

OPERATOR MANUAL

VIDEOJET EXCEL[®]

***2000 Series
Coder / Printer***

P/N 361066-01
Rev AD 04/02



recycled paper



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recording or by any information storage and retrieval system, without written permission.

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Wood Dale, IL 60191

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.

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1

Introduction

In this chapter you will find:

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



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

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

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Introduction

The **VIDEOJET** EXCEL® 2000 Series 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 2000 Series Printer

For ease of reading, the **VIDEOJET** EXCEL 2000 Series printer will be referred to as the “printer” throughout the remainder of this manual.

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 fluids with a flashpoint no lower than -22°C (-8°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 operator. 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 to perform these 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 all caps bold type when referred to within the text.

For Example:

Press the ON key to turn on the printer On. The HEAD indicator 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:

Turn the ink pressure regulator clockwise until the pressure gauge reads from 17-20 psi (1.16 to 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:

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

EXCEL 2000 Series Service Manual

Introduction

Included with the printer is the *EXCEL 2000 Series 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** EXCEL 2000 Series printer. The Service Manual is intended to be a supplement (and not a replacement) to **VIDEOJET** Customer Training.

For more information on Customer Training Courses, call 1-800-843-3610 (within the U.S.A. only). Outside the U.S.A., customers should contact a **VIDEOJET** subsidiary office or local 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 to 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 Off.
5. Read *Chapters 5, 6, and 7* to become familiar with how to use the printer software to operate the printer.

TotalSource[®]

What is TotalSource?

TotalSource, TOTAL SERVICE PLUS RELIABILITY, is **VIDEOJET** 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 center
- 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 1-800-843-3610 (for all customers within the U.S.A.). Outside the U.S.A., contact **VIDEOJET** distributor or subsidiary for assistance.

Videojet Technologies Inc.
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Safety

In this chapter you will find:

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



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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Introduction

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

The intended use of the EXCEL 2000 Series printer is to print information directly onto a product. Use of this equipment in any other fashion may lead to serious personal injury.

The safety guidelines provided in this chapter are intended to educate the operator on all safety issues in order to operate the printer in a safe manner.

Safety Conventions Used In This Manual

Introduction

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

- Warning statement turn to page 2-4
- Caution statement turn to page 2-5

Pay close attention to these statements. 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
- have a triangular symbol with an exclamation point to the immediate left
- 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 -22°C (-8°F) and boiling point no lower than 56°C (133°F).

Equipment Safety Guidelines



WARNING: Always observe the following safety guidelines when installing, operating, servicing, or maintaining the printer and associated equipment.



Comply with Electrical Codes

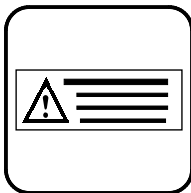
All electrical wiring and connections must comply with applicable local codes. Consult the appropriate regulatory agency for further information.



Avoid Breathing Exhaust Vapors

During operation, the printer exhausts vapors through the muffler. These vapors 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 is 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 agency 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 Guidelines



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

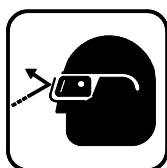


CAUTION: For continued protection against possible fire hazard, use only **VIDEOJET** fluids with a flashpoint no lower than -22°C (-8°F) and boiling point no lower than 56°C (133°F).



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 fluid is splashed into your eyes, flush eyes with water for 15 minutes and see a doctor immediately.



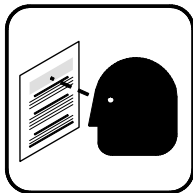
Avoid Skin Contact

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 Vapors

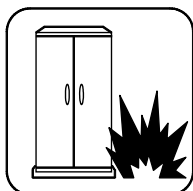
Avoid prolonged exposure to vapors. Consult the *Material Safety Data Sheet (MSDS)* for recommendations on engineering controls and personal protective equipment.



Read the Material Safety Data Sheets (MSDS)

Read and understand the *Material Safety Data Sheet (MSDS)* before using any ink, make-up fluid, or cleaning solution. An *MSDS* exists for each type of ink, make-up fluid, and cleaning solution; 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.A., customers should contact a **VIDEOJET** subsidiary office or their local 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 agency for further information. The label on the bottle or the *Material Safety Data Sheet (MSDS)* will indicate if a particular fluid is flammable.



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 agency for further information.

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 office. These items contain important information that 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 registered with the Rocky Mountain Poison Control Center, located in the U.S.A. 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 U.S.A. requiring medical attention can have a doctor contact the Rocky Mountain Poison Control Center in the U.S.A. or a poison control center or hospital in their own area.*

Notes:

This image shows a single sheet of white paper with horizontal 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.

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 a 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 and identify 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 3-9
- Display Screen turn to page 3-17
- Status Lights.....turn to page 3-19
- Function Keys turn to page 3-21
- Arrow Keys.....turn to page 3-23
- Alpha Keypad turn to page 3-25
- Numeric Keypad turn to page 3-26

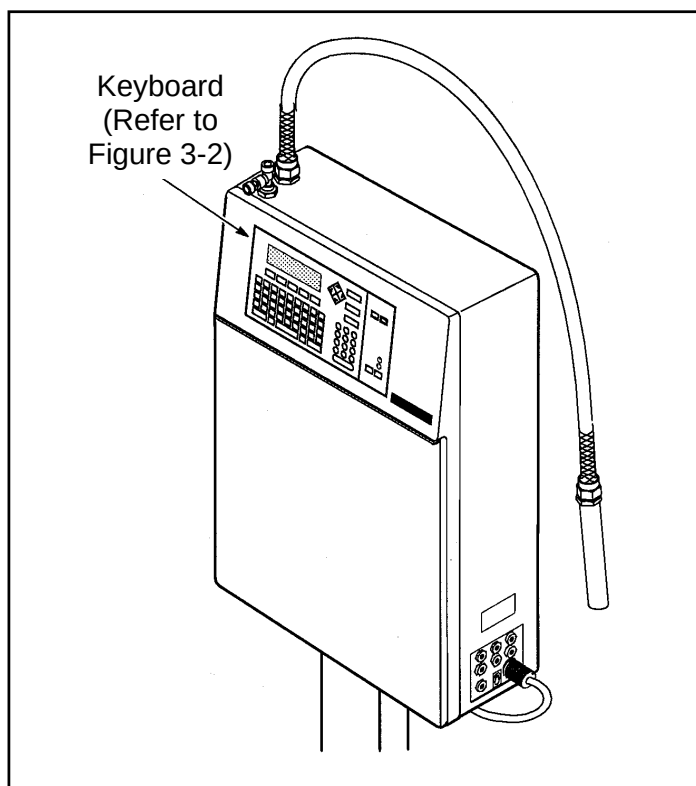


Figure 3-1. VIDEOJET EXCEL 2000 Series Printer

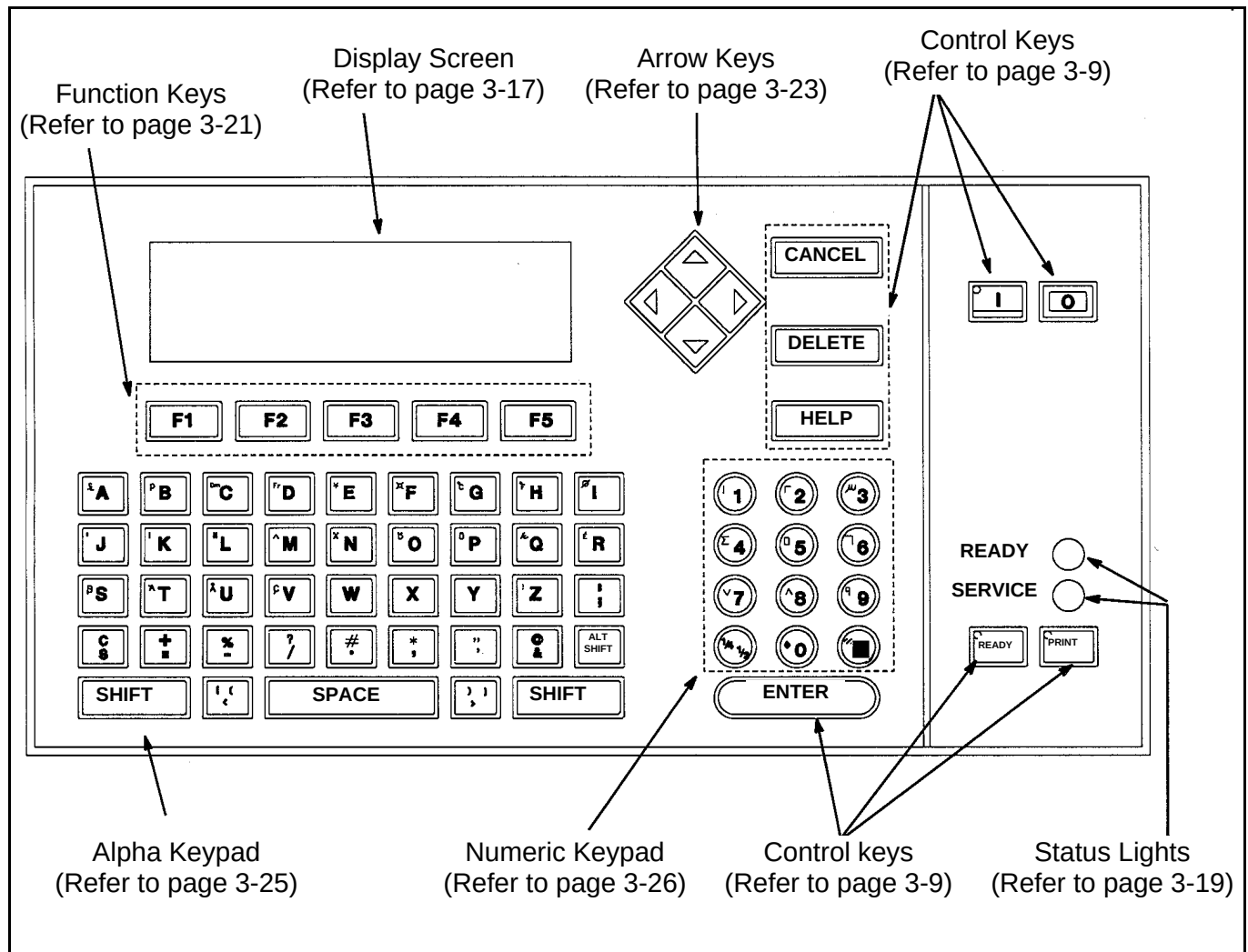


Figure 3-2. Keyboard Layout

Keyboard Lock and Display Contrast Features

Keyboard Lock Features

The printer keyboard lock feature allows you to prevent others from using the keyboard. Open the fluid pan door; the keyboard lock is located to the right of the fluid pan. Refer to Figure 3-3.

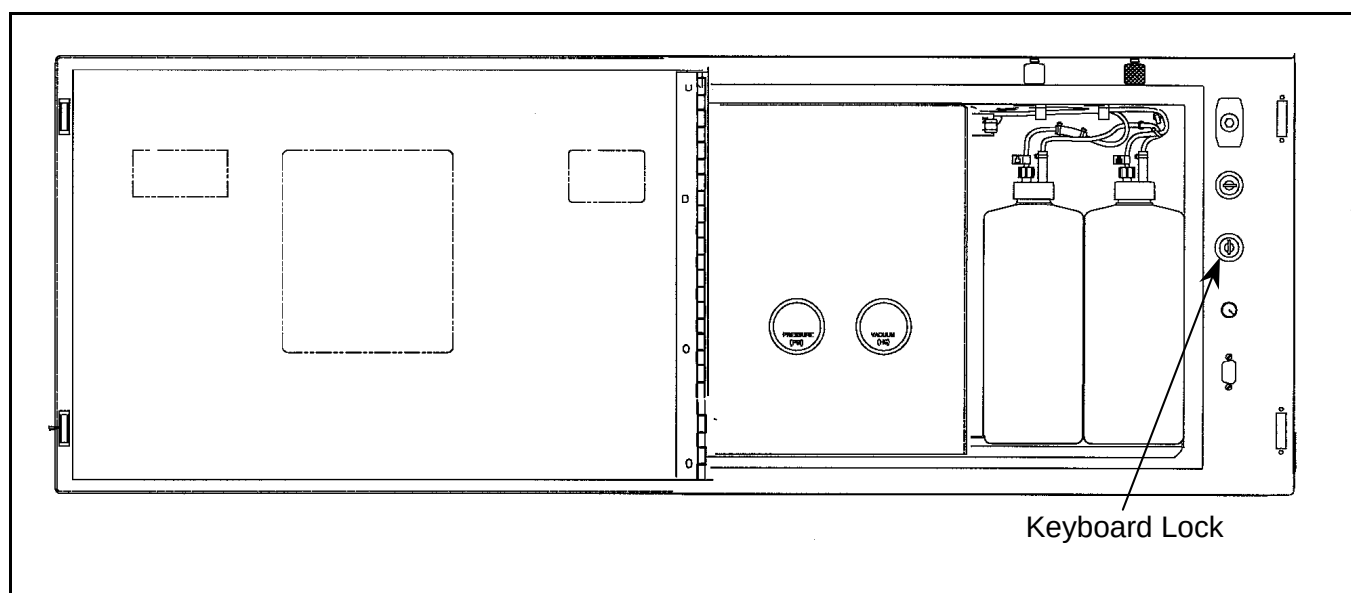


Figure 3-3. Keyboard Lock

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 accessing 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).

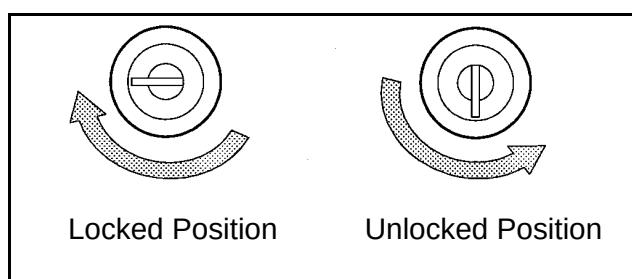


Figure 3-4. Locking and Unlocking the Keyboard

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. Open the fluid pan door; the keyboard lock is located to the right of the fluid pan. (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 counterclockwise for a darker display.

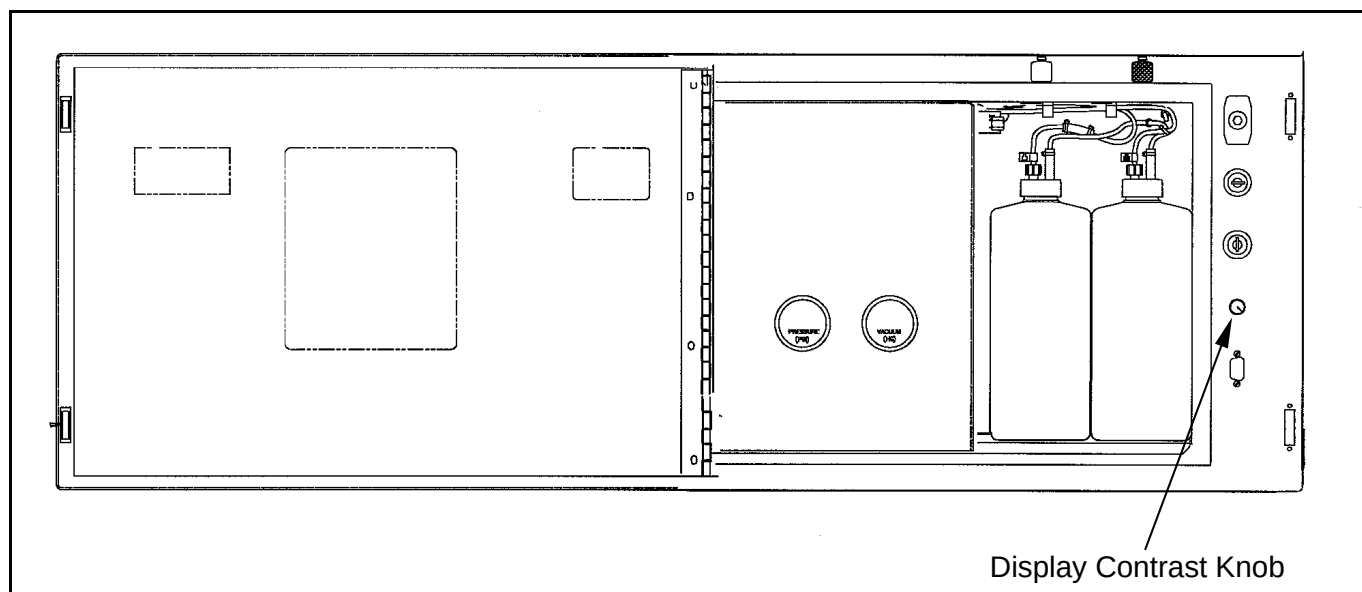


Figure 3-5. Display Contrast Knob

Control Keys

Control Key Identification

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

- **ON** key turn to page 3-10
- **CANCEL** key turn to page 3-11
- **DELETE** key.....turn to page 3-12
- **OFF** key turn to page 3-12
- **ENTER** key turn to page 3-13
- **HELP** key turn to page 3-14
- **HEAD** key turn to page 3-14
- **PRINT** key turn to page 3-15

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.

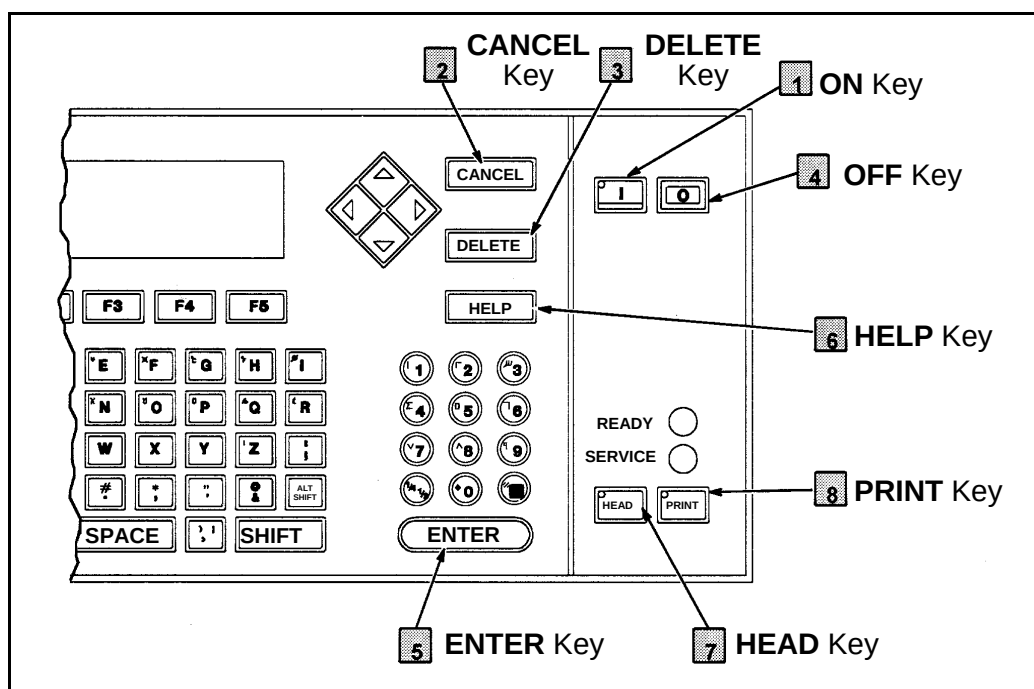


Figure 3-6. Control Keys on the Keyboard

1

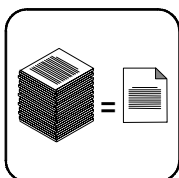
ON Key

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:

- 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 (refer to the 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 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 the printer is ready 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 is stabilized.

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 3-14 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, AC power is still applied to the printer unless the AC power cord or main circuit breaker is disconnected.

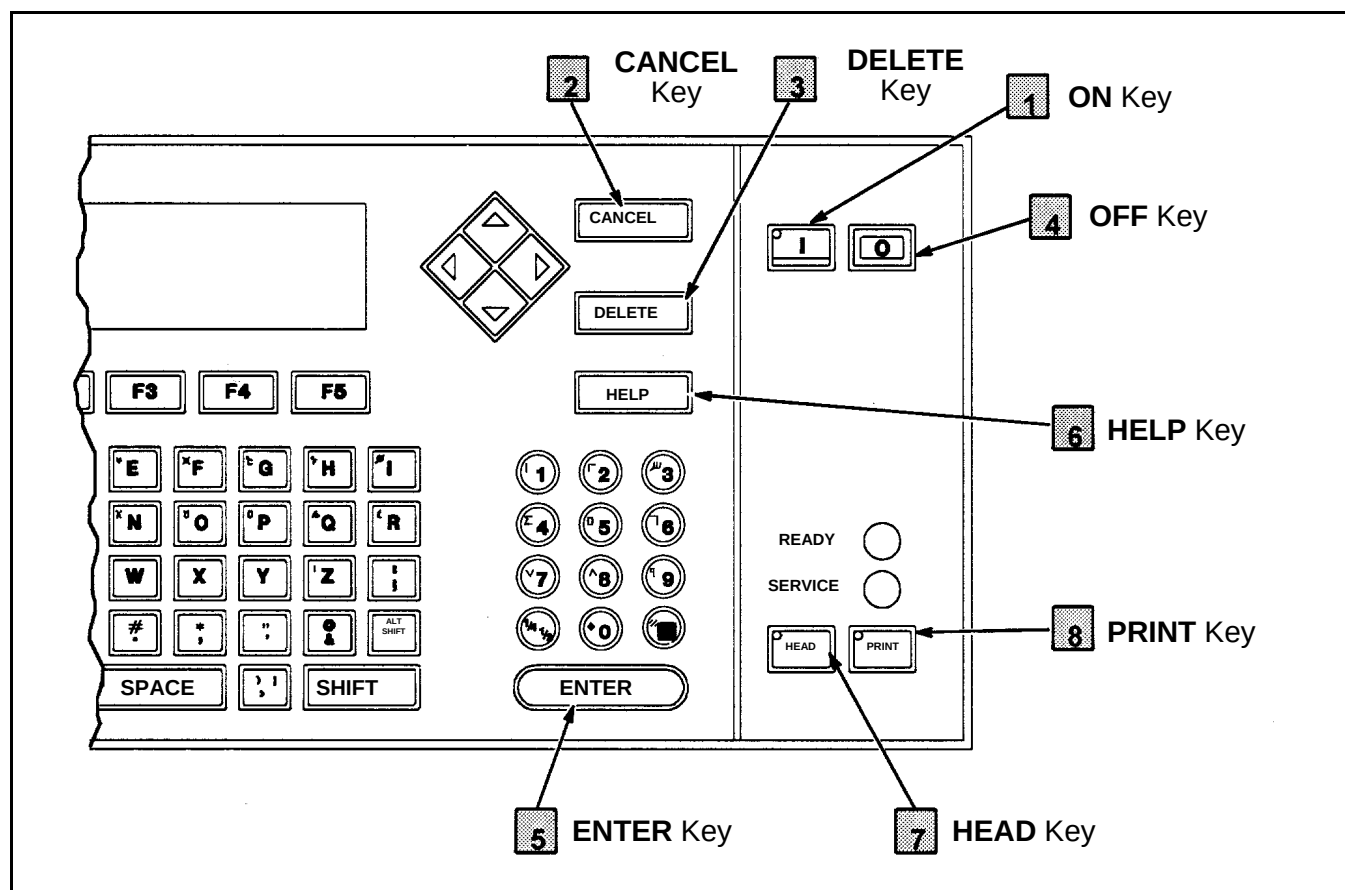


Figure 3-7. Control Keys on the Keyboard

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.

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.

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 supply 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 AC 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.



WARNING: AC power is still active at certain points in the printer unless the AC switch is turned Off and/or power to the printer is removed.

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.

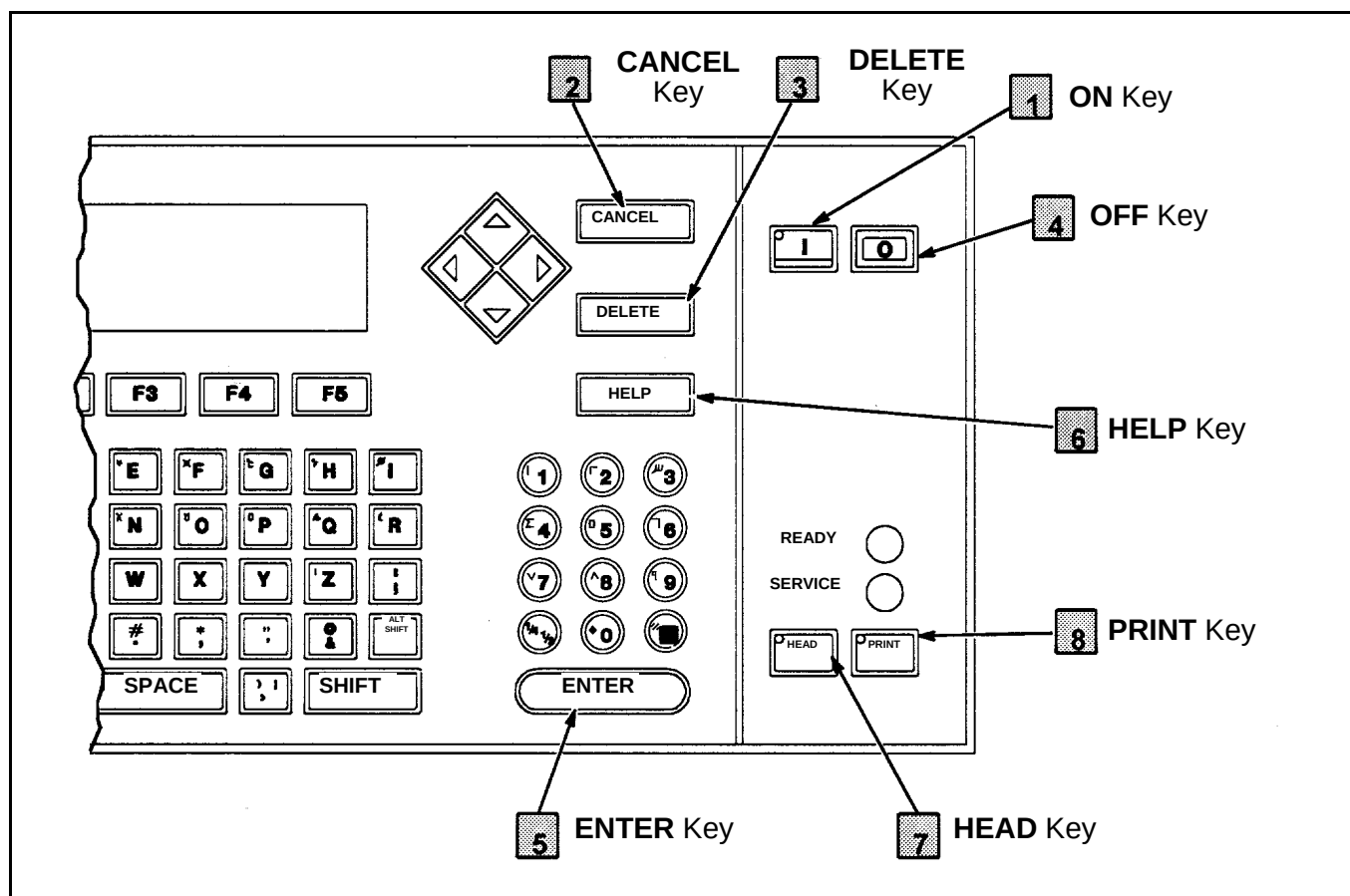


Figure 3-8. Control Keys on the Keyboard

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, Software Summary Chart*, for a description of the software modes.

The **ENTER** key is active only if the light on the **ON** key is lit.

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.

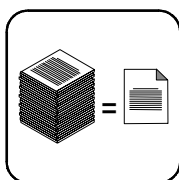
Pressing the **HELP** key while the **SERVICE** light is flashing will display printer fault information in the display screen.

7

HEAD Key

The **HEAD** key is used to turn the printhead On or Off. The printhead can be turned On only when both the ink and high voltage are On. The **HEAD** key must be On for the printer to be able to print a message.

NOTE: *If the ink is turned off longer than five minutes, the air control solenoid is automatically de-energized and the HEAD key must be pressed to reactivate the printer.*



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 3-15 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).

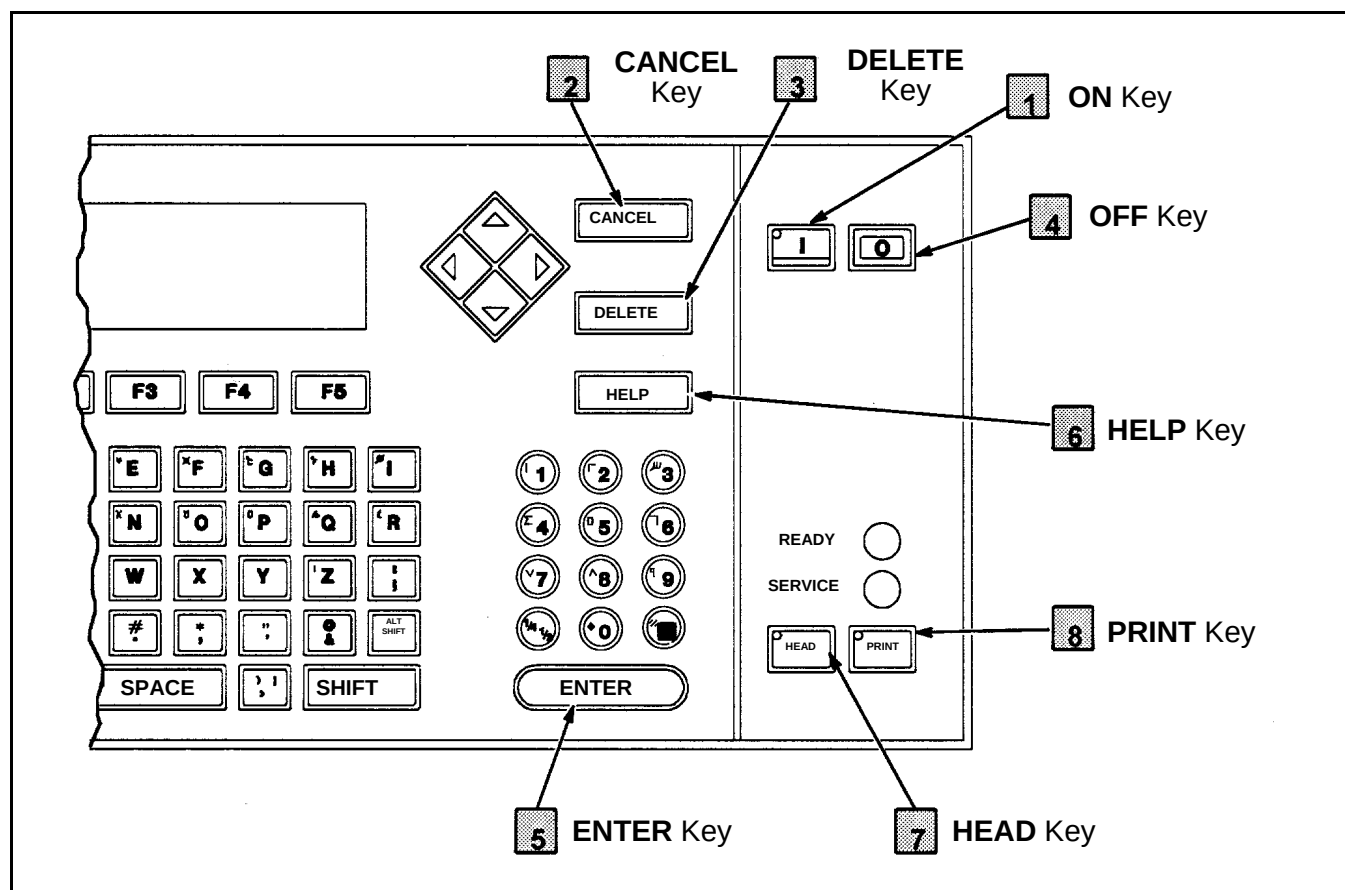


Figure 3-9. Control Keys on the Keyboard

8

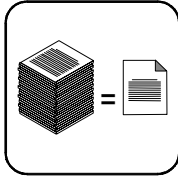
PRINT Key

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 its start-up.

Display Screen

Introduction

The display screen (refer to Figure 3-10) 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) that appears in software frames can be selected by using the function keys (refer to *Function Keys* on page 3-21 for further information).

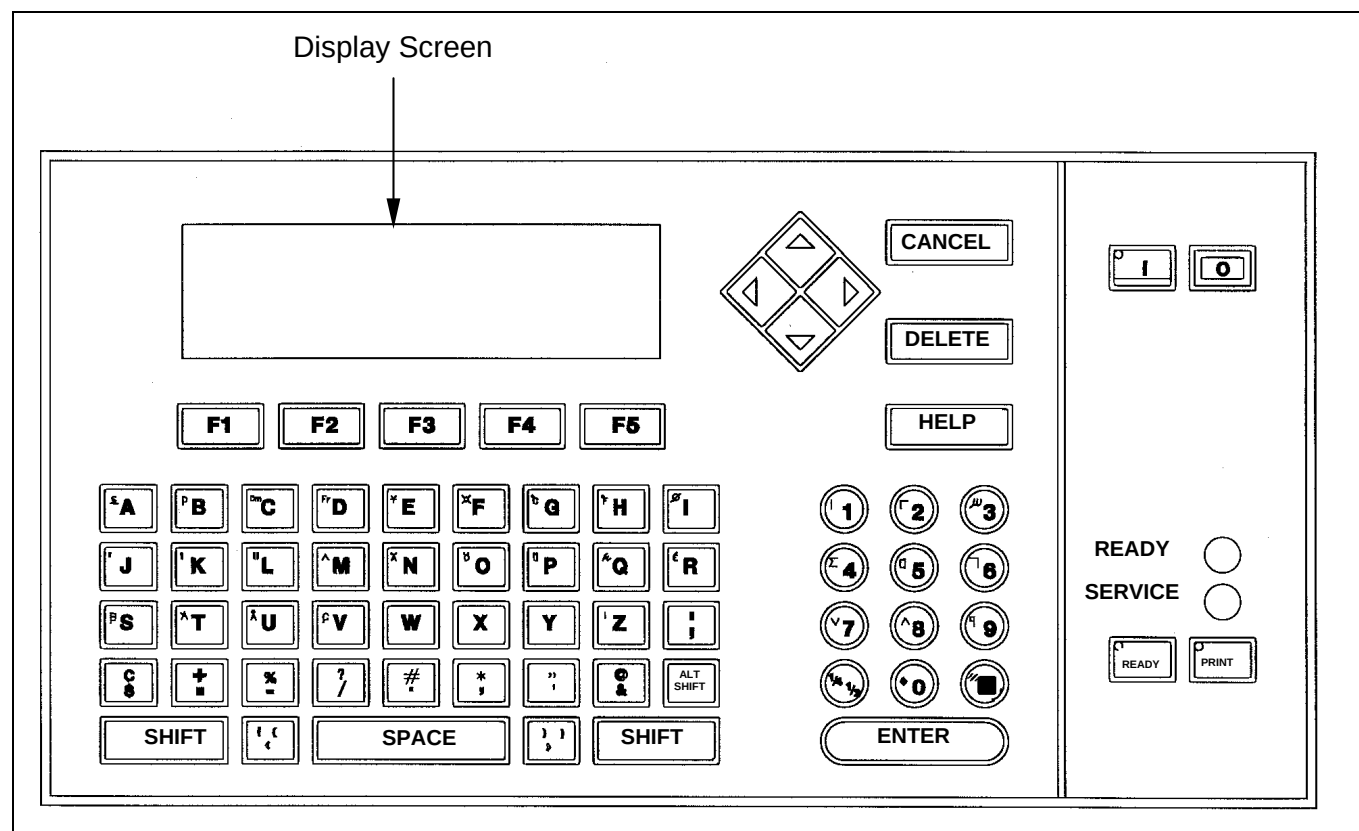


Figure 3-10. Display Screen

Cursor

The cursor is the black, blinking indicator in the display screen (refer to Figure 3-11). 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.

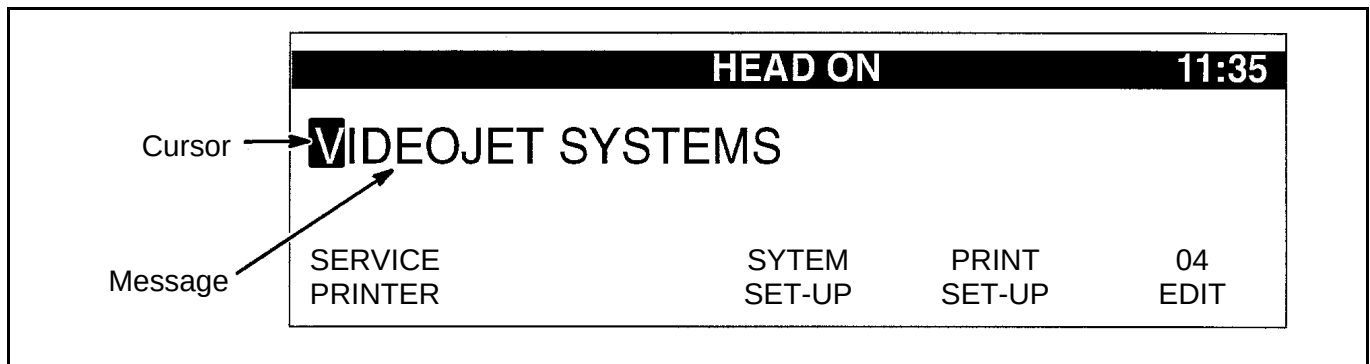


Figure 3-11. Cursor

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 3-12.)

- **READY** Light..... turn to 3-20
- **SERVICE** Light turn to page 3-20

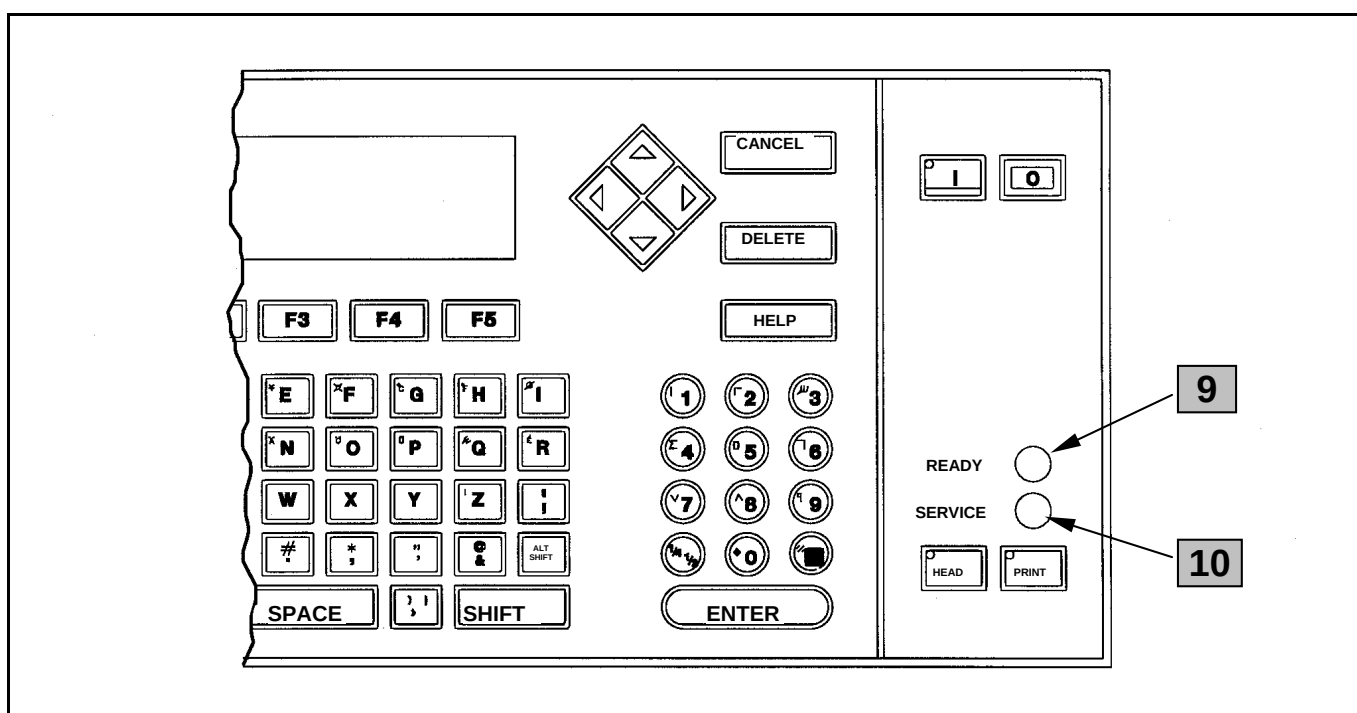
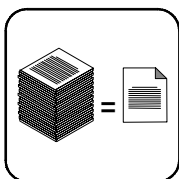


Figure 3-12. Status Lights on the Keyboard

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 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.

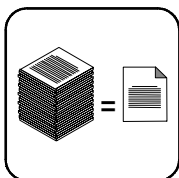
Light is Off: This indicates that the printer is not ready to print a message. To make the printer ready to print a message, press the **HEAD** key (if the light on the **HEAD** key is Off), then press the **PRINT** key. If the **HEAD** key light is already On, press the **PRINT** key. This will cause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

10

SERVICE Light

If the **SERVICE** light is flashing, it indicates that a printer *fault* has occurred. When a fault occurs, the fault type is displayed on the screen. Call a qualified service technician to determine the nature of the fault and to correct the condition as required.

If the **SERVICE** light is lit (not flashing), it indicates that a printer *warning* has occurred. When a warning occurs, information about the warning is displayed on the screen. Warning conditions are less serious than fault conditions, but in most cases will become a fault condition if not corrected. Call a qualified service technician to determine the nature of the warning and to correct the condition as required.



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 3-13). If an option does not appear above a particular function key, then nothing will happen when that function key is pressed.

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

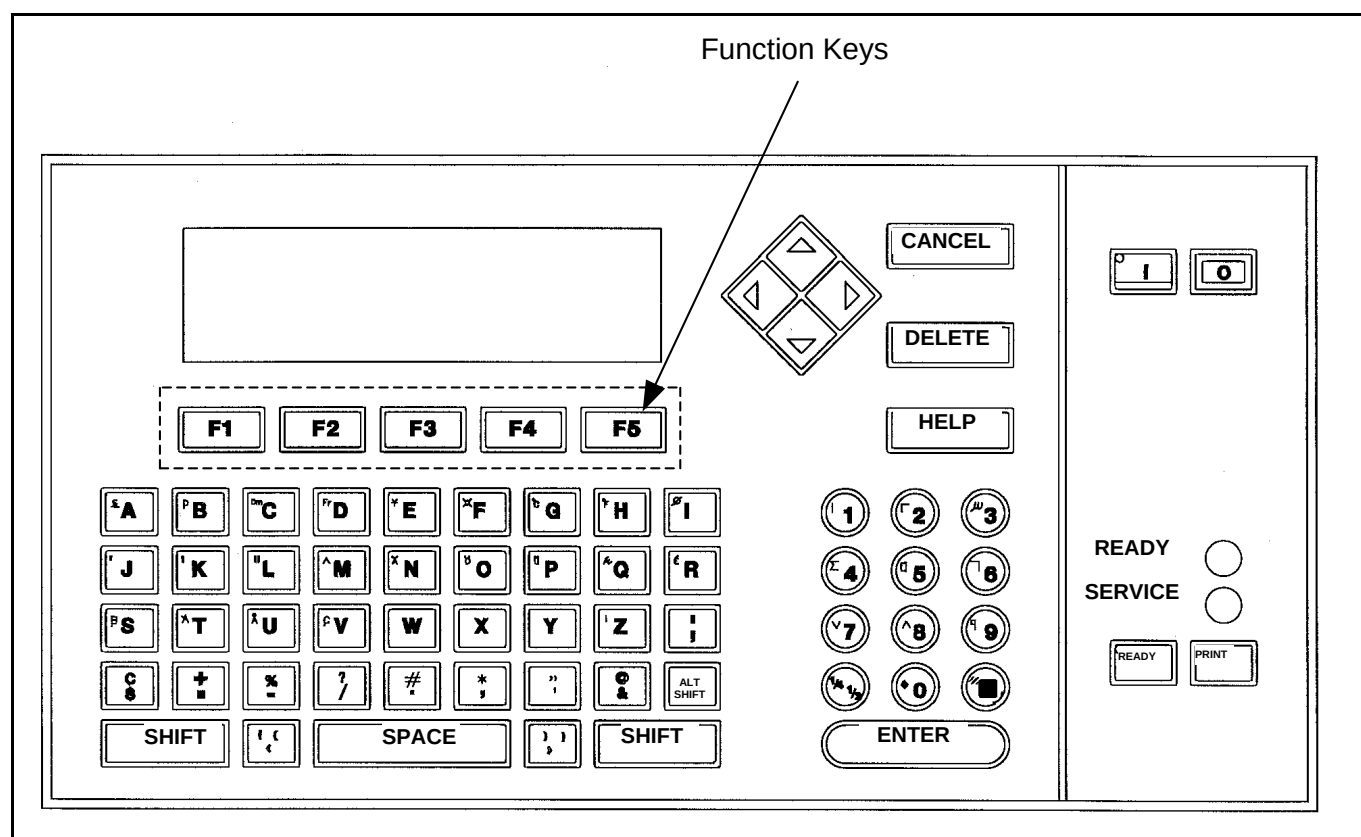


Figure 3-13. Function Keys

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.

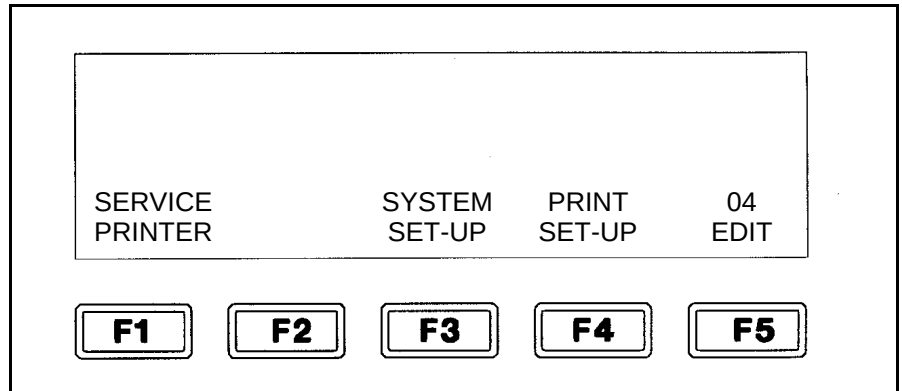


Figure 3-14.<04 EDIT> Software Frame

For Example:

This example applies to the software frame shown in Figure 3-14 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 3-15. 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.

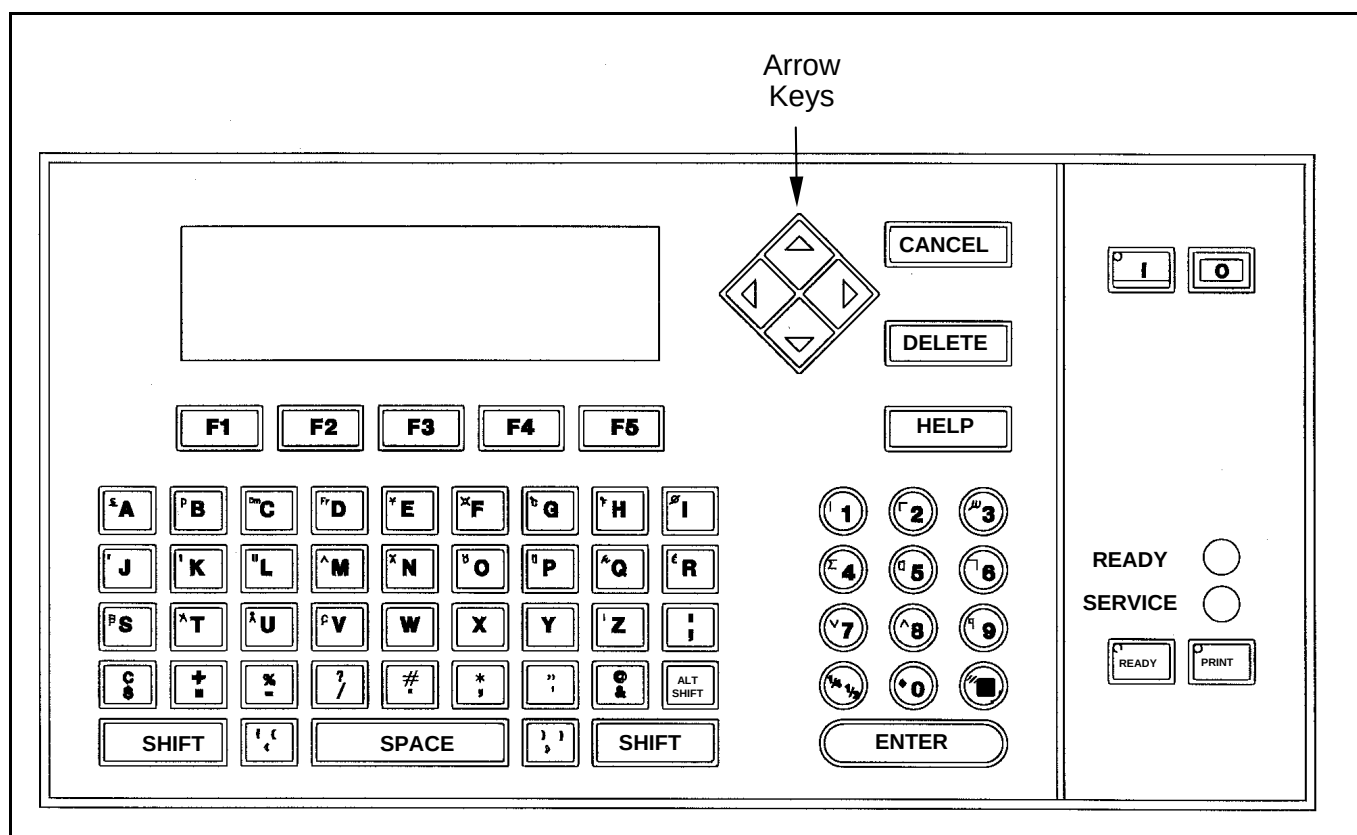


Figure 3-15. Arrow Keys

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 3-16).

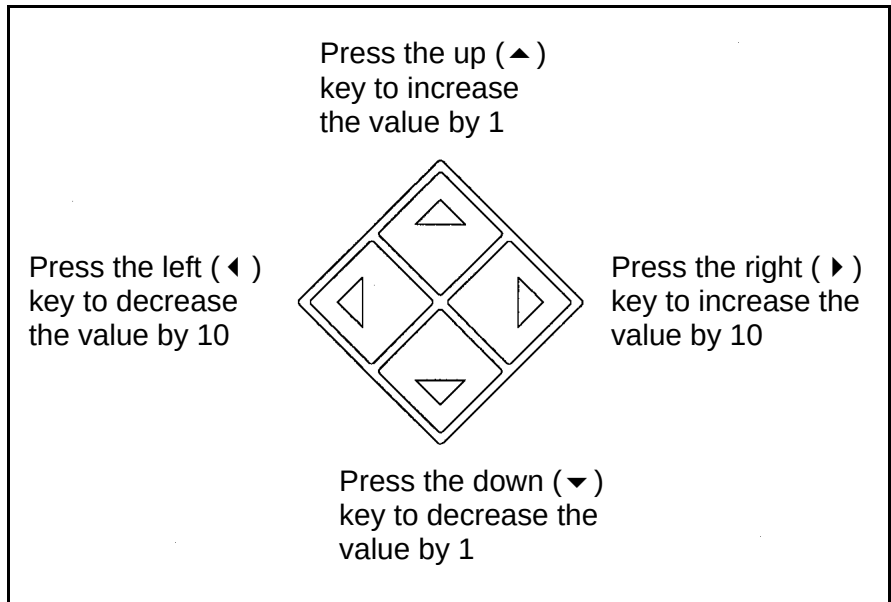


Figure 3-16. Changing Values Using the Arrow Keys

Alpha Keypad

Introduction

Use the alpha keypad to enter alphabetic and special characters into the message appearing in the display screen (refer to Figure 3-17). Special characters are those characters that 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 that 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.

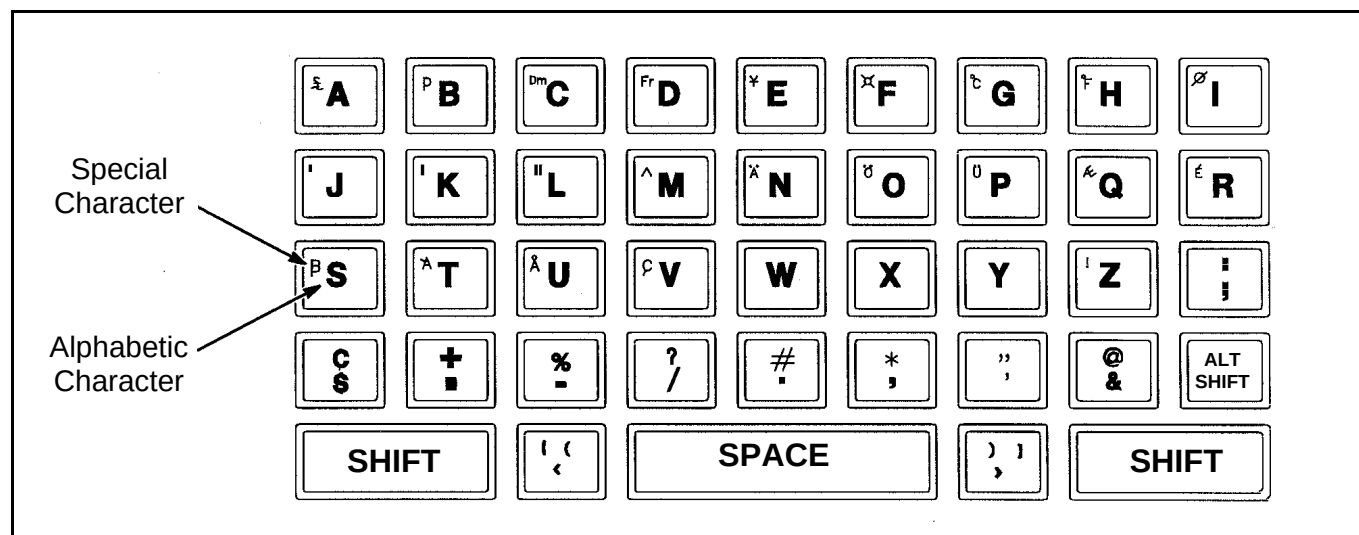


Figure 3-17. Alpha Keypad

Numeric Keypad

Introduction

Use the numeric keypad to enter numeric characters and special characters into the message appearing in the display screen (refer to Figure 3-18). Those characters that appear on the numeric keypad in red are referred to as special characters.

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 Special Characters

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

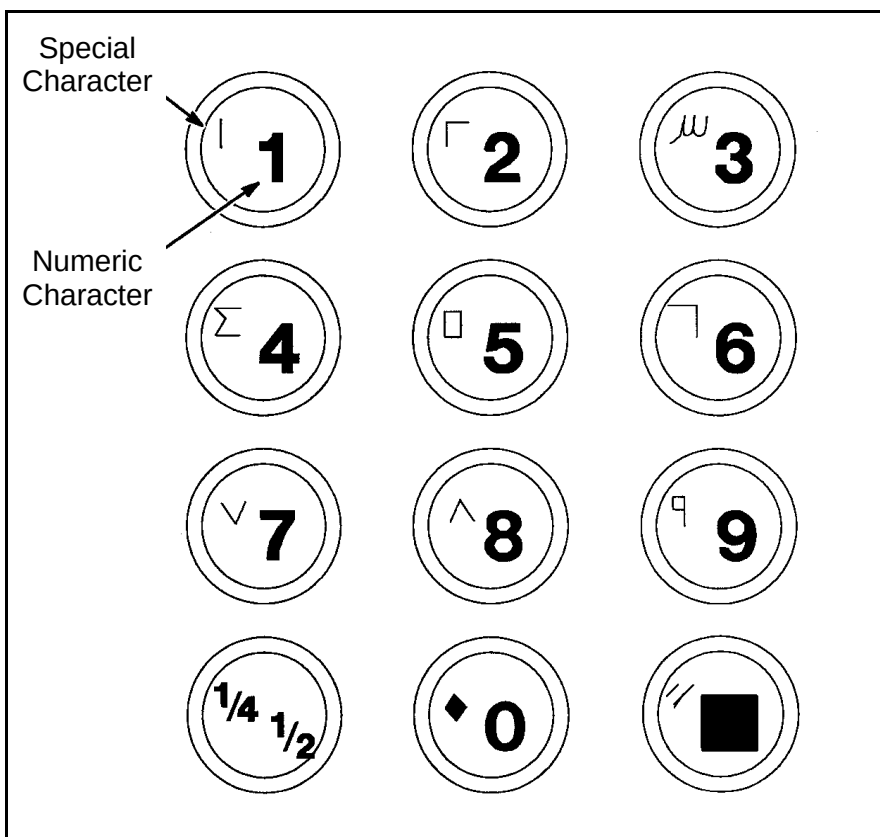


Figure 3-18. Numeric Keypad

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 guidelines for using the printer

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

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Guidelines for Using the Printer

Introduction

The printer is designed for continuous use. Follow the guidelines below when using the printer.

If Printer is Not Used Frequently

If you use the printer infrequently with three or more days between uses, you should circulate the ink in the printer every third 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 three 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 trained 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 that 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.

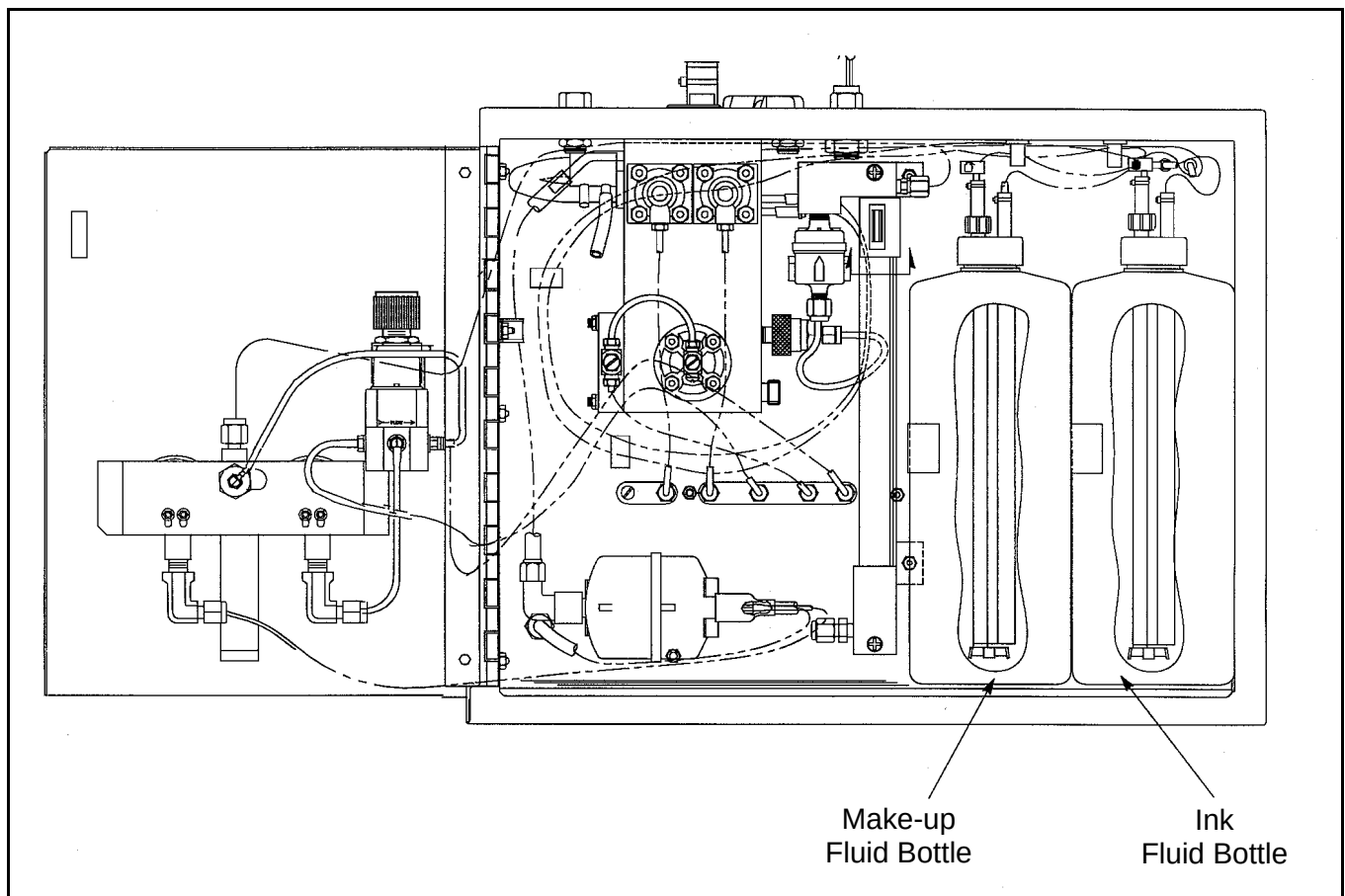


Figure 4-1. Fluid Pan

2. Inspect fluid tube connections for leaks. If you find a leak, tighten the connection one-quarter turn.



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

3. Have a trained service or maintenance personnel inspect, and if necessary clean the printhead.
 - If your printer is equipped with auto flush and it was run the last time the printer was shut down, the nozzle and ink return line will have already been cleaned. In this case, you will only need to clean the printhead if there is a visible buildup of ink on the printhead components which occurs over time, or if faults are occurring.
 - If your printer is **not** equipped with auto flush, you may need to clean the printhead to remove dried ink and ink build up on the printhead components from when the printer was last shut down.

NOTE: Trained Service Technicians should refer to the EXCEL 2000 Series Service Manual and/or to the EXCEL 2000 Opaque Service Manual Addendum for additional information on printhead cleaning requirements.

4. Properly align the printhead to its mounting.

You are now ready to turn the printer On. Refer to *Turning the Printer On* on page 4-6 for further information.

Turning the Printer On

Introduction

This procedure contains the steps to properly turn the printer On.

- EXCEL 2000 printer, complete the steps below:
- EXCEL 2000 Opaque printer, complete the steps beginning on page 4-8.

Turning the Printer On – EXCEL 2000 Printer

Perform the following steps to turn the printer On:

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

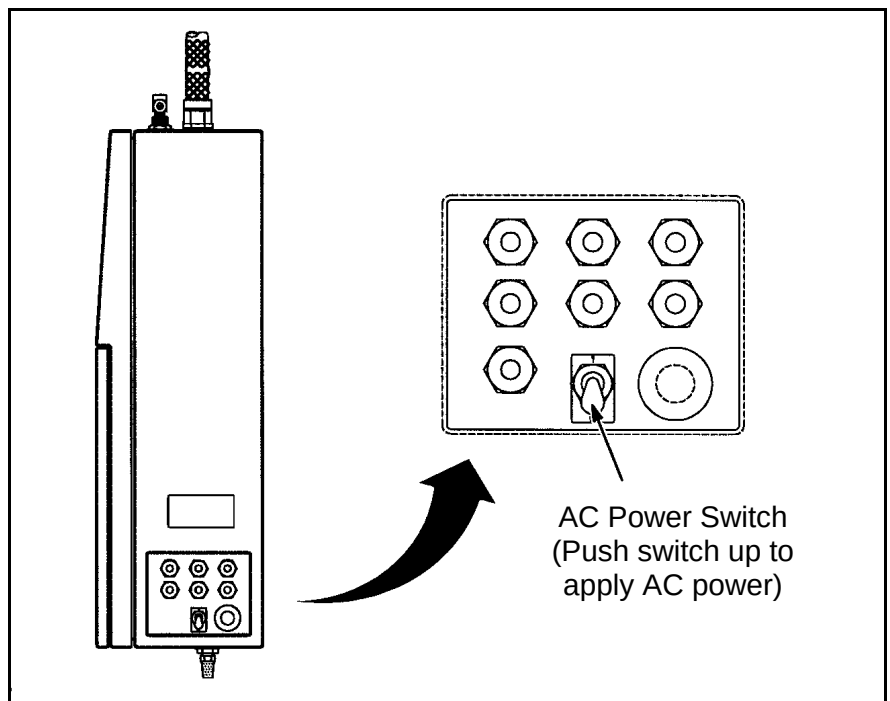


Figure 4-2. Main AC Power Switch

2. Press the **ON (I)** key on the keyboard to begin the 97-second start-up sequence. Refer to Figure 4-3 for the location of the **ON** key.
3. Press the **PRINT** key to begin printing a message. The message last loaded on the printer will begin printing upon activation of the product detector.

Refer to *Chapter 6, Creating and Printing Messages*, in this manual for instructions to enter a new message or change an existing message.

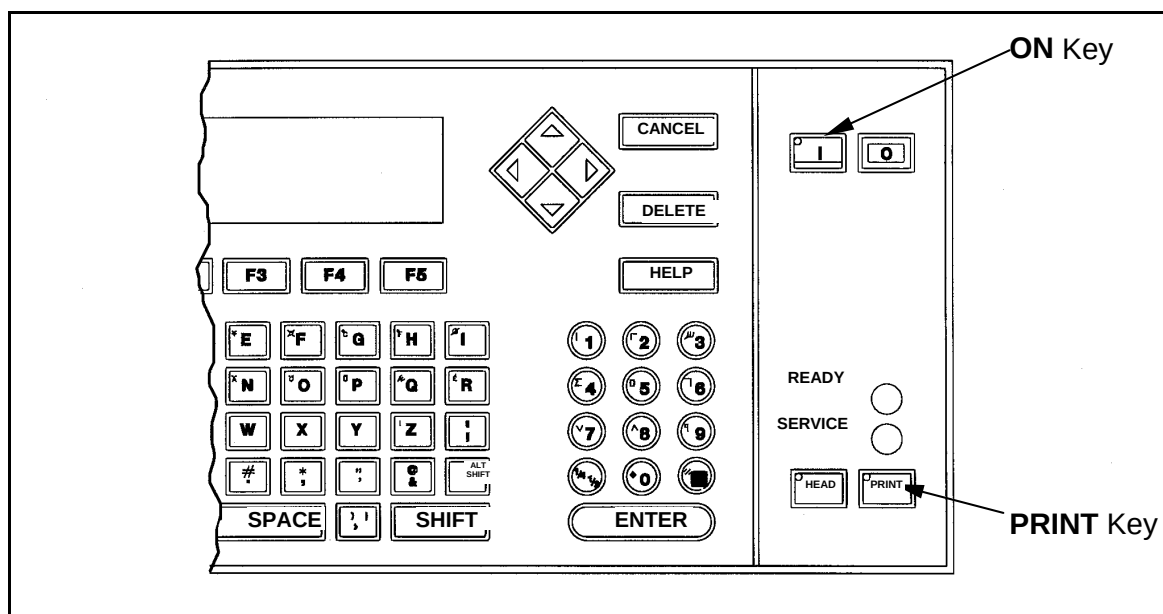


Figure 4-3. Location of ON and PRINT Keys

Turning the Printer On – EXCEL 2000 Opaque Printer

The EXCEL 2000 Opaque has a circulator pump which should remain on at all times. Refer to *EXCEL 2000 Opaque Circulator Pump* on page 4-13 for additional information. In this case, the printer will already be on, and it is not necessary to turn power to the printer on. Instead, it is only required to turn the printhead On. Refer to *Turning the printer Off* on page 4-12 for additional information on how the printer should be turned off.

Perform the following steps to turn the printhead On and prepare it for operation.

1. Press the **HEAD** key on the keyboard. This will begin the printhead 97 second startup sequence (refer to Figure 4-4).

NOTE: Do not press the On key on the keyboard. Since the printer is already on, this key will be disabled. The On key should only be used to turn the printer on after the printer has been completely shut down, such as when powering on after an extended shutdown.

2. When the **HEAD** light comes on lit (not flashing), the printer is ready for operation. In addition, the message <HEAD ON> appears at the top of the display screen.



CAUTION: *If powering on after an extended shut-down ONLY: Allow the printer to idle for 30 minutes prior to printing to make sure that the pigments in the ink are well stirred, or you may not have good print quality.*

3. Allow the printer to idle for 5 minutes prior to printing.
4. Press the **PRINT** key to begin printing a message. The message last loaded on the printer will begin printing upon activation of the product detector.

Refer to *Chapter 6, Creating and Printing Messages*, in this manual for instructions to enter a new message or change an existing message.

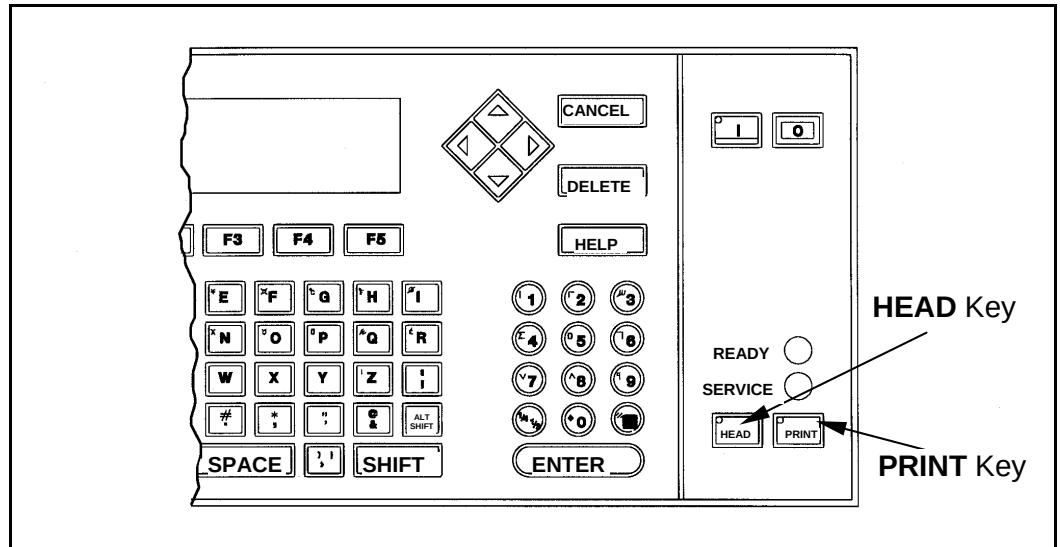


Figure 4-4. HEAD and PRINT Key

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.

- EXCEL 2000 printer, complete the steps below:
- EXCEL 2000 Opaque printer, complete the steps beginning on page 4-12.



CAUTION: Do not clean the printhead at shutdown, *unless you are using the Auto flush procedure which automatically cleans the printhead properly*. 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.

Turning the printer Off – EXCEL 2000 Printer

Perform the following steps to turn the printer Off:

1. Press the **OFF (O)** key to begin the shutdown sequence. (Refer to Figure 4-5 for the location of the **OFF** key.) Refer to the next page for an explanation of the Printer Shutdown sequence.

NOTE: 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.

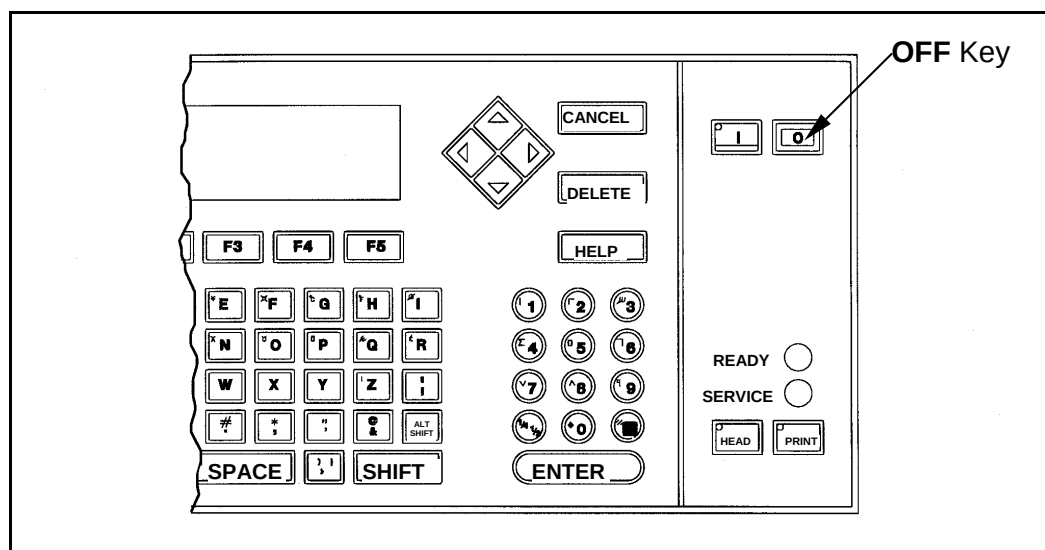


Figure 4-5. OFF Key



CAUTION: Never turn the printer Off by switching the AC 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 main AC power switch (located on the side of the printer) Off.

Turning the Printer Off – EXCEL 2000 Opaque Printer

The EXCEL 2000 Opaque has a circulator pump which should remain on at all times. (Refer to Page 4-13 for more information on the Circulator Pump). In this case, the printer should **not** be turned off. Instead, **only** the printhead should be shut-down.

Perform the following steps to turn the printer Off by shutting-down the printhead.

1. Press the **HEAD** key on the keyboard. This will begin the 4 minute shut-down procedure. When the shut-down procedure is complete, the printer's electronics will remain on.

NOTE: Do not use the OFF(O) key on the keyboard to turn the printer Off. The OFF key will start the printhead shut-down procedure and then it will turn the printer Off. This will disable the circulator pump, causing you to not have good print quality when the printer is turned back on again. The OFF key should only be used when it is necessary to completely shut down the printer, such as during an extended shut-down.

2. When the **HEAD** key on the keyboard stops flashing, the printhead shutdown is complete. The backlit display will remain lit indicating that the printer's electronics are still On.

NOTE: Press the HEAD key at any time to stop the printhead shut-down procedure and begin the printhead start-up procedure again if necessary.

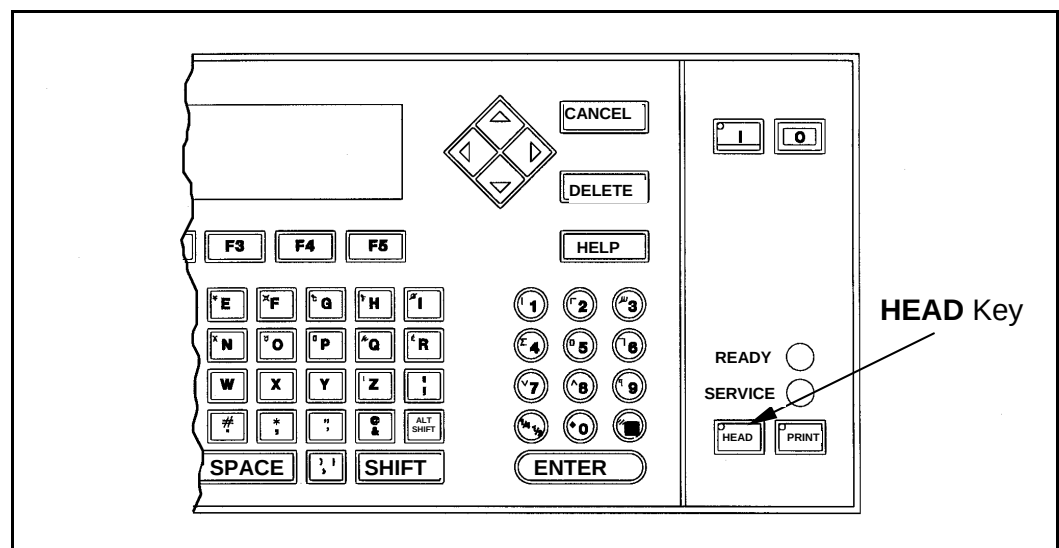


Figure 4-6. HEAD Key

The EXCEL 2000 Opaque Circulator Pump

The EXCEL 2000 Opaque printer has a circulator pump which should remain On at all times. It is located directly above and to the right of the fluid bottles. The circulator pump is required to keep the particles (pigments) within the ink suspended, (they tend to fall to the bottom).

For best performance, the pump should be stopped as little as possible. The pump will stop when certain conditions occur:

- The Circulator Pump will stop operating when power to the printer is turned Off. Avoid turning the printer Off during periodic printer shut-downs. Instead only turn the printhead Off.
- The Circulator Pump will stop operating when the front printer door is opened, such as when the ink bottle or makeup bottle is replaced. Avoid keeping the front door of the printer open for an extended period of time.
- The Circulator Pump will stop operating during a fluids low condition (whether it is ink or makeup). Avoid keeping the fluids low light on for an extended period of time.
- The Circulator Pump will stop operating if the printer is placed in the Service Mode. Avoid keeping the printer in the Service Mode for an extended period of time.

Notes:

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

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 a chapter-level Table of Contents.

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Software Summary Chart

Introduction

This chapter describes how to use the color-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 key. (Refer to Figure 5-1.)

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

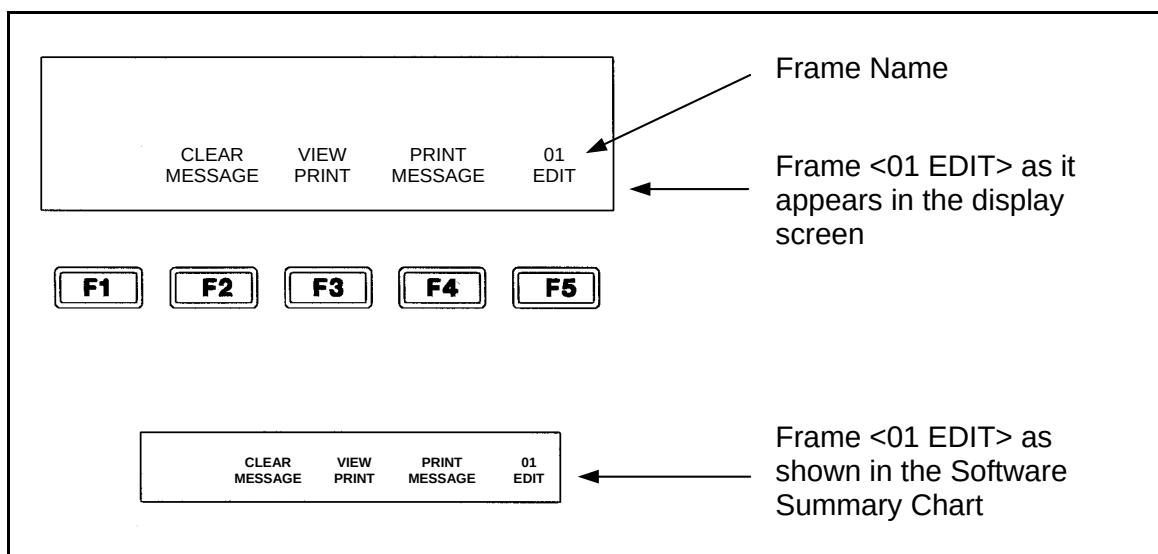


Figure 5-1. Frame <01 EDIT>

F Keys

The **F** keys (**F1**, **F2**, **F3**, **F4**, and **F5**) allow you to select a particular option in a frame, or, in certain cases, 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.

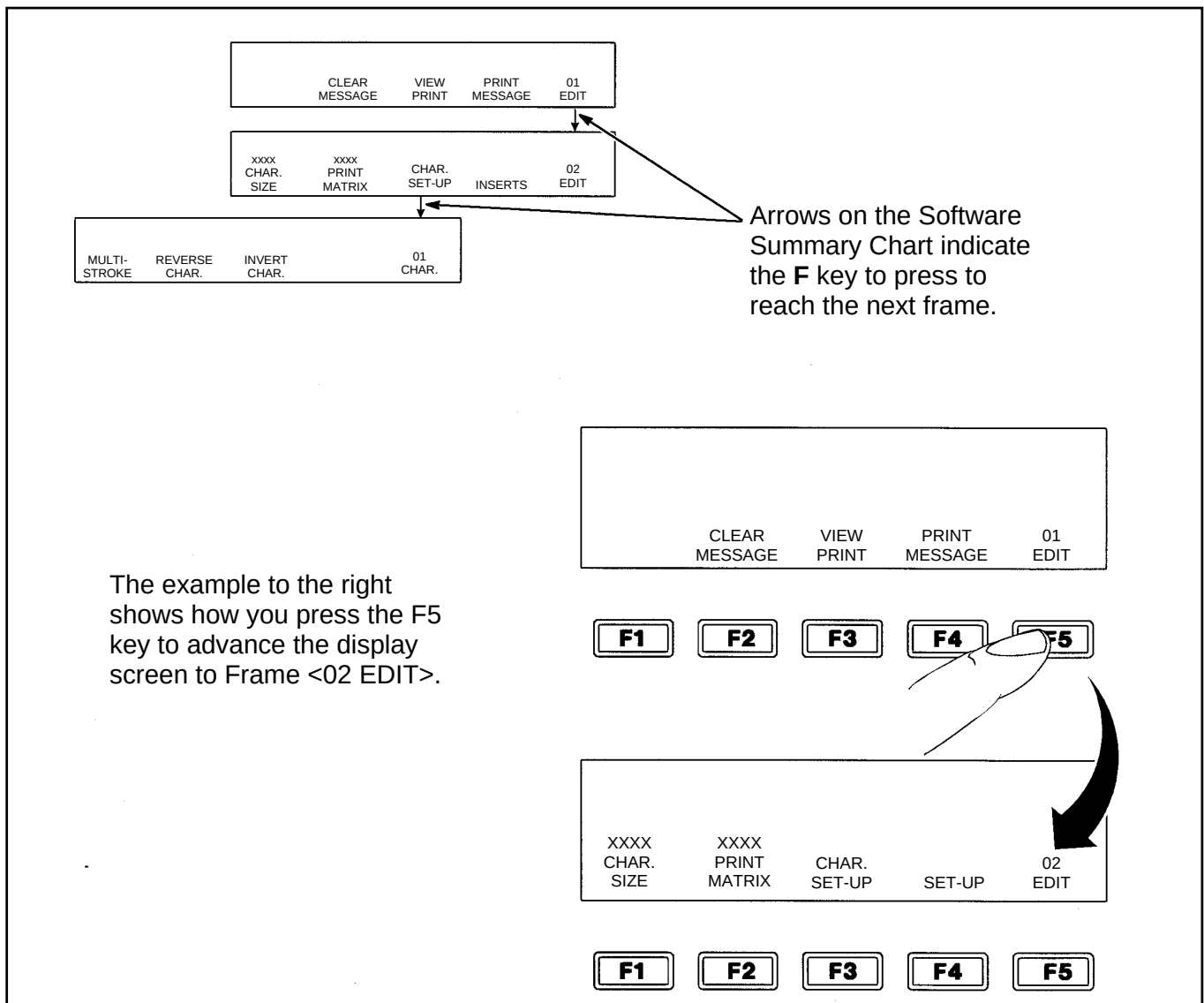


Figure 5-2. Software Summary Chart

**xxxx - indicates differing values depending on your type of printer.

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
- Character Set-up mode.....turn to page 5-6
- Insert mode.....turn to page 5-7
- Service mode.....turn to page 5-8
- System Set-up mode.....turn to page 5-8
- Print Set-up mode.....turn to page 5-9

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 Color: White

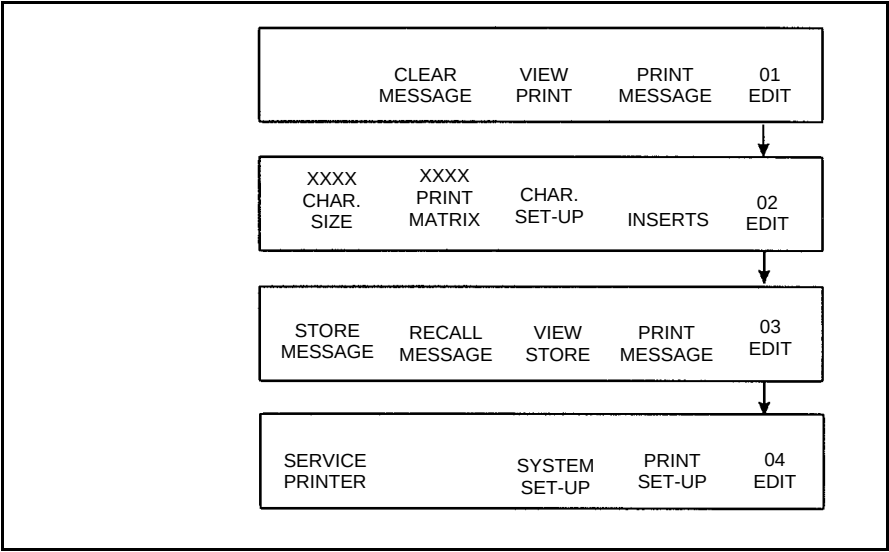


Figure 5-3. Edit Mode

**xxxx - indicates differing values depending on your type of printer.

Character Set-up Mode

Function: In this mode, you can change the orientation and appearance of individual characters in a message.

Chart Color: Orange

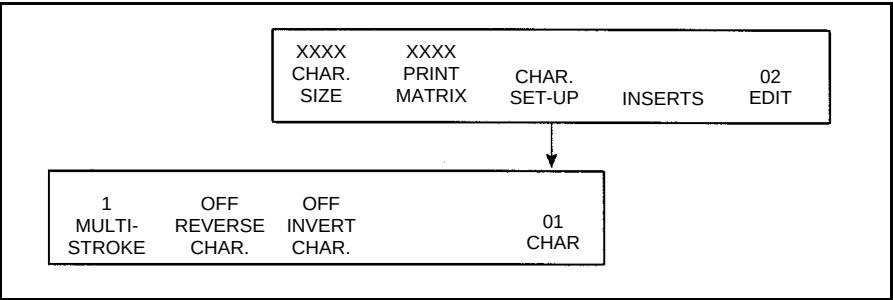


Figure 5-4. Character Set-up Mode

**xxxx - indicates differing values depending on your type of printer.

Insert Mode

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

Chart Color: Yellow

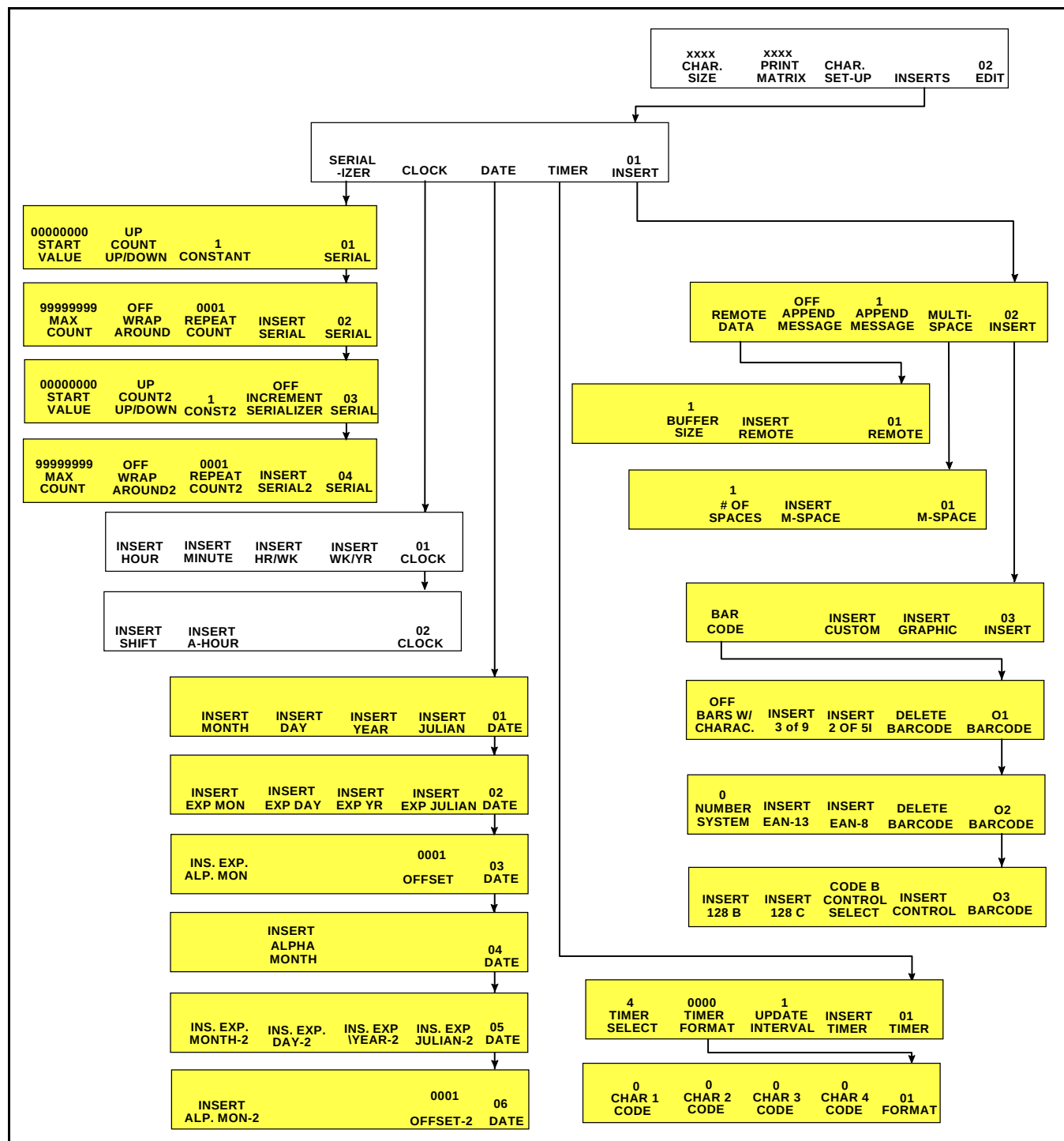


Figure 5-5. Insert Mode

**xxxx - indicates differing values depending on your type of printer.

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 will be exposed. Qualified personnel should refer to the **VIDEOJET EXCEL 2000 Series Service Manual** for information on the Service mode.

Chart Color: 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 5-6.

Chart Color: Blue

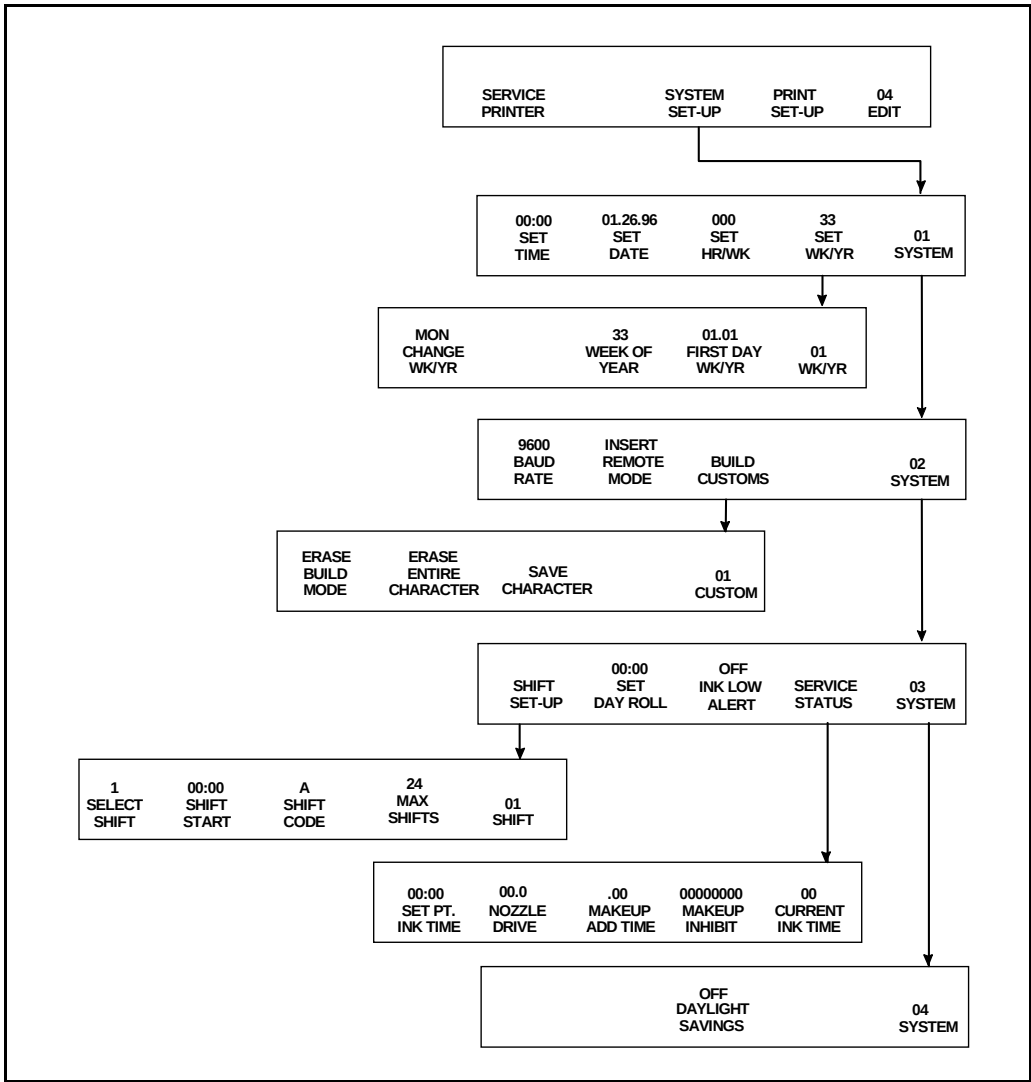


Figure 5-6. System Set-up Mode

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 5-7.

Chart Color: Green

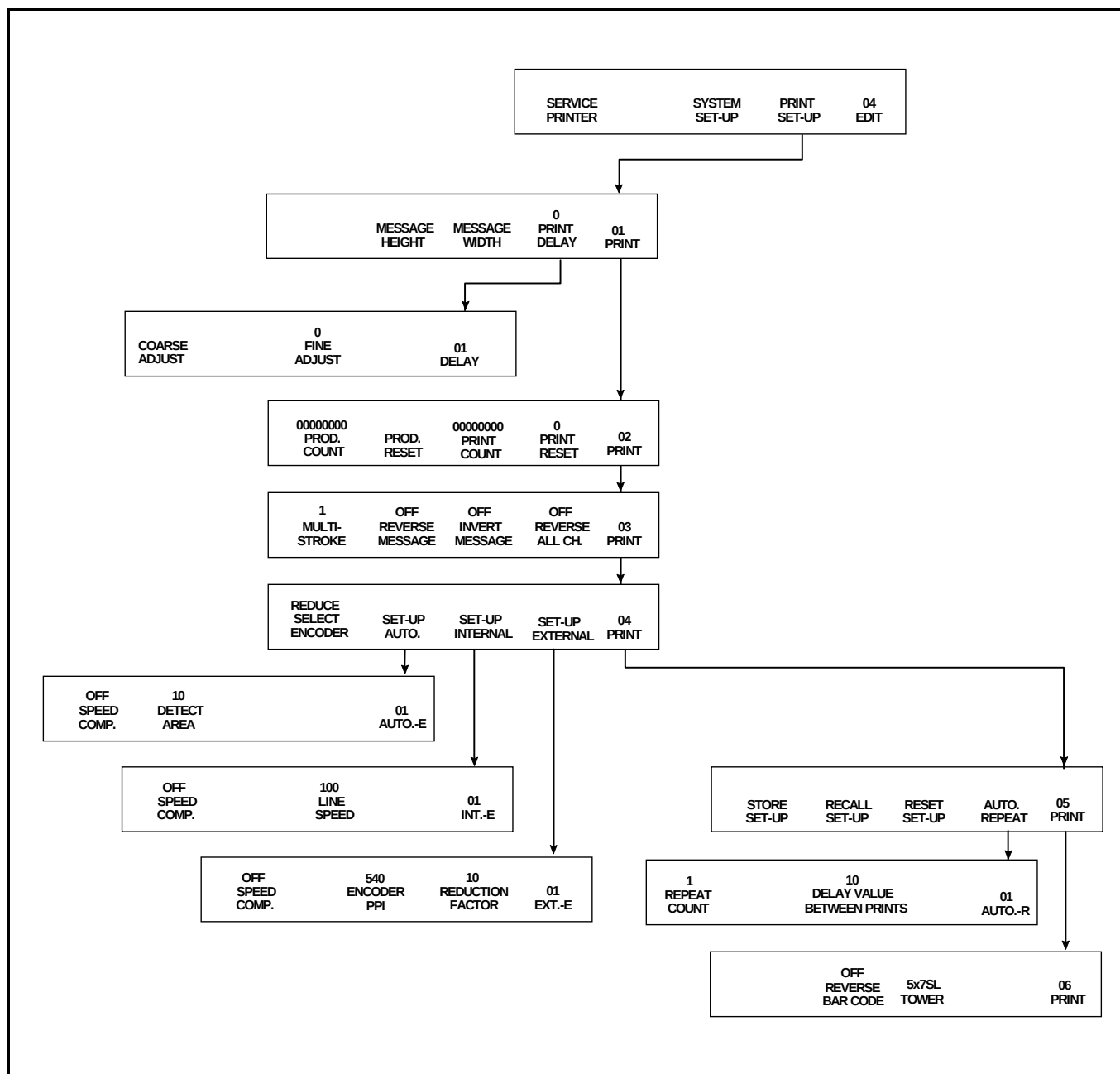


Figure 5-7. Print Set-up Mode

Notes:

This image shows a single sheet of white paper with horizontal 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.

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 a chapter-level Table of Contents.

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Introduction

Overview This chapter contains all the procedures required to create, edit, store, recall, 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 6-6
- Storing Messages.....turn to page 6-77
- Printing Messages.....turn to page 6-80

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.

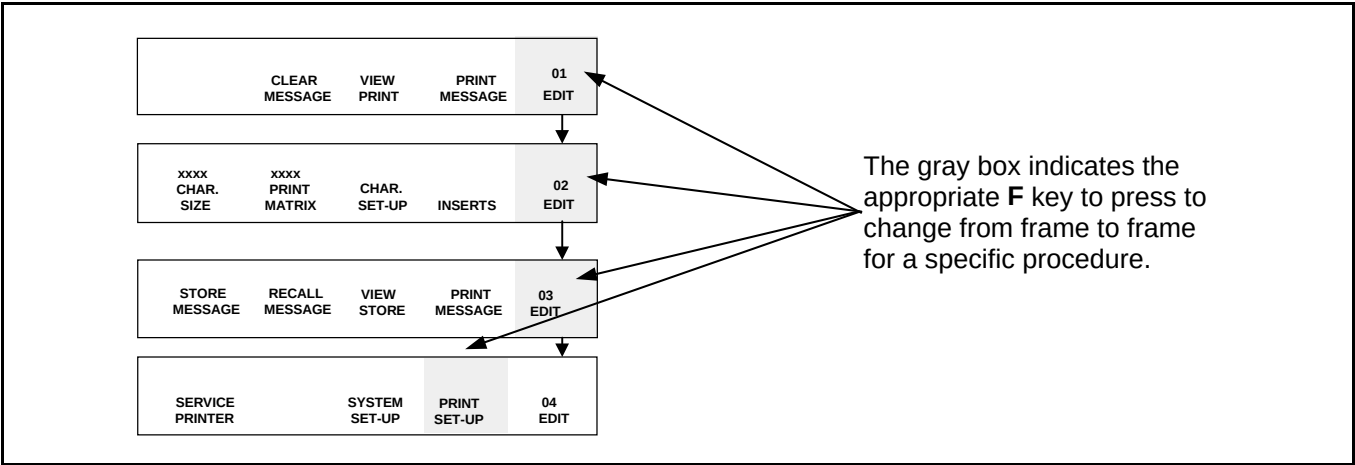


Figure 6-1. Software Illustration Example

**XXXX - indicates differing values depending on your type of printer.

Creating Messages

Introduction

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

- View the last message printed turn to page 6-7
- Clear the existing message.....turn to page 6-7
- Select a print matrix
(message format) turn to page 6-8
- Create a reversed, inverted,
or bold character turn to page 6-12
- Change the message (orientation,
bold value, width, and height) turn to page 6-16
- Add an insert into the message turn to page 6-24
- Remove an insert from the message turn to page 6-75
- Load a message into the printer turn to page 6-76

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 6-7 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 6-8 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 6-76 for further information.

The message is now ready to be printed. Refer to *Printing Messages* on page 6-80 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.

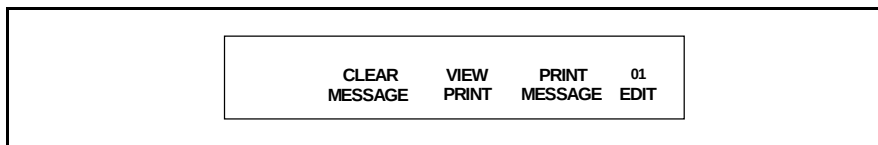


Figure 6-2. Frame <01 EDIT>

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.

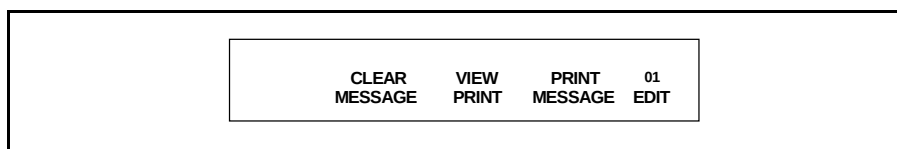


Figure 6-3. Frame <01 EDIT>

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.

Select a Print Matrix (Message Format)

Introduction

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

With print matrices, keep in mind the following guidelines:

- If a message already exists on the screen that consists of a different matrix than you would like, you must clear this message before you can select a different matrix type.
- After the print matrix has been selected, you can enter characters and inserts into the message.
- Once a character or insert has been entered into the message, you cannot change the print matrix (unless you clear the message first).

Message Formats Available

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

The print matrix is selected in Frame <02 EDIT> (refer to Figure 6-4). In addition, there is the <CHAR. SIZE> option which is used along with the print matrix type. This option is used to change the size of characters when you are using a mixed format matrix type. If it is not possible to change the character size in a message (i.e. in a single line message), Frame <02 EDIT> will not display the <CHAR. SIZE> option. Refer to Table 6-1 for examples of print matrix options.

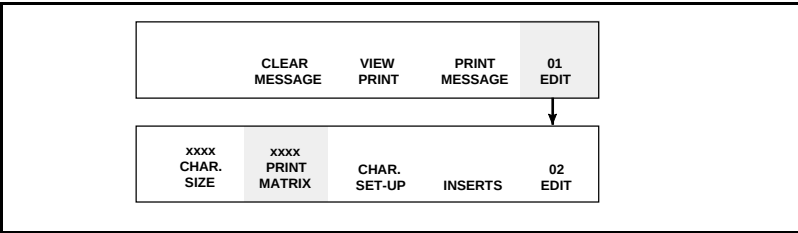


Figure 6-4. Frame <02 EDIT>

Matrix Type	Definition	Print Sample
5 x 5 SL Accudrop	This format will print one 5 x 5 line (Single-Line).	VIDEOJET
5 x 5 TL	This format will print two 5 x 5 lines (Twin-Line). It is intended to be used with high speed applications.	VIDEOJET VIDEOJET
5 x 7 SL	This format will print one 5 x 7 line (Single-Line).	VIDEOJET
6 x 7 SL	This format will print one 6 x 7 line (Single-Line). This provides a slightly larger character with more visibility than the 5 x 7 SL.	VIDEOJET
5 x 7 TL	This format will print two 5 x 7 lines (Twin-Line). It is intended to be used with high speed applications.	VIDEOJET VIDEOJET
5 x 7 STL	This format will print two 5 x 7 lines (Standard Twin-Line). It is intended to print at a lower speed and provides a higher quality print than the 5 x 7 TL.	VIDEOJET VIDEOJET
7 x 9 SL	This format will print one 7 x 9 line (Single-Line).	VIDEOJET
10 x 16 Mixed	This format will print one 16 high line, two 7 high lines, or a combination of both (Mixed-Line). Select <CHAR. SIZE> to switch between the single and double line options within the message.	VIDEOJET VIDEOJET VIDEOJET
16 x 24 Mixed	This format will print one 24 high line, two lines (one 16 high and the other 7 high), three 7 high lines or a combination of all three (Mixed-Line). Select <CHAR. SIZE> to switch between the single, double and triple line options within the message.	VIDEO VIDEOVIDEOJET VIDEOVIDEOJET VIDEOVIDEOJET
5 x 7/5 x 7/5 x 7	This format will print three 5 x 7 lines (Tri-Line).	VIDEOJET VIDEOJET VIDEOJET
10x7/5x7/5x7 5x7/10x7/5x7 5x7/5x7/10x7	This format will print three lines with either the first, second or third line bolded (Tri-Line Bold). Select the 10 x 7 option as the first, second, or third line to select that line as bold.	VIDEOJET VIDEOJETVIDEOJET VIDEOJETVIDEOJET

Matrix Type	Definition	Print Sample
10 x 7/5 x 7 5 x 7/10 x 7	This format will print two 5 x 7 lines, with either the first or second line bolded (Twin-Line Bold). Select the 10 x 7 option as the first or second line to select that line as bold.	
5 x 5 5 x 5 5 x 5 5 x 5 Mixed	This format will print four 5 x 5 lines, or one 24 high line, or a combination of both (Quad-Line Mixed). Select <CHAR. SIZE> to switch between the single line and quad line options with the message.	

Table 6-1. Print Matrix Descriptions

Procedure

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

1. Press **F5** until Frame <02 EDIT> appears in the display. Refer to Figure 6-5.
2. Does an existing message appear in the display screen?
 - If YES, clear the existing message. Press **F2** and the **SHIFT** key at the same time to select <CLEAR MESSAGE>. The existing message disappears from the display screen.

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

- If NO, continue to the next step.
3. Begin in Frame <02 EDIT>. Refer to Figure 6-5.

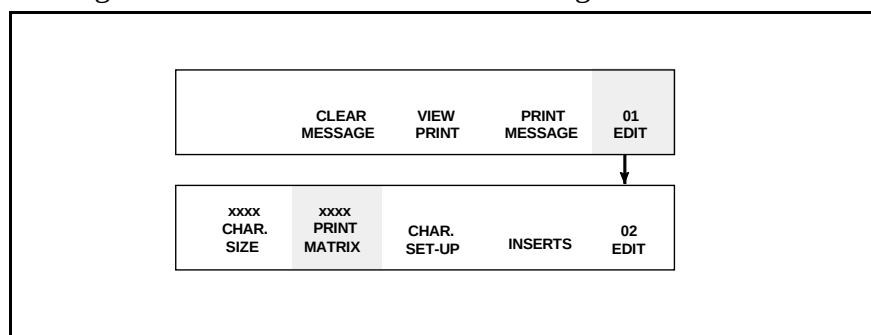


Figure 6-5. Accessing Frame <02 EDIT>

4. View the current setting above <PRINT MATRIX>. If desired, press **F2** to change the setting.

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

5. View the current setting above <CHAR. SIZE>. If desired, press **F1** to change the setting. If it is not possible to change the size of the characters within the message, the <CHAR. SIZE> field will not be visible.
6. You can now enter characters and/or inserts into the message.

Creating a Reversed, Inverted, or Bold Character

Introduction

The procedures in this section show you how to create characters that are reversed or inverted, or make the character bolder within a message.

NOTE: *To apply reverse, invert, or bold characteristics to an entire message, refer to Apply Reverse, Invert, and Bold to Entire Messages on page 6-16.*

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

NOTE: *Reverse message, invert message, and bold message settings override individual character settings. Refer to Apply Reverse, Invert, and Bold to Entire Messages on page 6-19 for further information.*

Procedures in this Section

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

- Reverse a Character turn to page 6-13
- Invert a Character.....turn to page 6-14
- Change the Character
Multi-Stroke (Bold).....turn to page 6-15

Reverse a Character

This procedure explains how to reverse individual characters within a message. Reversing a character rotates the character 180° in a horizontal direction. (Refer to Figure 6-6). Only new characters can be reversed; you cannot reverse an existing character in the message.

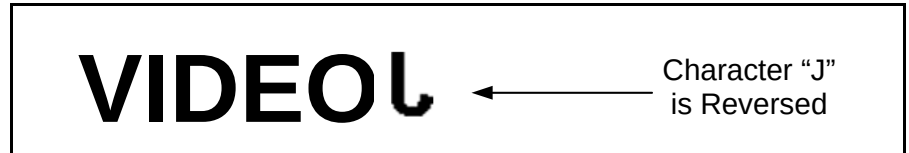


Figure 6-6. Reversing the Character - Example

Procedure

1. Use the arrow keys to move the cursor to the location in the message where you want the character to appear.
2. Begin in Frame <01 CHAR>. Refer to Figure 6-7.

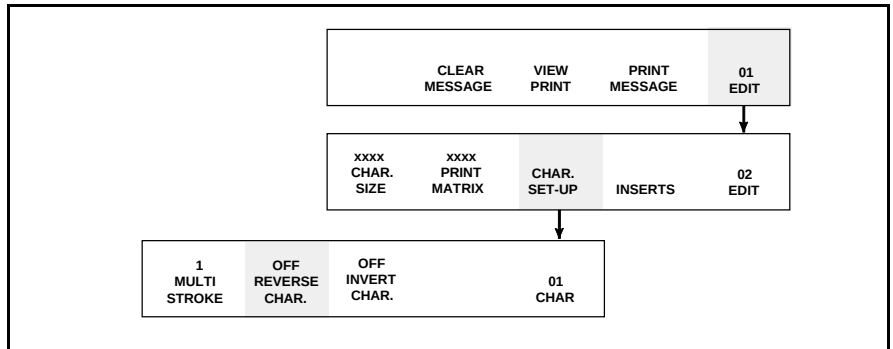


Figure 6-7. Accessing Frame <01 CHAR>

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

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

Invert a Character

This procedure explains how to invert an individual character within a message. Inverting a character causes the character to appear upside down. (Refer to Figure 6-8). Only new characters can be inverted; you cannot invert an existing character in the message.

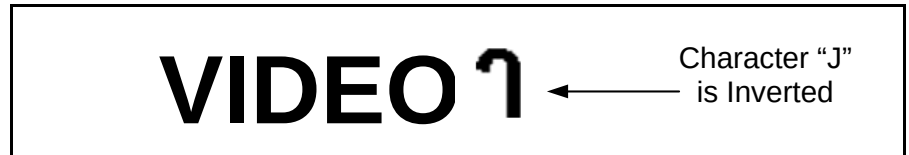


Figure 6-8. Inverting the Character - Example

1. Use the arrow keys to move the cursor to the location in the message where you want the character to appear.
2. Begin in Frame <01 CHAR>. Refer to Figure 6-7.
3. View the current setting above <INVERT CHAR.>. Is it set to <ON>?
 - If NO, press **F3** to change the setting to <ON>.
 - If YES, continue to the next step.
4. Enter the new character into the message. The character appears in the display screen inverted.

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

Change the Character Multi-Stroke (Bold)

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

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

Procedure

1. Use the arrow keys to move the cursor to the location in the message where you want the character to appear.
2. Begin in Frame <01 CHAR>. Refer to Figure 6-9.

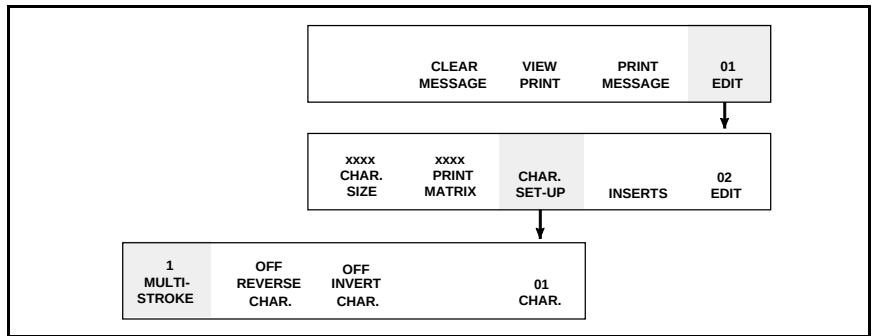


Figure 6-9. Accessing Frame <01 CHAR>

3. View the current setting above <MULTI-STROKE>. If desired, press **F1** to change the setting. (Settings: 1, 2, 3, 4.)

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

Table 6-2. Multi-Stroke (Bold) Values

4. Enter the new character into the message. The character will not appear in the display screen as bold; however, it will be bold when printed.

NOTE: The next character entered will have the same multi-stroke (bold) value setting as the previous character unless you press **F1** to change the setting before entering the next 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 each character (individually) within the message, and how to adjust the message height and width of a message.

NOTE: To create a reversed, inverted, or bold (individual) character, refer to Creating a Reversed, Inverted, or Bold Character on page 6-12.

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 6-17
- Invert a Message turn to page 6-18
- Reverse All Characters.....turn to page 6-19
- Change the Message
Multi-stroke (Bold).....turn to page 6-20

Refer to Figure 6-10 for an illustration of the frames used in this section.

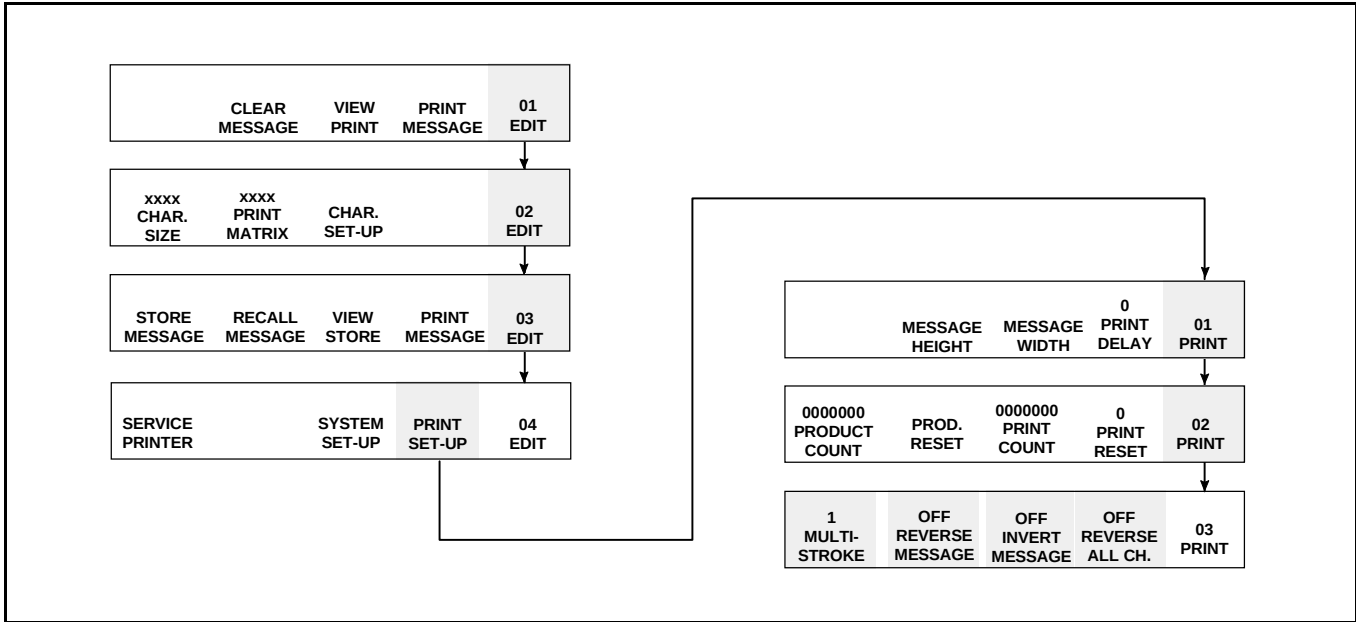


Figure 6-10. Accessing Frame <03 PRINT>

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 6-11.

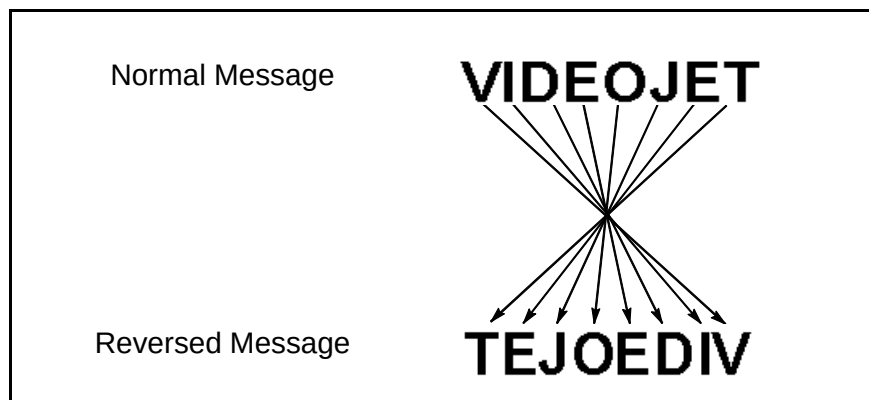


Figure 6-11. Reversing the Message – Example

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 6-10 on page 6-16.
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.

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

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 6-12 for an example.

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

This setting will override any change made to invert the character individually (from Frame <01 CHAR>). Refer to *Invert a Character* on page 6-14 for further information.

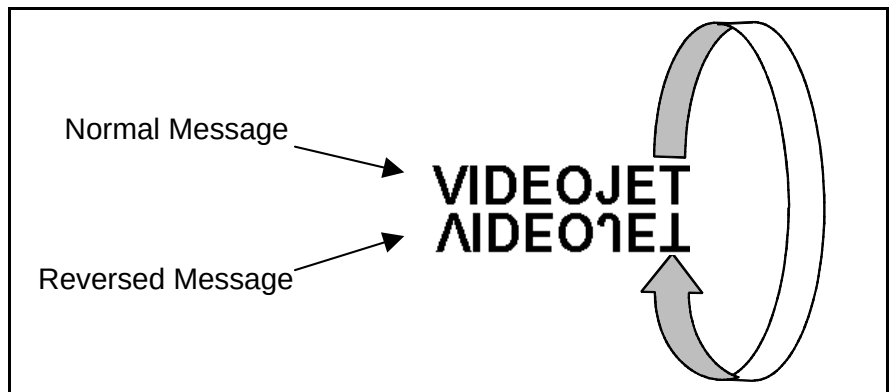


Figure 6-12. Inverting the Message - Example

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 6-10 on page 6-16.
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

Figure 6-13 shows an example of a message which is reversed, then inverted.

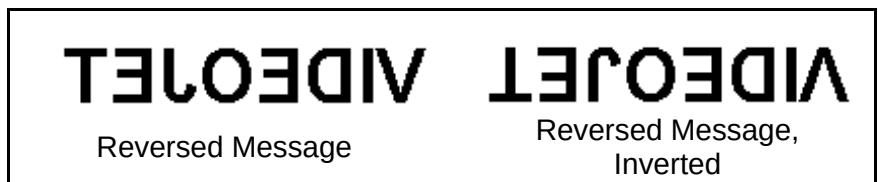


Figure 6-13. Reversed and Inverted Message

Reverse All Characters

This procedure explains how to reverse all the characters in a message. Reversing all characters rotates each character horizontally 180 degrees. Refer to Figure 6-14.

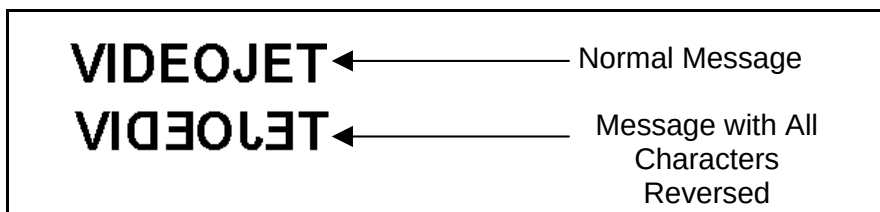


Figure 6-14. Reversing All Characters – Example

Procedure

1. Load the 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 6-10 on page 6-16.
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, each of the characters will be reversed (individually) when the message is printed.*

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

Inverted Message with all Characters Reversed

Figure 6-15 shows an example of a message with all characters reversed and inverted.

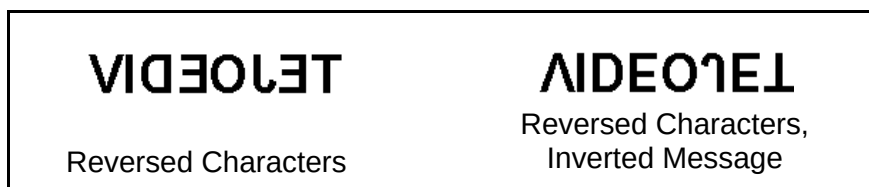


Figure 6-15. Reversed Characters in an Inverted Message

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.

This setting will override any change to make an individual character bold (made in Frame <01 CHAR>). Refer to *Change the Character Multi-Stroke (Bold)* on page 6-15 for further information.

Procedure

1. Begin in Frame <03 PRINT>. Refer to Figure 6-10 on page 6-16 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.)

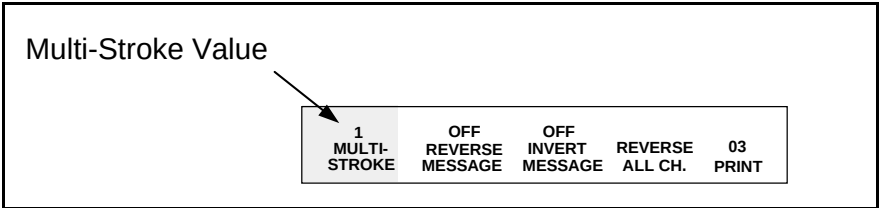


Figure 6-16. Changing the Multi-Stroke Value of a Message

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)

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 6-17.

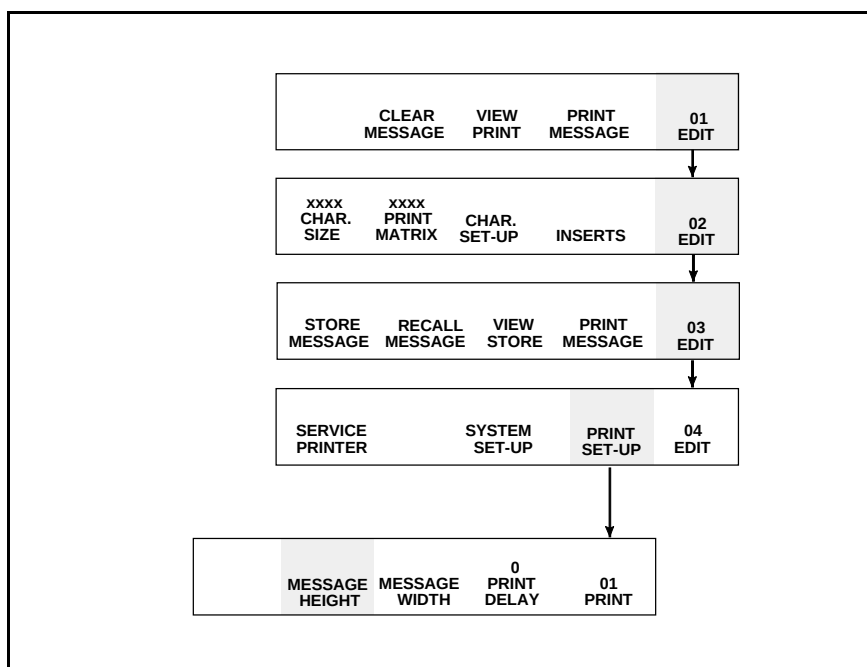


Figure 6-17. Assessing Frame <01 PRINT>

Procedure

1. Begin in Frame <01 PRINT>. Refer to Figure 6-17.
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 from 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 6-18.

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).

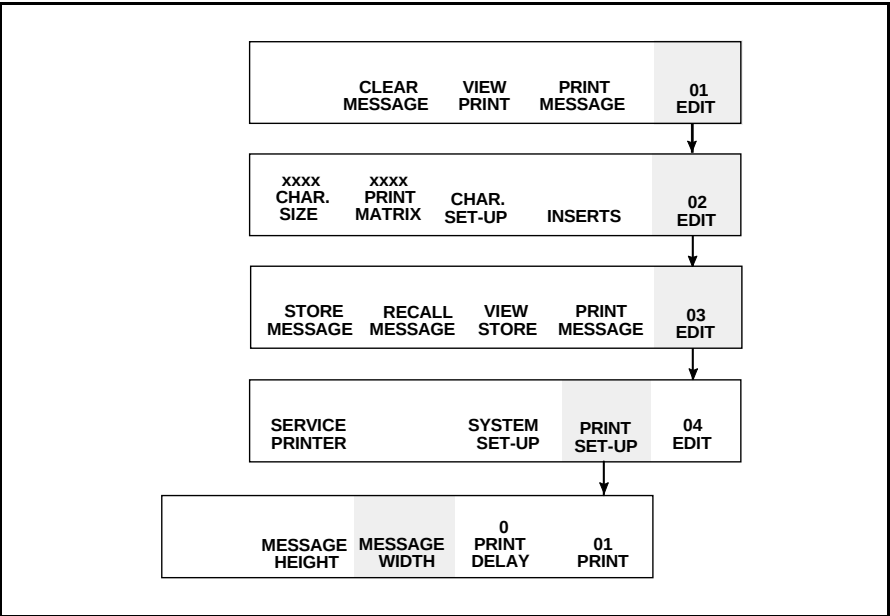


Figure 6-18. Assessing Frame <01 PRINT>

Procedure

1. Begin in Frame <01 PRINT>. Refer to Figure 6-18.
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 from 0–100.

NOTE: As the values increase in increments of 10, the characters per inch increase in increments of 0.5. Refer to Table 6-4 on page 6-23.

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

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

Table 6-4. Width Adjustment Settings

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 that 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 that appears in the message) are defined by you, not by the printer's internal clock. The insert is updated according to the settings made during set-up.
Type 2	Inserts where the parameters (information which appears in the message) are determined by the current reading of the printer's internal clock. The printer automatically updates the insert as the printer's internal clock changes.
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 6-5. 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 6-6 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 6-76 for further information.

Insert Reference Table

Refer to Table 6-6 below for a complete listing of: 1) the number of inserts available to be placed 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.

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

Insert	Max. Digits per Insert	Type	Max. per Message*	Page
Alpha Hour	1	2	SLO	6-26
Alpha Month	3	2	SLO	6-27
Hour of Day	2	2	SLO	6-28
Minute of Hour	2	2	SLO	6-29
Hour of Week	3	2	SLO	6-30
Week of Year	2	2	SLO	6-31
Month of Year	2	2	SLO	6-32
Day of Month	2	2	SLO	6-33
Year	2	2	SLO	6-34
Julian Date	3	2	SLO	6-35
Expiration Alpha Month	3	2	SLO	6-36
Expiration Month of Year	2	3	SLO	6-38
Expiration Day of Month	2	3	SLO	6-39
Expiration Year	2	3	SLO	6-41
Expiration Julian Date	3	3	SLO	6-42
Serializer	8	1	2	6-44
Timer	4	3	1	6-47
Programmable Shift Timer	1	3	SLO	6-50
Appended Message	Message length	1	1	6-54
Remote Data	32	1	1	6-57
Multi-Space	255	1	SLO	6-59

Insert	Max. Digits per Insert	Type	Max. per Message*	Page
Custom Character	1	1	SLO	6-61
Graphic	1	1	SLO	6-63

Table 6-6. Insert Information

Alpha Hour Insert

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

The value for this insert is determined by the printer's internal clock, and is updated as the internal clock changes. Refer to Table 6-7.

Value	Time of Day	Value	Time of Day
A	12:00 a.m. (midnight)	M	12:00 p.m. (noon)
B	1:00 a.m.	N	1:00 p.m.
C	2:00 a.m.	O	2:00 p.m.
D	3:00 a.m.	P	3:00 p.m.
E	4:00 a.m.	Q	4:00 p.m.
F	5:00 a.m.	R	5:00 p.m.
G	6:00 a.m.	S	6:00 p.m.
H	7:00 a.m.	T	7:00 p.m.
I	8:00 a.m.	U	8:00 p.m.
J	9:00 a.m.	V	9:00 p.m.
K	10:00 a.m.	W	10:00 p.m.
L	11:00 a.m.	X	11:00 p.m.

Table 6-7. Alpha Hour Insert Values

Procedure

1. Begin in Frame <02 CLOCK>. 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 A. HOUR>. The insert appears in the message.

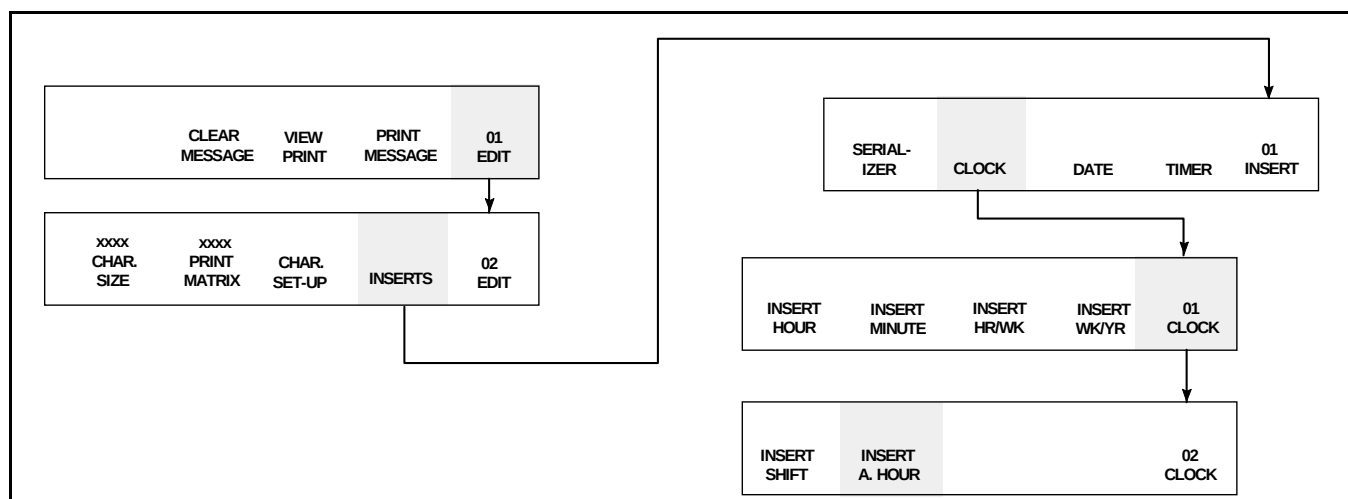


Figure 6-19. Accessing Frame <02 CLOCK>

Alpha Month Insert

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

The value for this insert is determined by the printer's internal clock, and is updated as the internal clock changes. Refer to Table 6-8.

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

Table 6-8. Alpha Month Insert Values

Procedure

1. Begin in Frame <04 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 ALPHA MONTH>. The insert appears in the message.

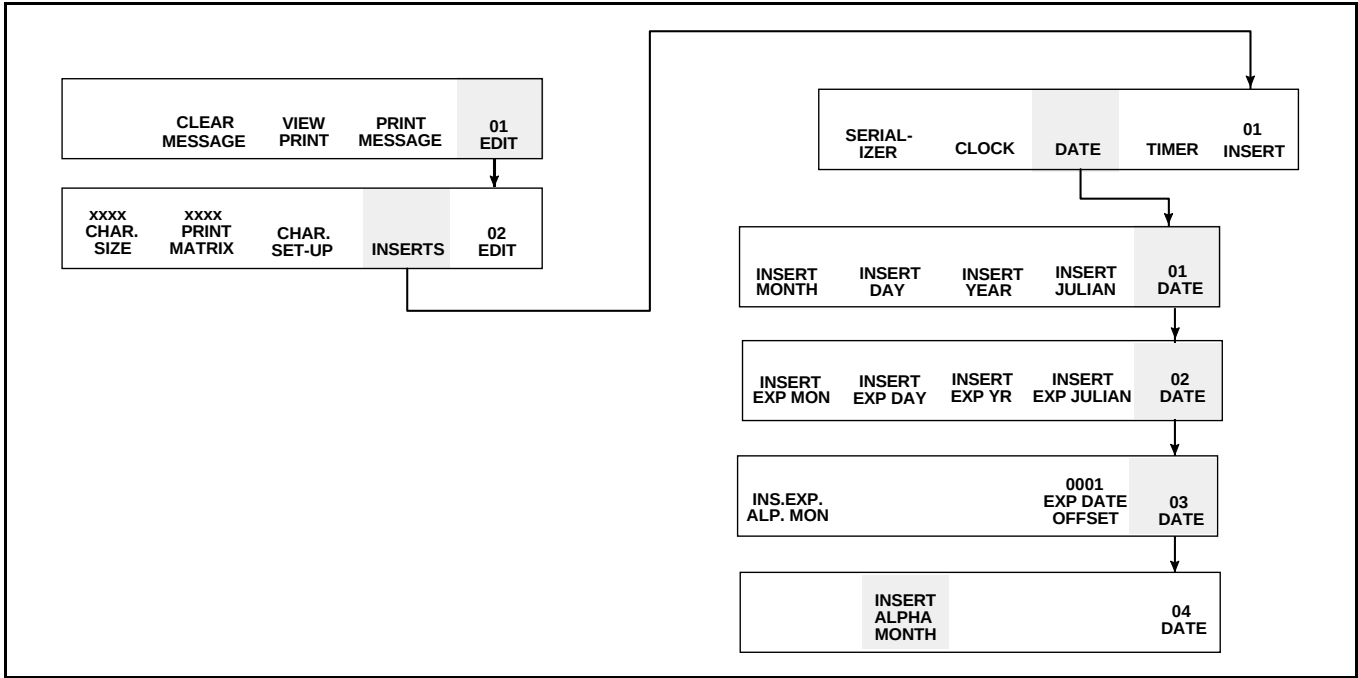


Figure 6-20. Accessing Frame <04 DATE>

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 6-9.

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 6-9. Hour-of-Day Insert Values

Procedure

1. Begin in Frame <01 CLOCK>. 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 **F1** to select <INSERT HOUR>. The insert appears in the message.

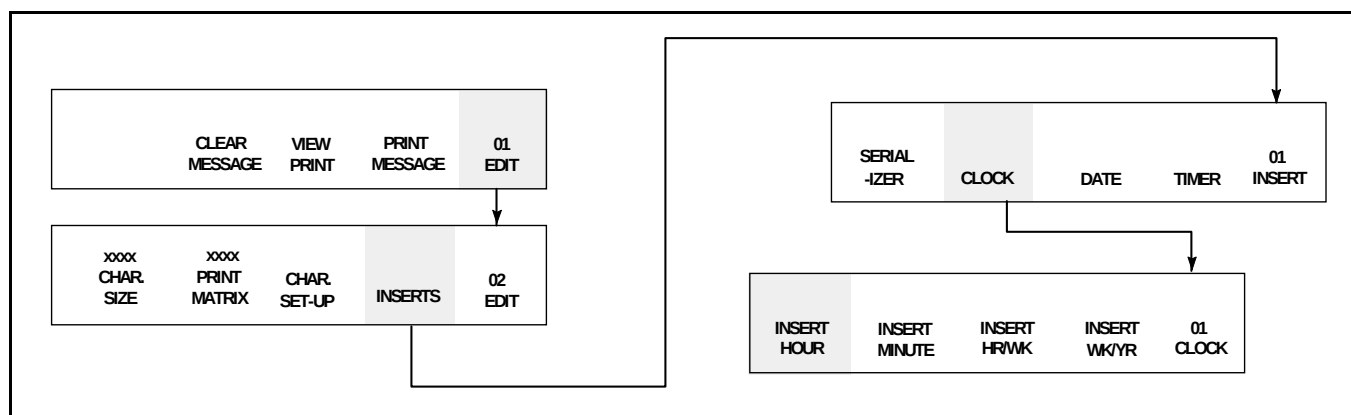


Figure 6-21. Accessing Frame <01 CLOCK>

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 6-22.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <INSERT MINUTE>. The insert appears in the message.

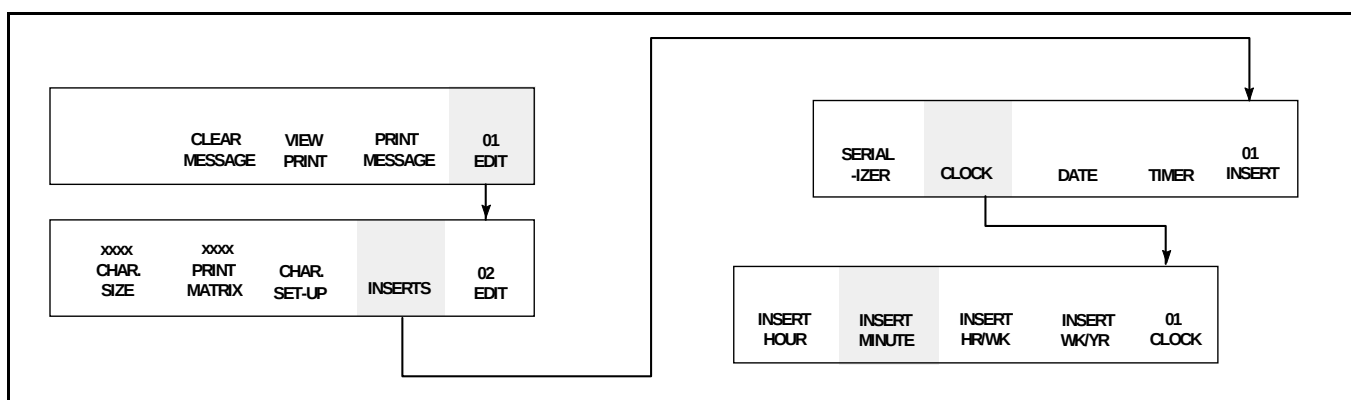


Figure 6-22. Accessing Frame <01 CLOCK>

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 the user entry made in *Chapter 7, System Set-up*, and is updated as the printer's internal clock changes.

Procedure

1. Begin in Frame <01 CLOCK>. 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 **F3** to select <INSERT HR/WK>. The insert appears in the message.

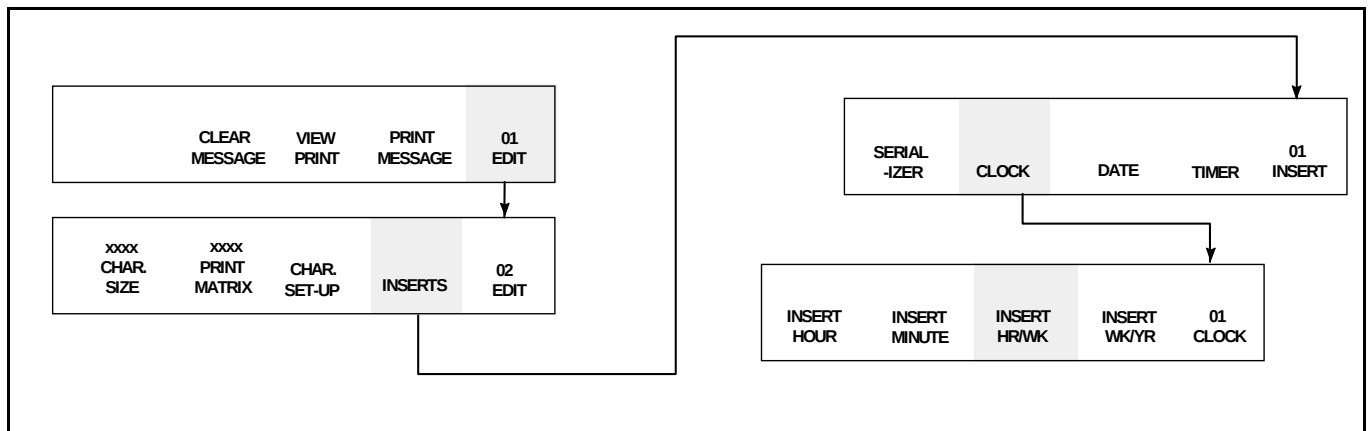


Figure 6-23. Accessing Frame <01 CLOCK>

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 52 or 53 indicates the last week of the year.

The value for this insert is determined by the printer's internal clock and the entries made in *Chapter 7, System Set-up*, and is updated as the printer's internal clock changes.

Procedure

1. Begin in Frame <01 CLOCK>. 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 **F4** to select <INSERT WK/YR>. The insert appears in the message.

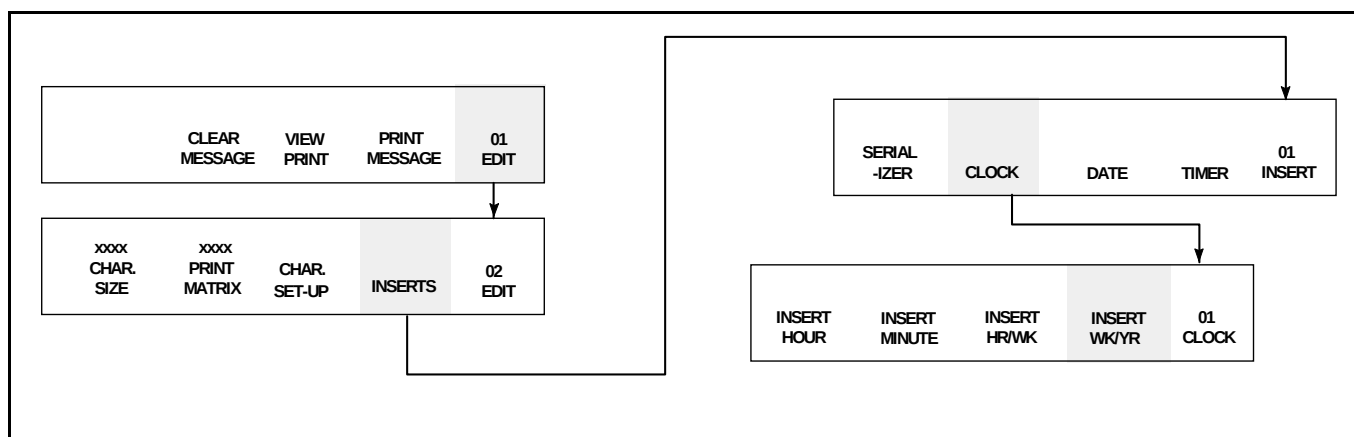


Figure 6-24. Accessing Frame <01 CLOCK>

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 6-10. Month Values

Procedure

1. Begin in Frame <01 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 **F1** to select <INSERT MONTH>. The insert appears in the message.

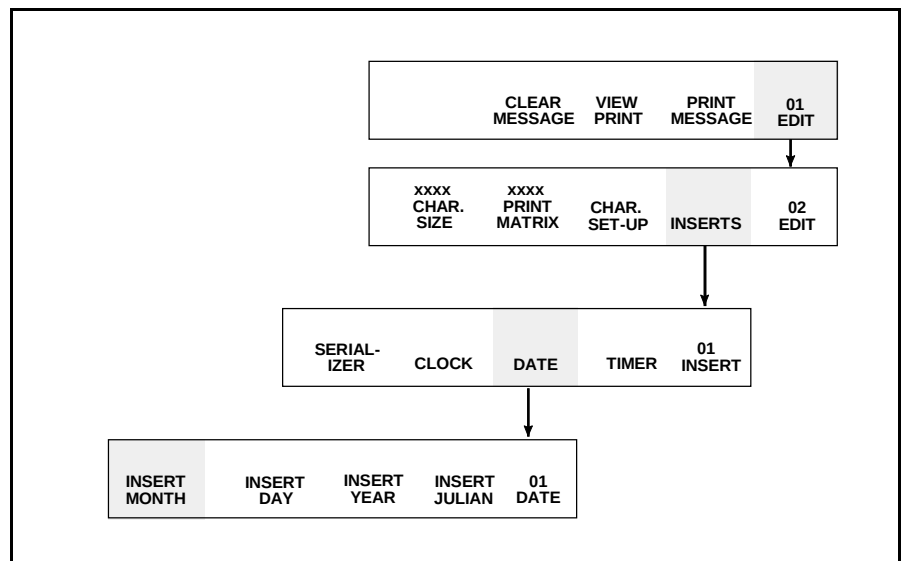


Figure 6-25. Accessing Frame <01 DATE>

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 6-26.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.
3. Press **F2** to select <INSERT DAY>. The insert appears in the message.

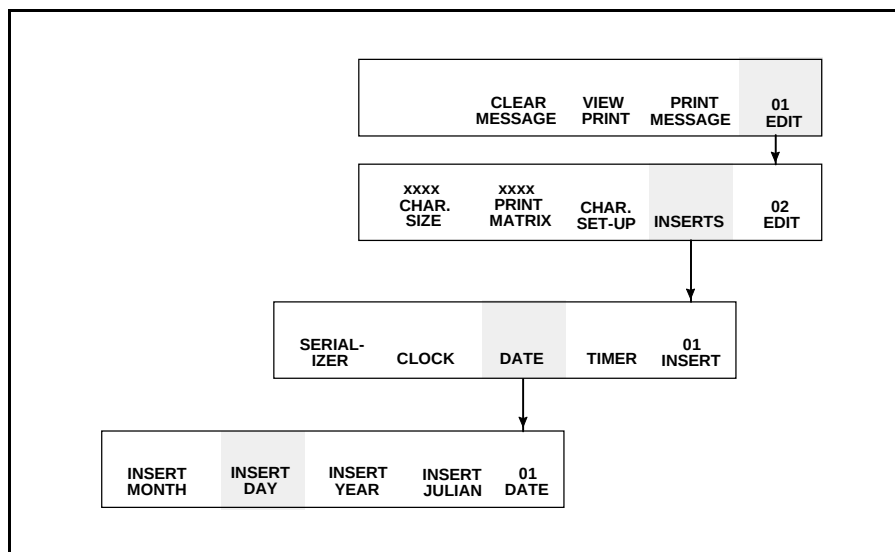


Figure 6-26. Accessing Frame <01 DATE>

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 “1999” will appear as <99>.

Procedure

- 1. Begin in Frame <01 DATE>. Refer to Figure 6-27.
- 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.

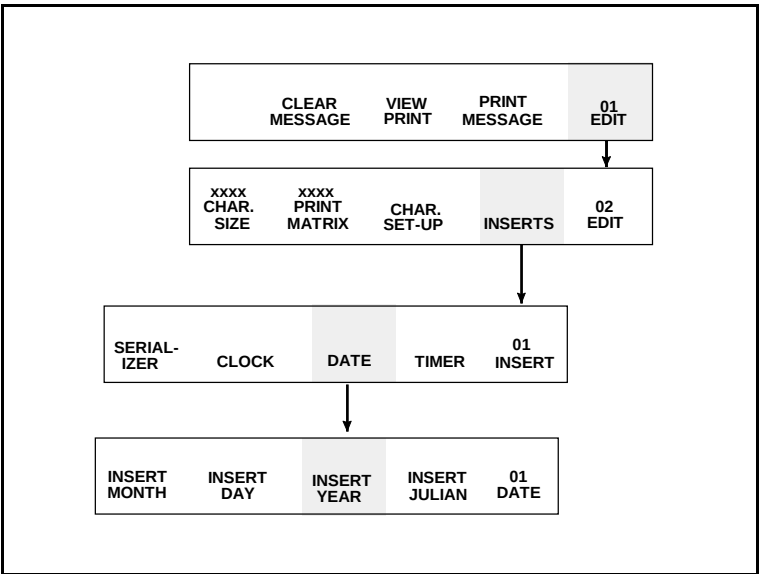


Figure 6-27. Accessing Frame <01 DATE>

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 or 366 indicates the last day of the year.

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

Procedure

1. Begin in Frame <01 DATE>. 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. Press **F4** to select <INSERT JULIAN>. The insert appears in the message.

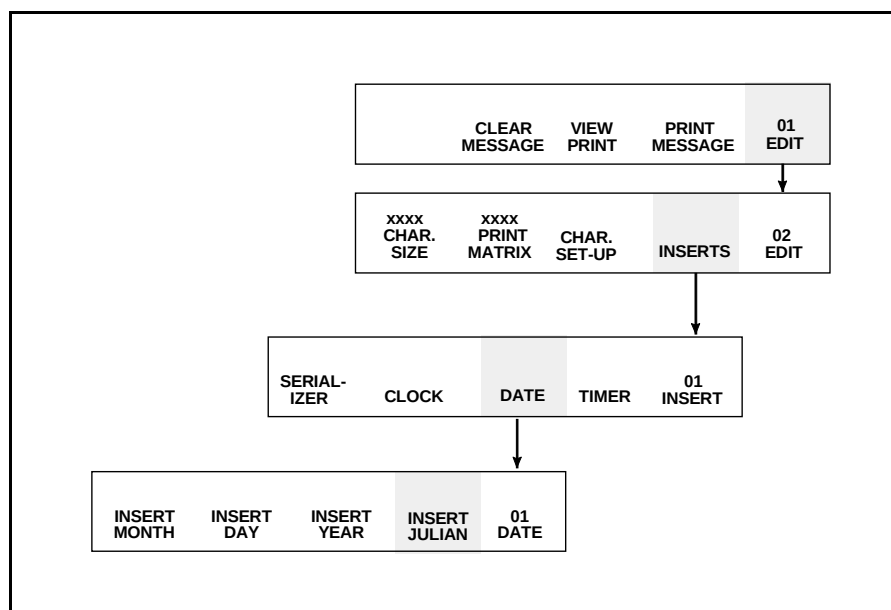


Figure 6-28. Accessing Frame <01 DATE>

Expiration Alpha Month Insert

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

The value for this insert is determined by the printer's internal clock, and is updated as the internal clock changes. Refer to Table 6-11.

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

Table 6-11. Expiration Alpha Month Insert Values

For Example:

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

Procedure

1. Begin in Frame <03 DATE>. Refer to Figure 6-29.
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 EXP ALPHA MON>. The insert appears in the message.

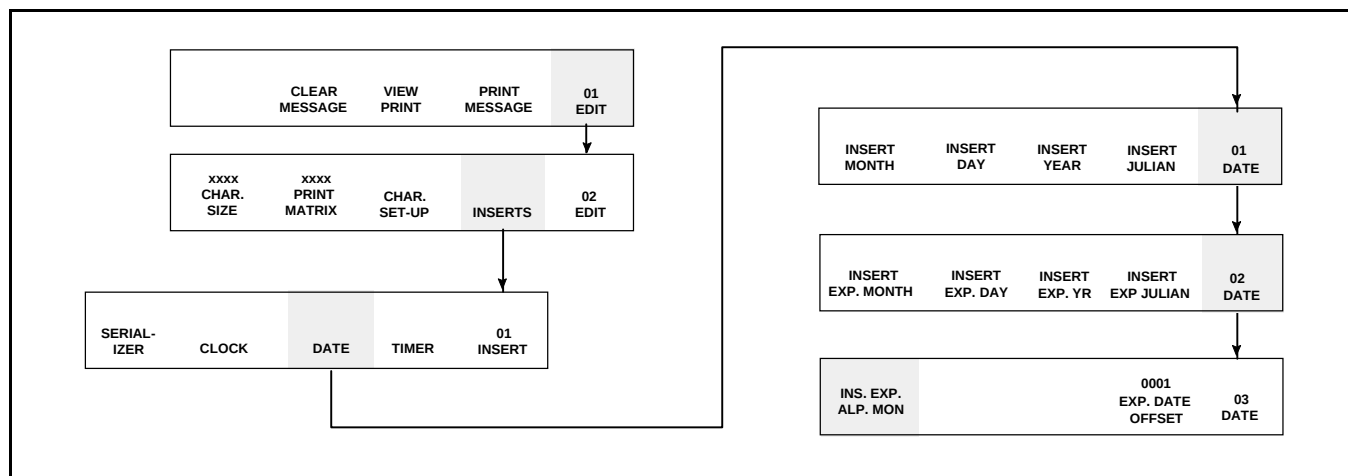


Figure 6-29. Accessing Frame <04 DATE>

4. Press **F4** to select <EXP. DATE OFFSET>. The following appears on the screen:

ENTER OFFSET DAYS (1-2048)----- ▶

5. Use the numeric keypad to enter the number of days that can pass before the product expires. The entry must be from 1-2048 (2048 days is about 5 ½ years).
6. Press the **ENTER** key. The insert appears in the message and Frame <03 DATE> reappears in the display screen.
7. To create a separate expiration alpha month insert, repeat steps 1 through 6, but begin in Frame <06 DATE>. Set the offset value in the same frame <06 DATE>.

Expiration Month-of-Year Insert

This procedure explains how to place an 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. **You may add two separate expiration month-of-year inserts per message.**

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 6-30.
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 EXP. MONTH>. The insert appears in the message.
4. Press **F5** to go to Frame <03 DATE>. (Refer to Figure 6-30).
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 from 1-2048 (2048 days is about 5½ years).
7. Press the **ENTER** key. The insert appears in the message and Frame <03 DATE> reappears in the display screen.

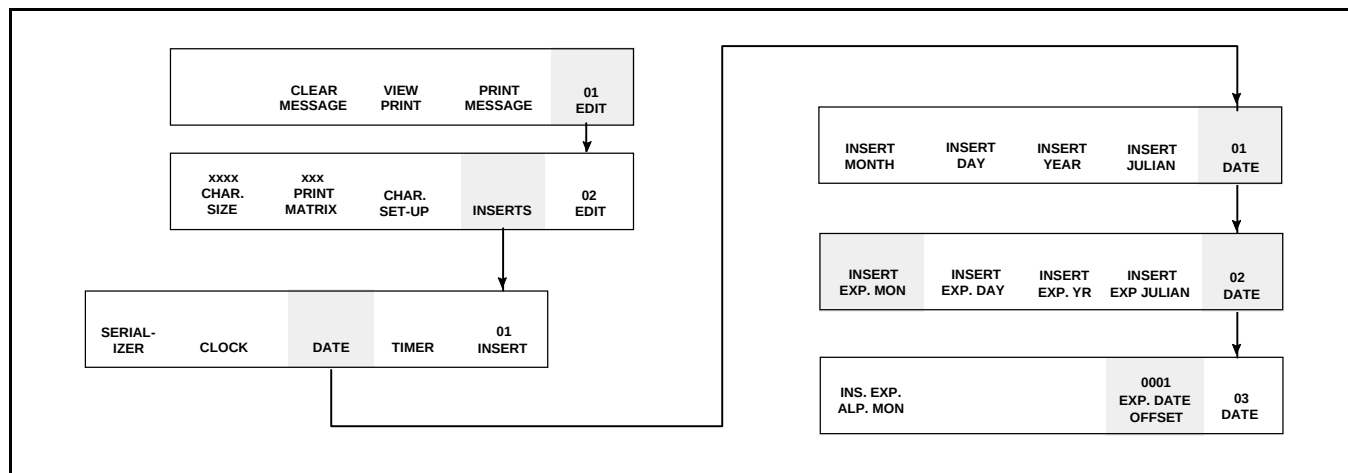


Figure 6-30. Accessing Frame <02 DATE>

8. To add a separate expiration month-of-year insert, repeat steps 1 through 7 but begin in Frame <05 DATE>. Set the offset value in Frame <06 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. **You may add two separate expiration day-of-month inserts per message.**

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

Procedure

1. Begin in Frame <02 DATE>. Refer to Figure 6-30.
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. DAY>. The insert appears in the message.
4. Press **F5** to go to Frame <03 DATE>. (Refer to Figure 6-31).
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 from 1–2048 (2048 days is about 5½ years).
7. Press the **ENTER** key. The insert appears in the message and Frame <03 DATE> reappears in the display screen.

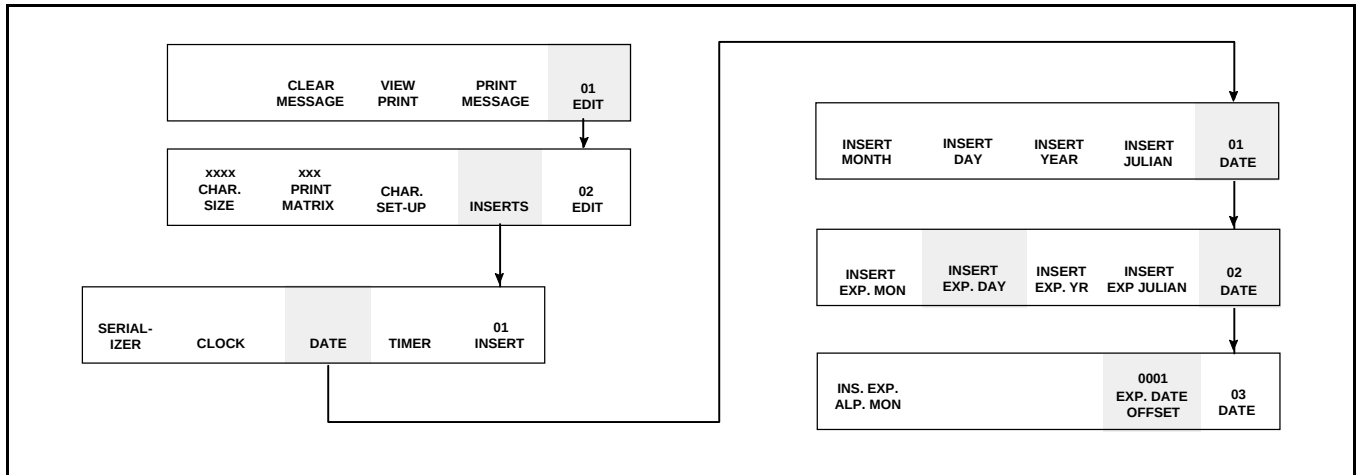


Figure 6-31. Accessing Frame <02 DATE>

8. To add a separate expiration day-of-month insert, repeat steps 1 through 7 but begin in Frame <05 DATE>. Set the offset value in Frame <06 DATE>.

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. **You may add two separate expiration year inserts per message.**

For Example:

If the current date is November 24th and you set the expiration date of the product to be 60 days from the current date, then the printer will print 99 for the expiration year insert. The value 99 represents the year 1999 (60 days from the current date).

Procedure

1. Begin in Frame <02 DATE>. Refer to Figure 6-32.
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 6-32.
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 from 1-2048 (2048 days is about 5½ years).
7. Press the **ENTER** key. The insert appears in the message and Frame <03 DATE> reappears in the display screen.

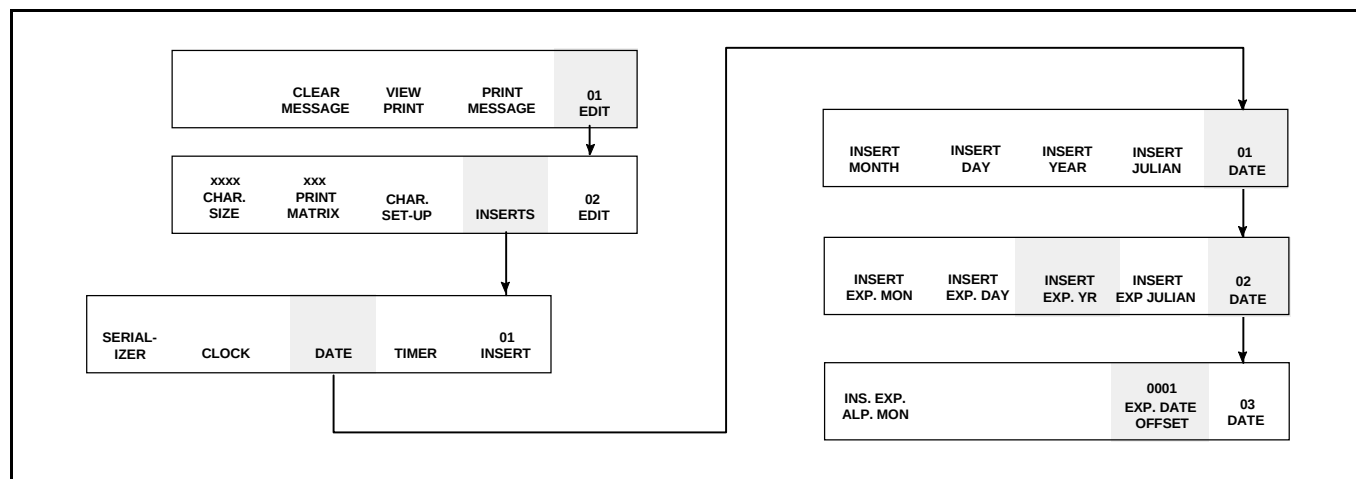


Figure 6-32. Accessing Frame <02 DATE>

8. To add a separate expiration year insert, repeats steps 1 through 7 but, begin in Frame <05 DATE>. Set the offset value in Frame <06 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. **You may add two separate expiration julian date inserts per message.**

For Example:

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

Procedure

1. Begin in Frame <02 DATE>. 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 **F4** to select <INSERT EXP. JULIAN>. The insert appears in the message.
4. Press **F5** to go to Frame <03 DATE>. Refer to Figure 6-33.
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. The insert appears in the message and Frame <03 DATE> reappears in the display screen.

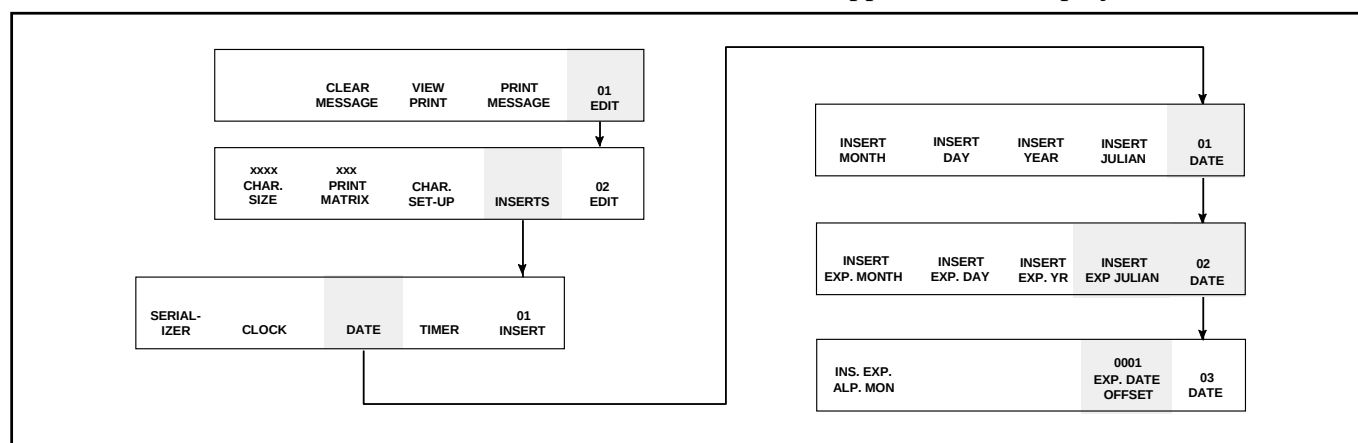


Figure 6-33. Accessing Frame <02 DATE>

8. To add a second expiration julian date insert, repeat steps 1 through 7 but begin in Frame <05 DATE>. Set the offset value in Frame <06 DATE>.

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 that will update as messages are printed. **You may add two separate serializer inserts per message.**

Serializer parameters are defined by you, rather than the printer's internal clock. Before inserting a serializer into the message, you must set the following serializer parameters for either one or two serializers used. Refer to Table 6-12.

Parameter	Explanation
Starting Value	This is the first value to be printed. The value must be less than the max count (ending value), and from 00000000--99999999. Leading zeros are required to match the number of digits in the maximum count. For example, if the max count is 1000, then the start value should be 0001.
Max Count (Ending Value)	This is the maximum product detect count value to be printed. The value must be greater than the starting value, and from 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 from 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 from 1--9999.
Off Increment Serializer	Set the second serializer to increment only after the first serializer has rolled over (reached its Max Count).

Table 6-12. 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 6-34.
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 from 0–99999999. Also, the number of digits must match the number of digits in the max count.

NOTE: When entering the starting value, you may substitute spaces for 0s, and you may enter letters instead of numbers.

5. Press the **ENTER** key. Frame <01 SERIAL> reappears in the display screen.

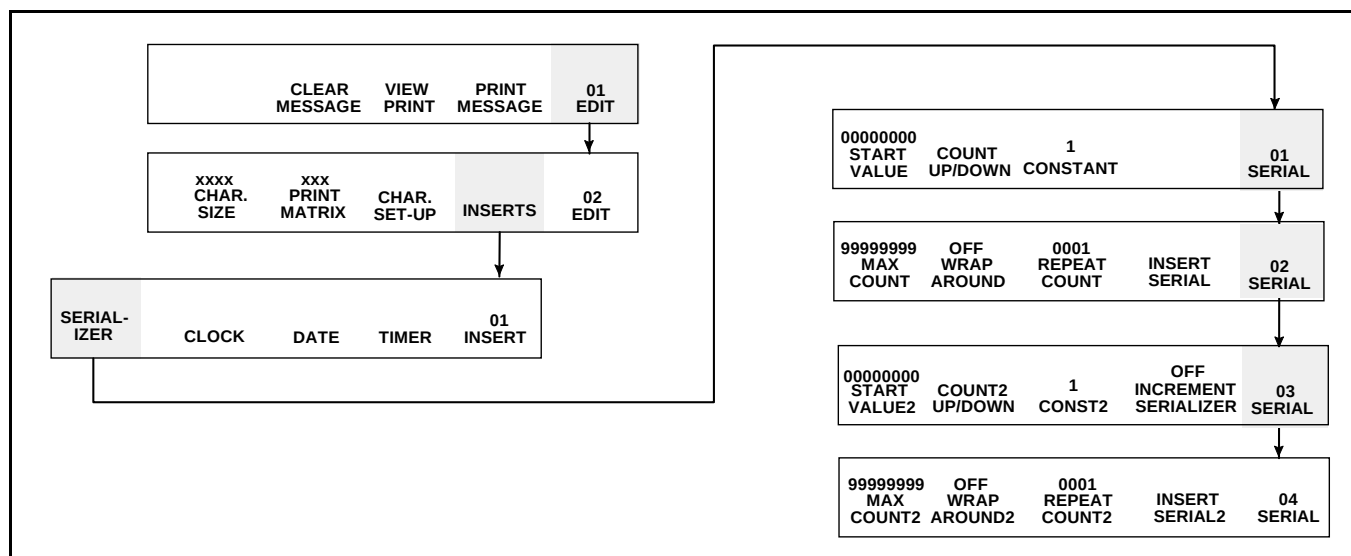


Figure 6-34. Accessing Frame <01 SERIAL>

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 VALUE----- ▶

8. Use the numeric keypad to enter the constant. The entry must be from 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 6-34.

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 from 10—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 from 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.
19. To insert a second serializer in the message, repeat steps 1 through 18 but begin in Frame <03 SERIAL>.
20. To make the second serializer increment only after the first serializer has met its max count, press **ENTER** to reach Frame <03 SERIAL>. Press **F4** and change the <INCREMENT SERIALIZER> value to ON.

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 6-13):

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: • two • four										
Update Interval	Choose the interval (in minutes) of when the insert will be updated. Your selections are: • 15, 30, or 60 minutes for a two–digit insert • every minute or every 15, 30, or 60 minutes for a four–digit insert										
Timer Format	Choose if you want each digit in the insert to remain as a digit or appear as an alphabetic character (representing that digit). • this can be selected for each digit. • use to code the time by substituting digits with alphabetic characters. Character/digit cross–reference: <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 6-13. 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> = 45

<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.

Procedure

1. Begin in Frame <01 TIMER>. 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. 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 6-35.

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.

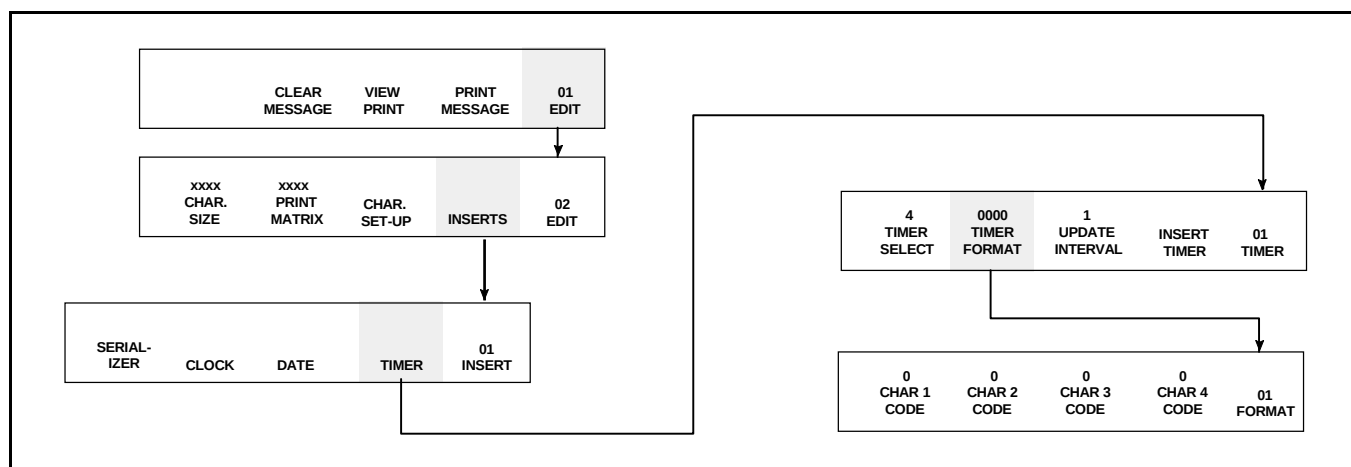


Figure 6-35. Accessing Frame <01 TIMER>

Programmable Shift Timer

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

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

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

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

NOTE: If you would like to use the default shift settings shown above for your shift values without making a change, go directly to the next section Insert Procedure on page 6-53-for instructions on inserting a shift code into your message. It is not necessary to complete the next procedure.

Set-Up Procedure

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

1. Begin in Frame <03 SYSTEM>. Refer to Figure 6-36.
2. Press **F1** to access <SHIFT SETUP>. Frame <01 SHIFT> appears.
3. Press **F4** to access <MAX SHIFTS>. This allows you to set how many shifts you will have. You may create up to 24 “shifts”. The following appears in the display screen.

ENTER SHIFTS MAXIMUM (1-xx) ----- ▶

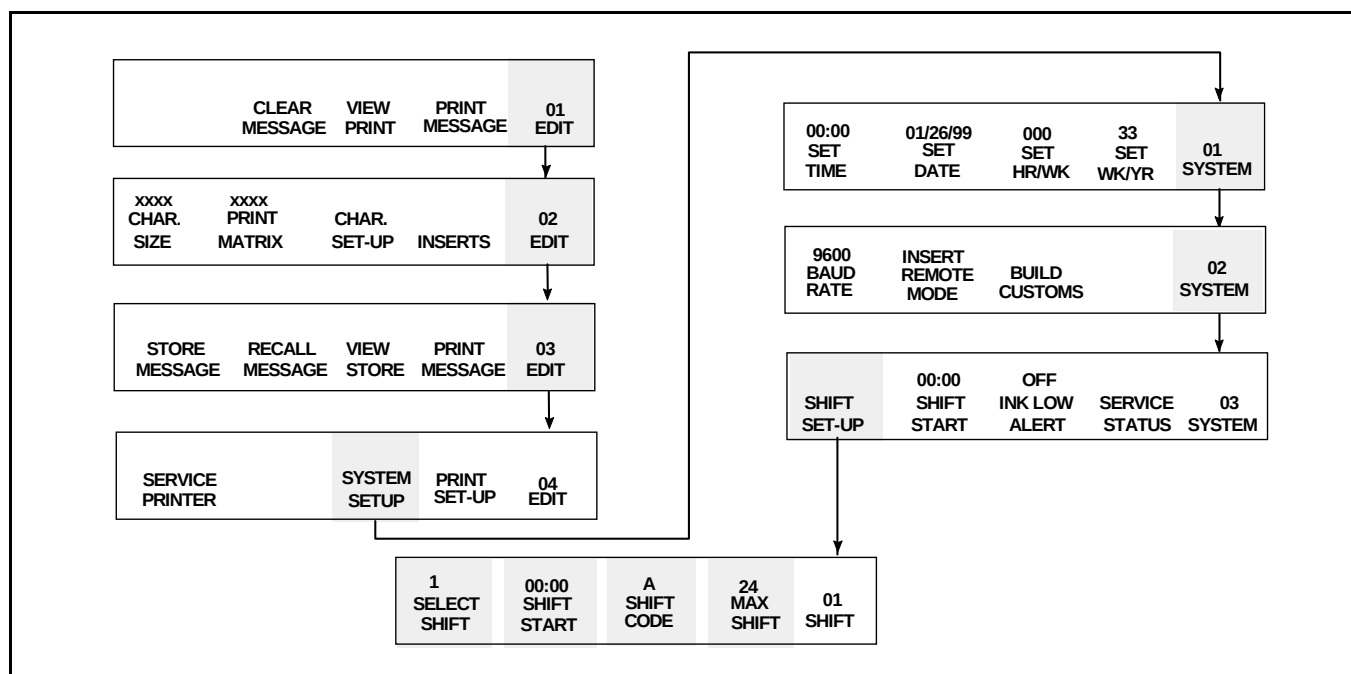


Figure 6-36. Accessing Frame <01 SHIFT>

4. Use the numeric keypad to enter the number of shifts you want available. The entry must be from 1-24.
5. Press the **ENTER** key. The number you enter appears above <MAX SHIFTS> in the display screen. Frame <01 SHIFT> appears.
6. Press **F1** to access <SELECT SHIFT>. This allows you to select the work-shift number you want to edit. You can create up to 24 work-shifts by number. The following appears in the display screen:

ENTER SHIFT NUMBER (1-xx) ---- ►

7. Use the numeric keypad to enter the shift number. The entry must be from 1-24.
8. Press the **ENTER** key. The number you entered appears above <SELECT SHIFT> in the display screen.

9. Press **F2** to access <SHIFT START>. This allows you to enter the starting time for the work–shift. The following appears in the display screen:

ENTER HHMM ---- ▶

10. Use the numeric keypad to enter the starting time for the work–shift number.
11. Press the **ENTER** key. The number you entered appears above <SHIFT START> in the display screen. Frame <01 SHIFT> appears.

NOTE: Make sure that every starting time (shift) you enter is in ascending order. For instance, enter 1:00 for shift 1, 2:00 for shift 2, and 4:00 for shift 3. Do not enter 1:00 for shift 1, 4:00 for shift 2, and 2:00 for shift 3. This does not apply to the shift code, which may be any character in any order.

12. Press **F3** to access <SHIFT CODE>. This allows you to enter the single–character alpha–numeric work–shift code (A-Z or 1-24). The following appears in the display screen:

ENTER ALPHANUMERIC CODE ---- ▶

13. Use the keypad to enter the single–character alpha–numeric work–shift code (A-Z or 1-24).
14. Press the **ENTER** key. The number or letter you entered appears above <SHIFT CODE> in the display screen. Frame <01 SHIFT> appears.

Insert Procedure

Complete the following steps to insert your work-shift code into a message:

1. Begin in Frame <02 CLOCK>. Refer to Figure 6-37.
2. Press **F1** to select <INSERT SHIFT>. Your work-shift code is now inserted at the current location of the cursor.
3. Repeat the *Set-up Procedure* and Step 1 of this procedure for every work-shift code you wish to enter.

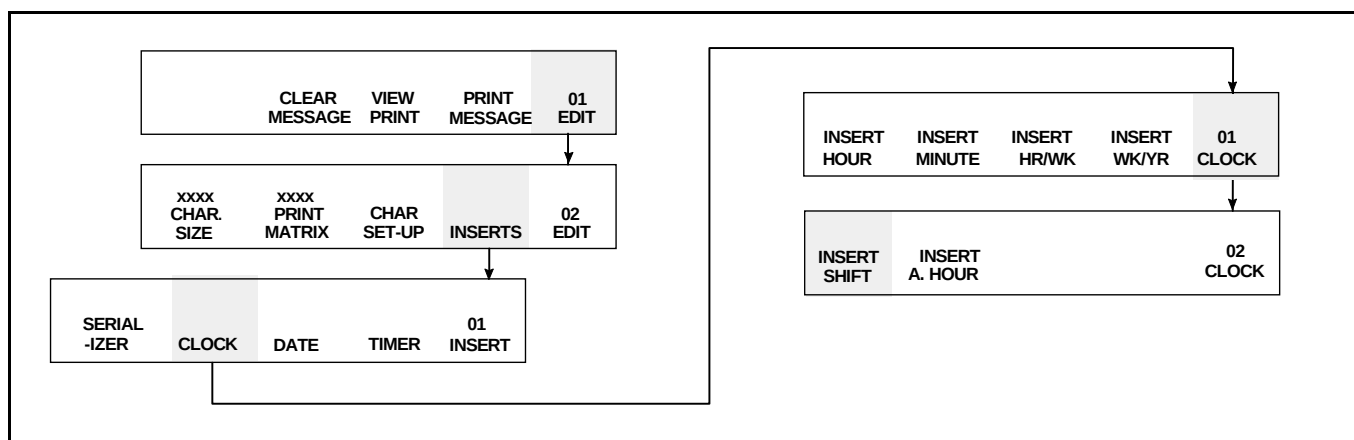


Figure 6-37. Inserting a Work-shift Code into a Message

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 is only used when the content of the original message exceeds the maximum number of characters allowed in the message (per line). This enables you to create messages that are twice as long as the specified maximum number of characters for the message (per line). Message length is 200 characters per message in single and twin-line formats and 100 characters in tri-line formats.

For Example:

The maximum number of characters (per line) for a 7 x 9 single line message is 200. If you were to include an appended message, you could create a message that has a total of 400 characters.

Procedure

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.

1. Begin in Frame <01 EDIT>. Refer to Figure 6-38.

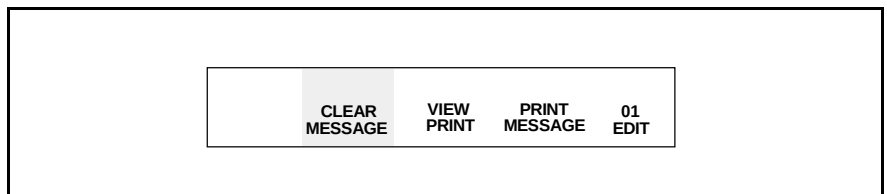


Figure 6-38. Frame <01 EDIT>

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.

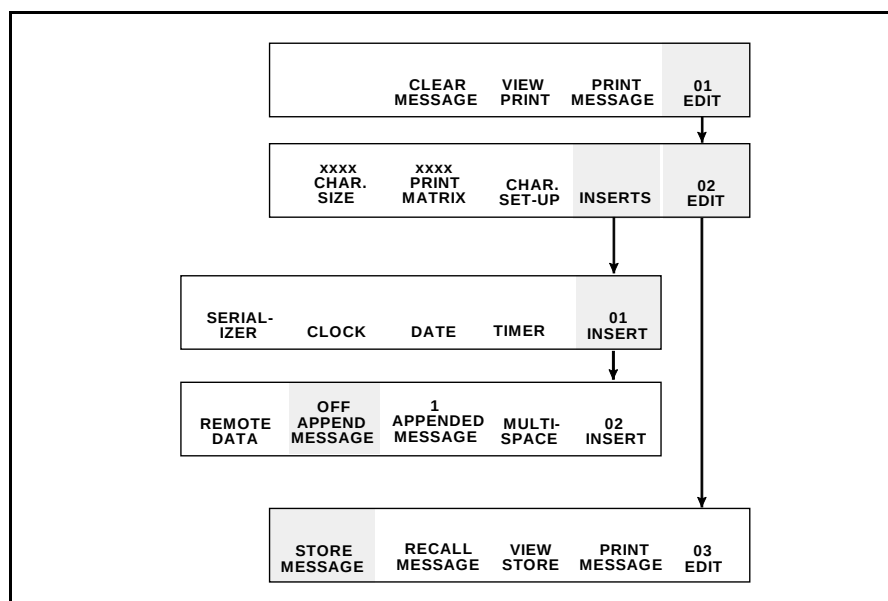


Figure 6-39. Accessing Frame <03 EDIT>

NOTE: Before creating the information that 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 6-39.
5. Press **F1** to select <STORE MESSAGE>. The following appears in the display screen:

ENTER STORE LOCATION (1-56) ---- ►

6. Use the numeric keypad to enter the location in which you want to store the appended message information. The entry must be from 1-8 (32 optional).
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.
8. Go back to Frame <01 EDIT>. Refer to Figure 6-39.

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 that 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 6-39.
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 (1-8) ---- ▶

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 from 1-8 (32 optional).
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 6-76 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.

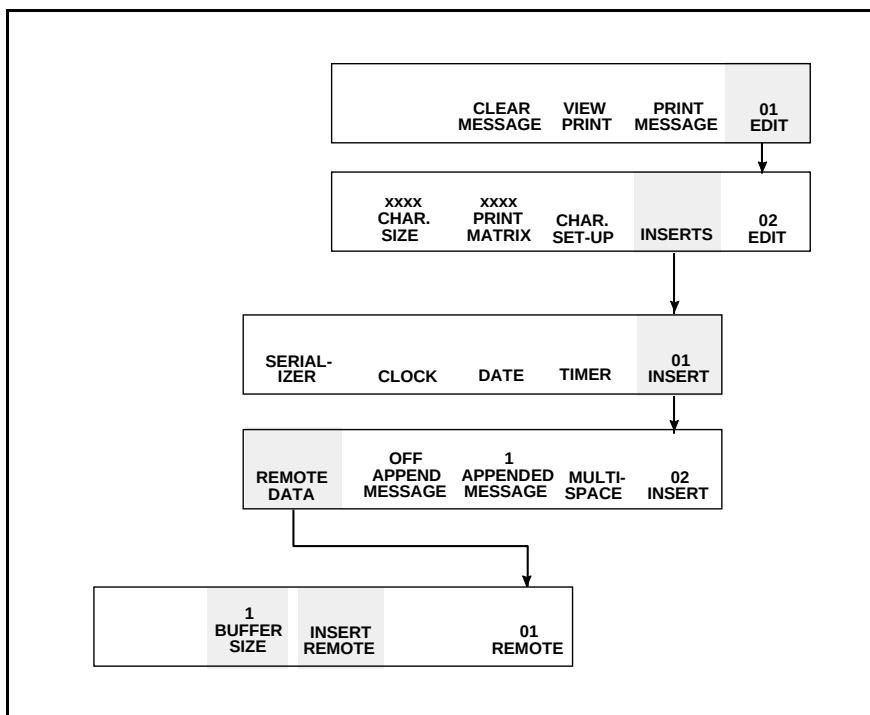


Figure 6-40. Accessing Frame <01 REMOTE>

Procedure

1. Begin in Frame <01 REMOTE>. Refer to Figure 6-40.
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 from 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 6-41.

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 6-41.

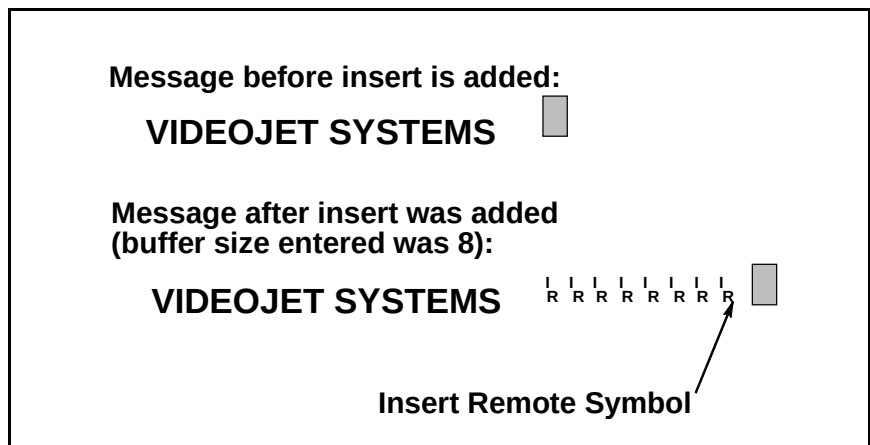


Figure 6-41. Message with a Remote Insert

Multi-Space Insert

This procedure explains how to place a single space that is equivalent to several spaces into a message. The length of the multi-space is determined by you.

A multi-space insert is better to use than manually adding multiple spaces (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 multi-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) by pressing the SPACE key twelve times, it would take up 12 character spaces in the message.

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

Procedure

1. Begin in Frame <01 M-SPACE>. Refer to Figure 6-42.
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 from 1-255 characters.
5. Press the **ENTER** key. Frame <01 M-SPACE> reappears in the display screen. Refer to Figure 6-42.

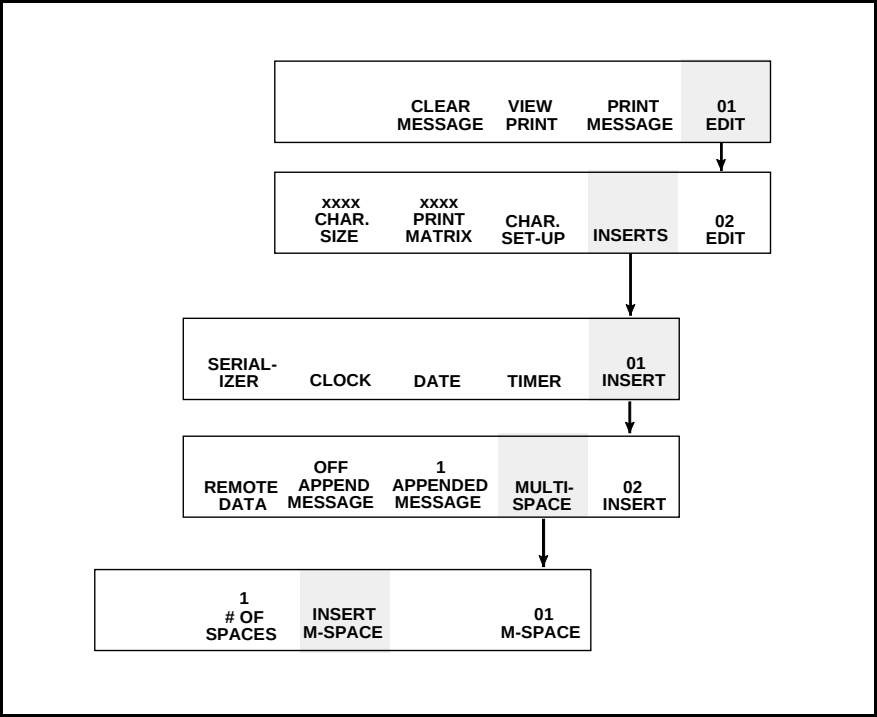


Figure 6-42. Accessing Frame <01 M-SPACE>

6. Press **F3** to select <INSERT M-SPACE>. The insert will appear in the message as a “blank space symbol.” Refer to Figure 6-43.

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 every time you insert a multi-space character. Refer to Figure 6-43.

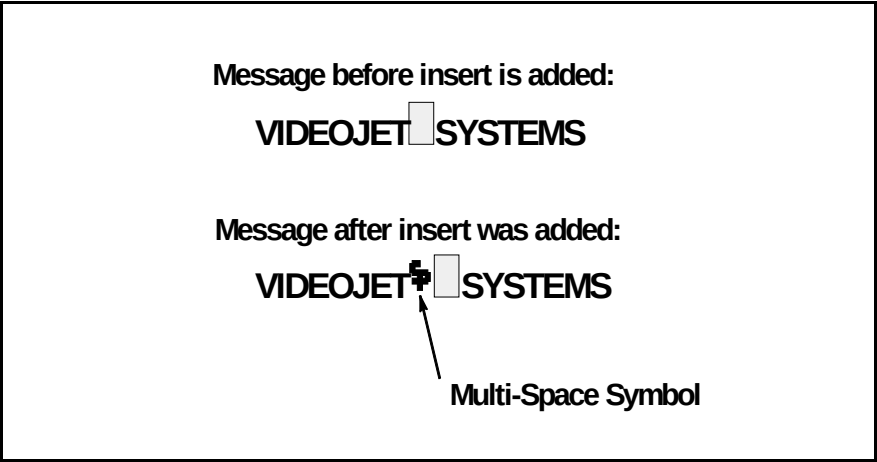


Figure 6-43. Message with a Multi-Space Insert

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. If you do not create a custom character, the default is equivalent to a boxmark. Refer to *Chapter 7, Build a Custom Character* on page 7-18 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 6-44.
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 from 0–9.

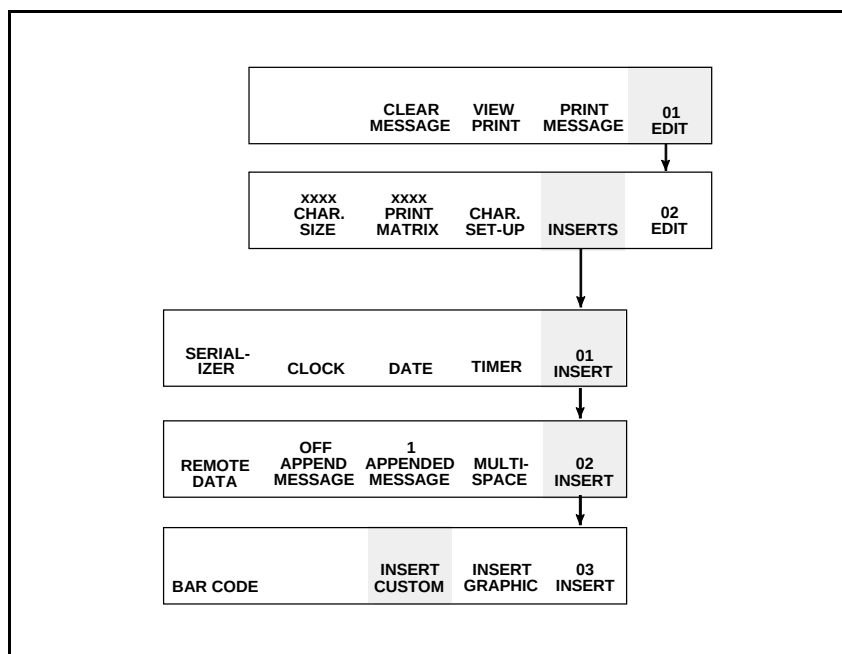


Figure 6-44. Accessing Frame <03 INSERT>

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 6-45.

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 6-45.

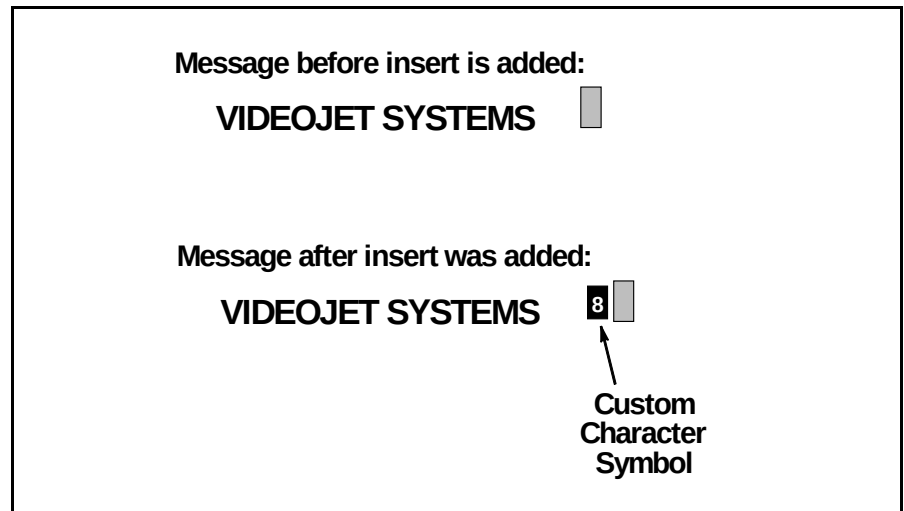


Figure 6-45. Message with a Custom Character Insert

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 6-46.
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 that you are adding the graphic insert into has the same print matrix as the graphic itself.*

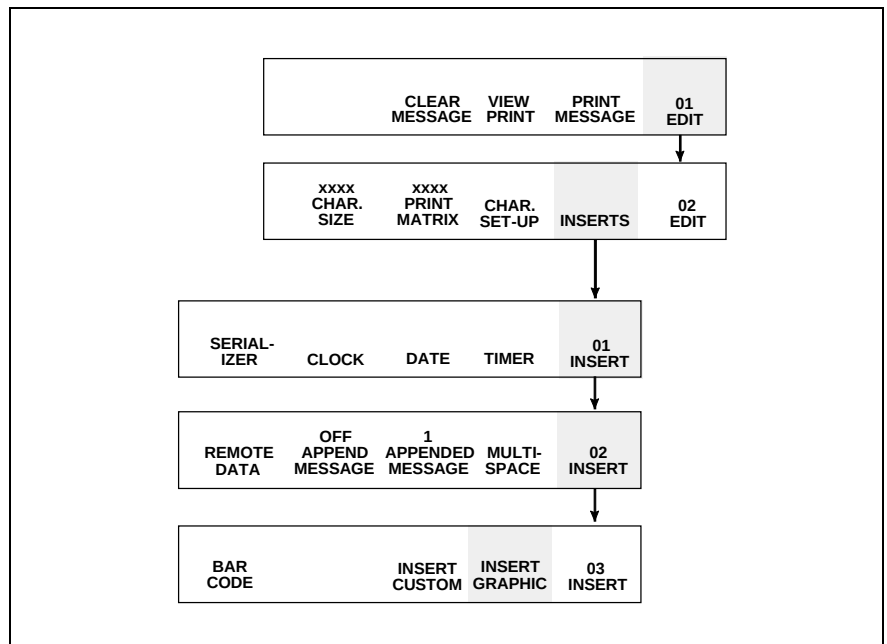


Figure 6-46. Accessing Frame <03 INSERT>

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 6-47. The procedure to add the graphic insert is completed.
 - If YES, the following appears in the display screen:

ENTER GRAPHIC CHARACTER # (1-(8 or 4) ---- ▶

4. Use the numeric keypad to enter the storage location of the graphic. The entry must be between 1–128 for a 10x16 matrix, and 1–4 for a 16x24 matrix.
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 6-47.

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”).

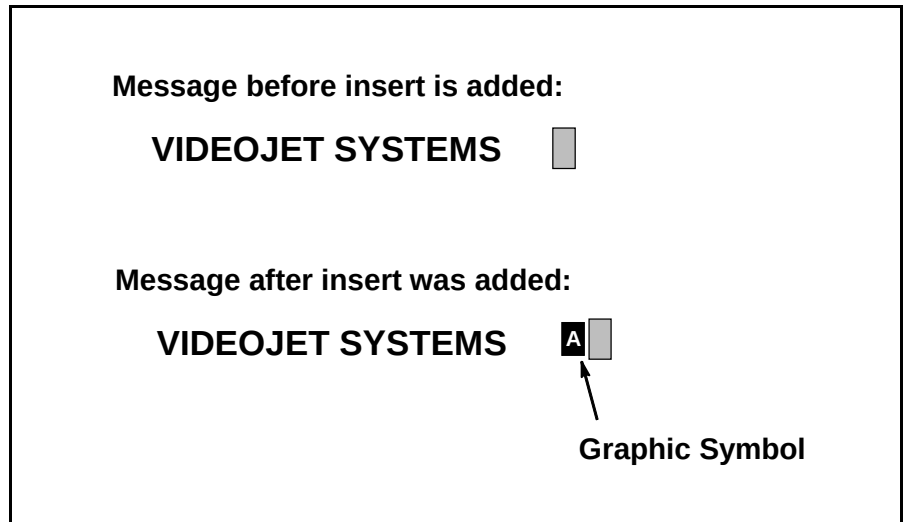


Figure 6-47. Message with a Graphic Insert

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 an even number of characters is required).
EAN-8	Can be used for numeric characters only.
EAN-13	Can be used for numeric characters only.
UPC-A	Can be used for numeric characters only.
Code 128B	Can be used for both alphabetic and numeric characters.
Code 128C	Can be used for numeric characters only.

Table 6-14. Bar Code Types

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

Procedure for 3 of 9 or 2 of 5I Bar Codes

1. Begin in Frame <01 BARCODE>. Refer to Figure 6-48.
2. Use the arrow keys to move the cursor to the location in the message where you want the insert to appear.

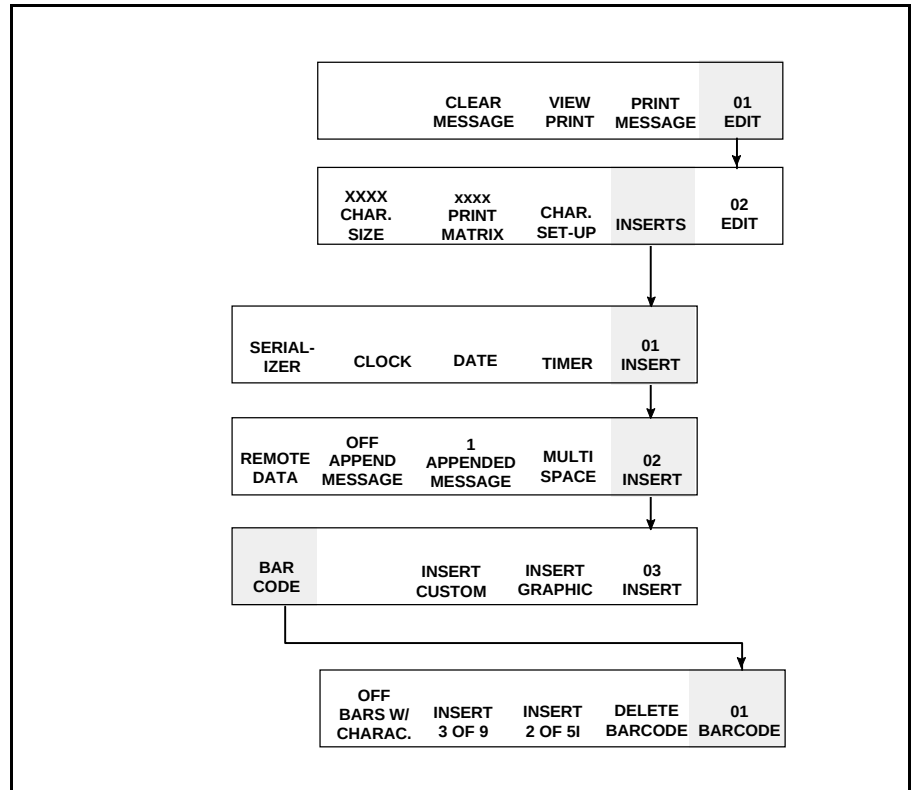


Figure 6-48. Accessing Frame <01 BARCODE>

NOTE: If you have selected a 16 x 24 print matrix, you have the option of printing human readable characters below the bar code. Refer to Figure 6-54. To select this option, press F1 to select <BARS W/ CHARAC.> while in Frame <01 BARCODE>. Refer to Figure 6-48. If this option is selected the code will be 16 drops high (instead of 24 drops high). This option can be used only if the 16 x 24 matrix has been selected.

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 6-49
 - 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 6-49.

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

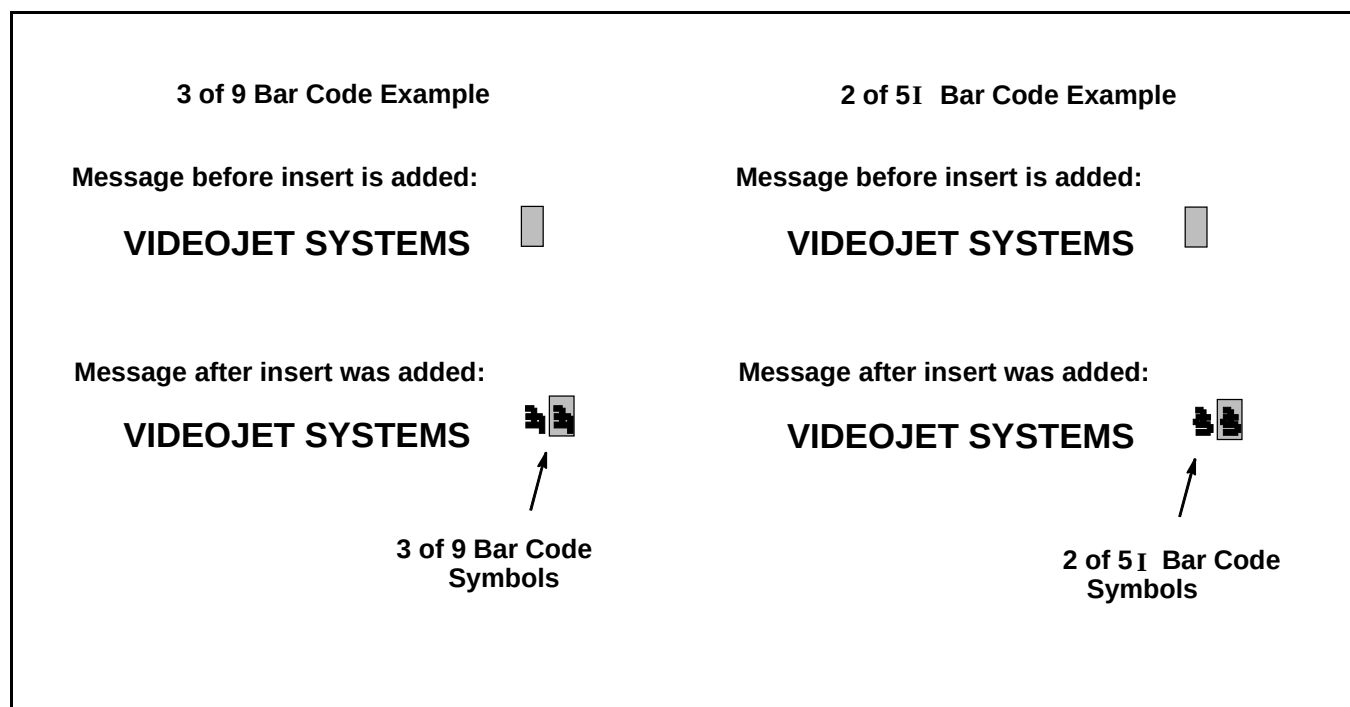


Figure 6-49. Messages with Bar Code Inserts

4. Use the appropriate keypads on the keyboard to enter the information that 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 use only use the numeric keypad.*

NOTE: *The 2 of 5I bar code requires an even number of digits entered. 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).

Procedure for EAN-8 and EAN-13 Bar Codes

1. Begin in Frame <03 INSERT>. Refer to Figure 6-50.
2. Press **F1** to select <BAR CODE>. Then press **F5**. Frame <02 BARCODE> appears in the display. Refer to Figure 6-50.

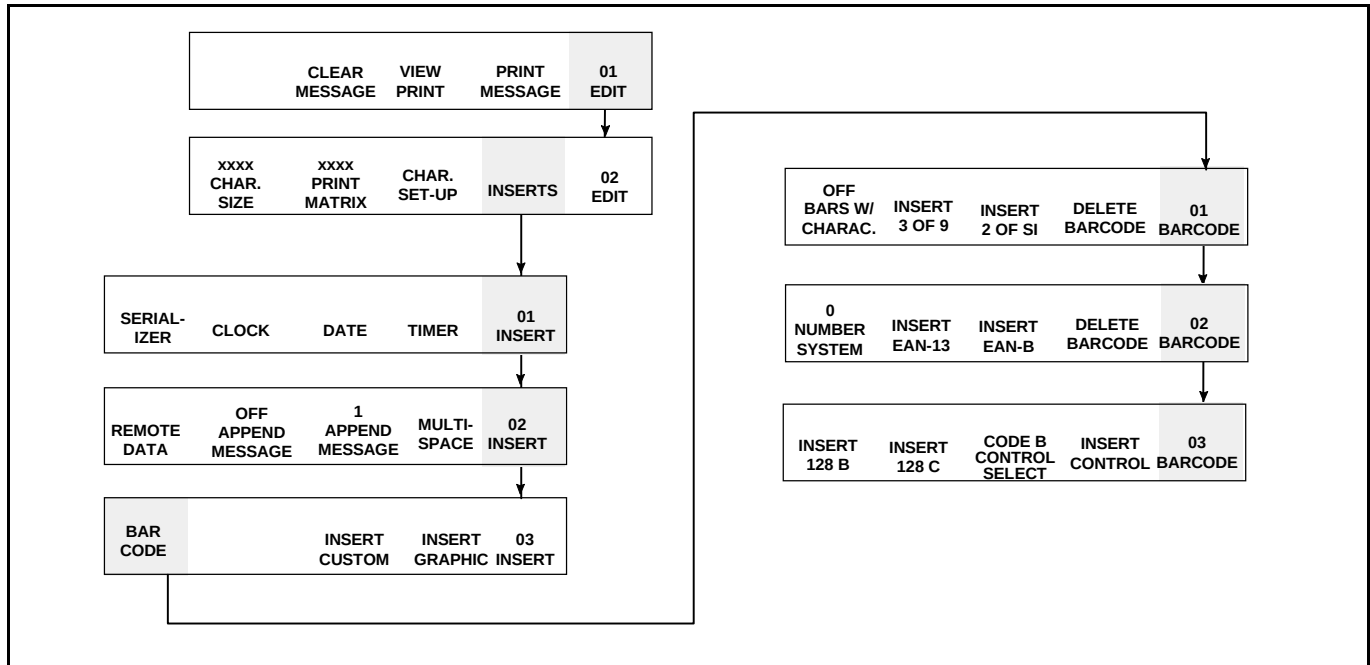


Figure 6-50. Accessing Frame <02 BARCODE>

3. Use the arrow keys to move the cursor to the location in the message where you want the bar code insert to appear.
4. You can now choose to add a bar code into the message:
 - To insert an EAN-13 bar code, press **F2** to select <INSERT EAN-13>. Three EAN-13 bar code symbols will appear in the message. Refer to Figure 6-51.
 - To insert an EAN-8 bar code, press **F3** to select <INSERT EAN-8>. Three EAN-8 bar code symbols will appear in the message. Refer to Figure 6-51.

NOTE: If you are inserting an EAN-13 bar code, the <NUMBER SYSTEM> option allows you to select which EAN number system to use. Press **F1** and enter a selection from 0-9. The <NUMBER SYSTEM> option only applies to the EAN-13 bar code.

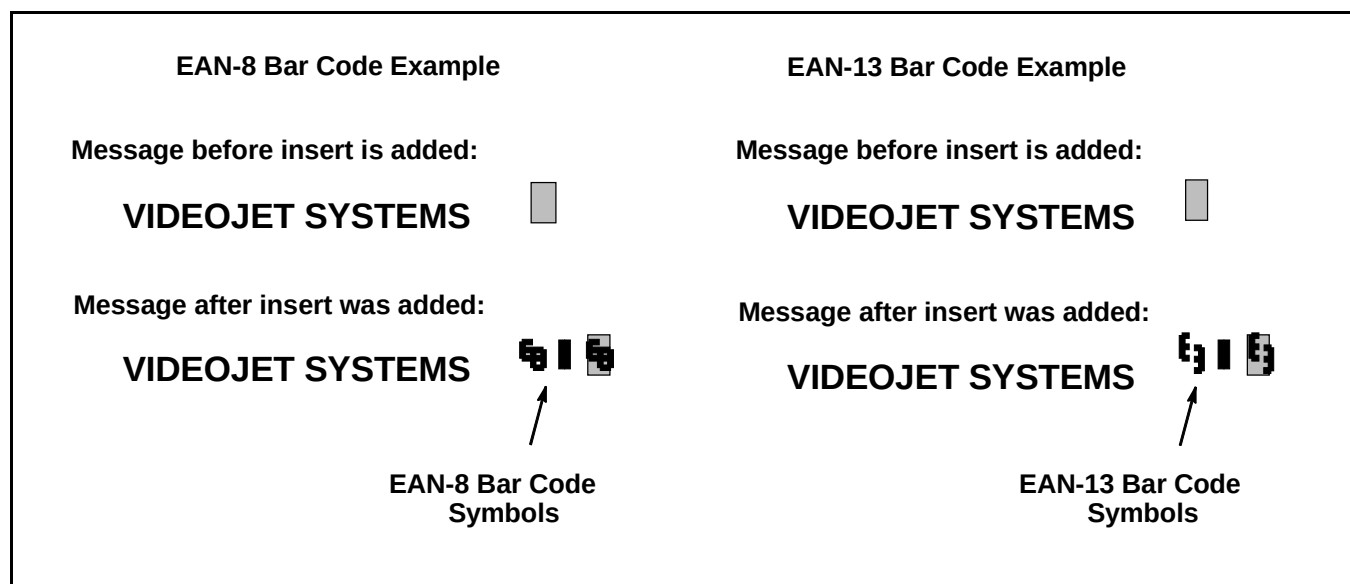


Figure 6-51. Messages with Bar Code Inserts

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

5. 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 bar code insert).
 - If you have selected an EAN-8 or EAN-13 bar code, you can only use the numeric keypad. These codes require that legitimate digits are entered (for example, you must use 8 digits for an EAN-8, and you must use 12 digits (not including the system number) for an EAN 13).
 - When inserting an EAN-8 bar code, you must enter the first four digits of the bar code between the first two bar code symbols, and the second four digits between the last two bar code symbols.
 - When inserting an EAN-13 bar code, you must enter the first six digits of the bar code between the first two bar code symbols, and the second six digits between the last two bar code symbols.

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).

Procedure for UPC-A

1. Begin in Frame <03 INSERT>. Refer to Figure 6-50.
2. Press **F1** to select <BAR CODE>. Then press **F5**. Frame <02 BARCODE> appears in the display. Refer to Figure 6-52.

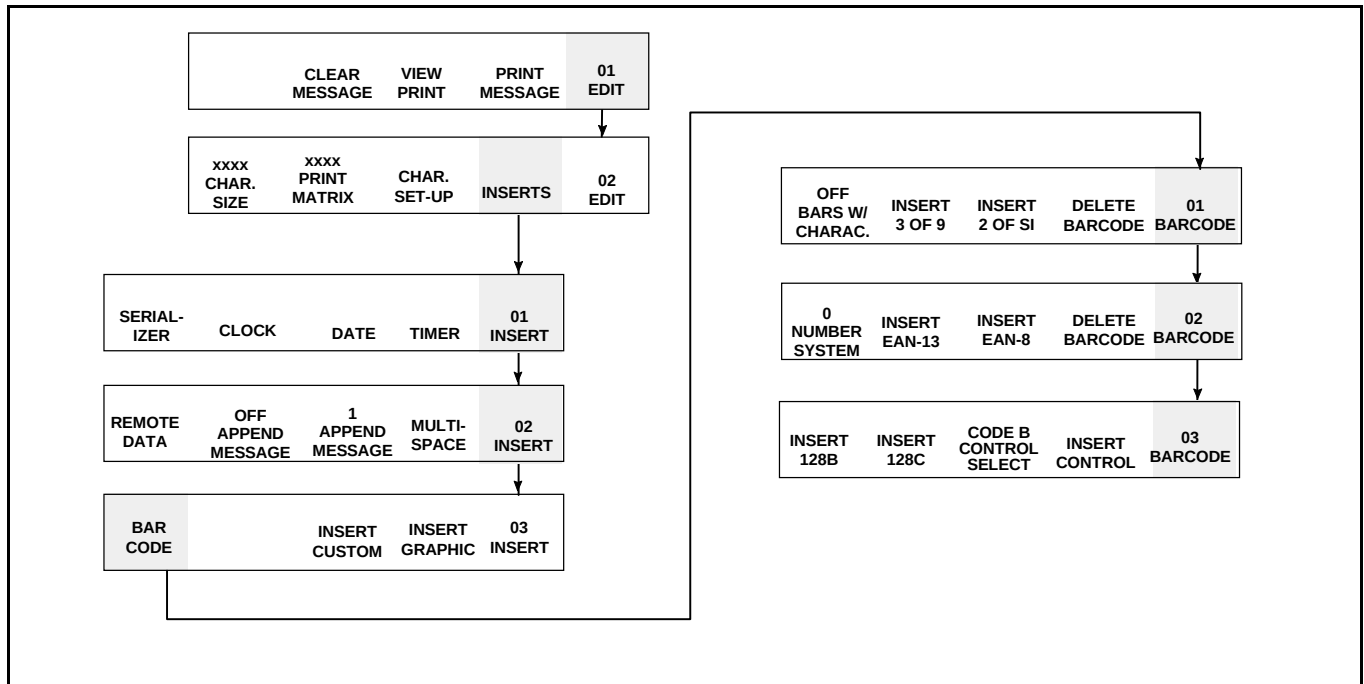


Figure 6-52. Accessing Frame <02 BARCODE>

3. Use the arrow keys to move the cursor to the location in the message where you want the bar code insert to appear.
4. You can now choose to add a bar code into the message.

NOTE: UPC-A is a subset of EAN-13. Press F2 to select <INSERT EAN-13>. Three EAN bar code symbols will appear in the message.

NOTE: The <NUMBER SYSTEM> option allows you to select which number system to use. Your entry must be "0," and the first digit of the left field must also be "0" when creating a UPC-A code.

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

5. 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 bar code insert).

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

NOTE: When inserting an UPC-A bar code, you must enter the first six digits of the bar code between the first two bar code symbols, and the second six digits between the last two bar code symbols.

NOTE: EAN-8, EAN-13, and UPC-A are not random number types of codes. While the printer will allow random numeric entries with these codes, and will print these entries, a bar code scanner will not read the code. This is because the last digit entered must be a "check digit," based on the other digits.

Procedure for Code 128B and 128C Bar Codes

1. Begin in Frame <03 INSERT>. Refer to Figure 6-50.
2. Press **F1** to select <BAR CODE>. Then press **F5** twice. Frame <03 BARCODE> appears in the display. Refer to Figure 6-53.

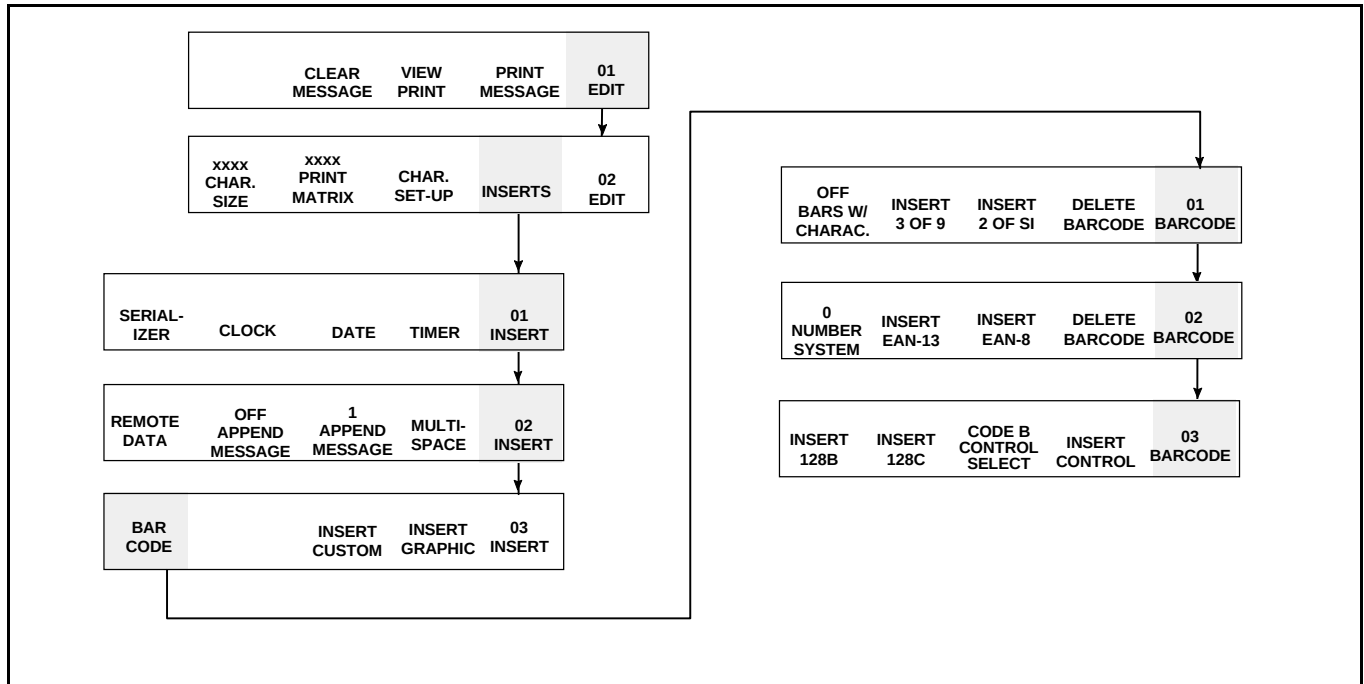


Figure 6-53. Accessing Frame <03 BARCODE>

3. Use the arrow keys to move the cursor to the location in the message where you want the bar code insert to appear.
4. You can now choose to add a bar code into the message:
 - To insert a Code 128B bar code, press **F1** to select <INSERT 128B>. Two 128B bar code symbols will appear in the message. Refer to Figure 6-55.
 - To insert a Code 128C bar code, press **F2** to select <INSERT 128C>. Two 128C bar code symbols will appear in the message. Refer to Figure 6-55.



Figure 6-54. Message with Code 128B and 128C

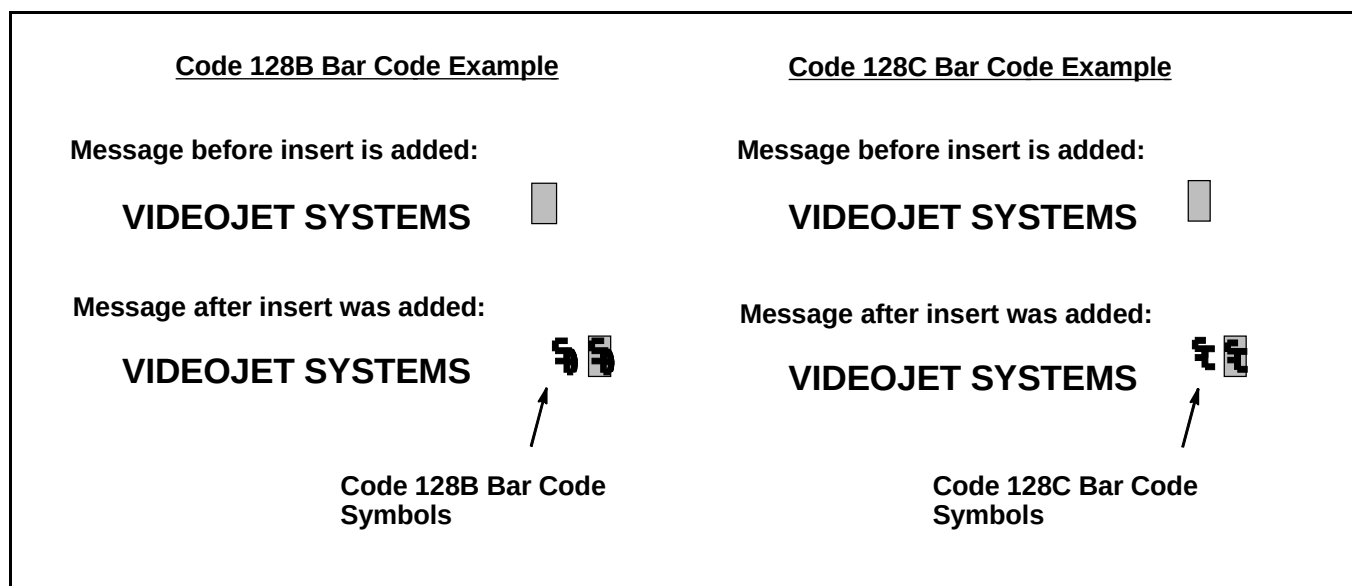


Figure 6-55. Messages with Bar Code Inserts

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

5. Use the appropriate keypads on the keyboard to enter the information that 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 bar code insert).



Control Select, Insert Control, and Function Characters

When you enter a Code 128 bar code, you may use the <CONTROL SELECT> option to toggle between 128B and 128C. This is done by pressing **F3** until the desired selection is made. Press **F4** to activate <INSERT CONTROL> to enter your selection.

For example, when in 128B, use **F3** <CONTROL SELECT> to toggle to 128C. Then press **F4** <INSERT CONTROL> to enter this selection.

For example, when in 128B, use **F3** <CONTROL SELECT> to toggle to 128C. Then press **F4** <INSERT CONTROL> to enter this selection.

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

- Only FNC1 may be inserted into a Code 128C bar code.
- All four function codes may be inserted into a Code 128B bar code.

<CONTROL SELECT> selects the function character. <INSERT CONTROL> inserts the character into the message.

- If you have selected a 128B bar code, you can use both the alpha and numeric keypads
- If you have selected a 128C bar code, you can only use the numeric keypad.

NOTE: You may only use an even number of digits with a 128C bar code.

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).

Removing an Insert from the Message

Introduction

This procedure explains how to delete an insert from a message. The procedure to remove an insert from the message is identical for all types of inserts.

Removing an Insert

This procedure explains how to remove an insert from the message.

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.

Step #1: **MANUFACTURED ON**
 01 23 94

Step #2: **MANUFACTURED ON**
 01 94

Figure 6-56. Removing an Insert - Example

Loading a Message into the Printer

Introduction

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 6-57.

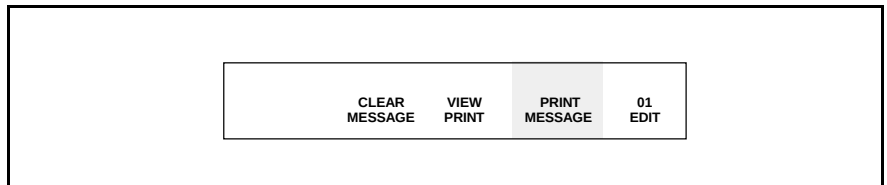


Figure 6-57. Frame <01 EDIT>

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 **F4** 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
- Recall a Stored Message turn to page 6-78
- View Stored Messages turn to page 6-79

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 224 storage locations in the printer.

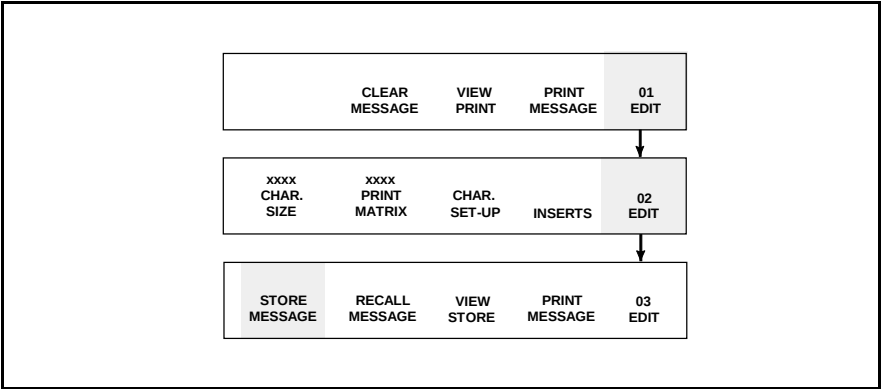


Figure 6-58. Accessing Frame <03 EDIT>

Procedure

1. Begin in Frame <03 EDIT>. Refer to Figure 6-58.
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 (1-56)* ---- ▶

4. Use the numeric keypad to enter the location in which you want to store the message. The entry must be from 1–56 (*up to 224 with optional software).
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 6-79 for further information.

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 6-79 for further information.

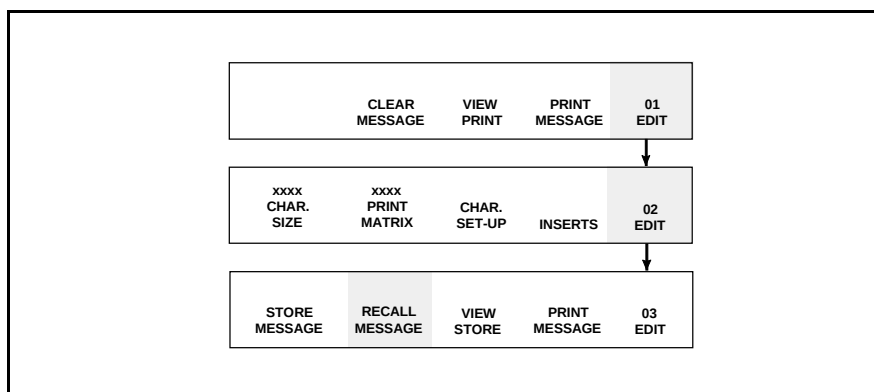


Figure 6-59. Accessing Frame <03 EDIT>

Procedure

1. Begin in Frame <03 EDIT>. Refer to Figure 6-59.
2. Press **F2** to select <RECALL MESSAGE>. The following appears in the display screen:

ENTER RECALL LOCATION (1-56)*---- ►

3. Use the numeric keypad to enter the storage location you want to recall. The entry must be between 1–56. (*up to 224 with optional software).
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 6-76 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 56 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 6-78.

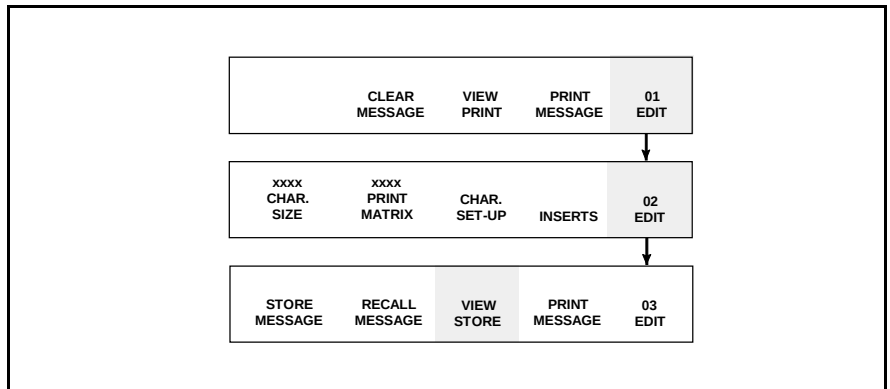


Figure 6-60. Accessing Frame <03 EDIT>

Procedure

1. Begin in Frame <03 EDIT>. Refer to Figure 6-60.
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 6-15. Changing Values Using the Arrow Keys

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

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 6-81
- Delay Printing of a Message turn to page 6-82

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 3-14 and *PRINT Key* on page 3-15 for further information about these keys.

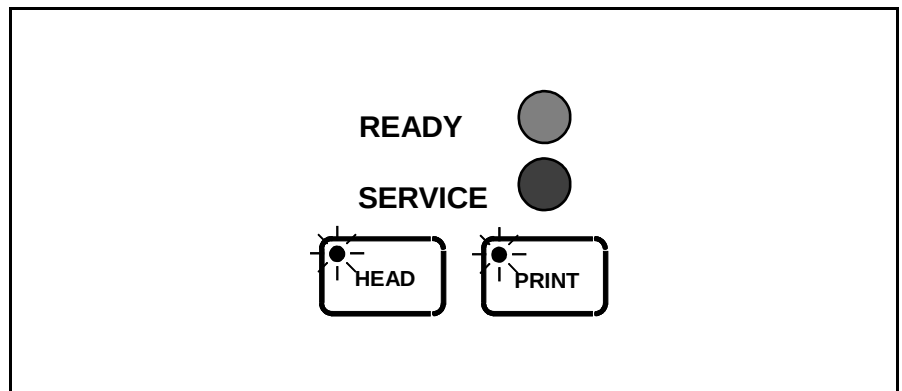


Figure 6-61. Keyboard

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 the message that appears in the screen been loaded into the printer?
 - If YES, continue to the next step.
 - If NO, go to Frame <01 EDIT>. Refer to Figure 6-62. Press **F4** to select <PRINT MESSAGE>.

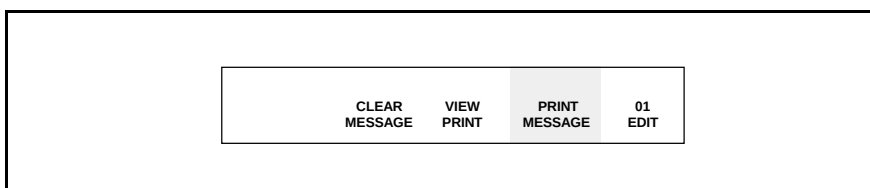


Figure 6-62. Frame <01 EDIT>

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.

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 from 0–7500 for inches and from 0–20,000 for millimeters.

Refer to [Figure 7-18](#) in *Chapter 7, System Set-up*, for information on how to set the print delay.

NOTE: In order to set the print delay, measure the distance from the product detector to the printhead (x). Next, measure the distance from the leading edge of the product to the point on the product where you want to start printing (y). Add these together (x+y). This is the delay value you must enter. Refer to Figure 6-63. Encoder values must be properly set in order for the delay to work properly.

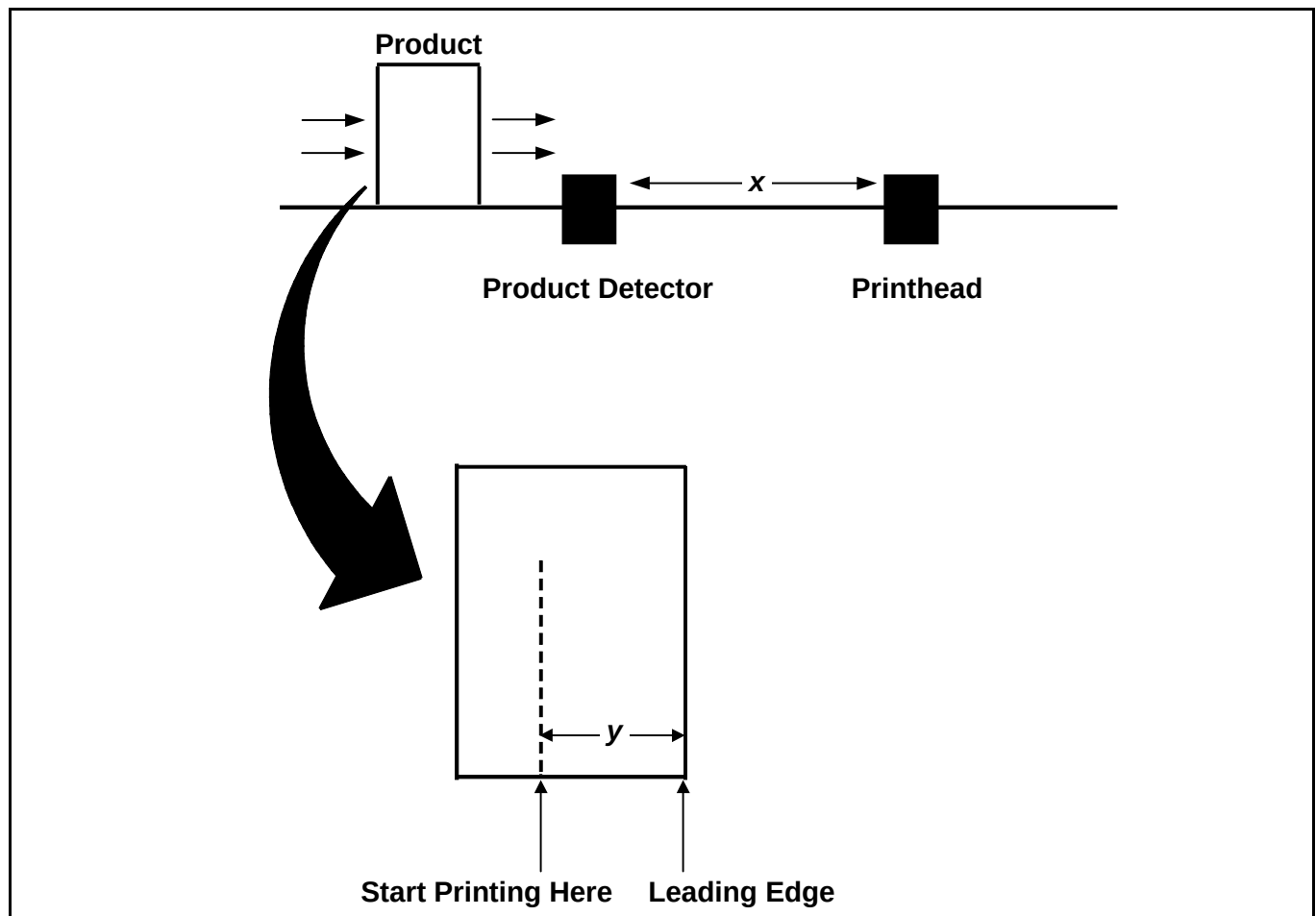


Figure 6-63. Delaying the Printing of a Message Example

7

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 a chapter-level Table of Contents.

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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.

- View and Reset the Print Count turn to page 7-5
- View and Reset the Product Count.....turn to page 7-6
- Select the Method of Product Speed Matching.....turn to page 7-7
- Set the Internal Clock turn to page 7-9
- Build a Custom Character.....turn to page 7-19
- Enable or Disable the Ink Low Alert Light Option turn to page 7-22
- Set the Baud Rate turn to page 7-23
- Set the Remote Mode for External Message Receiving.....turn to page 7-24
- Set Auto Repeat.....turn to page 7-25
- Monitor Flow Time Settings.....turn to page 7-27
- Set Print Delay.....turn to page 7-28
- Set Print Set-up Parameters turn to page 7-30

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.

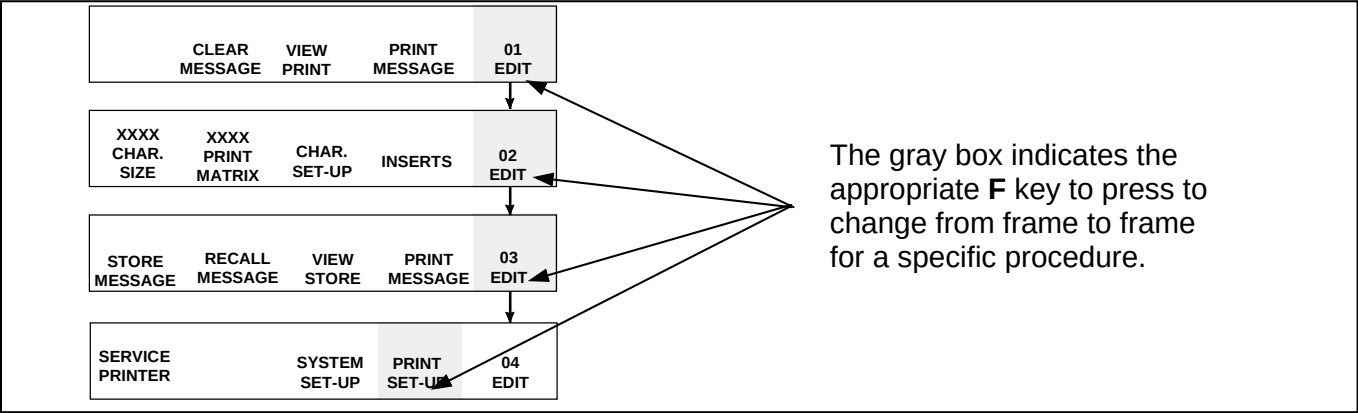


Figure 7-1. Software Illustration Example

**xxxx - indicates differing values depending on your type of printer.

View and Reset the 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>.

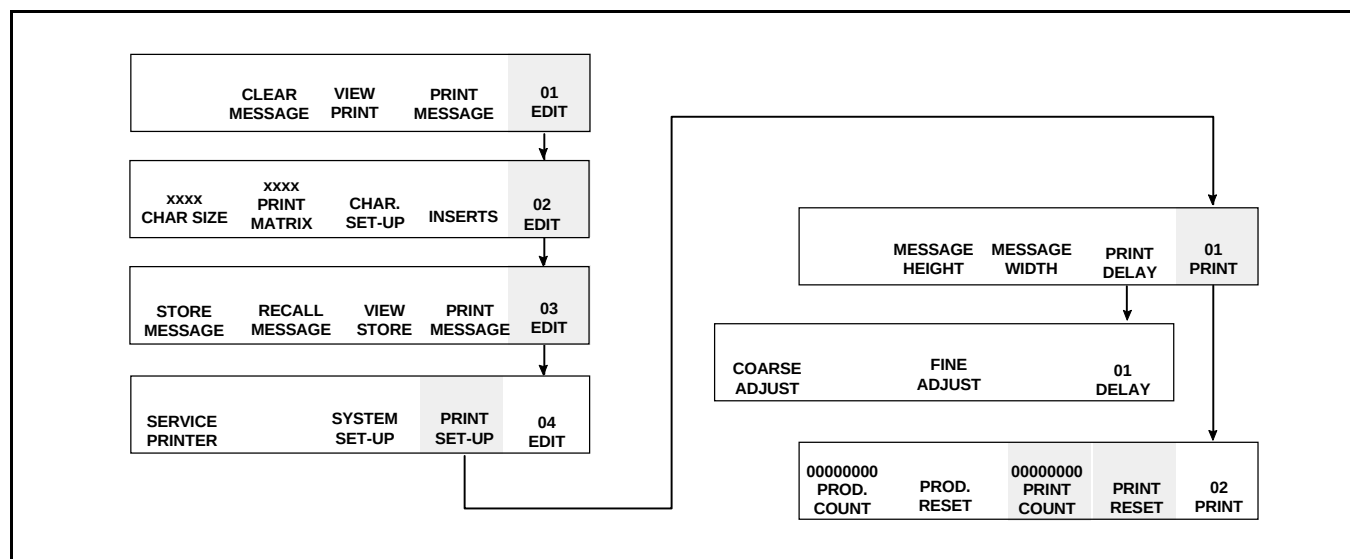


Figure 7-2. Accessing Frames <PRINT RESET> and <PRINT COUNT>

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.

View and Reset the 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>.

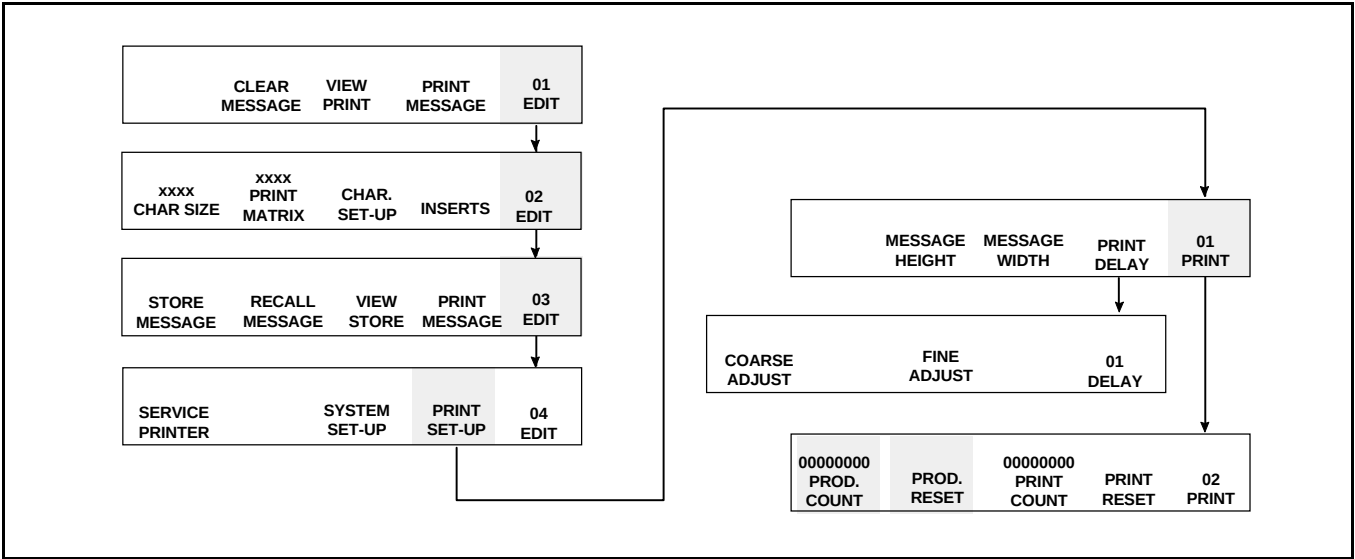


Figure 7-3. Accessing Frame <02 PRINT>

View the 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 current value above <PROD. COUNT>.

Reset the Current Product Count

Procedure

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

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 four encoding settings available: Internal, Direct, Reduced, 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 with conveyor	<EXT> External<REDUCED> External
	<DIRECT> External
varies and an external encoder cannot be used	<AUTO> Automatic

Table 7-1. Selecting the Appropriate Encoding Type

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

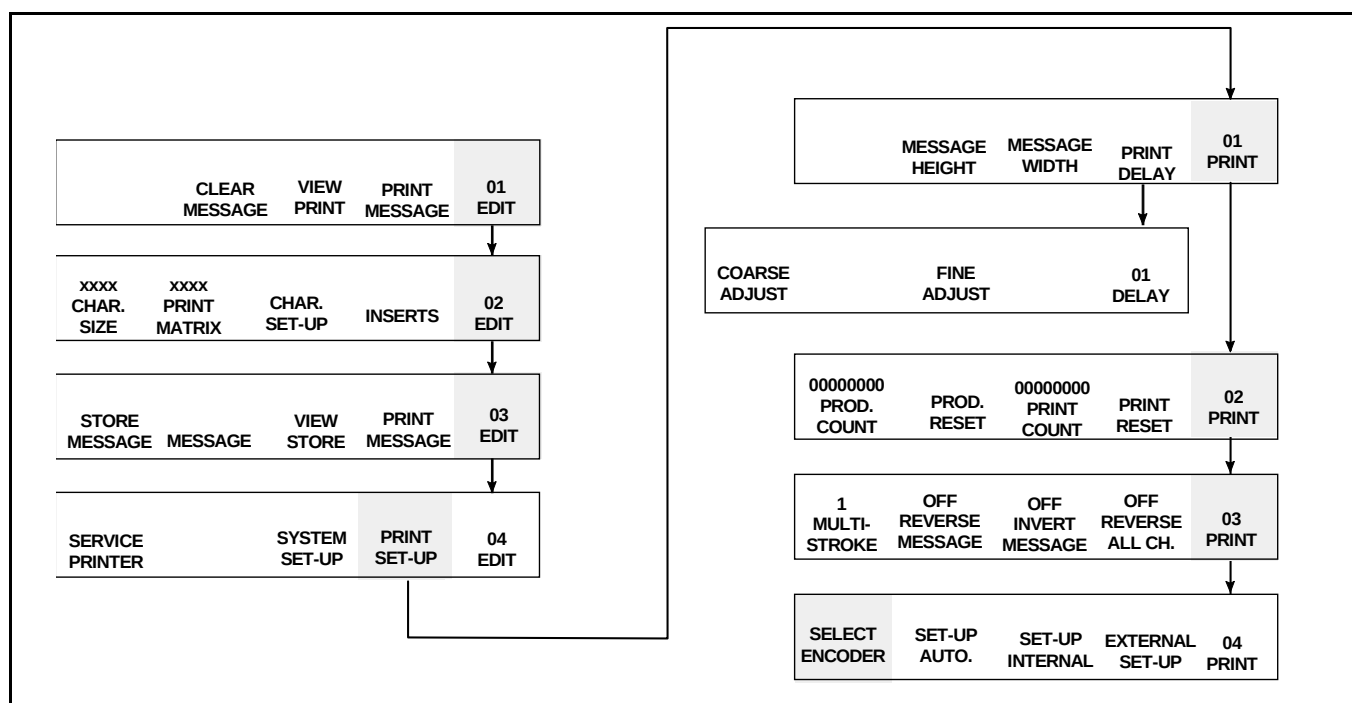


Figure 7-4. Accessing Frame <04 PRINT>

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., RED., and DIR)
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 LINE SPEED IN FEET/MINUTE (5—1111) - - - ▶
<AUTO>	<SET-UP AUTO> press (F2)	ENTER DETECT AREA IN TENTHS OF INCHES (1—130) - - - ▶
<EXT><REDUCED>	<SET-UP EXTERNAL> press (F4)	ENTER ENCODER PPI (100—1200)- - - ENTER REDUCTION FACTOR (2—9999) - ▶
<DIRECT>	<SET-UP EXTERNAL> press F4	ENTER ENCODER PPI (100—1200) --- ▶

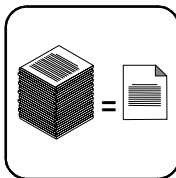
Table 7-2. Setting Appropriate Encoder Values

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.

6. 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 11/32 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 7-10
- Set the System Date.....turn to page 7-11
- Set the Hour-of-the-Week turn to page 7-13
- Set the Week-of-the-Year turn to page 7-15
- Set the Programmable Date Roll-over turn to page 7-17

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>.

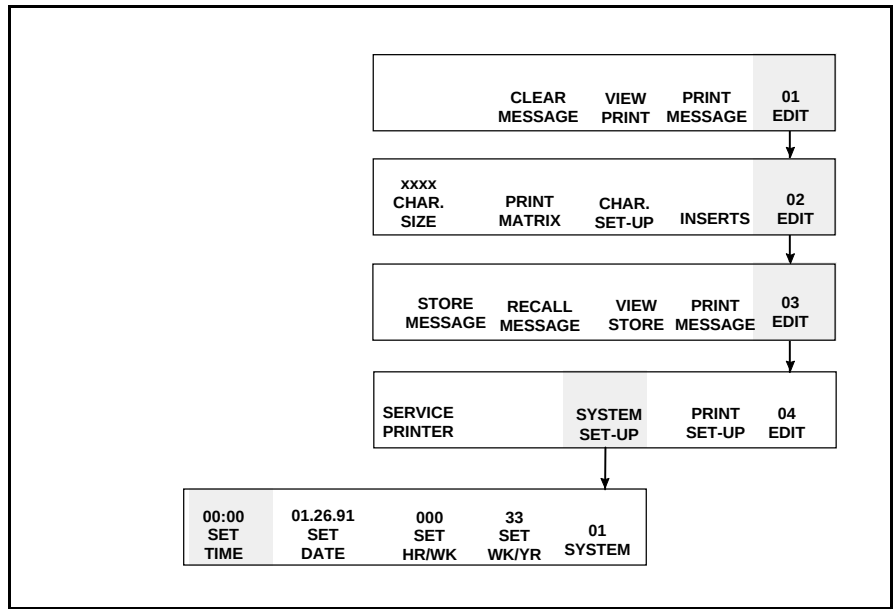


Figure 7-5. Accessing Frame <01 SYSTEM>

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 AM, enter 0945; 09 is the hour and 45 is the minute. If the time is 4:02 PM, enter 1602; 16 is the hour (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 6-36 in Chapter 6, *Creating and Printing Messages*, 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 7-13 for directions to set the current week-of-the-year.

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

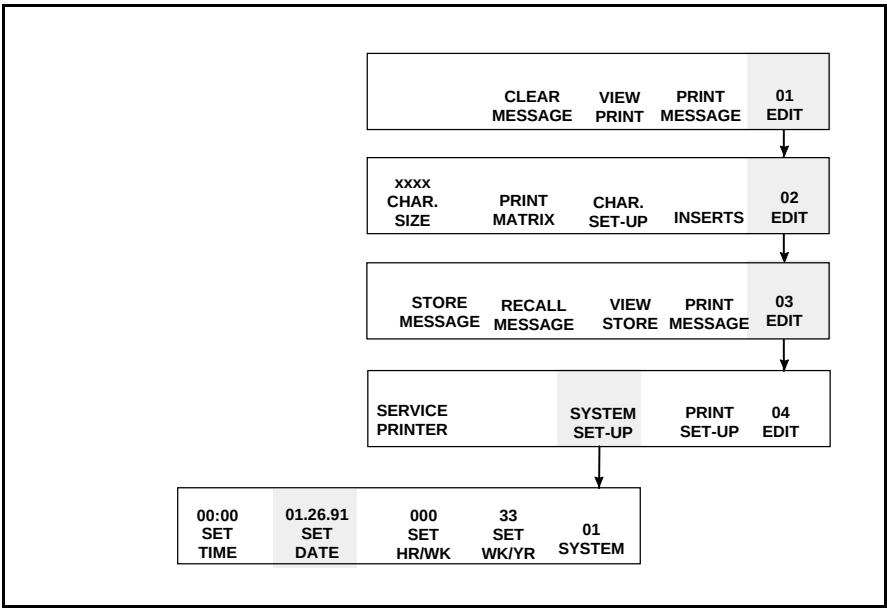


Figure 7-6. Accessing Frame <01 SYSTEM>

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 MMDDYY----- ▶

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

For Example:

If the date is February 9, 1999, enter 020999; 02 is the month, 09 is the day of the month and 99 is the year.

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

Refer to page 6-36 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.

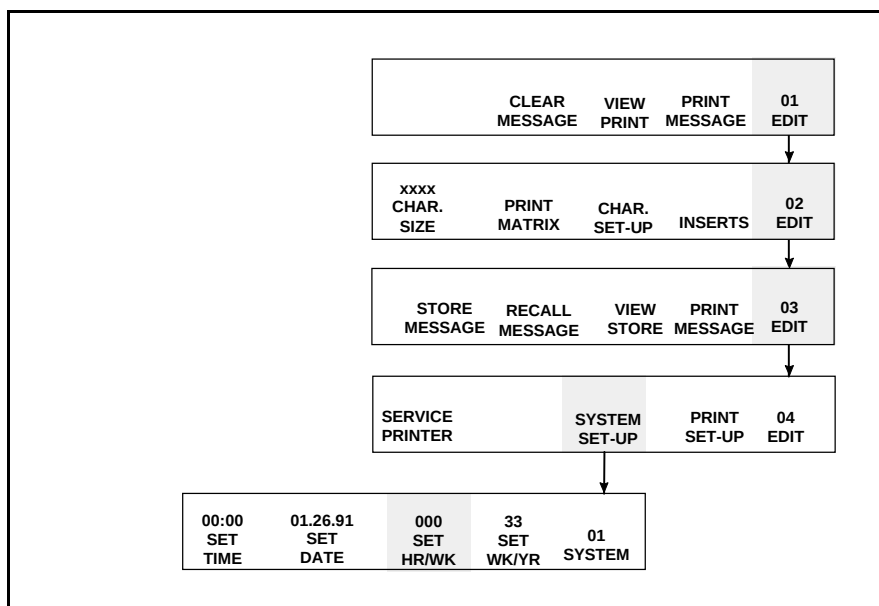


Figure 7-7. Accessing Frame <01 SYSTEM>

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 from 1-168.

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 PM, 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 6-33 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 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.

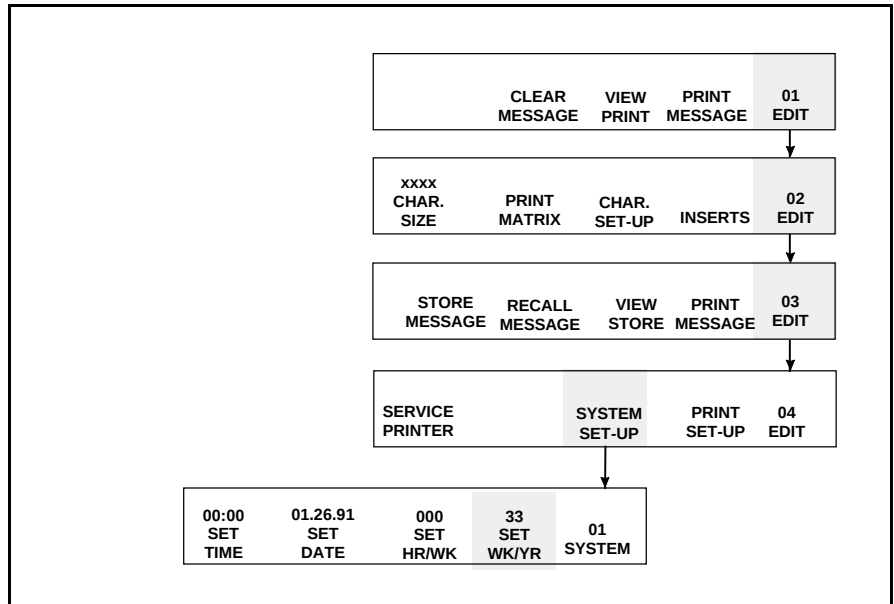


Figure 7-8. Accessing Frame <01 WK/YR>

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 7-11 and follow the procedure to set the system date. After you complete the procedure, return to page 7-17 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 MMDD ----- ▶

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

For Example:

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

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

5. Press the **ENTER** key. The week of the year appears above <WEEK OF YEAR> in the display screen.
6. Press the **ENTER** key again to return to Frame <01 SYSTEM>.

Refer to page 6-34 in *Chapter 6, Creating and Printing Messages* for the procedure to insert the current week-of-the-year into a message.

Set the Programmable Date Roll-over

The programmable date roll-over feature allows you to program the date to advance at a time other than midnight (the default value). The printer will then update its date to the next day when the system clock time reaches that day-roll time, instead of at midnight. All day functions, including expiration date, will roll-over at the time set-up by this function.

Set-up Procedure

Complete the following steps to set-up the programmable date roll-over:

1. Begin in Frame <03 SYSTEM>. Refer to Figure 7-9.
 2. Press **F2** to select <SET DAY-ROLL>. The following appears in the display screen:
- ENTER DATE ROLL TIME (0-2359)---- ▶**
3. Use the numeric keypad to enter the time for the date roll-over to start: two digits for the hour and two digits for the minutes.
 4. Press the **ENTER** key. The time the date will roll-over appears above <SET DAY-ROLL> in the display screen.
 5. Press the **ENTER** key again to return to Frame <01 SYSTEM>.

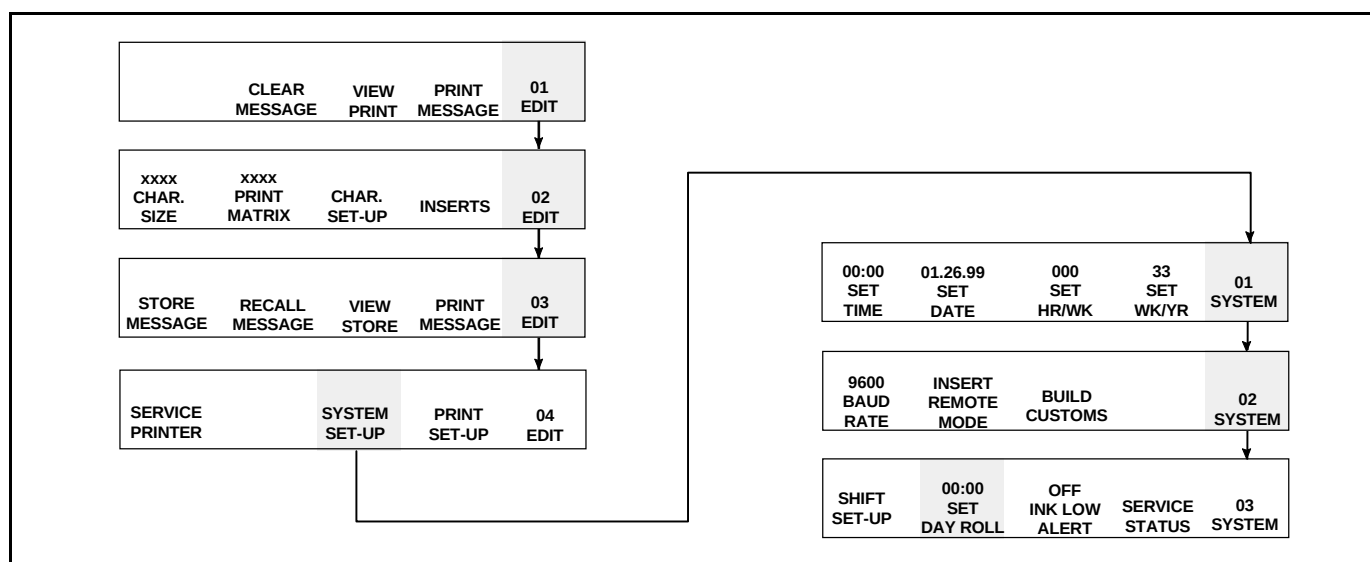


Figure 7-9. Setting the Programmable Date Rollover

Set the Printer for U.S. Daylight Savings Time

This procedure shows you how to set the printer to automatically advance or retard the system clock by one hour at the end or beginning of United States Daylight Savings Time.

NOTE: This feature is not available if using 24-hour time, and is only available on U.S. versions of the printer.

Set-up Procedure

Complete the following steps to set the printer to automatically account for Daylight Savings Time:

1. Begin in Frame <04 SYSTEM>. Refer to Figure 7-11.
2. Press **F3** to access <DAYLIGHT SAVINGS>. The word “OFF” above <DAYLIGHT SAVINGS> will change to “ON.”
3. Press **ENTER**. The printer is now set to automatically compensate for Daylight Savings Time.

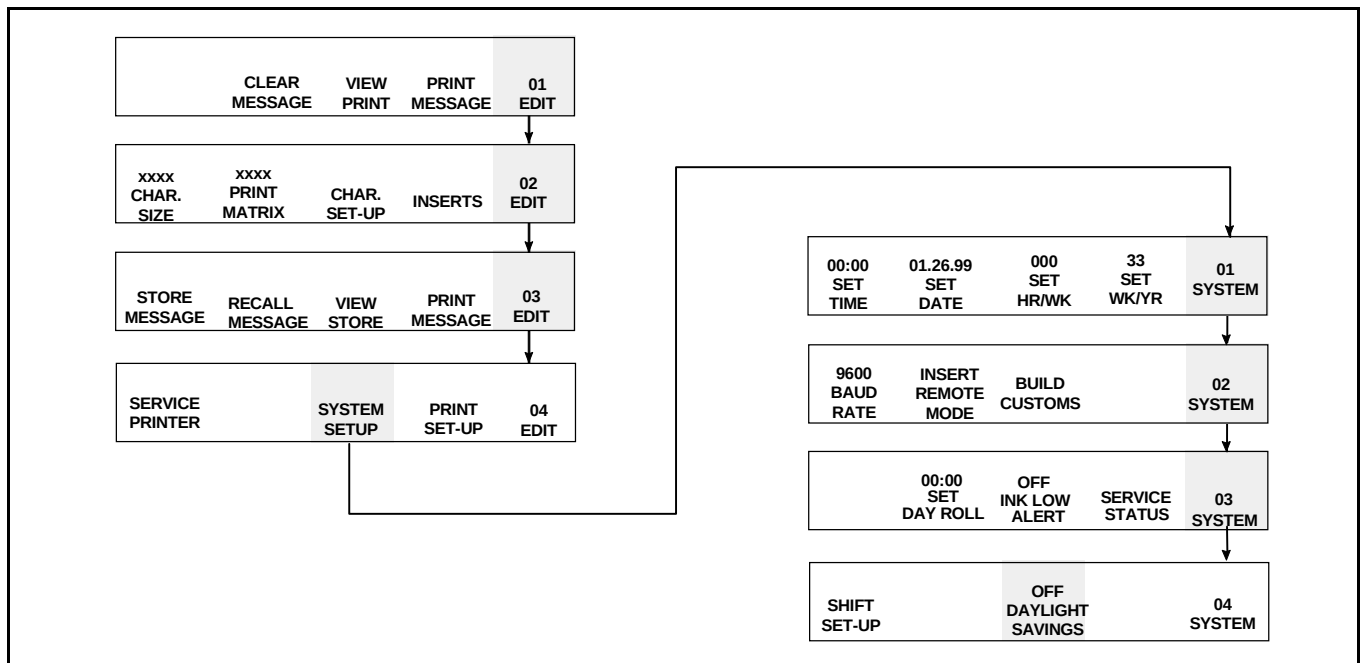


Figure 7-10. Accessing Frame <04 SYSTEM>

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 6-60 in *Chapter 6, Creating and Printing Messages*, for instructions on placing 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 7-11 below for directions to reach this frame.

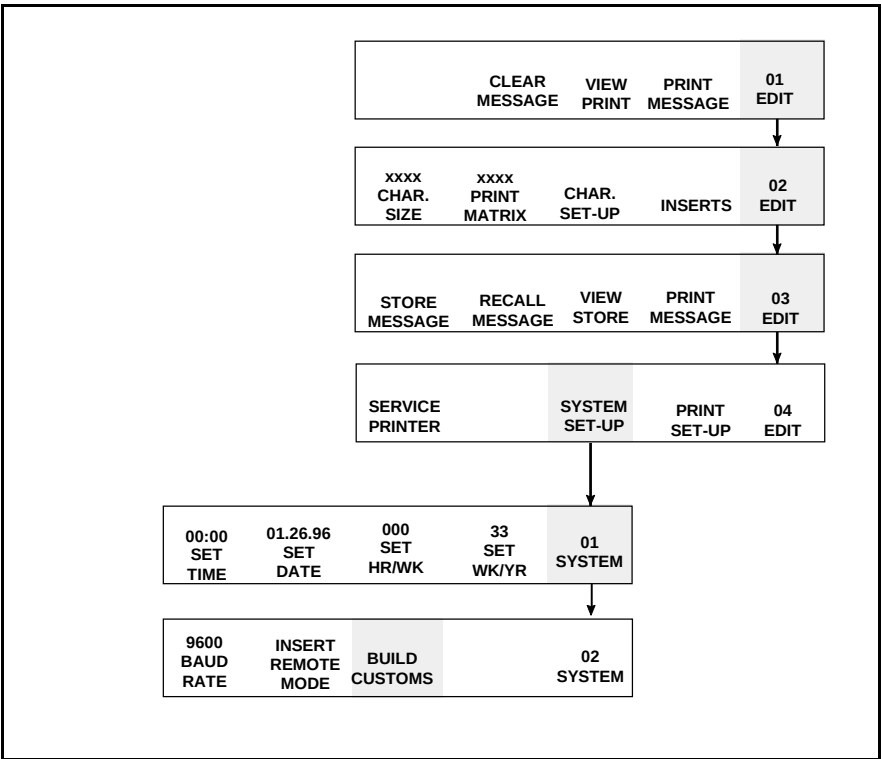


Figure 7-11. Accessing Frame <02 SYSTEM>

Procedure

1. Begin in Frame <02 SYSTEM>. Refer to Figure 7-12.

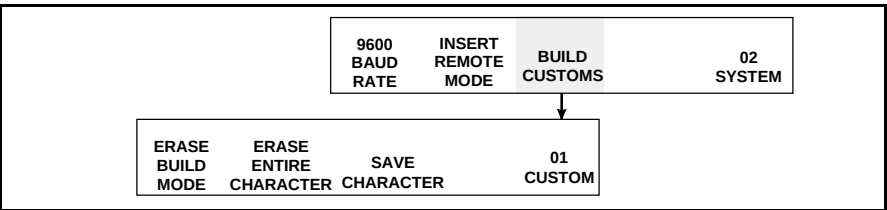


Figure 7-12. Accessing Frame <01 CUSTOM>

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 9. (In the example shown in Figure 7-13, number 1 is used.) Ten custom characters can be created for each font matrix.
4. Press the **ENTER** key. Refer to Figure 7-13 for an example of the display screen after you press the **ENTER** key.
5. Use the arrow keys to draw the custom 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

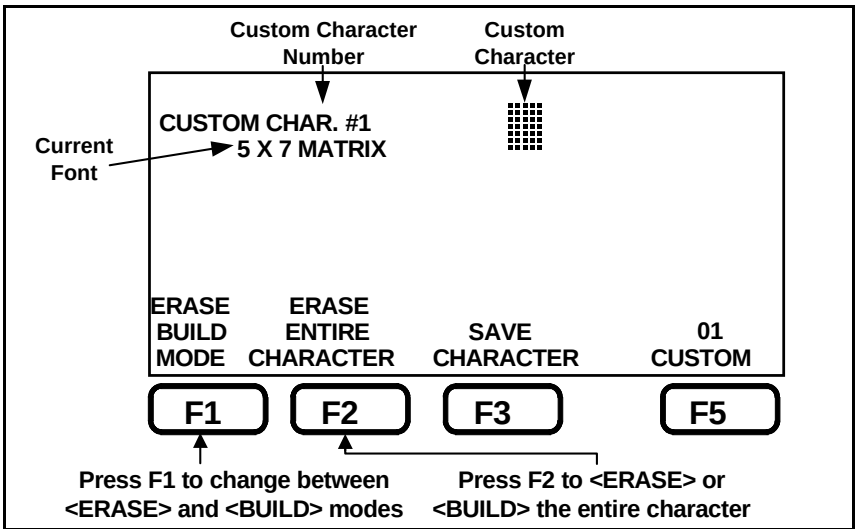
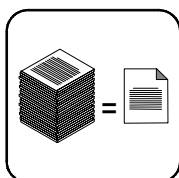


Figure 7-13. Create a Custom Character

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

Refer to page 6-60 in *Chapter 6, Creating and Printing Messages* for the procedure to place a custom character insert into a message.



Build Customer 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 <ERASE 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 <ERASE 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>.

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>.

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 hardware accessory feature) 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; a warning will appear in the display screen; and the SERVICE light will illuminate.
<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>.

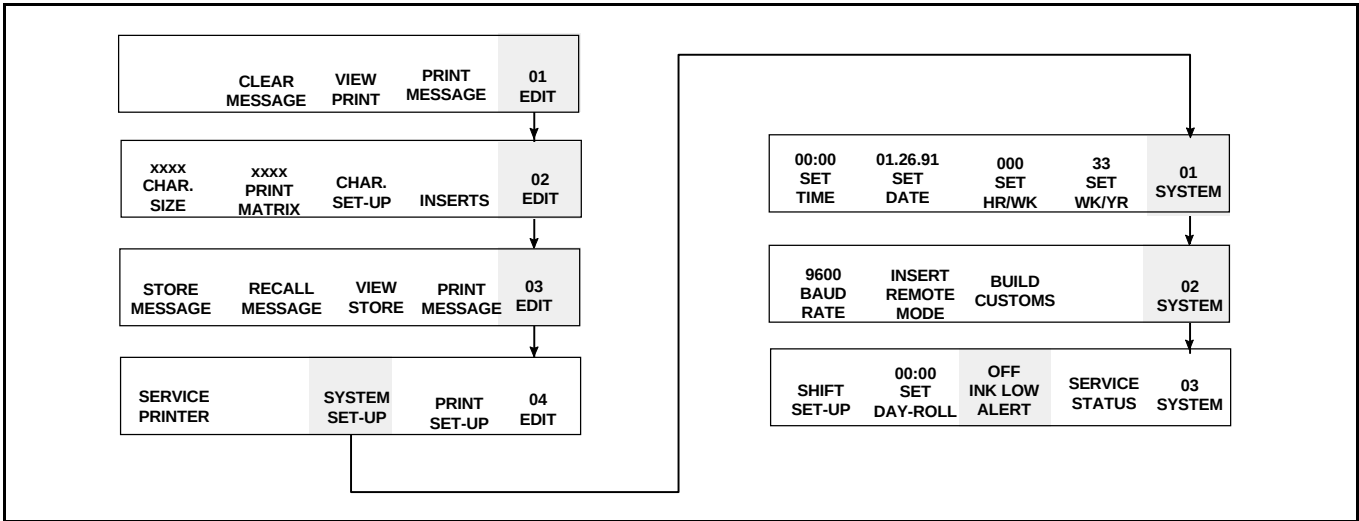


Figure 7-14. Accessing Frame <03 SYSTEM>

Procedure

1. Begin in Frame <03 SYSTEM>. Refer to Figure 7-14.
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.

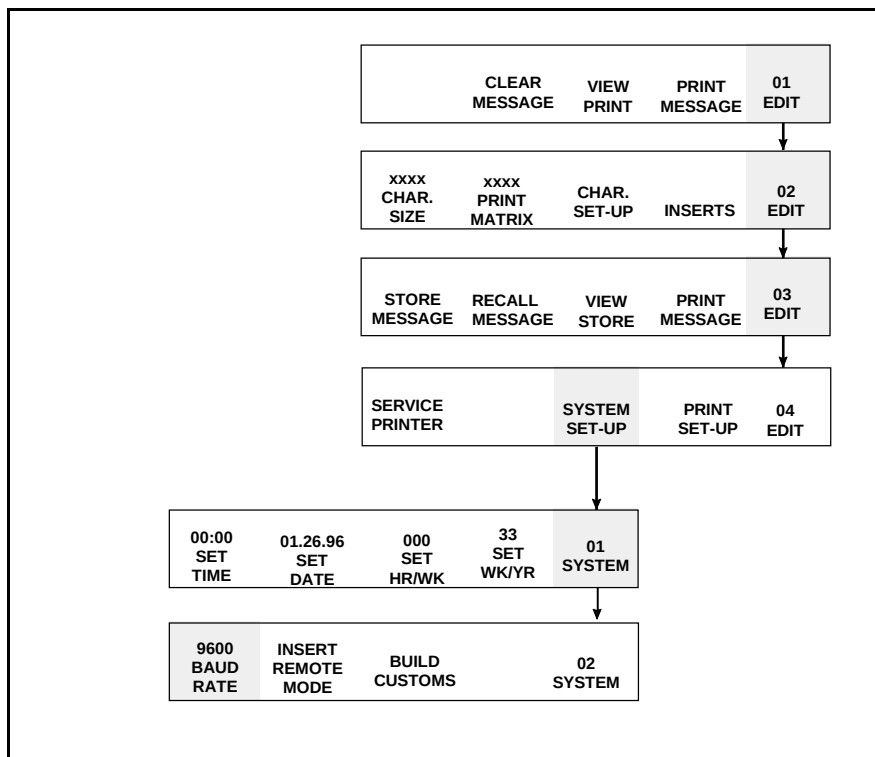


Figure 7-15. Accessing Frame <02 SYSTEM>

Procedure

1. Begin in Frame <02 SYSTEM>. Refer to Figure 7-15.
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 inserted into the 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.

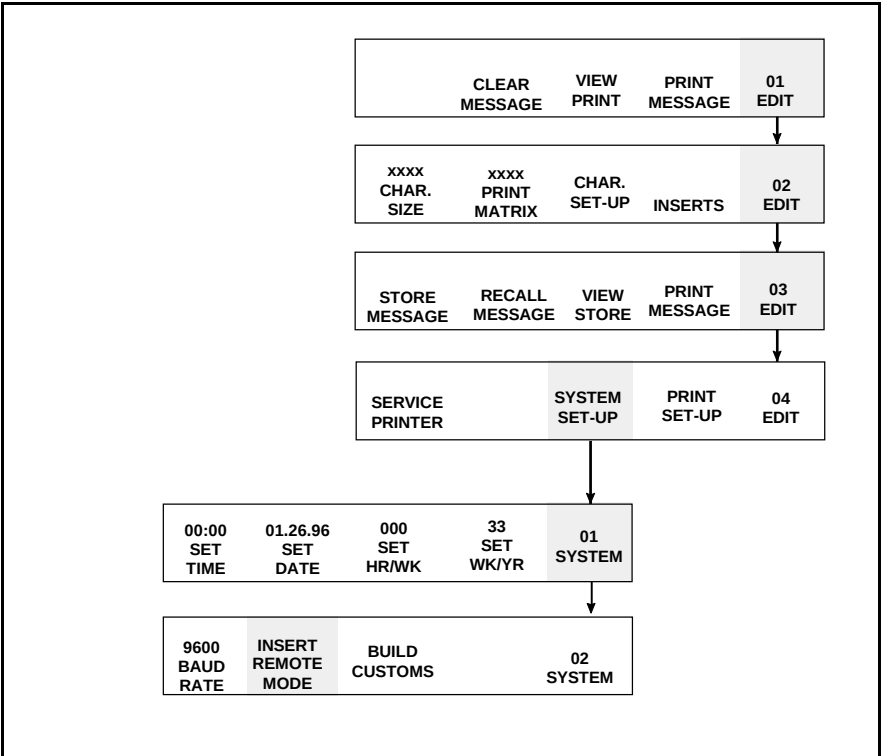


Figure 7-16. Accessing Frame <02 SYSTEM>

Procedure

1. Begin in Frame <02 SYSTEM>. Refer to Figure 7-16.
2. View the current setting above <REMOTE MODE>. Press the **SHIFT** key and **F2** at the same time. If desired, press **F1** to change the setting. (Settings: MESSAGE, and INSERT.)
3. Press the **ENTER** key to save the setting.

Set Auto Repeat

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

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

Turn to page 7-25 for the procedure to set the auto repeat.

For Example:

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

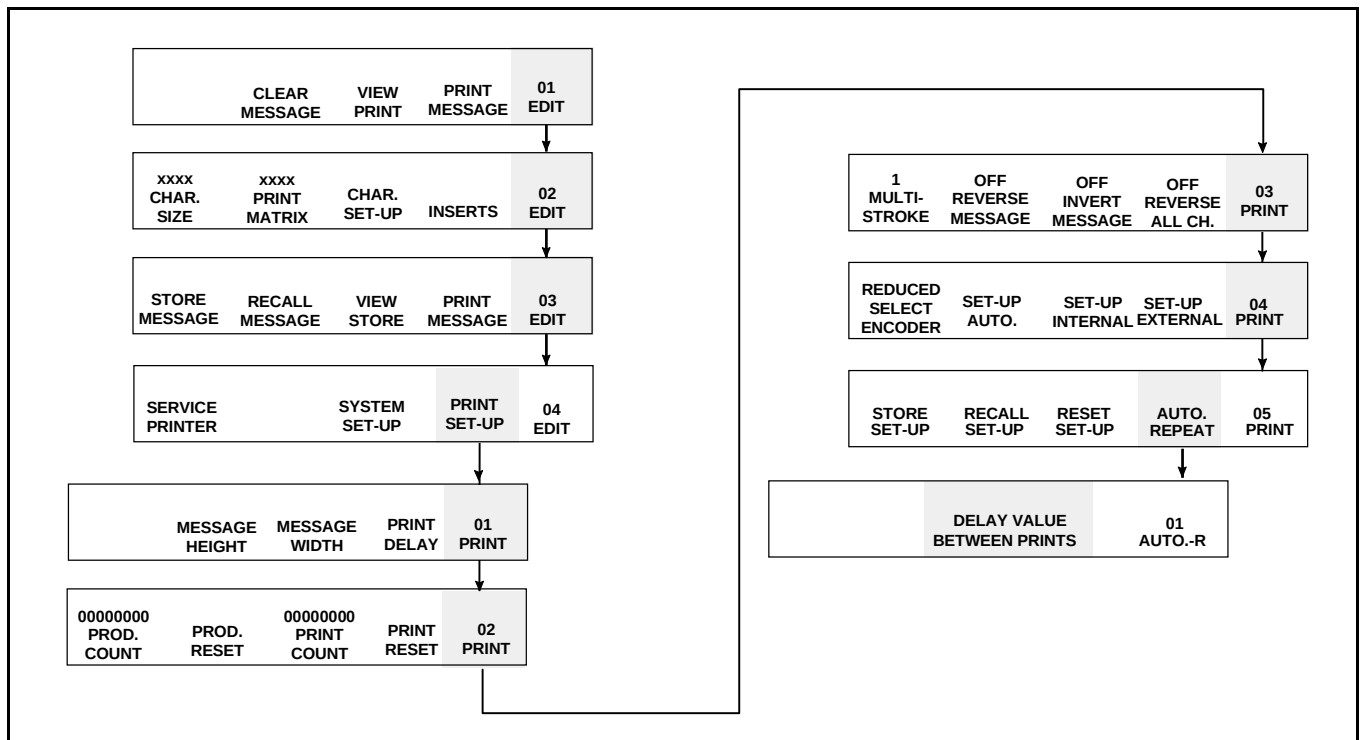


Figure 7-17. Accessing Frame <01 AUTO.-R> and Frame <01 A-SPACE>

Procedure

1. Begin in Frame <05 PRINT>. Refer to Figure 7-17 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 1-255) that a message will print for each product detect signal.
5. Press the **ENTER** key. Frame <01 AUTO. -R> re-appears on the display screen.
6. Press **F3** to select <DELAY VALUE BETWEEN PRINTS>.
7. In this frame you can make adjustments to the amount of space in between each message. The following appears in the display screen.

ENTER 1/100 OF AN INCH (0-7500)----- ▶

Use the numeric keypad to enter a number between 0–7500. This value represents the distance (in inches) between each message. For example: A value of 100 would equal 1 inch ($100 \times 1/100 = 1$).

8. Press the **ENTER** key to save the entry. Frame <01 AUTO.-R> re-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, Make-up 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>.

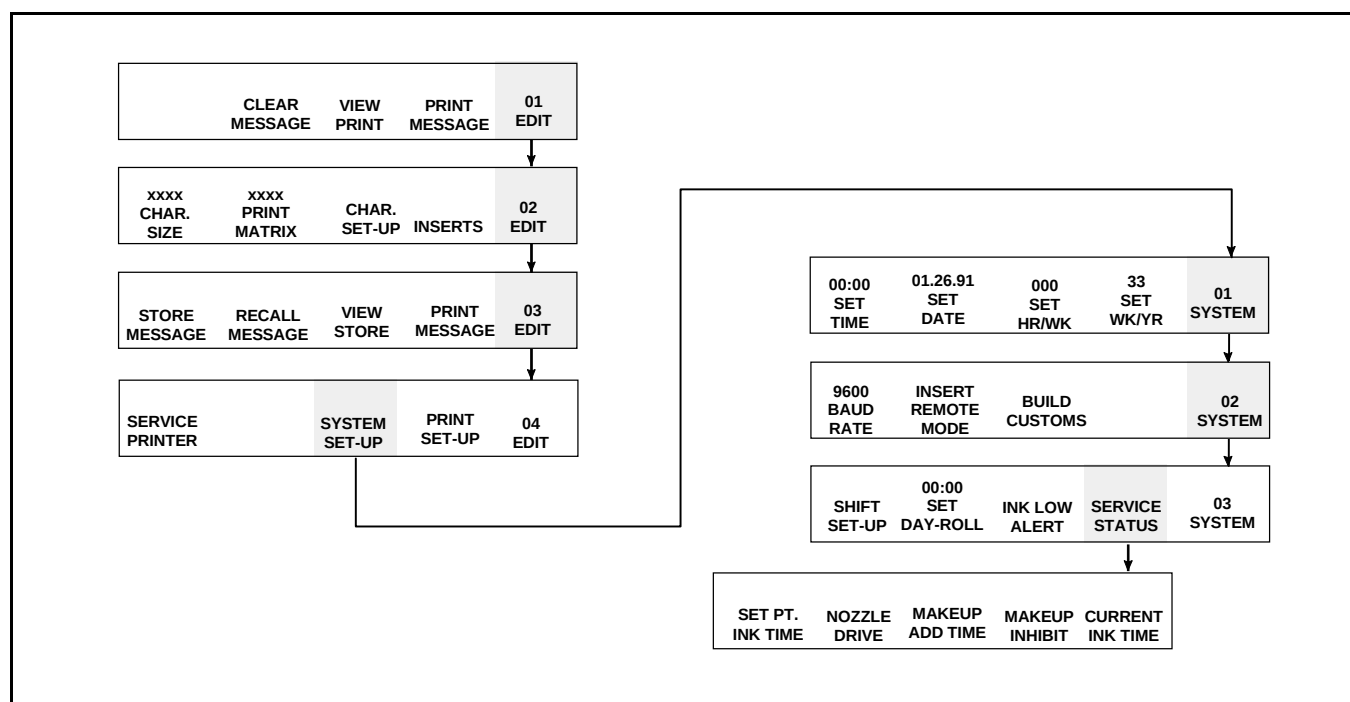


Figure 7-18. Accessing Frame <CURRENT INK TIME>

Procedure

1. Begin in Frame <03 SYSTEM>. Refer to Figure 7-18.
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.

Set Print Delay

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

When Would You Use Print Delay?

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

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

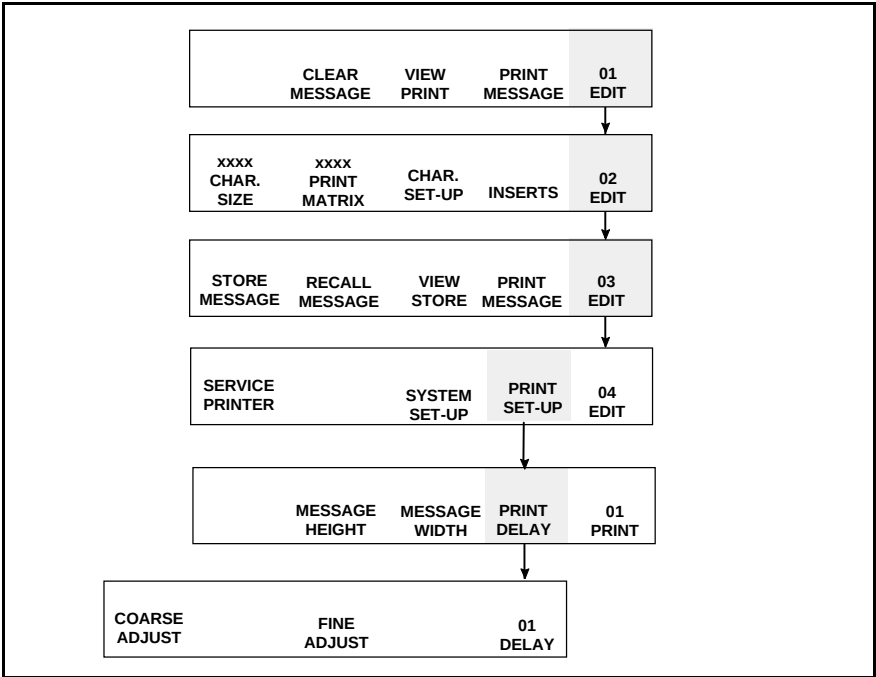


Figure 7-19. Access Frame <01 PRINT>

Procedure

1. Begin in Frame <01 PRINT>. Refer to Figure 7-19.
2. Press **F4** to select <PRINT DELAY>.
3. In this frame you can make coarse and fine adjustments to the distance allowed (delay) before the message is printed:

- The **coarse adjustment** feature allows you to adjust the spacing by 1/100 inch (0.254 mm). To make a coarse adjustment to the delay, press **F1** to select <COARSE ADJUST>. The following appears in the display screen:

ENTER 1/100 OF AN INCH (0-7500)----- ▶

Use the numeric keypad to enter a number between 0–7500. This value represents the distance (in inches) allowed before the message is printed. For example: A value of 100 would equal 1 inch ($100 \times 1/100 = 1$).

- Press the **ENTER** key to save the entry. Frame <01 DELAY> reappears in the display screen

DELAY 1/100 OF AN INCH (0-7500)----- ▶

- The **fine adjustment** feature allows you to adjust the spacing by 1/200 (0.005 mm). To make a fine adjustment to the delay, press the **F3** key to select <FINE ADJUST>. The following appears in the display screen:

Use the up (▲) and down (▼) arrow keys to increase or decrease the delay. Since the delay is displayed in 1/100 inch, you must press the arrow key twice to increase or decrease the displayed count by one. This value represents the distance (in inches) allowed before the message is printed. For example: A value of 5 would equal 1/20 inch ($5 \times 1/100 = 1/20$).

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

Press the **ENTER** key to save the entry.
Frame <01 A-SPACE> reappears in the display screen.

Set 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.

Procedures Found in Chapter 6

- Reverse message.....turn to page 6-17
- Invert message turn to page 6-18
- Reverse all characters turn to page 6-19
- Multi-stroke turn to page 6-20
- Message height turn to page 6-21
- Message width.....turn to page 6-22

Procedures Found in Chapter 7

- Encoder set-up turn to page 7-8
- Set Auto repeat turn to page 7-25
- Set Print delay.....turn to page 7-28

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

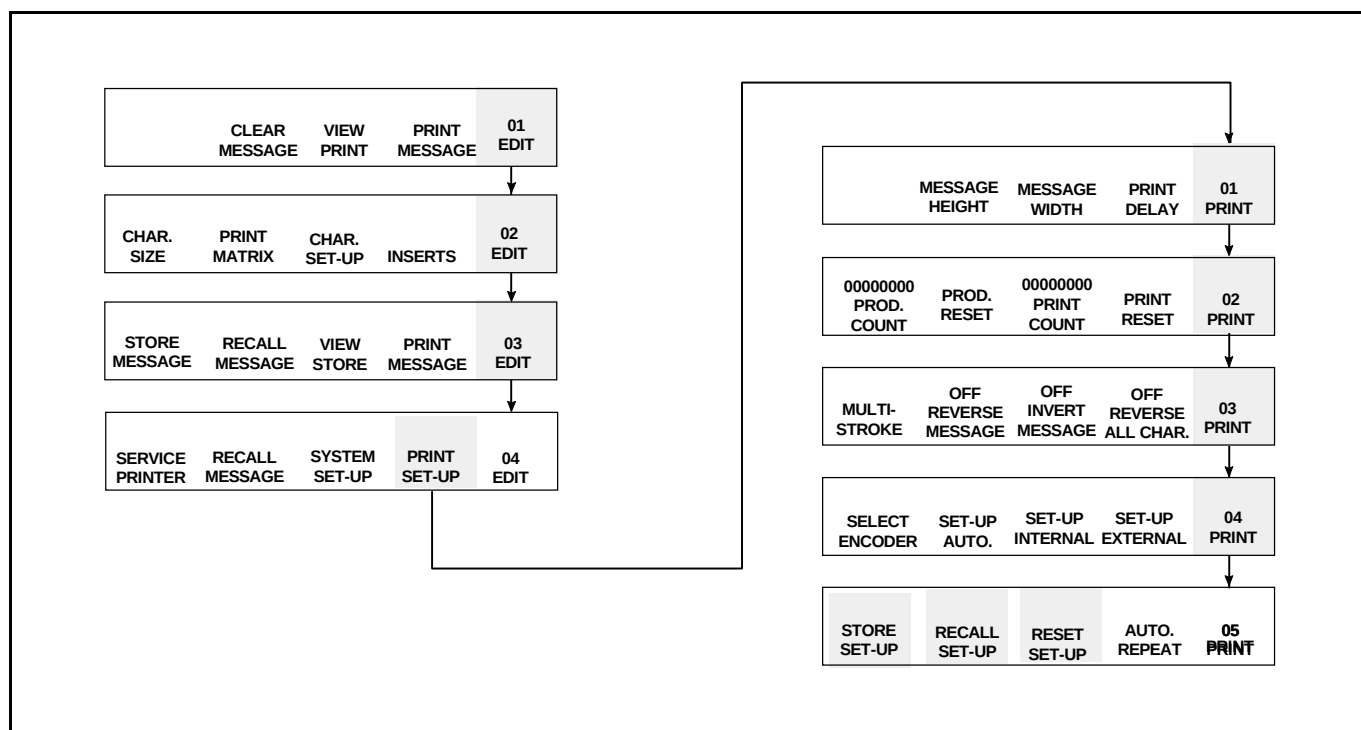


Figure 7-20. Accessing Frame <05 PRINT>

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 7-20.

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

Procedure

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

1. Begin in Frame <05 PRINT>. Refer to Figure 7-20.
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 lights must be Off to reset parameters.

Procedure

1. Begin in Frame <05 PRINT>. Refer to Figure 7-20.
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.

5 x 7 SL Tower

This procedure shows you how to use the 5 x 7 SL Tower function. This allows you to print a message onto a substrate with the effect of printing in a vertical direction, rather than the usual horizontal direction. This application is useful for marking wire and cable. Refer to Figure 7-21.

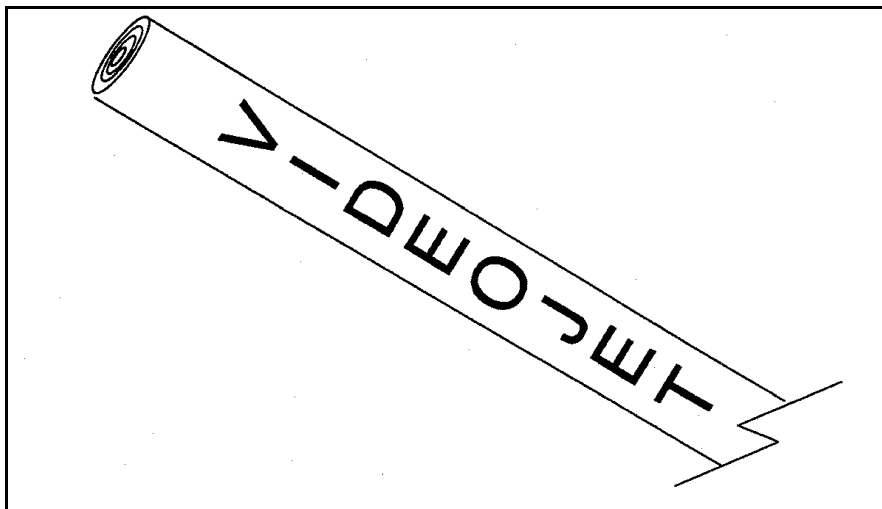


Figure 7-21. Sample Application for Tower Font Printing.

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

The tower print font rotates each character of the normal 5 x 7 font 90 degrees counterclockwise. Therefore, the print matrix actually becomes 7 drops wide by 5 drops high, and the characters are printed “sideways.” Refer to Figure 7-22.

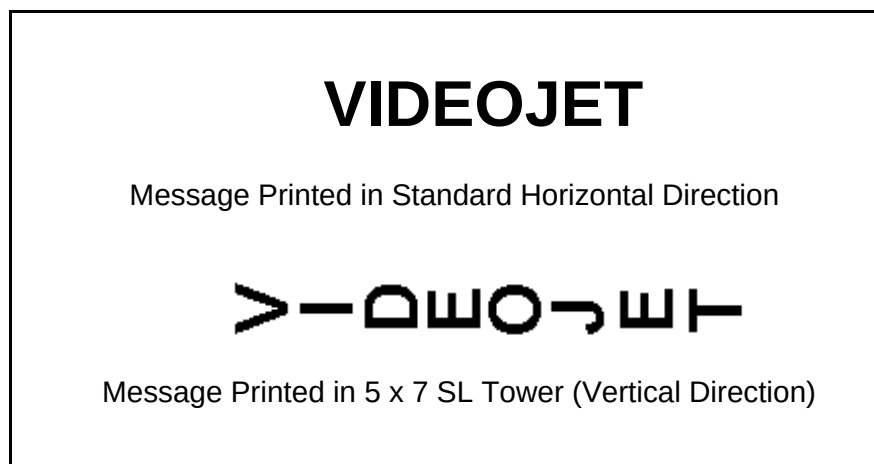


Figure 7-22. Tower Printing Example

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 <06 PRINT>. Refer to Figure 7-23.
3. View the current setting above <5 x 7 SL TOWER>. Is it set to <ON>?
 - if NO, press **F3** to change the setting to <ON>. This will print the entire message in the tower font.
 - if YES, the message is already set to print in the tower font.
4. Press the **ENTER** key to return to Frame <01 PRINT>.

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

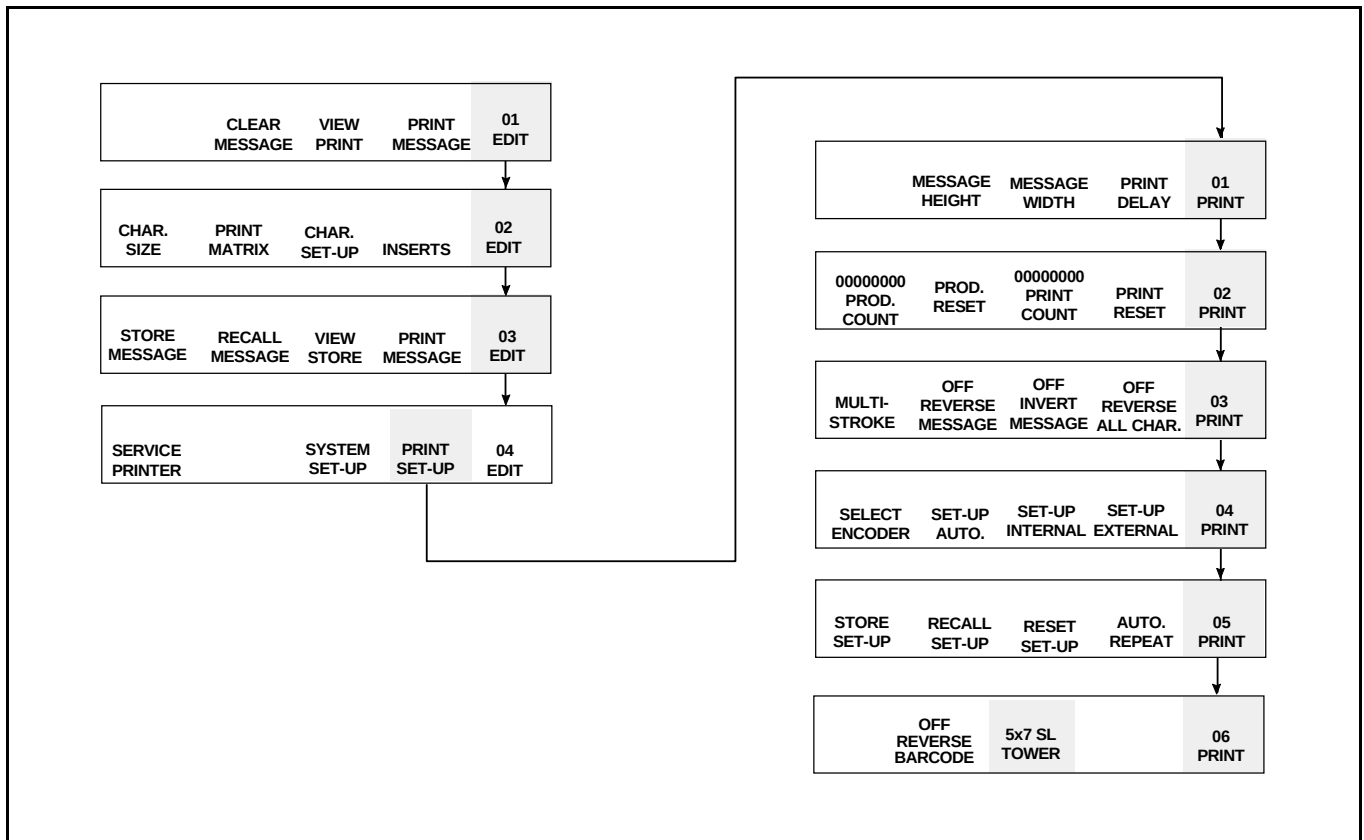


Figure 7-23. Accessing Frame <06 PRINT>

Reverse Image Bar Code

This procedure shows you how to print a reverse image bar code. This means that instead of printing the *lines* of a bar code with dark ink on a light-colored background, you will actually print the *spaces* of the bar code with light colored ink on a dark background. Refer to Figure 7-24 for an example of a reverse image bar code.

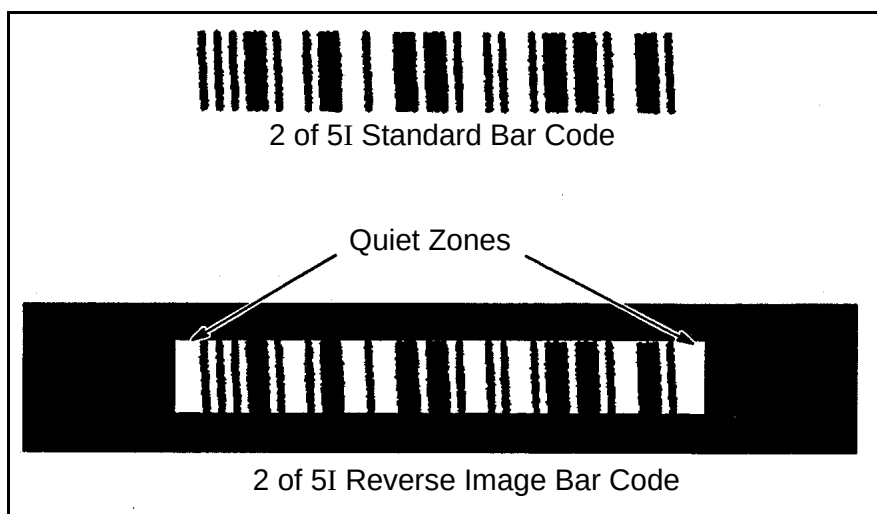


Figure 7-24. Reverse Image Bar Code

Both Code 39 and Code 2 of 5I bar codes may be printed in reverse images. In order for the reverse image codes to be readable, the printer places a 10-stroke quiet zone at the beginning and end of every message. Code 2 of 5I reverse image bar codes have built-in quiet zones.

NOTE: *The reverse bar code function has no effect on any type of message other than a bar code message (10 x 16 or 10 x 24 print matrices).*

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 <06 PRINT>. Refer to Figure 7-25.
3. View the current setting above <REVERSE BARCODE>. Is it set to <ON>?
 - If NO, press **F2** to change the setting to <ON>. This will print the bar code in reverse image.
 - If YES, the message is already sent to print the bar code in reverse image.
4. Press the **ENTER** key to return to Frame <01 PRINT>.

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

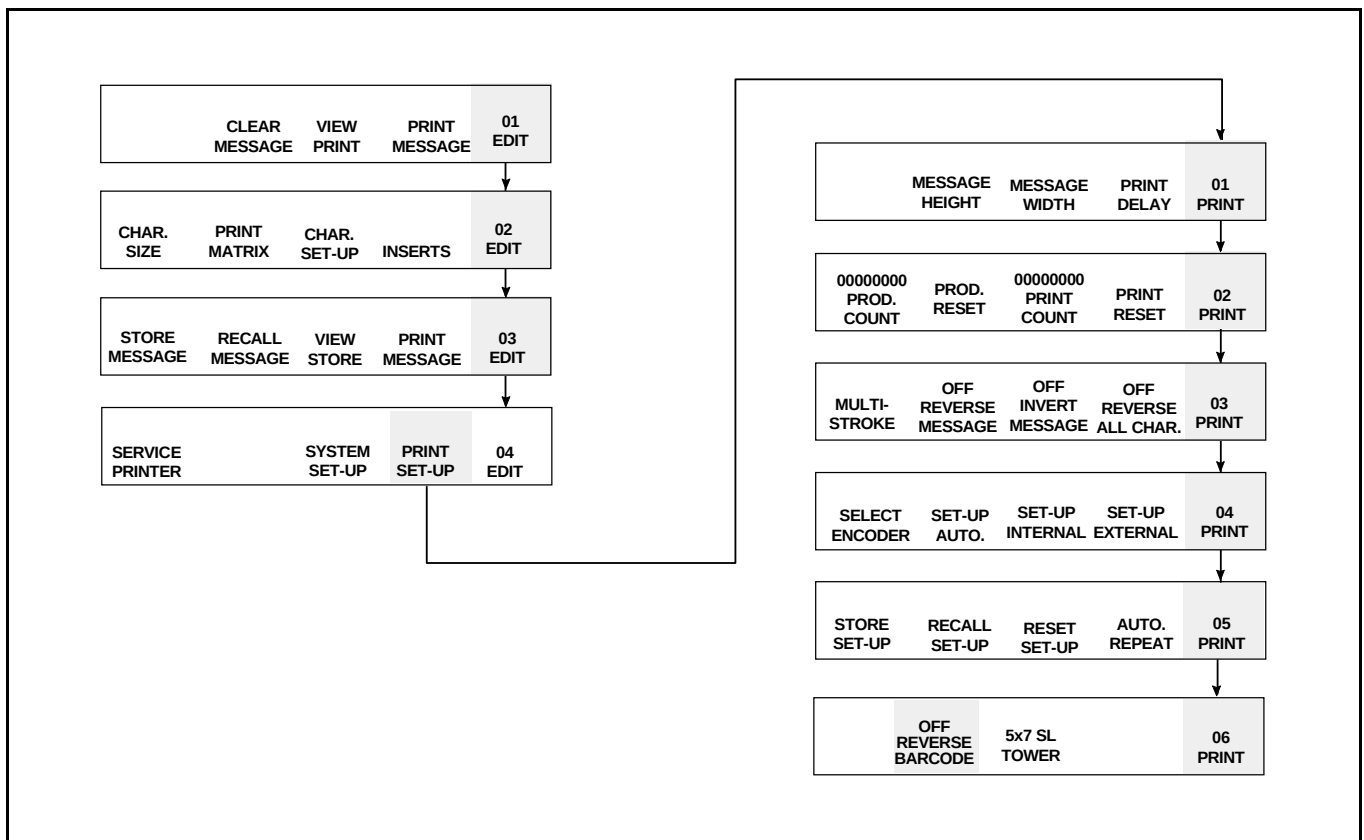
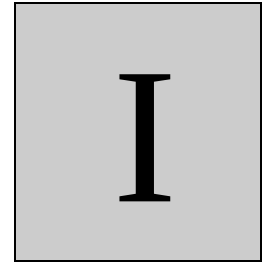


Figure 7-25. Accessing Frame <06 PRINT>



Index

Use this 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 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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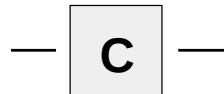
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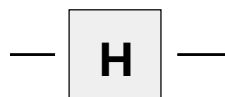
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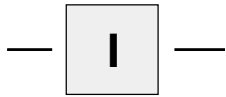
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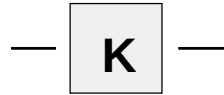
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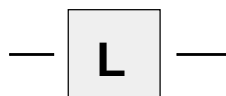


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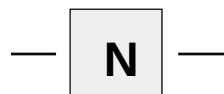
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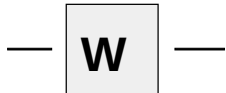
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