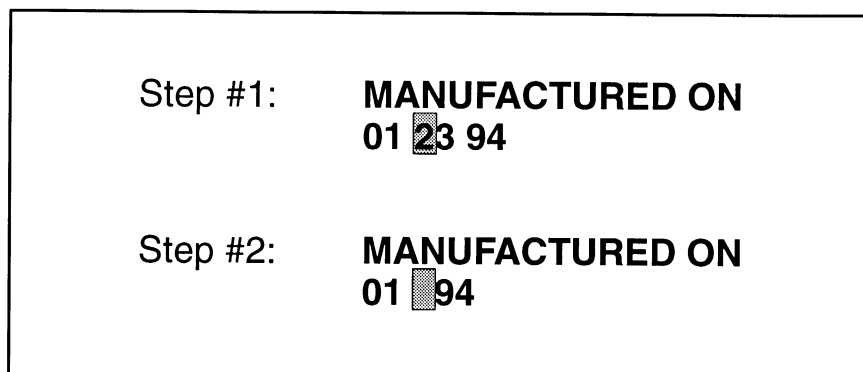


Figure 6-41. Removing an Insert - Example

Remove a Bar Code Insert

This procedure explains how to remove a bar code insert from the message. Use this procedure to remove bar code inserts only.

Procedure

1. Use the arrow keys to place the cursor on either one of the two bar code symbols (or on any of the characters in between the symbols) in the message. Refer to Figure 6-40.
2. Press the **DELETE** key.

This will remove the entire insert from the message. The position of the cursor will remain unchanged and any subsequent characters, inserts, or spaces in the message line will be shifted to the left until the first remaining character, insert, or space occupies the current position of the cursor.

Load A Message into the Printer

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

Procedure

1. Begin in Frame <01 EDIT>. Refer to Figure 6-42.

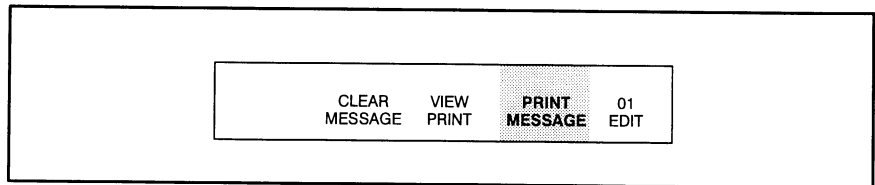


Figure 6-42. Frame <01 EDIT>

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

2. Make certain the message you want to print appears in the display screen.
3. Press **F3** to select <PRINT MESSAGE>. The command <MESSAGE LOADED> appears in the display screen below the message.

Storing Messages

Introduction

The procedures in this section show you how to view stored messages, recall stored messages, and store new messages.

The procedures in this section explain how to do the following:

- *Store A Message* below
- *View Stored Messages* turn to page 6-51
- *Recall a Stored Message* turn to page 6-52

Store A Message

This procedure explains how to store a message. Once you have created a new message or changed an existing message, you can choose to store that message in any one of 32 storage locations in the printer.

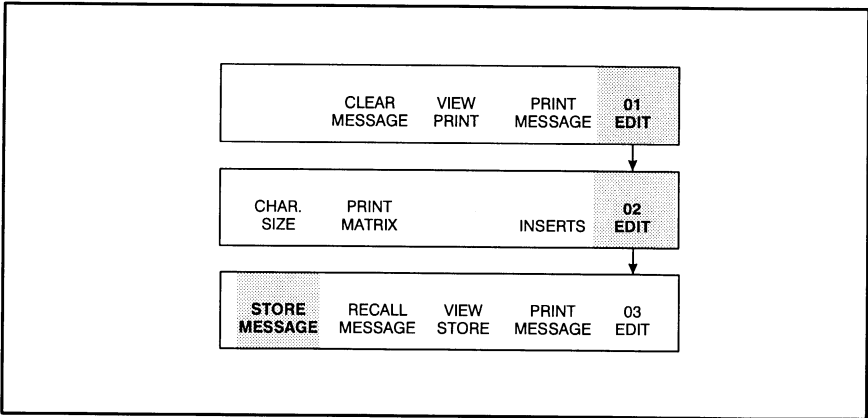


Figure 6-43. Accessing Frame <O3 EDIT>

Procedure

1. Begin in Frame <O3 EDIT>. Refer to Figure 6-43.
2. Make certain the message to be stored currently appears in the display screen.
3. Press **F1** to select <STORE MESSAGE>. The following appears in the display screen:

ENTER STORE LOCATION (1-32) --- ►

4. Use the numeric keypad to enter the location you want to store the message. The entry must be between 1-32.
5. Press the **ENTER** key. The message that appears in the display screen will be stored in the location entered.

Note: To verify that the message was stored in that location, view the storage location. Refer to View Stored Messages on page 6-51 for further information.

View Stored Messages

This procedure explains how to view the messages currently stored in the printer memory. The printer can store up to 32 messages. If you already know the storage location, you can go directly to that location to verify that the message is there. If you do not know the storage location of a particular message, you can randomly sort through the storage locations to find it.

This procedure only enables you to identify which storage location a message occupies. To recall that message and load it into the printer, turn to *Recall a Stored Message* on page 6-52.

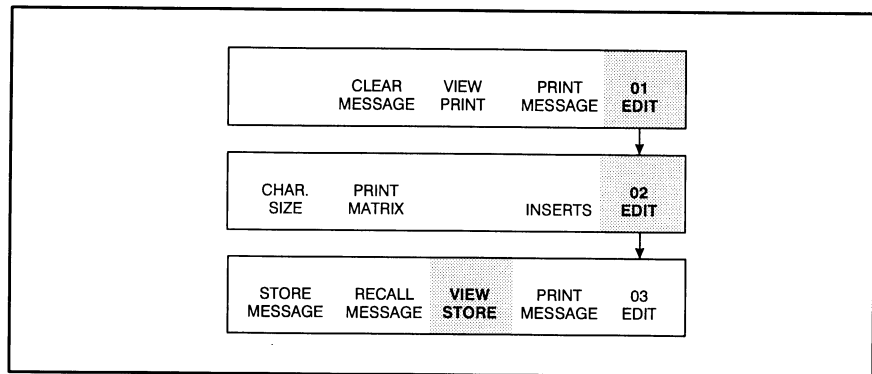


Figure 6-44. Accessing Frame <03 EDIT>

Procedure

1. Begin in Frame <03 EDIT>. Refer to Figure 6-44.
2. Press **F3** to select <VIEW STORE>. The following appears in the display screen:

MESSAGE NOW VIEWING --- ►

3. Use the arrow keys to change the storage location that presently appears in the display screen.

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

Arrow Key	Description
▲	Press this key to increase value by one.
▼	Press this key to decrease value by one.
►	Press this key to increase value by five.
◄	Press this key to decrease value by five

Table 6-11. Changing Values Using the Arrow Keys

Once the storage location number appears in the display screen, the message (if, any) stored in that location will appear in the display screen as well. If a message does not appear, then that storage location is empty.

Recall a Stored Message

This procedure explains how to recall a stored message. Once you know the storage location 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 storage location of the message to be recalled, turn to *View Stored Messages* on page 6-51 for further information.

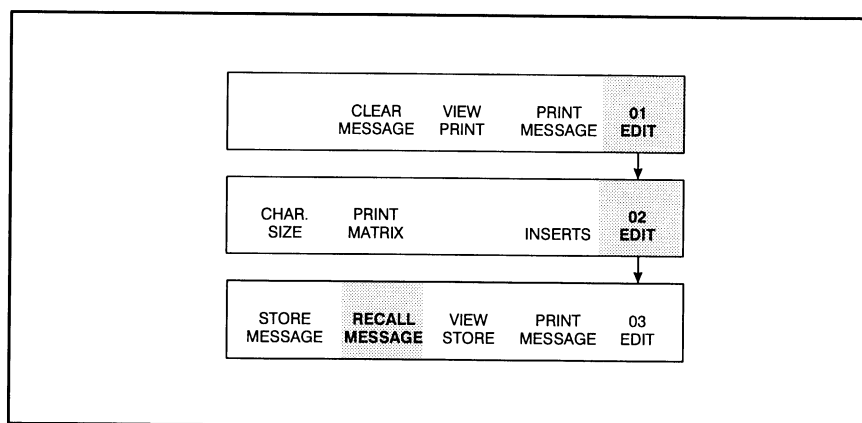


Figure 6-45. Accessing Frame <O3 EDIT>

Procedure

1. Begin in Frame <O3 EDIT>. Refer to Figure 6-45.
2. Press **F2** to select <RECALL MESSAGE>. The following appears in the display screen:

ENTER RECALL LOCATION (1–32) --- ►

3. Use the numeric keypad to enter the storage location you want to recall. The entry must be between 1–32.
4. Press the **ENTER** key. The message stored in that location will appear in the display screen.

Note: Remember that you must load the message into the printer before you can print the message. Turn to *Load a Message into the Printer* on page 6-49 for further information.

Printing Messages

Introduction

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

The procedures in this section explain how to do the following:

- *Print a Message* turn to page 6-54
- *Delay Printing Of A Message* turn to page 6-55

Criteria for Printing a Message

Before you can print a message, the following criteria must be met:

- the message must be loaded into the printer
- the **READY** light must be lit

The **READY** light is lit only when the light on both the **HEAD** key and the **PRINT** key are lit at the same time. Refer to *HEAD Key* on page 3-13 and *PRINT Key* on page 3-14 for further information about these keys.

The printer will not print a message while it is in the Service mode.

Print a Message

This procedure explains how to print a message normally (without a delay).

Procedure

1. Make certain the message you want to print appears in the display screen.
2. Has this message been loaded into the printer?
 - If YES, continue to the next step.
 - If NO, go to Frame <O1 EDIT>. Refer to Figure 6-46. Press **F4** to select <PRINT MESSAGE>.

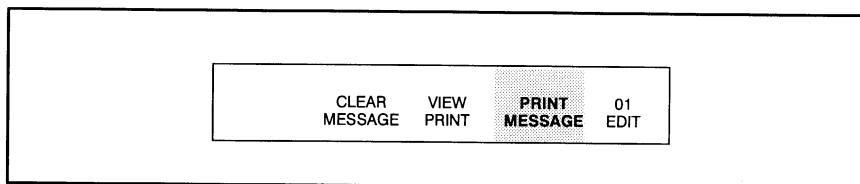


Figure 6-46. Frame <O1 EDIT>

Note: To reach Frame <O1 EDIT>, press the **ENTER** key until the frame appears in the display screen.

3. Is the light on the **HEAD** key lit?
 - If YES, continue to the next step.
 - If NO, press the **HEAD** key and wait until the light is lit (solid, not flashing).
4. Is the light on the **PRINT** key lit?
 - If YES, the **READY** light will be lit as well.
 - If NO, press the **PRINT** key to turn the light On. Once the light is lit, the **READY** light will be lit as well.

When the **READY** light is lit, it indicates that the printer will now print a message whenever it receives a product detect signal (once the product passes the printhead).

Delay Printing Of A Message

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

The delay value is entered in print strokes, and the entry must be between 0-9999. Once the product detect signal is received, the printer waits until the specified number of strokes (the delay value) passes before it prints the message onto the product. Refer to Figure 6-47 for an example.

The distance that the message will be delayed before it is printed depends on the print matrix of the message. The distance that the message will be delayed will be different for a 7 x 9 Single Line print matrix than it would be for the same message having a 10 x 16 Twin Line print matrix.

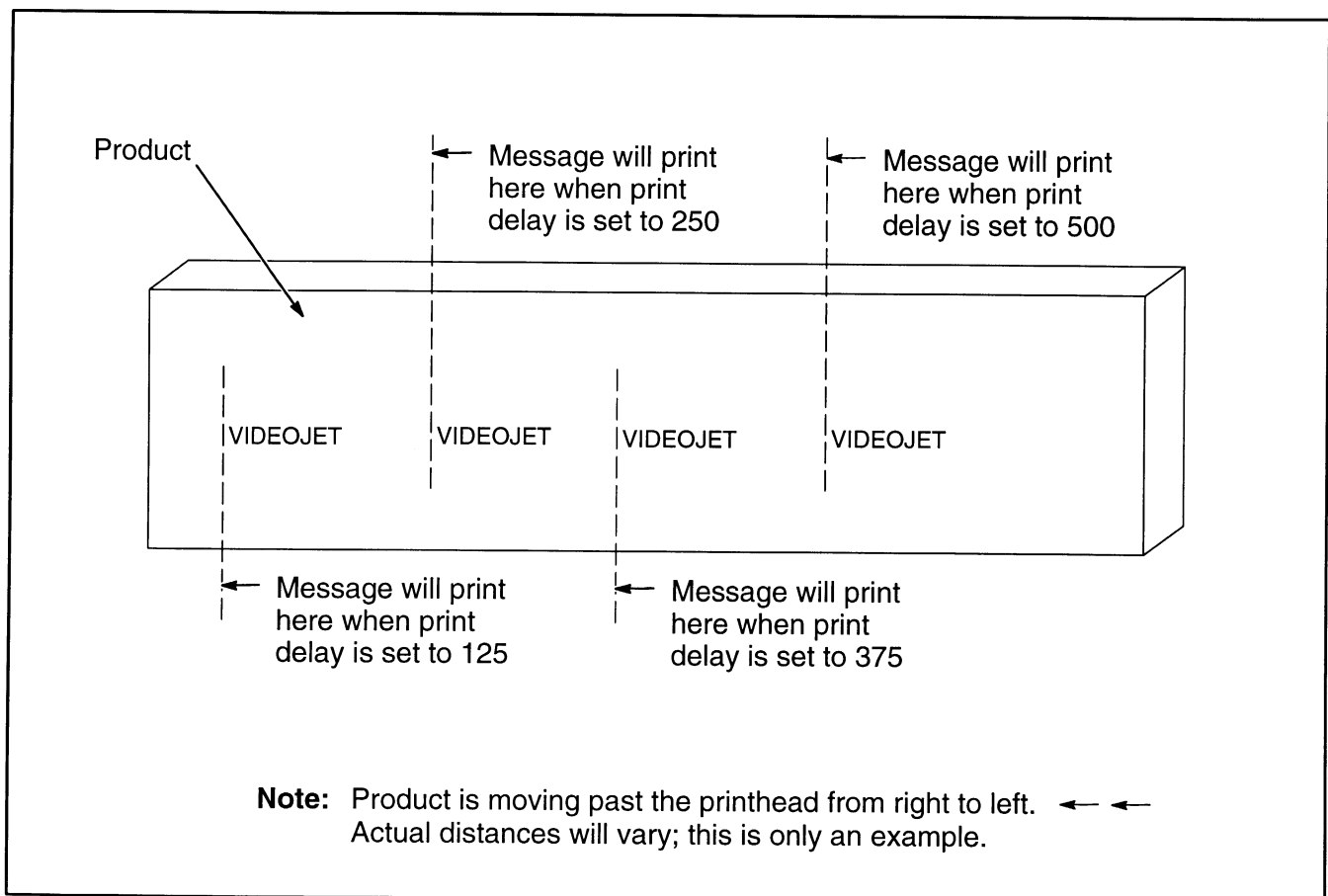


Figure 6-47. Delaying the Printing of a Message - Example

Continued on next page ►

Procedure

1. Begin in Frame <01 PRINT>. Refer to Figure 6-48.
2. Press **F4** to select <PRINT DELAY>. The following appears in the display screen:

ENTER NEW PRINT DELAY --- ►

3. Use the numeric keypad to enter the print delay. The entry must be between 0-9999.
4. Press the **ENTER** key. Frame <01 PRINT> reappears in the display screen.
5. Follow the instructions in *Print a Message* on page 6-54 to print the message (with the delay).

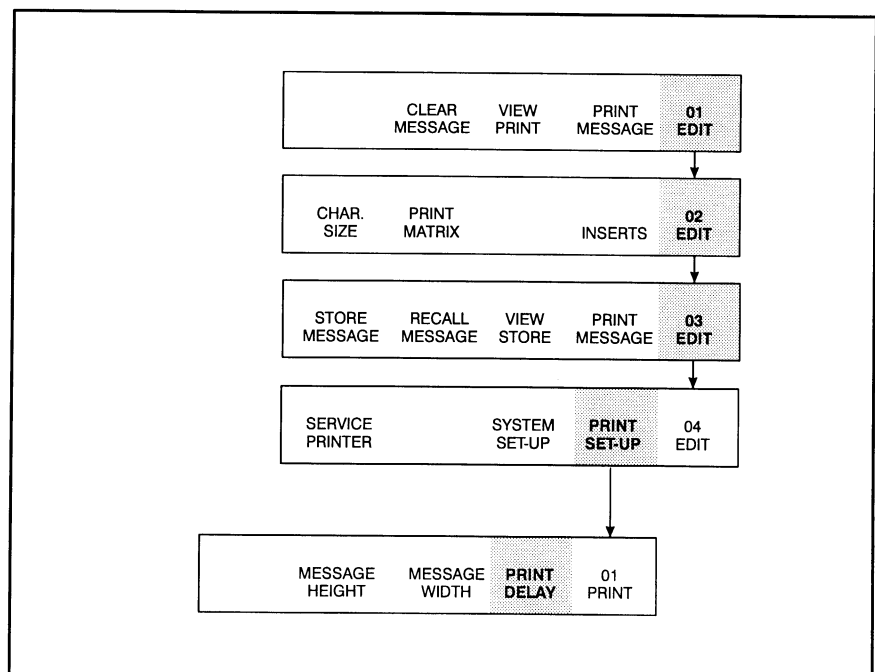
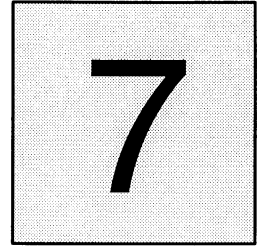


Figure 6-48. Accessing Frame <01 PRINT>



System Set-up

In this chapter you will find:

- an explanation of how to use the Software Summary chart to perform the procedures necessary to prepare the system for printing

Refer to page 7-2 for the Table of Contents for this chapter.

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Introduction

This chapter describes how to set system and printing parameters. Refer to the list below to view all the tasks covered in this chapter. Refer to the page number listed to locate the specific procedure for each task.

- *Print Count* turn to page 7-4
- *Product Count* turn to page 7-5
- *Select the Method of Product Speed Matching* turn to page 7-6
- *Set the Internal Clock* turn to page 7-8
- *Build a Custom Character* turn to page 7-16
- *Turn Ink Low Alert Light Option On or Off* turn to page 7-19
- *Set the Baud Rate* turn to page 7-20
- *Set the Remote Mode for Receiving External Messages* turn to page 7-21
- *Auto Repeat* turn to page 7-22
- *Monitor Flow Time Settings* turn to page 7-24
- *Print Delay* turn to page 7-25
- *Print Set-up Parameters* turn to page 7-26

Software Illustration Conventions

The illustration in Figure 7-1 shows how to use the software illustrations provided for each procedure to find your way through the software.

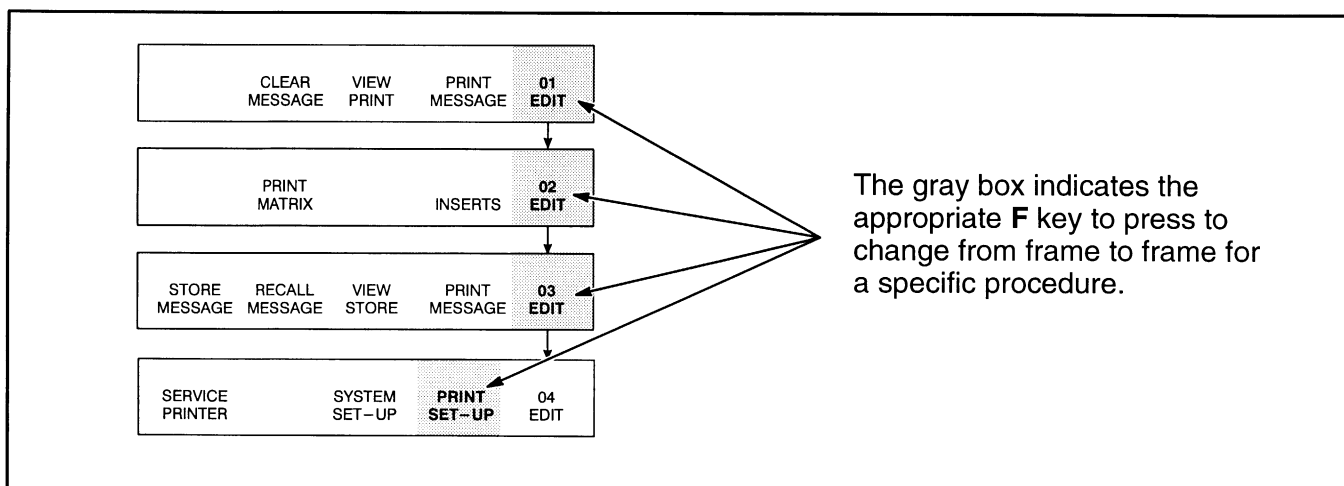


Figure 7-1. Software Illustration Example

Print Count

Introduction

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

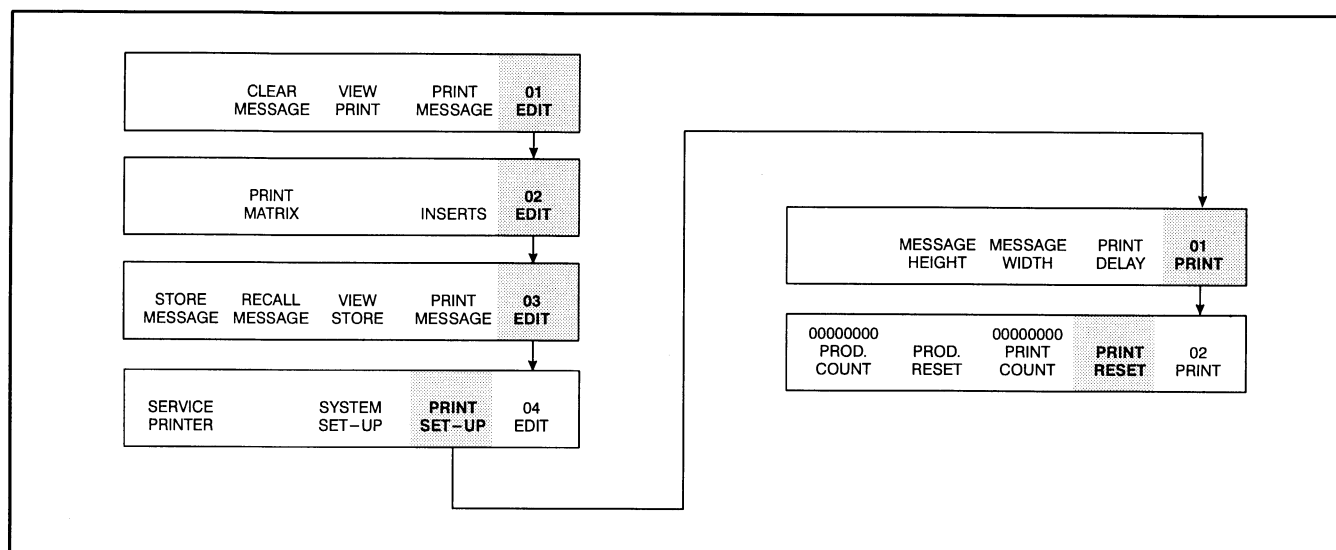


Figure 7-2. Accessing Frame <02 PRINT>

View Current Print Count

This procedure shows you how to view the current print count.

Procedure

1. Begin in Frame <02 PRINT>. Refer to Figure 7-2.
2. View the current value above <PRINT COUNT>.

Reset the Current Print Count

This procedure shows you how to reset the current print count to zero.

Procedure

1. Begin in Frame <02 PRINT>. Refer to Figure 7-2.
2. Press **F4** to select <PRINT RESET>. The value above <PRINT COUNT> changes to zero.

Product Count

Introduction

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

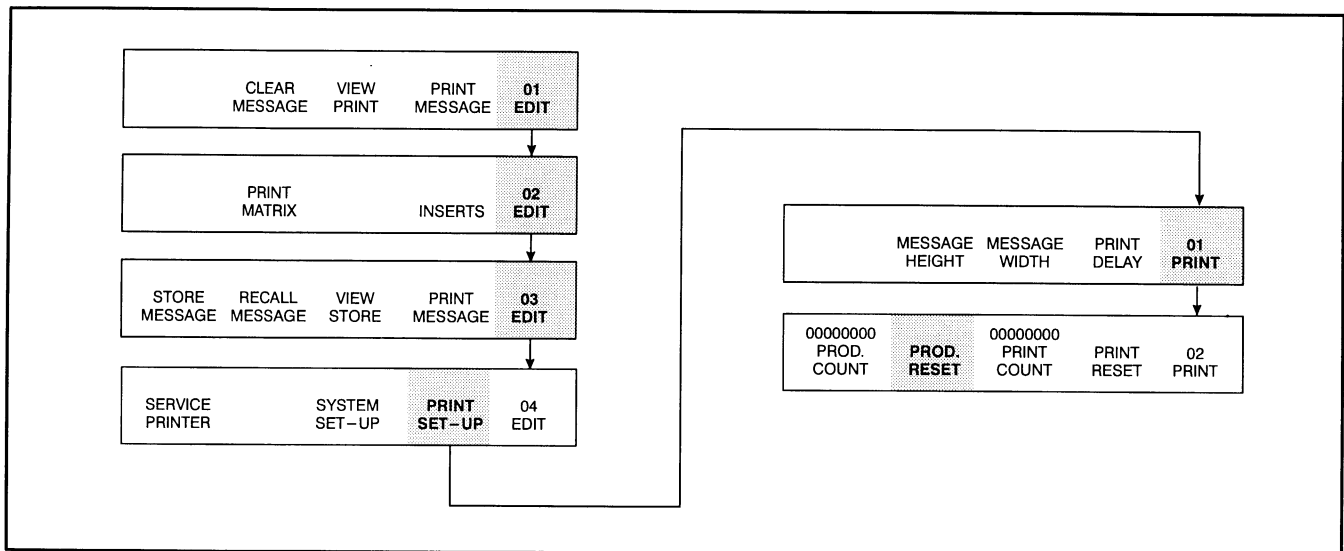


Figure 7-3. Accessing Frame <02 PRINT>

View Current Product Count Procedure

This procedure shows you how to view the current product count.

1. Begin in Frame <02 PRINT>. Refer to Figure 7-3.
2. View the current value above <PROD. COUNT>.

Reset the Current Product Count

This procedure shows you how to reset the current product count to zero.

Procedure

1. Begin in Frame <02 PRINT>. Refer to Figure 7-3.
2. Press **F2** to select <PROD. RESET>. The value above <PROD. COUNT> changes to zero.

Select the Method of Product Speed Matching

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 three encoding settings available: Internal, External, and Auto. Refer to Table 7-1 below to select the appropriate setting for your application.

If the Product Speed:	Then the Encoder Type Should Be Set to:
is constant	<INT> Internal
varies	<EXT> External
differs from that of the convey- or due to product slippage	<AUTO> Automatic

Table 7-1. Selecting the Appropriate Encoding Type

Note: External encoding is the only setting that is used with an encoder.

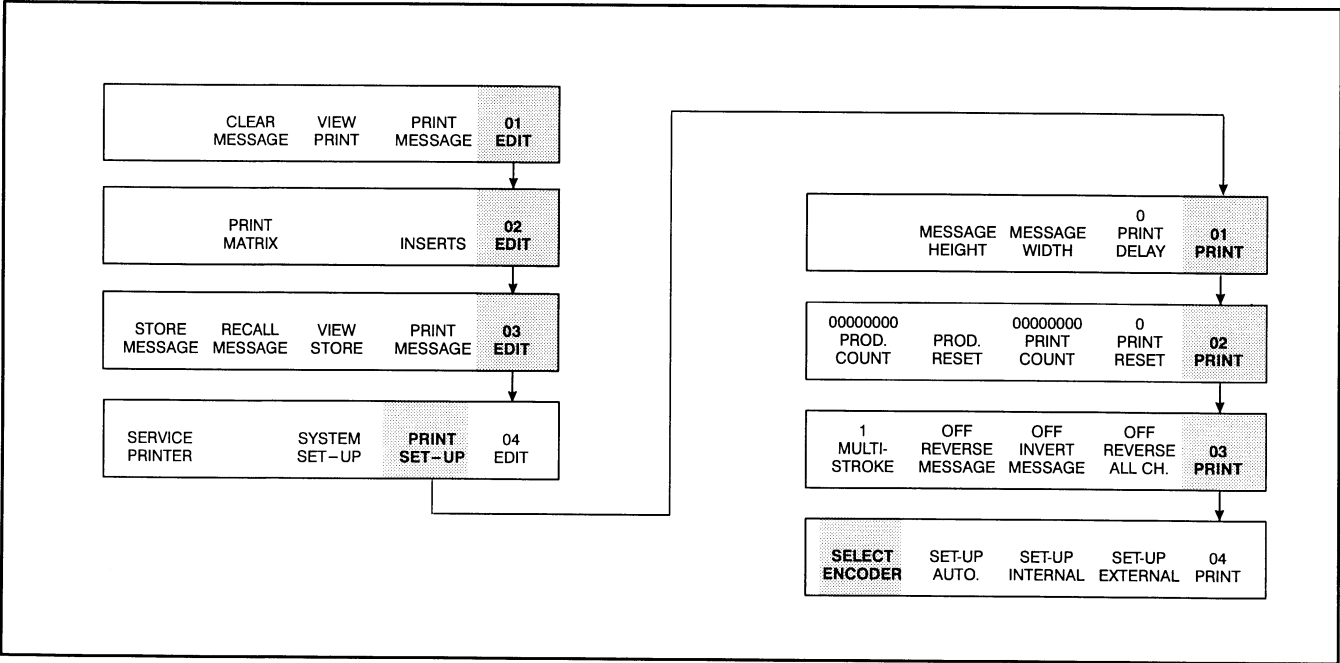


Figure 7-4. Accessing Frame <04 PRINT>

Procedure

1. Begin in Frame <04 PRINT>. Refer to Figure 7-4.
2. View the current setting above <SELECT ENCODER>. Press **F1** to change the setting. (Settings: INT., AUTO., and EXT.)
3. Refer to Table 7-2 below to complete the next step.

If <SELECT ENCODER> is set to:	Then Select:	Use the Numeric Keypad to Enter the Following Values:
<INT>	<SET-UP INTERNAL> press (F3)	ENTER METERS/MINUTE (2-511) --- ►
<AUTO>	<SET-UP AUTO> press (F2)	ENTER IN MILLIMETERS (3-332) - ►
<EXT>	<SET-UP EXTERNAL> press (F4)	ENCODER REDUCTION (2-9999) --- ►

Table 7-2. Setting Appropriate Encoder Values

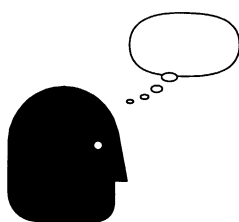
4. Press the **ENTER** key.
5. This step is optional. If you do not want Speed Compensation On, continue to step 6. Follow these instructions to turn Speed Compensation On.

View the current setting above <SPEED COMP.>. If desired, press **F1** to change the setting. (Settings: ON, OFF.)

Note: Refer to the Speed Compensation Summary below for more information.

7. Press the **ENTER** key. Frame <04 PRINT> appears in the display screen.

Note: When Speed Compensation is switched On, the print delay is increased by 60 strokes. The 60 strokes must be subtracted from the existing print delay if you want the message to remain in the same position on the product.



Speed Compensation Summary

Speed Compensation enables the printer to print a message in the same position on a product as the product speed changes. The printer does this by computing a variable stroke delay for each product. As the product speed is reduced, the variable stroke delay increases. This feature is designed for a print distance of $1\frac{1}{32}$ or 0.1875 inch (4.76 mm).

Set the Internal System Clock

The procedures in this section show you how to set the internal clock. The clock controls the updating 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 message inserts are accurate.

Complete the procedures listed below to accurately set the system clock. Turn to the page numbers indicated for specific procedures.

- *Set the System Time* turn to page 7-9
- *Set the System Date* turn to page 7-10
- *Set the Hour-of-the-Week* turn to page 7-12
- *Set the Week-of-the-Year* turn to page 7-14

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 clock. The time of day that appears in the display screen is also based on the internal time clock.

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

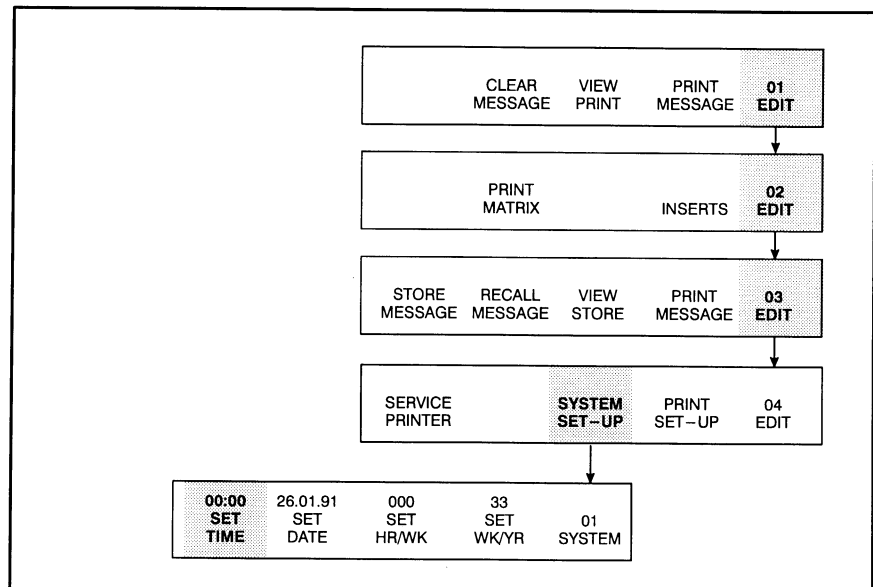


Figure 7-5. Accessing Frame <01 SYSTEM>

Procedure

1. Begin in Frame <01 SYSTEM>. Refer to Figure 7-5.
2. Press **F1** to select <SET TIME>. The following appears in the display screen:

ENTER HHMM --- ►

3. Use the numeric keypad to enter in 24-hour clock time the two-digit hour-of-the-day (HH) followed by the two-digit minute (MM).

For example:

If the time is 9:45 a.m., enter 0945; 09 is the hour and 45 is the minute. If the time is 4:02 p.m., enter 1602; 16 is the hour (24-hour clock), 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.

Note: Refer to page 6-18 in Chapter 6 for the procedure to place a time insert into a message.

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.

Note: The system date must be set before the week-of-the-year insert can be calculated. Refer to page 7-14 for directions to set the current week-of-the-year.

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

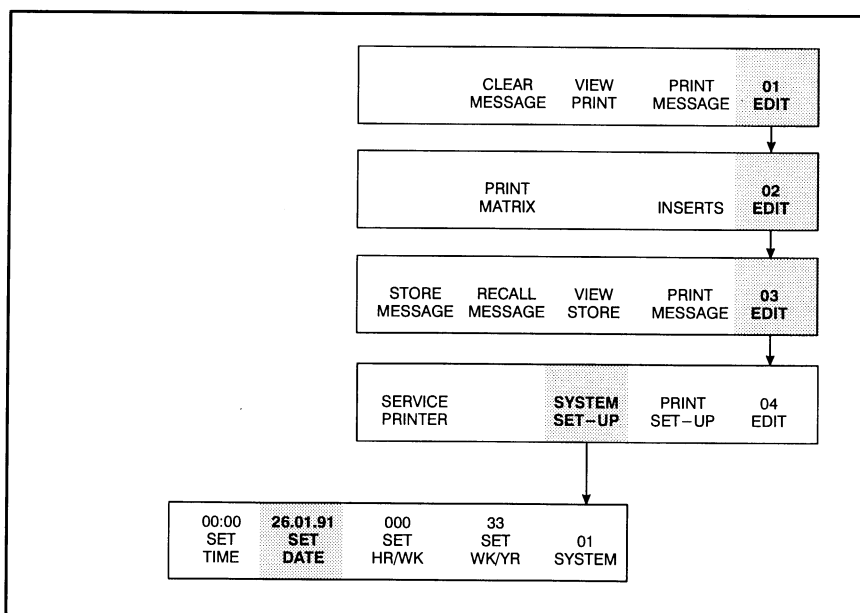


Figure 7-6. Accessing Frame <01 SYSTEM>

Procedure

1. Begin in Frame <01 SYSTEM>. Refer to Figure 7-6.
2. Press **F2** to select <SET DATE>. The following appears in the display screen:

ENTER DDMMYY --- ►

3. Use the numeric keypad to enter two digits for the current day-of-the-month (DD), followed by two digits for the current month (MM), and two digits for the current year (YY).

For example:

If the date is February 9, 1995, enter 090295; 09 is the day-of-the-month, 02 is the month, and 95 is the year.

4. Press the **ENTER** key. The date appears in the display screen above <SET DATE>.

Refer to page 6-23 in Chapter 6 for the procedure to place a date insert into a message.

**Set the Current
Hour-of-the-Week**

This procedure shows you how to set the hour-of-the-week. This setting is used in the hour-of-the-week insert.

The hour-of-the-week is set in Frame <01 SYSTEM>. Refer to Figure 7-7 below for directions to reach this frame.

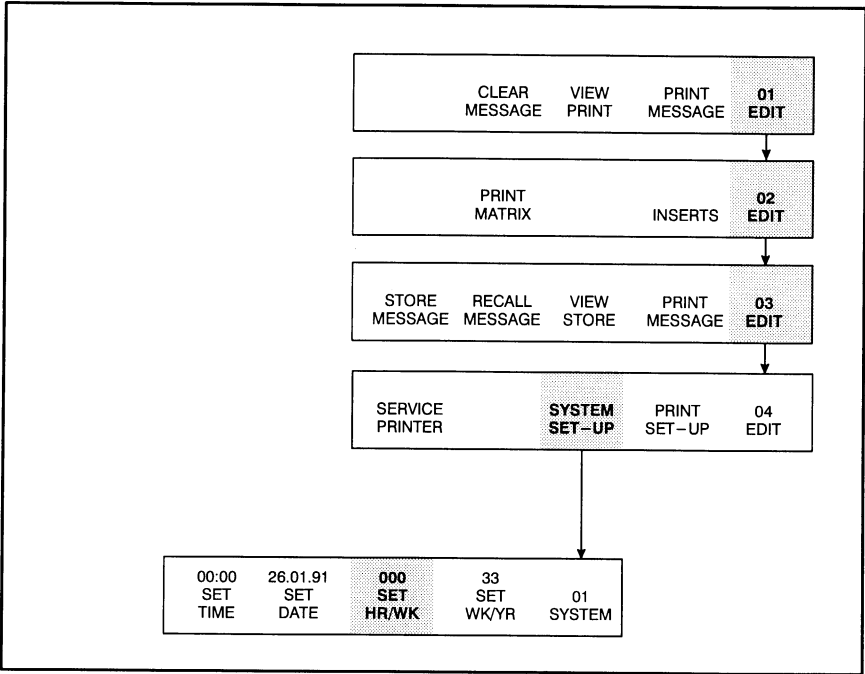


Figure 7-7. Accessing Frame <01 SYSTEM>

Procedure

1. Begin in Frame <01 SYSTEM>. Refer to Figure 7-7 on the previous page.
2. Press **F3** to select <SET HR/WK>. The following appears in the display screen:

ENTER HOUR/WEEK (1-168) --- ►

3. Use the numeric keypad to enter three digits for the current hour of the week. The setting must be between 1 and 168.

To determine this value, use the following procedure:

- a. Determine the starting day of the week.
- b. Determine the current hour of the day.
- c. Add 24 hours for each day from the starting day up to but not including the current day.
- d. Add the current hour of the day (number of hours to the previous total from step c). Determine the current hour of the week.

For example:

If your week begins on Monday and the current time is Thursday at 3:30 p.m., add 24 hours each for Monday, Tuesday, and Wednesday, then add 16 hours for Thursday. The total is 88.

4. Press the **ENTER** key. The hour of the week appears in the display screen above <SET HR/WK>.

Refer to page 6-20 in Chapter 6 for the procedure to place the hour-of-the-week insert into a message.

Set the Current Week-of-the-Year

This procedure shows you how to enter the correct settings so that the system can automatically calculate the current week-of-the-year. This setting is used in the week-of-the-year insert.

The current week-of-the-year is displayed in Frame <01 SYSTEM>. Refer to Figure 7-8 below for directions to reach this frame.

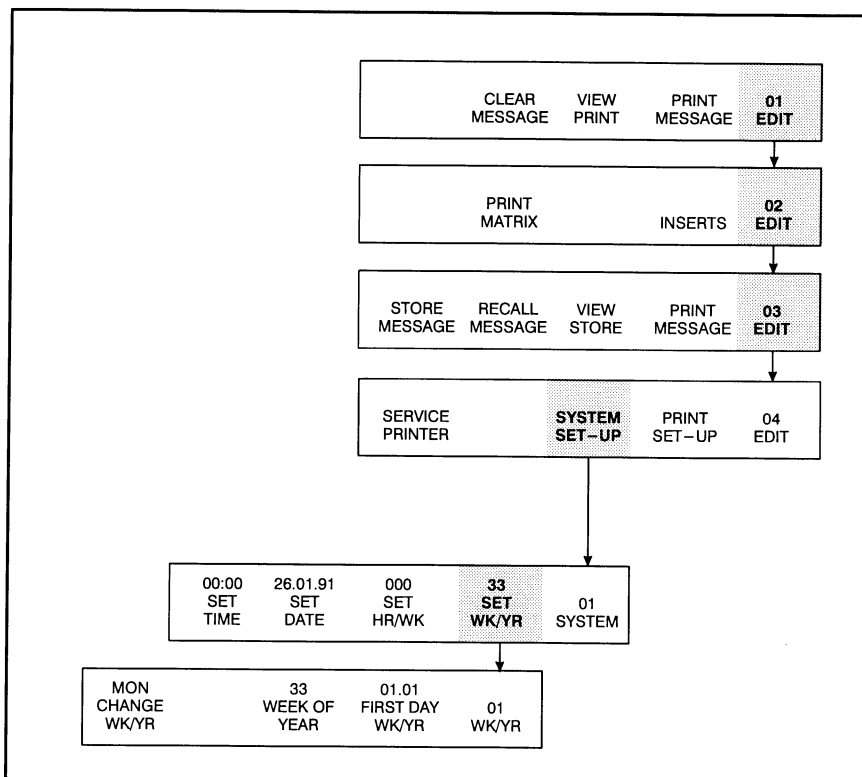


Figure 7-8. Accessing Frame <01 WK/YR>

Procedure

1. Begin in Frame <01 SYSTEM>. Refer to Figure 7-8.
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, turn to page 7-10 and follow the procedure to set the system date. After you complete the procedure, return to this page and proceed to step 3.

Note: The week-of-the-year is calculated automatically if the system date has already been entered into the system.

3. Press **F4** 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 **F1** to change the setting. (Settings: MON, TUE, WED, THU, FRI, SAT, SUN.)

For example:

If you set the change to occur on Monday, the week of the year setting will change at 12:00 a.m. on Monday morning.

- b. Press **F4** to select <FIRST DAY WK/YR>. The following appears in the display screen:

ENTER 1ST DAY WEEK 1 DDMM -- ➡

Use the numeric keypad to enter the starting day of the year in DDMM format: two digits for the day-of-the-month (DD), and two digits for the month (MM).

For example:

For example, if the starting day is to be January 3, enter 0301; 03 for the day-of-the-month, and 01 for 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>.

Refer to page 6-21 in Chapter 6 for the procedure to insert the current week-of-the-year into a message.

Building a Custom Character

Introduction

This procedure shows you how to build your own custom character to place into a message. The custom character you build, or create, is used in the custom character insert. Refer to page 6-42 in Chapter 6 for instructions to place a custom character insert into a message.

Build custom characters by designing a pattern from a block of ink drops equal to the size of the current font. For example, the 7 x 9 font matrix enables you to create a character from a block of drops 7 wide by 9 high. Ten custom characters can be created and saved per font.

The custom character is created in Frame <02 SYSTEM>. Refer to Figure 7-9 below for directions to reach this frame.

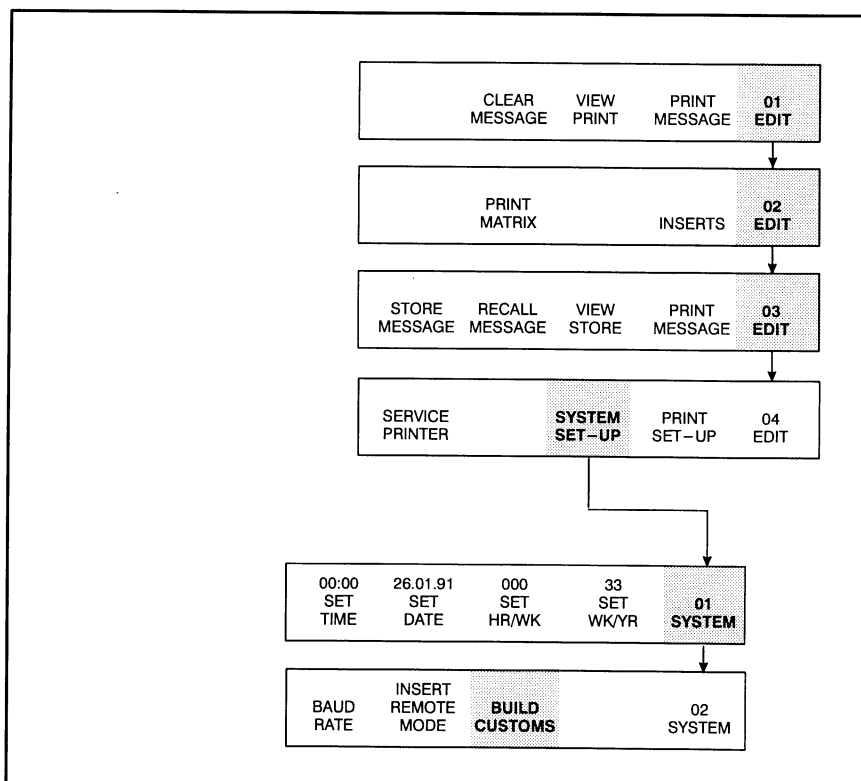


Figure 7-9. Accessing Frame <02 SYSTEM>

Procedure

1. Begin in Frame <02 SYSTEM>. Refer to Figure 7-10.

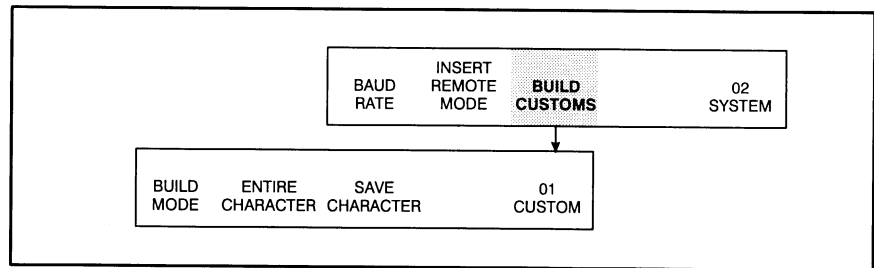


Figure 7-10. Accessing Frame <01 CUSTOM>

Note: If at any time you want to cancel the operation while you are creating a custom character, press the **CANCEL** key to return to Frame <02 SYSTEM>.

2. Press **F3** to select <BUILD CUSTOMS>. Frame <01 CUSTOM> appears in the display screen. The following also appears on the display screen:

ENTER CUSTOM CHARACTER # --- ►

3. Use the numeric keypad to enter a number between 1 and 10. (In the example shown in Figure 7-11, number 1 is used.) Ten custom characters can be created for each font matrix.
4. Press the **ENTER** key. Refer to Figure 7-11 for an example of the display screen after you press the **ENTER** key.

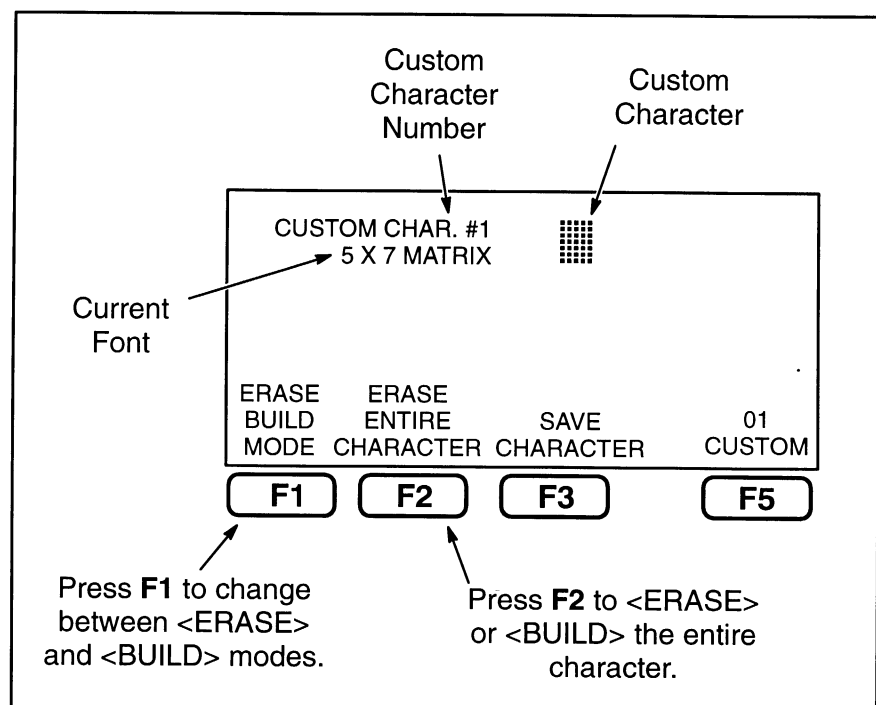
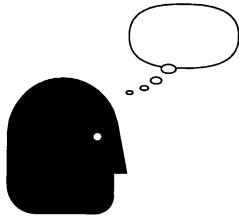


Figure 7-11. Create a Custom Character

Continued on next page ►



5. Use the arrow keys to draw the custom character.

Build Custom Character Summary

You begin with a field of ink drops in the current font. Create a custom character by turning the black ink drops into empty drops.

With the <BUILD MODE> (**F1**) set to <ERASE>, you remove ink drops from the pattern as you move the invisible cursor with the arrow keys.

With the <BUILD MODE> set to <WRITE>, you add ink drops to the pattern as you move the invisible cursor. Press **F1** to change the current setting. Settings include <ERASE> and <WRITE>.

Note: The invisible cursor is located in the lower-left corner of the pattern when you begin.

Note: The <BUILD MODE> (**F1**) controls the status of both the <BUILD MODE> and <ENTIRE CHARACTER> (**F2**) commands.

The <BUILD ENTIRE CHARACTER> selection is used to turn all the drops in the pattern on. The <WRITE ENTIRE CHARACTER> selection is used to turn all the drops in the pattern off.

Press the **SHIFT** key and **F2** to erase the entire character (turn all drops in the pattern off) when the current setting is <WRITE ENTIRE CHARACTER>.

Press the **SHIFT** key and **F2** to build the entire character (turn all drops in the pattern on) when the current setting is <BUILD ENTIRE CHARACTER>.

6. When you are finished editing your custom character, press **F3** to select <SAVE CHARACTER>. The following appears in the display screen.

CHARACTER HAS BEEN SAVED

7. Press the **ENTER** key. Frame <02 SYSTEM> appears in the display screen.

Refer to page 6-42 in Chapter 6 for the procedure to place a custom character insert into a message.

Edit a Custom Character

To edit a custom character after it has been saved, complete the procedure as described above, but enter the number of the saved custom character in step 3. Change the character as desired. Press **F3** to select <SAVE CHARACTER>, and the character will be automatically saved to memory.

If at any time you want to cancel the operation while you are creating a custom character, press the **CANCEL** key to return to Frame <02 SYSTEM>.

Enable or Disable the Ink Low Alert Light Option

This procedure shows you how to enable and disable the Ink Low alert option. When an alert light (optional) is connected to the printer and <INK LOW ALERT> is set to ON, the alert light flashes when the fluid levels in the ink or make-up fluid replenishment bottles are low.

If <INK LOW ALERT> Is Set to:	Then:
<ON>	the alert light will begin to flash one minute after the ink low signal is received
<OFF>	a warning will appear in the display screen and the SERVICE light will illuminate

Table 7-3. How INK LOW ALERT is Used

The ink low alert is set in Frame <03 SYSTEM>.

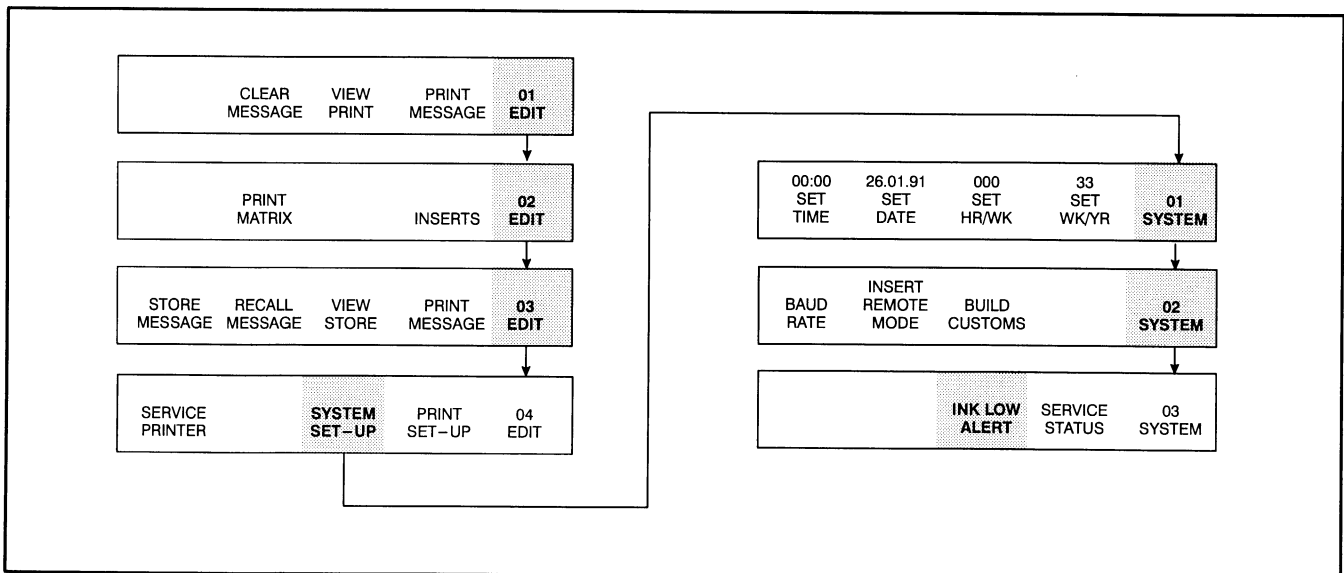


Figure 7-12. Accessing Frame <03 SYSTEM>

Procedure

1. Begin in Frame <03 SYSTEM>. Refer to Figure 7-12.
2. View the current setting above <INK LOW ALERT>.
Press **F3** to change the setting. (Settings: OFF and ON.)

Set the Baud Rate

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

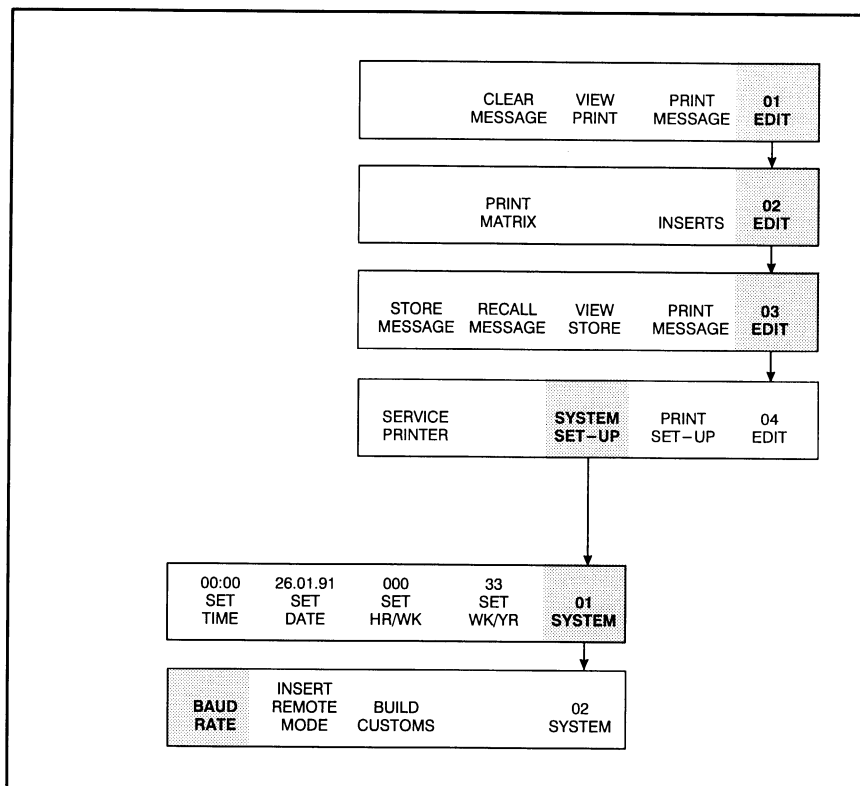


Figure 7-13. Accessing Frame <02 SYSTEM>

Procedure

1. Begin in Frame <02 SYSTEM>. Refer to Figure 7-13.
2. View the current setting above <BAUD RATE>. Press the **SHIFT** and **F1** keys at the same time to change the setting. (Settings: 300, 1200, 2400, 4800, 9600, and 19200.)

Set the Remote Mode for External Message Receiving

This procedure shows you how to set the remote mode for external data transmission.

If <REMOTE MODE> Is Set to:	Then:
<MESSAGE>	External data transmissions take the place of any messages that are on the display screen.
<INSERT>	External data transmissions are printed alongside messages that are created through the keyboard.

Table 7-4. REMOTE MODE Settings

With the remote mode set to <INSERT>, use the arrows keys to put the cursor in front of, or behind, the other messages.

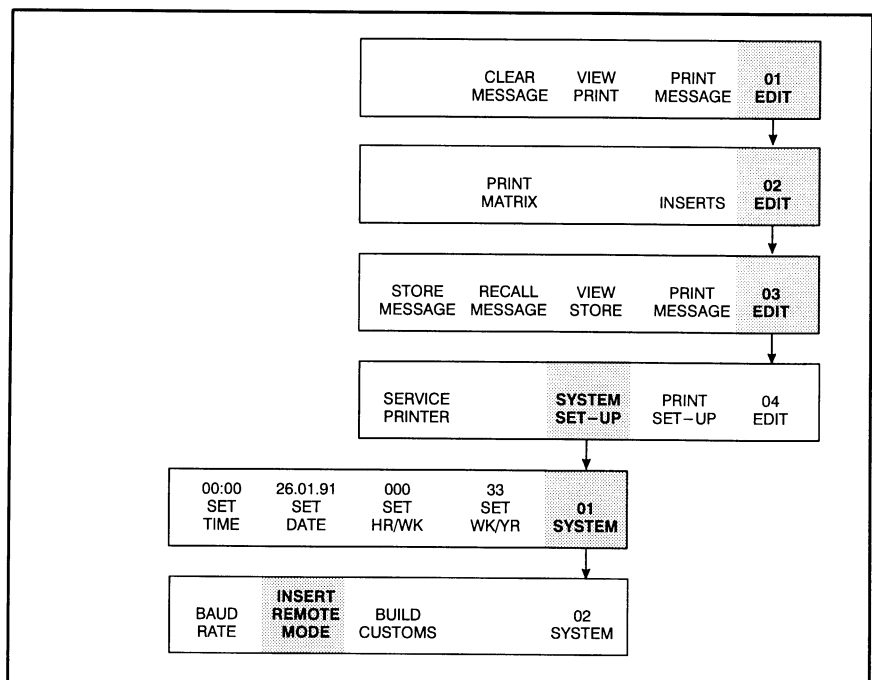


Figure 7-14. Accessing Frame <02 SYSTEM>

Procedure

1. Begin in Frame <02 SYSTEM>. Refer to Figure 7-14.
2. View the current setting above <REMOTE MODE>. Press the **SHIFT** and **F1** keys at the same time to change the setting. (Settings: MESSAGE, and INSERT.)
3. Press **ENTER** to save the setting.

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.

Note: Be careful not to confuse this function with the <REPEAT COUNT> option in the serializer set-up frame. The serializer repeat count allows you to print the same serializer upon successive product detects; 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.

Turn to page 7-23 for the procedure to set the auto repeat.

For example:

The Auto repeat function is used effectively when marking wire. One product detect is received and the same message prints continuously (to a maximum of 255 times) along the length of the wire.

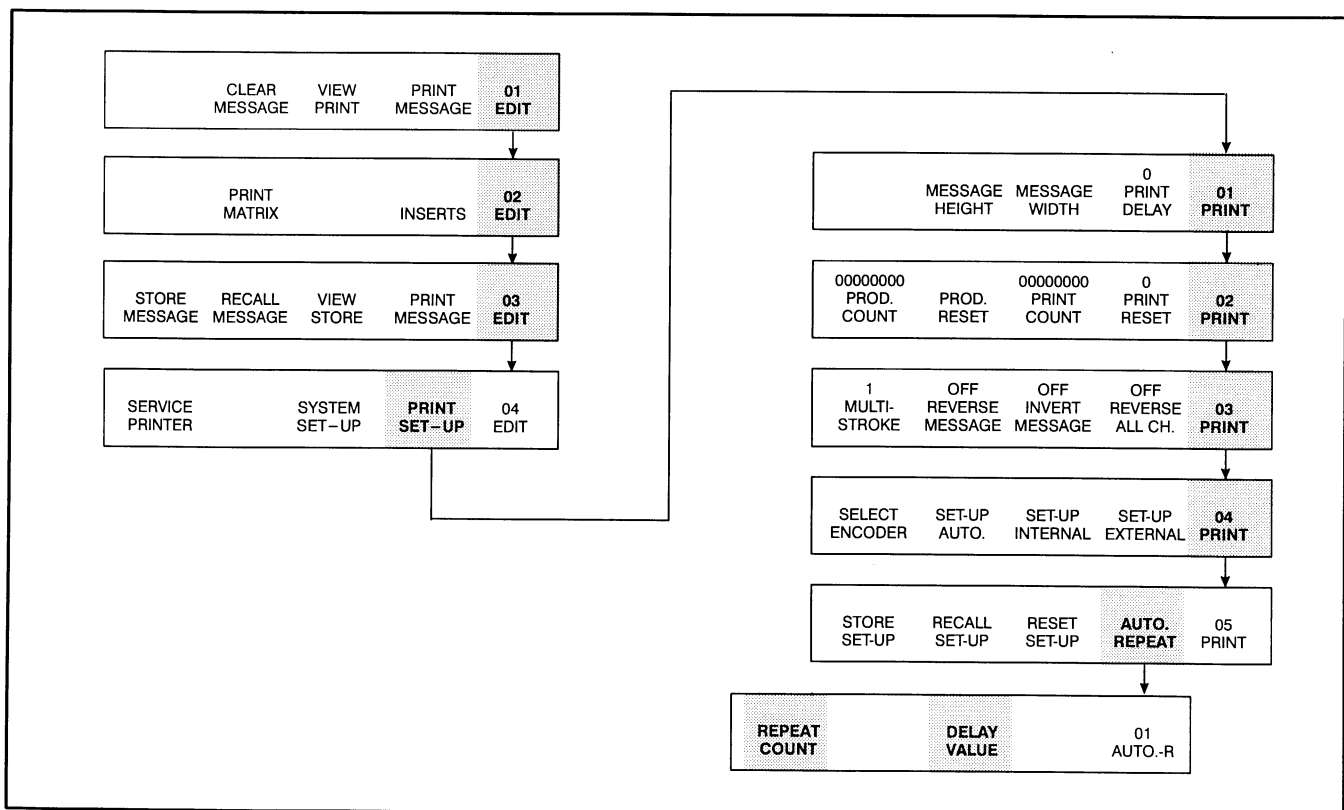


Figure 7-15. Accessing Frame <01 AUTO.-R>

Procedure

1. Begin in Frame <05 PRINT>. Refer to Figure 7-15 on the previous page.
2. Press **F4** to select <AUTO REPEAT>. Frame <01 AUTO.-R> appears in the display screen.
3. Press **F1** to select <REPEAT COUNT>. The following appears in the display screen:

ENTER REPEAT COUNTS (1-255) ---▶

4. Using the numeric keypad, enter the number of times (from 1 to 255) that a message will print for each product detect signal.
5. Press the **ENTER** key.
6. Press **F3** to select <DELAY VALUE>. The following appears in the display screen:

ENTER DELAY BETWEEN PRINTS (0-9999) ---▶

7. Using the numeric keypad, enter a number between 0–9999. This value represents strokes, or vertical columns of ink drops, between each message.

For example:

A value of 100 would place the equivalent of 100 vertical drops of space between each message.

8. Press the **ENTER** key.
9. Press the **ENTER** key again. Frame <05 PRINT> appears in the display screen.

Monitor Flow Time Setting (Service Status)

This procedure shows you how to view flow time settings that you set in the Service mode. Flow time settings include: Set Point Ink Time, Nozzle Drive, Makeup Add Time, Makeup Inhibit, and Current Ink Time.

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

The Service Status is monitored in Frame <CURRENT INK TIME>.

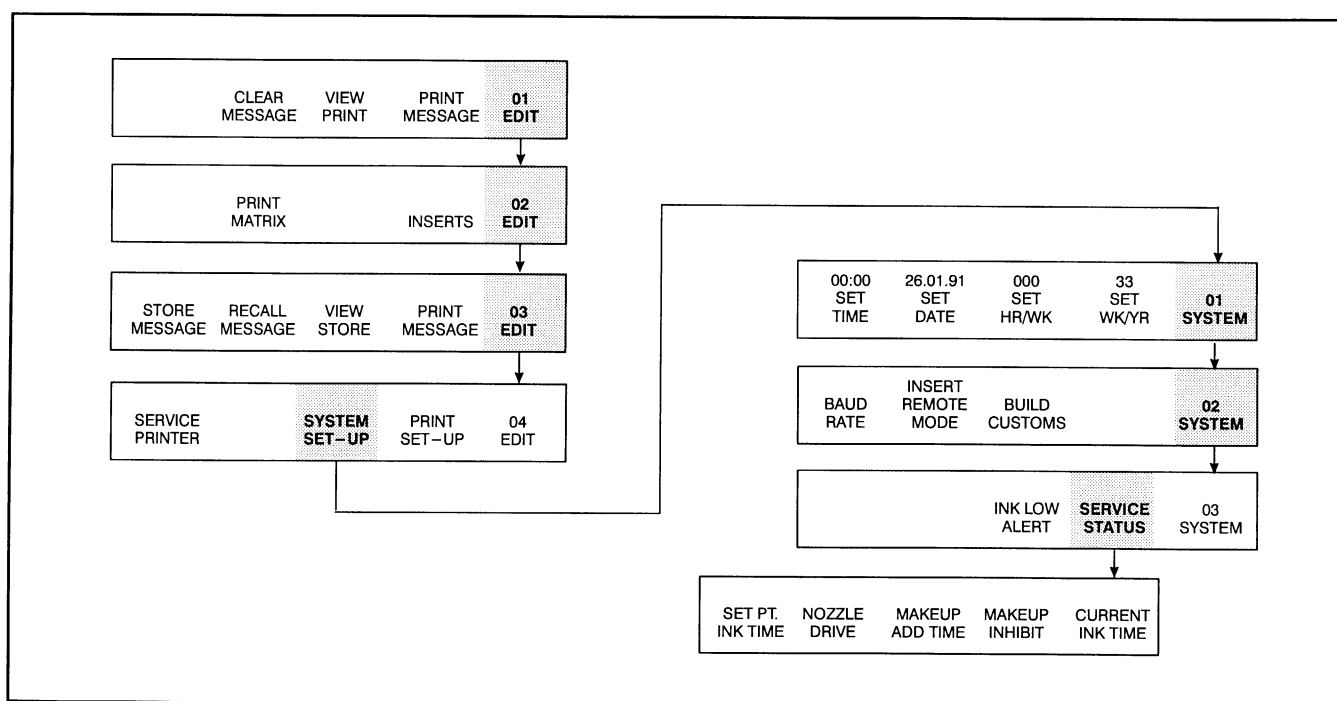


Figure 7-16. Accessing Frame <CURRENT INK TIME>

Procedure

1. Begin in Frame <03 SYSTEM>. Refer to Figure 7-16.
2. Press F4 to select <SERVICE STATUS>. Frame <CURRENT INK TIME> appears in the display screen.
View the settings above <SET PT. INK TIME>. (Settings: <NOZZLE DRIVE>, <MAKEUP ADD TIME>, <MAKEUP INHIBIT>, and <CURRENT INK TIME>.)
3. Press the **ENTER** key. Frame <03 SYSTEM> appears in the display screen.

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 vertical strokes of ink drops to delay the message prior to printing. A delay of up to 9,999 strokes can be entered.

When Would You Use Print Delay?

In certain 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 adding spaces to the front of a message. Refer to page 6-55 for more information on delaying the printing of messages.

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

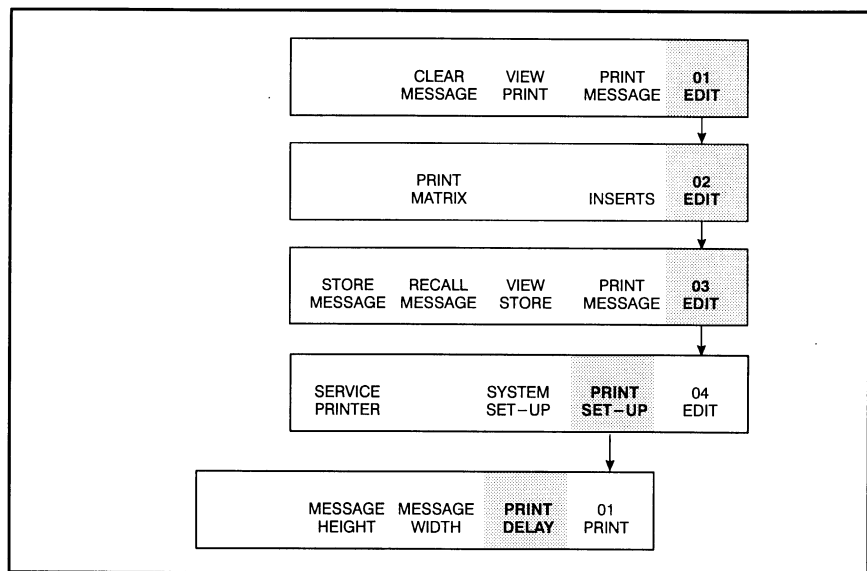


Figure 7-17. Access Frame <01 PRINT>

Procedure

1. Begin in Frame <01 PRINT>. Refer to Figure 7-17.
2. Press **F4** to select <PRINT DELAY>. The following appears in the display screen:

ENTER NEW PRINT DELAY --- ►

3. Use the numeric keypad to enter a print delay of 0 to 9,999.

For example:

If you enter 10, the message will delay 10 strokes after receiving the product detect signal before printing.

4. Press the **ENTER** key. The print delay value you entered will be visible above <PRINT DELAY> in Frame <01 PRINT>.

Print Set-up Parameters

The procedures in this section show you how to store, recall, and reset parameters that you 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 re-entering the same information repeatedly as your applications change.

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

- *Message height* turn to page 6-14
- *Message width* turn to page 6-15
- *Print delay* turn to page 7-25
- *Multi-stroke* turn to page 6-13
- *Reverse message* turn to page 6-10
- *Invert message* turn to page 6-11
- *Reverse all characters* turn to page 6-12
- *Encoder set-up* turn to page 7-6
- *Auto repeat* turn to page 7-22

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

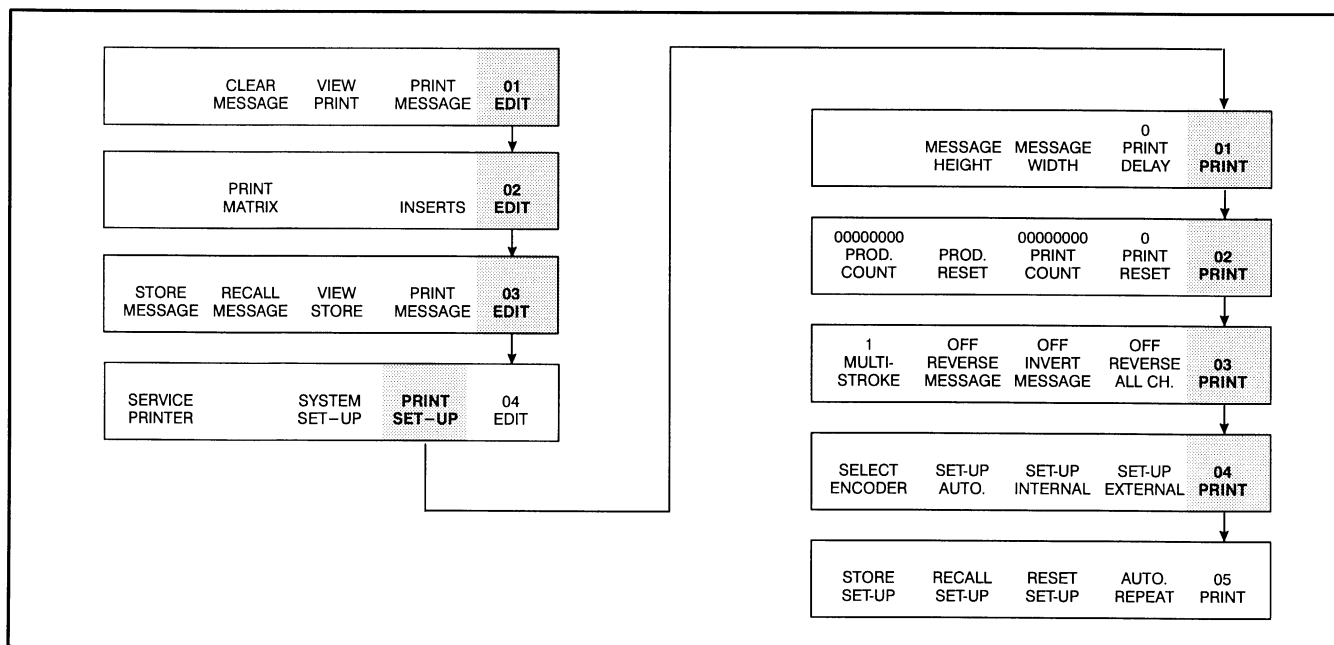


Figure 7-18. Accessing Frame <05 PRINT>

Store Set-up Parameters

This procedure shows you how to store Print Set-up parameters.

Procedure

1. Begin in Frame <05 PRINT>. Refer to Figure 7-18.

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

2. Press **F1** to select <STORE SET-UP>. The following appears in the display screen:

ENTER STORE LOCATION (1-2) --- ►

3. Use the numeric keypad to enter a 1 or 2 to indicate the number of the storage location.
4. Press the **ENTER** key.

Recall Set-up Parameters

This procedure shows you how to recall Print Set-up parameters.

Procedure

1. Begin in Frame <05 PRINT>. Refer to Figure 7-18.
2. Press **F2** to select <RECALL SET-UP>. The following appears in the display screen:

ENTER SET-UP TO RECALL (1-2) --- ►

3. Use the numeric keypad to enter a 1 or 2 to indicate the number of the storage location.
4. Press the **ENTER** key.

Reset Set-up Parameters

This procedure shows you how to reset Print Set-up parameters. This function resets the values to the current set-up parameters.

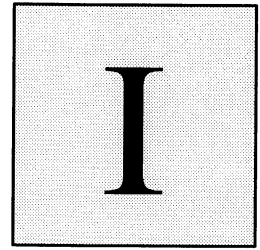
Note: The **PRINT** light must be Off to reset parameters.

Procedure

1. Begin in Frame <05 PRINT>. Refer to Figure 7-18.
2. Press **F3** to select <RESET SET-UP>. All values in the Print Set-up mode (except Product Count and Print Count) will reset to the default values.

Notes:

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Index

Use the index to find page references for specific terms related to operating the printer. Among the topics indexed are printer components, functions, and all the terms which appear on the display screen.

Refer to the **Note** on page Index-2 for the conventions used in the Index.

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Note: References in **bold** denote illustrations. References in *italics* denote definitions. Entries in CAPITAL LETTERS denote words that appear on the display screen.

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