

I.V./700

Ink Jet Printer User's Manual

Revision B
5750-210



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I.V./700 Ink Jet Printer Features

Diagraph's Model I.V./700 Ink Jet Printer has a variety of features that make it uniquely suited to print on porous surfaces in industrial printing applications.

- Self-contained printing system for marking products moving on conveyors.
- Adjustable printhead that allows for side, top, or inclined conveyor printing at line speeds up to 250 feet (76 meters) per minute.
- Prints characters up to seven dots high, one half-inch tall.
- Ink supply system from a pressurized can. Cans can be changed during operation for uninterrupted printing.
- Detects product direction and speed of movement with photosensors mounted in the front of printhead. An external photosensor option is available.
- Prints one message per item or many messages per item.
- Twelve function keys for easier editing and system operation.
- Built-in count, shift, time and date codes including expiration dates.
- Prints in three different fonts: 3/8 inch (9.5 mm), 1/2 inch (12.7 mm) and 1/2 inch (12.7 mm) bold.
- Screen menus in multiple languages.
- Two-line, twenty character per line, liquid crystal display.
- Power supply operates on 80 to 240 VAC input.
- May be used between 40° F (4.4° C) and 110° F (43.4° C).
- Modular printhead design that incorporates Quick Disconnects for easy maintenance
- Modular spare parts kits for easy maintenance.
- Long printhead bracket for easy printing on top of a product.
- Ink and electronics are separated throughout the system to ensure reliability and industrial durability.
- Can print with multiple colors of ink: Blue, Green, Red, Orange and Yellow.
- Supplies available worldwide.

I.V./700 Controller

DISPLAY

- 1 Two-line, twenty character per line, liquid crystal display (LCD).

LEDs

- 2 Power LED; lit when the printer has power.
- 3 Photo-eye LED; on while a product passes by.
- 4 Print LED; lit when the printer is in print mode.
- 5 Ink out LED; blinks when the ink can is out of ink.

FUNCTION KEYS

- 6 PRINT: Starts and stops printing.
- 7 EDIT: Create, edit or delete a message.
- 8 PURGE: Purge all ink channels; with ALT (24), it purges single channels.
- 9 MESSAGE INDENT: Sets the message indentation from the leading edge of the product.
- 10 FONT: Selects the font to print.
- 11 TIME: Inserts the printed time into a message. With ALT (24), it inserts a work shift code..
- 12 SET-UP: For configuration of the system.
- 13 INFORMATION: Provides status and setting information.
- 14 DOT SIZE: Increases or decreases all dot sizes at once.
- 15 CHARACTER WIDTH: Changes the width of printed characters which produces changes in the length of printed messages.
- 16 DATE: Inserts the date into a message. With ALT (24), it inserts an expiration date.
- 17 ITEM COUNT: In print mode, it shows the last count for Item, Pallet and Total; in edit mode, it inserts the item count into a message. With ALT (24), it inserts a pallet count.

NUMERIC KEYPAD

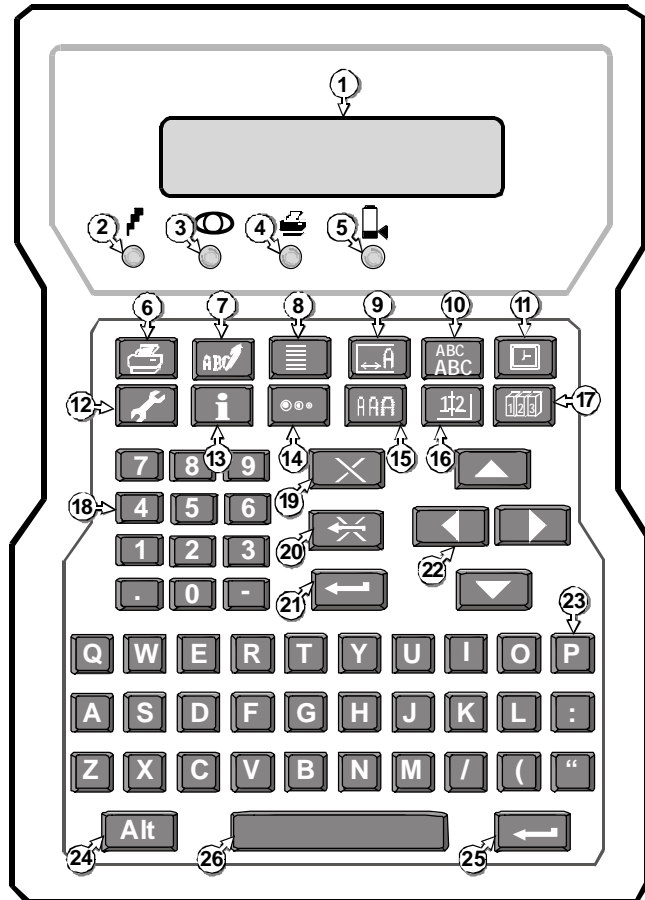
- 18 Keys for number entry which will show alternate characters when scrolled with the arrow keys

EDIT KEYS

- 19 DELETE: Erases the character under the cursor and does not repeat.
- 20 BACKSPACE: Deletes the character to the left of the cursor and will continue to delete when held down.
- 21 ENTER: Completes entries and enacts changes.

ARROW KEYS

- 22 Keys that provide cursor movement and screen scrolling.



ALPHABETIC KEYS

- 23 Keys for character entry. Each character will show alternate characters when scrolled with the up and down arrow keys.

ALTERNATE KEYS

- 24 ALT: Provides alternate characters and functions when used in combination with other keys.
- 25 ENTER: This key duplicates the function of key 21

SPACE BAR

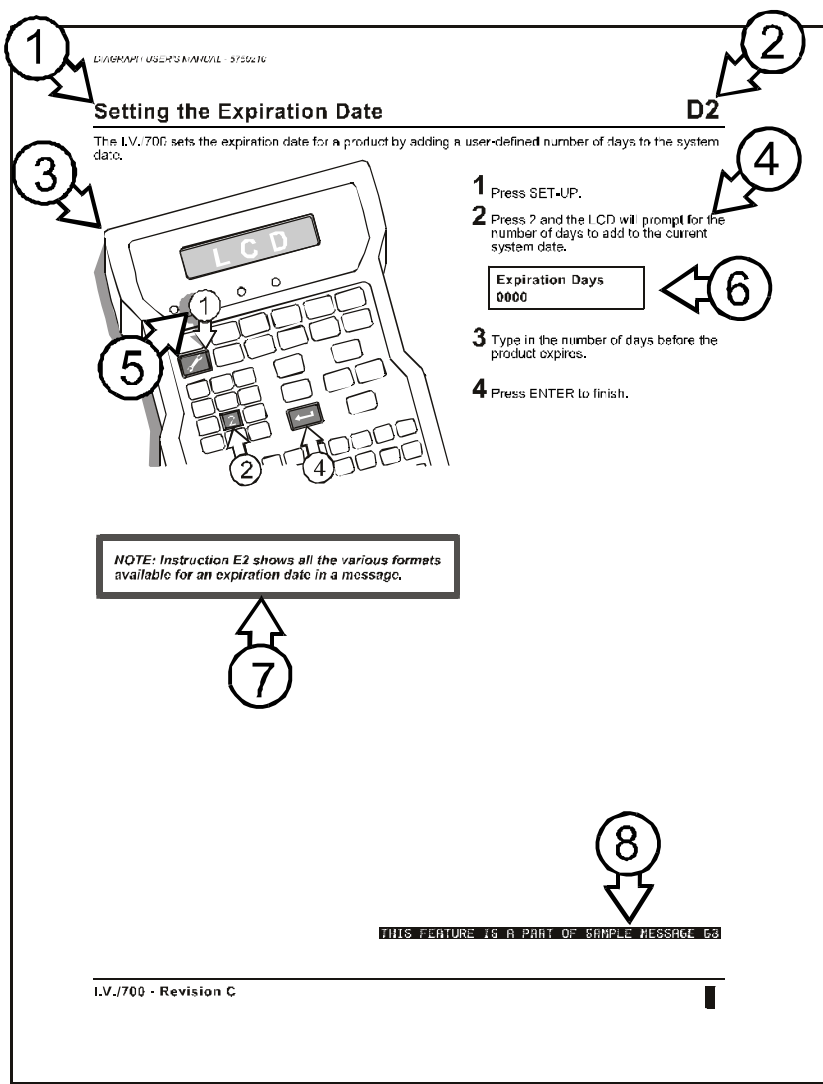
- 26: Enters spaces in messages; can be scrolled with the up and down arrows to show alternate characters

Make Your Own Manual

This manual evolved from the observation that users often make their own manuals: they find and reproduce the instructions that are essential for their jobs and file away the rest. With this in mind, the writers at Diagraph created this manual so that every easily altered feature occupies only one page such as Printing a Message (one page); Setting the Date (one page) and Changing the Font (one page). Only four subjects occupy more than one page and they do not require daily inspection: Frequently Asked Questions, Setting a Password, Example Messages and Troubleshooting.

This preface is an invitation to find those pages that describe the features that are useful at your location, copy them and assemble your own “cheat sheet” of instructions. In the discovery process, try the example messages (Section G) to learn more about the printer and its capabilities. Also review the frequently asked questions (A6) to accelerate the implementation of the I.V./700 printer.

The illustration below points out the ease-of-use characteristics of each page.



- 1** Feature description.
- 2** Alphabetic reference. See the table of contents for the nine subject areas. By using these references instead of page numbers, you can easily assemble additional instructions.
- 3** Illustration of the controller.
- 4** Concise directions.
- 5** Numbered references to keys with icons.
- 6** Representations of the onscreen prompts.
- 7** Framed notes that contain warnings or key items of information.
- 8** References to example messages in Section G that use the feature on this page.



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Basics **A**

Printing a MessageA1

Creating a Text-Only MessageA2

Editing a Text-Only MessageA3

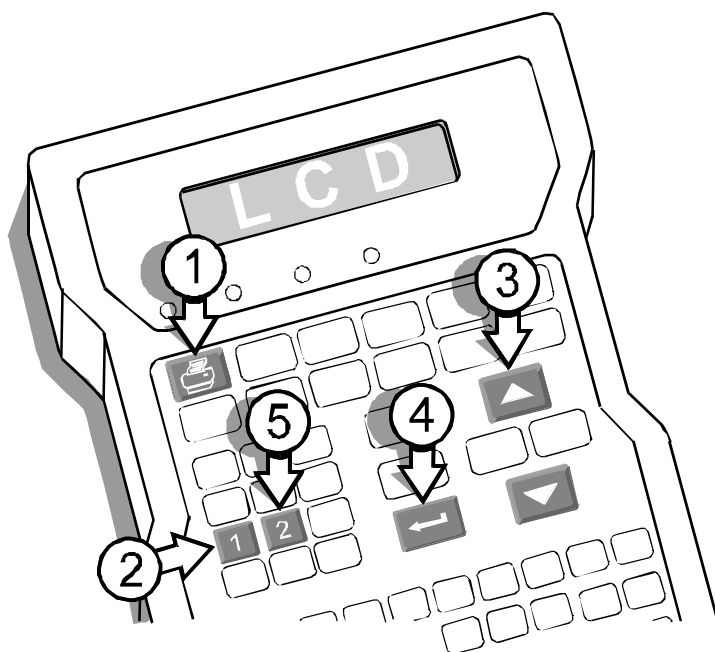
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Frequently Asked QuestionsA6

Printing a Message

A1



- 1** Press PRINT and the LCD will show "1-Print" and "2-Stop Print"

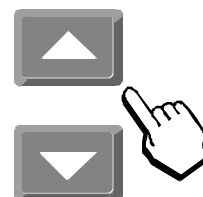
1-Print
 2-Stop Print

- 2** Press 1 and the LCD will show the name of the last message printed and its corresponding text.

Name:DIAGRAPH
 DIAGRAPH<

The screen example above shows the message created at the factory.

- 3** Scroll until the message to print appears on-screen.



- 4** Press ENTER to print.

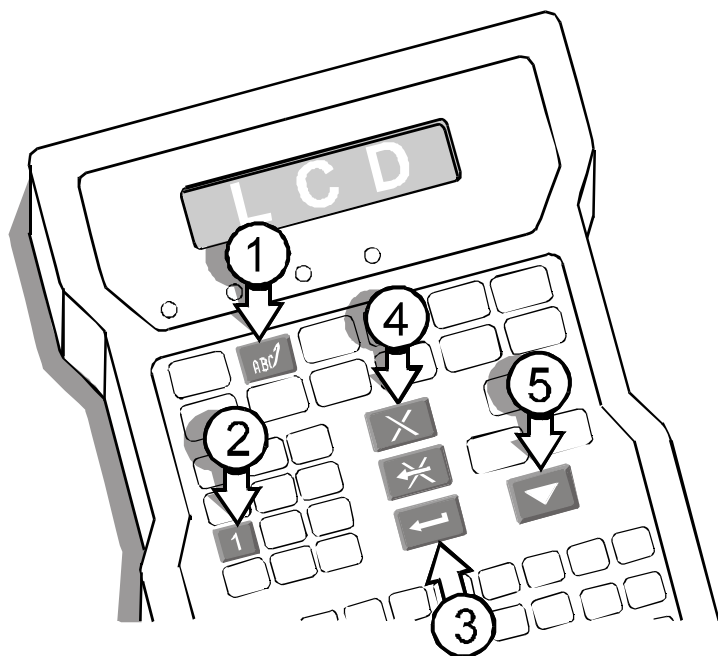
- 5** Press 2 to stop printing.

The print sample below is the default DIAGRAPH message printed with controller default settings.

DIAGRAPH

This feature is a part of sample message G1

Creating a Simple Message

A2


1 Press EDIT and the LCD will show “1-New Message” and “2-Edit Message.”

2 Press 1 and the LCD will prompt for a name for the new message.

Name:

3 Type a name and press ENTER.

Name:

TESTMESSAGE

4 Type a simple message of letters and numbers only, no codes. Correct mistakes with DELETE and BACKSPACE.

Editing...

123TESTING123<

5 Press ENTER to finish the message. The LCD will offer three choices:

1-Save:TESTMESSAGE
2-Cancel changes: T↓

2-Cancel changes: TE
3-Edit: TESTMESSAGE

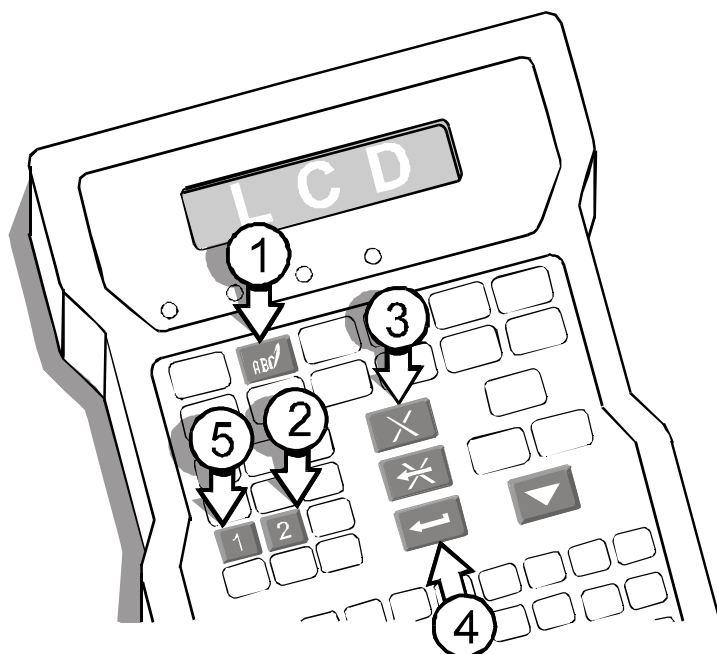
NOTE: a down arrow on the LCD indicates that this menu has more than two

6 Press 1 to save the new message.

This feature is a part of sample message G1, G2, g3, g4 and g5

Editing a Message

A3

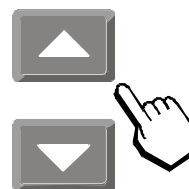


1 Press EDIT and the LCD will show “1-New Message” and “2-Edit Message.”

2 Press 2 and the LCD will show a message. If you want to edit the message on-screen, press ENTER.

Name: **T**ESTMESSAGE
123TESTING123<

If you want to edit another message, scroll until your message appears and press ENTER.



3 Type changes. Use BACKSPACE and DELETE to remove unwanted characters.

4 Press ENTER to finish editing. The LCD will offer three choices:

1-Save:TESTMESSAGE
2-Cancel changes: T↓

2-Cancel changes: TE
3-Edit: TESTMESSAGE

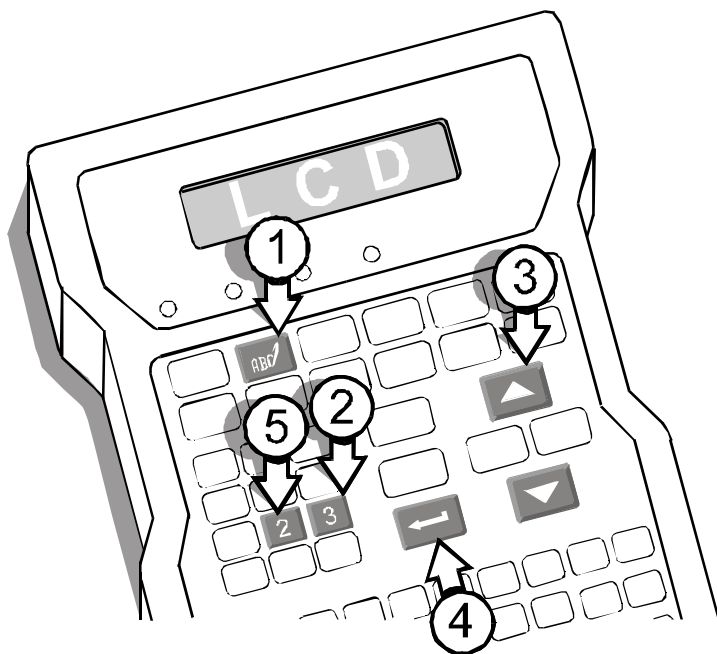
NOTE: a down arrow on the LCD indicates that this menu has more than two

5 Press 1 to save the edits.

This feature is a part of sample message G1, G2, g3, g4 and g5

Deleting a Message

A4



1 Press EDIT.

2 Press 3 for "Delete Message." The LCD will show the name of a message and its content.

**Name:DIAGRAPH
DIAGRAPH<**

3 Scroll until the message to delete is on-screen.



**Name:TEST MESSAGE
12134567890<**

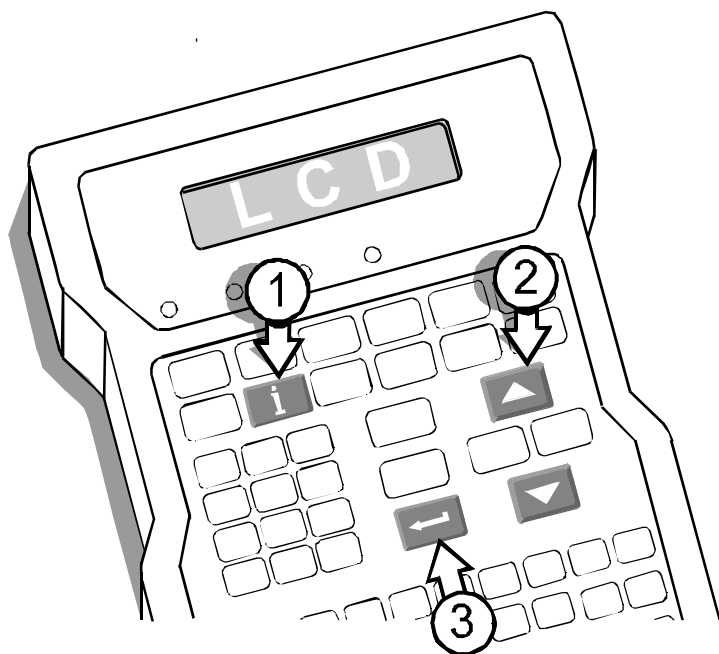
4 Press ENTER. The LCD will prompt to cancel the changes or delete the message:



**1-Cancel Changes:TE
2-Ok. Delete: TEST M**

5 Press 2. The message is now deleted and the LCD shows the Edit screen:

**2-Edit Message
3-Delete Message**

Viewing System Information

A5


- 1** Press INFORMATION.
- 2** Scroll up and down to see all choices.


- 3** Press ENTER at any menu entry to see the associated detail. The chart below left shows all prompts with explanatory notes.
- 4** Press ENTER when done.

Menu Selection	Explanation
1-Unused Messages	This selection shows the number of available messages. The I.V./700 can store 99 messages.
2-Date	This selection shows the date currently set in the system in the year, month and day format.
3-Time	This selection shows the time set in the system in hours, minutes and seconds.
4-Print Speed	This selection shows the speed recorded by the photosensors during the last printing session.
5-Item Count	This selection shows the number of times the current message has been printed.
6-Version	This selection shows the version of firmware in your controller.
7-Support/Supplies	This selection displays information on supplies and support for your I.V./700 printer.

Frequently Asked Questions

A6-1

Q1 How do I create a message?

Q1a Follow the directions on instruction page A2, "Creating a Text-Only Message". See Section G1 for an example of a new message.

Q2 How do I change the parameters of a message I have already created?

Q2a See instruction page A3, "Editing a Text-Only Message." Determine what variables are in your message such as Item Count (E5) and Date (E1) and review Section D that explains how to set variables and Section E that explains how to insert variables in messages.

Q3 How do I select and print a message?

1 Press PRINT.

2 Press 1. The top line of the LCD will show the name of the message and line two will show the message contents.

Name: DIAGRAPH
DIAGRAPH<

3 Scroll through message names until you find the one to print.



4 Press ENTER to print.

Q4 What do I do if my print quality does not match the quality of the print sample supplied with the unit?

Q4a Determine exactly how your print differs from the supplied sample. Is it too light? Is it missing dots? Look in Section H, "Troubleshooting" to find the solution to your printing problem.

Q5 If I am using sequential numbers while printing and stop the print, what number will the print start with when I send it to print again?

Q5a The numbers will start over again. Specifically, they will begin with the starting number specified in either "Setting the Item Count (D6)" or "Setting the Pallet Count (D7)".

Frequently Asked Questions

A6-2

Q6 What do I do if I see no image printed on the substrate but I see that the message has been sent to print?

Q6a See Section H, "Troubleshooting."

Q7 How far will the built-in photoeyes "see"?

Q7a The photosensors should be placed no farther than one-quarter inch from the product.

Q8 What do I do if the unit is printing in the wrong area on the case or between cases?

Q8a See Section H, "Troubleshooting."

Q9 What do I do with the unit if I won't be using it for a week or more?

Q9a Purge the I.V./700 with conditioner, P/N 5750-112. See instruction page B2 for details on flushing.

Q10 Can I turn the printhead straight up and print on the bottom of the product?

Q10a No.

Q11 Can I print upside down?

Q11a Yes. Inverted printing requires no changes in position of the printhead or its bracket—the controller has been programmed to print upside down messages. Follow the directions on instruction page C6, "Rotating the Message".

Q12 Is the unit Year 2000 Compliant?

Q12a Yes.

Q13 What happens if I unplug the unit?

Q13a The controller memory retains your messages and parameters.

Q14 How often should I purge?


Q14a Purge at the start of each workday or more often in dusty environments.

Frequently Asked Questions

A6-3**Q15 Do I have to stop printing to put in a new can of ink?**

Q15a *No. There is enough ink in the ink delivery system to allow continuous printing while you install a new can of ink.*

Q16 If I get lost in a menu, what button should I press to find my way again?

Q16a *INFORMATION () is a safe key to press if you are unsure about editing, printing or working in the Set-Up menu. Some of the other function keys such as Date and Time, will not let you out of the menu until you have entered a value or pressed ENTER.*

Q17 The character I want to print isn't on the keyboard.

Q17a *All alphabetic and numeric keys on the I.V./700 keypad can display alternate characters when used with the up and down arrows. The English vowel set and the consonants C, N and Y have alternate characters with phonetic marks such as the umlaut (") and the acute accent ('). All consonant keys provide access to the entire alphabet in both uppercase and lowercase. The punctuation keys provide multiple punctuation marks. Follow the directions on instruction page E7, "Using Alternate Characters" to create messages with characters not on the keyboard.*

Maintenance **B**

Loading Ink..... B1

Purging All Channels B2

Purging Individual Channels B3

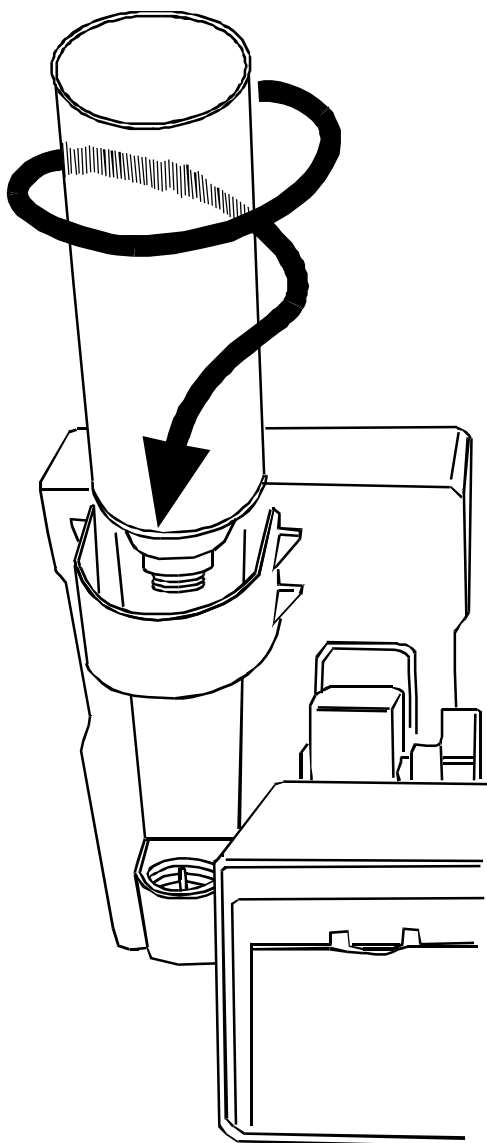
Adjusting Screen Contrast B4

Resetting Factory Defaults B5

Loading Ink

B1

Do not stop printing when you run low on ink. The I.V./700 has enough ink its delivery system to continue printing until you install fresh can.



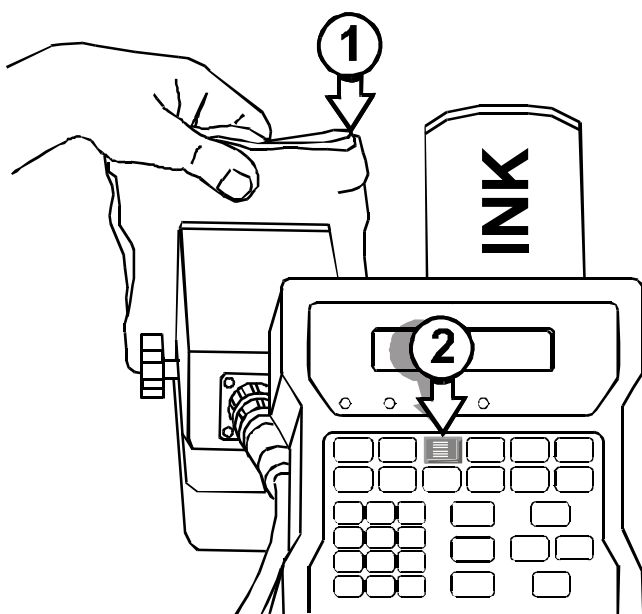
- 1** Unscrew the old can and set aside.
- 2** Remove the cap from the new can, invert and screw into the ink receptacle.
- 3** Dispose of the old can in accordance with state and federal regulations

**NOTE: DO NOT SHAKE
THE INK CAN.**

Purging All Channels

B2

Purge the printer at the start of the workday.



1 Hold a disposable towel in front of the printhead.

2 Press PURGE.



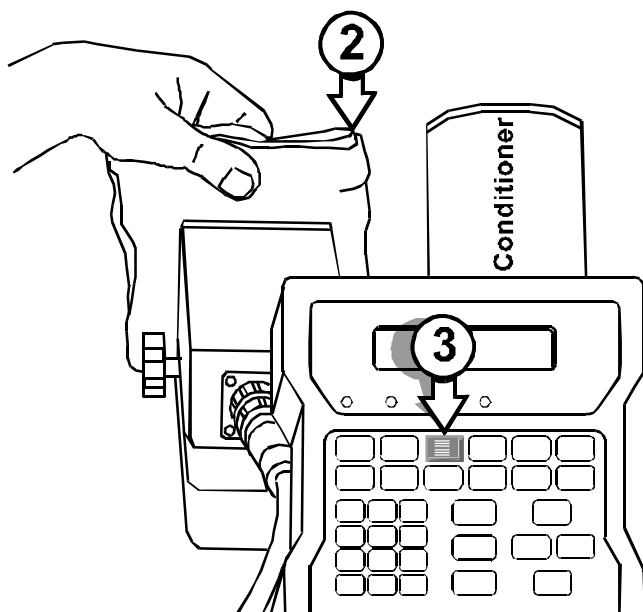
Hold for long purge
Purge 96/100<

The printhead will expel ink for approximately two seconds.
Continue to press PURGE if you want a long purge of ink.

3 Clean the face of the printhead with water.

Purging with Conditioner

Extended shutdowns will require purging the printhead with conditioner.



1 Remove the ink canister and attach a canister of conditioner.

2 Hold a disposable towel in front of the printhead.

3 Press PURGE.



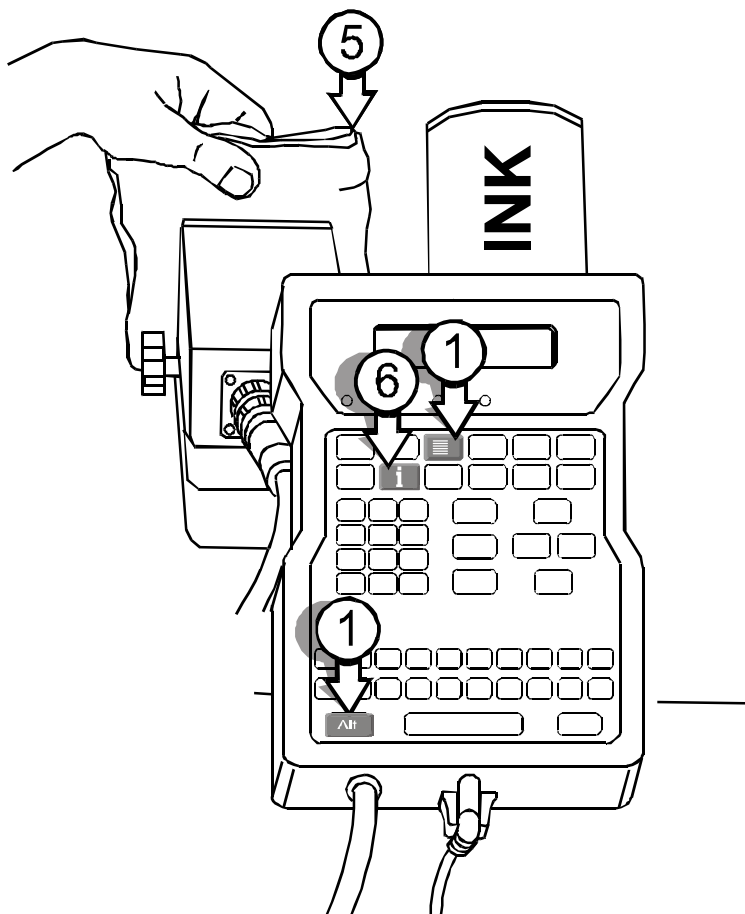
4 Continue to press PURGE until the expelled fluid is clear.

5 Remove the conditioner canister and attach the ink canister.

Purging a Single Channel

B3

Purge a single channel when a dot is missing or undersized.



- 1** Press and hold ALT and PURGE.

Dot: 7
 Press i to exit

- 2** Press the corresponding numeric key to select a channel to purge.

Channel

1	●
2	●
3	●
4	●
5	●
6	●
7	●

- 3** Hold a disposable towel in front of the printhead.

- 4** Press PURGE.



The printhead will expel ink for approximately two seconds.

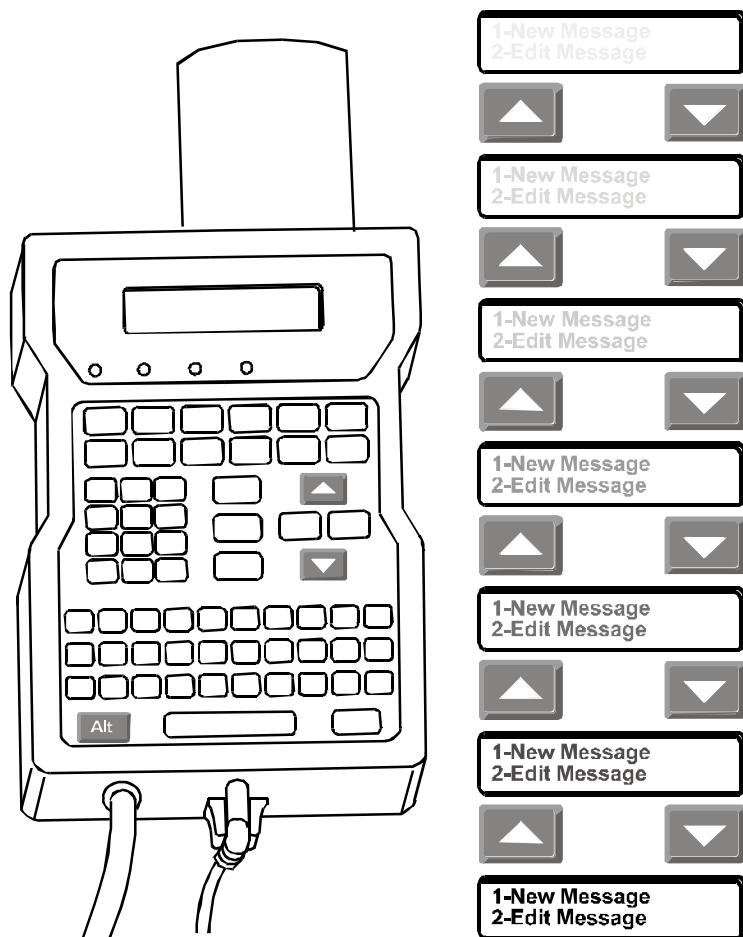
- 5** Clean the face of the printhead with water.

- 6** Press i to exit or enter another channel to purge and repeat steps 3 and 4.

Adjusting the Screen Contrast

B4

You can change the contrast on the LCD by using the UP and DOWN arrows with the ALT key.

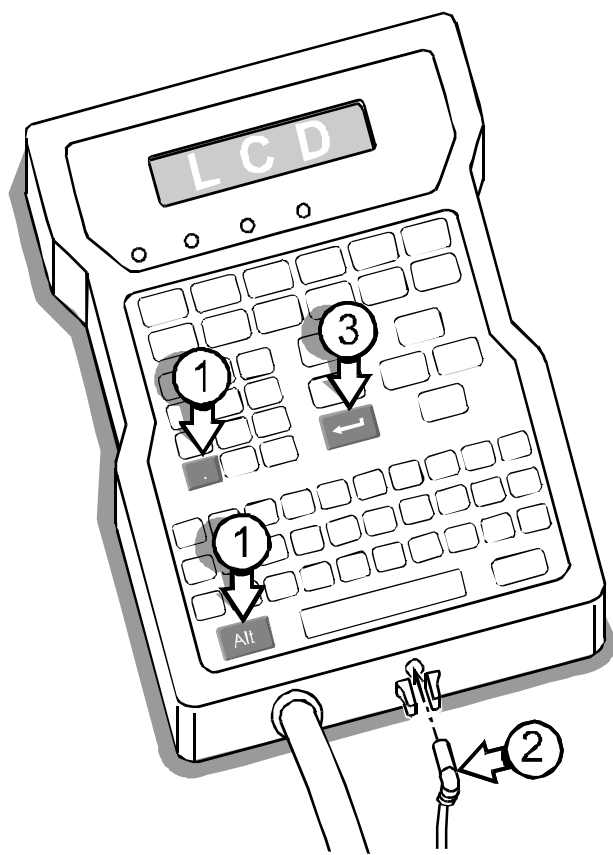


- 1** Press and hold ALT and the DOWN arrow. Hold for at least five seconds. The screen contrast will gradually dim.
- 2** Press and hold ALT and the UP arrow. Hold for at least five seconds. The screen contrast will gradually become sharper.

Resetting Factory Defaults

B5

If you want to reset your printer to factory defaults, unplug the controller.



- 1** Press and hold ALT and the decimal point on the numeric keypad.
- 2** Reconnect power. Release the keys when the LCD asks if you want to "Erase All Messages?"

Erase all messages?		
1-No	2-Yes	:2

- 3** Make your selection and press ENTER.
The controller will initialize and you must set a language for the LCD, the date, the time and the units of measurement.

Print Adjustments **C**

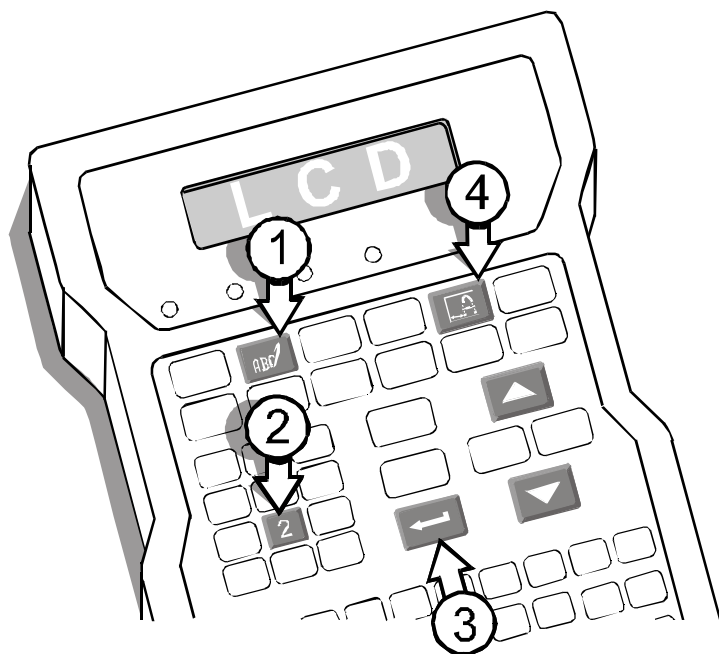
Setting an Individual Message Indent.....	C1
Setting the Default Message Indent	C2
Changing the Character Width in a Message	C3
Setting the Default Character Width	C4
Changing the Printed Dot Size	C5
Changing the Font in a Single Message...	C6
Changing the Default Font.....	C7
Rotating the Message.....	C8
Adjusting a Single Dot Diameter	C9
First Dot Adjustment	C10
Sizing Dots in Columns.....	C11

Changing an Individual Message Indent

C1

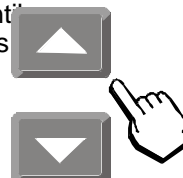
The message indent is the distance from the leading edge of the product to the starting character of the message. The system default for message indent is 0.5 inches (12.7 mm).

Using the indent function while editing gives the message an indent value different from the default indent distance. This feature is useful when printing on products of varying sizes.



1 Press EDIT.

2 Press 2 and scroll until the target message is on-screen.



3 Press ENTER.

4 Press INDENT, move the cursor to the number for change and type in a new indent value.

Set Message Indent:
001.0 inches

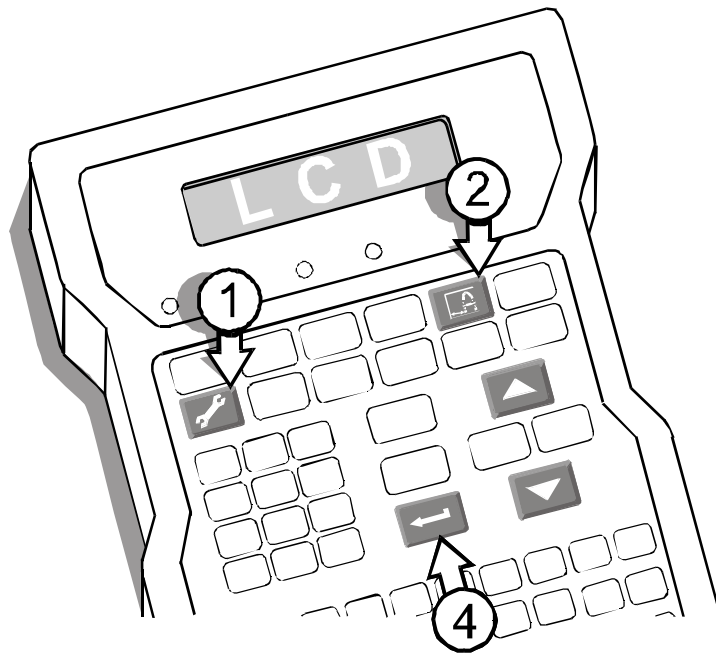
5 Press ENTER to finish.

Setting the Default Message Indent

C2

CHANGING MESSAGE INDENT *The indent distance set in this routine will be the default indent for all messages created in the future. To change the indent distance in an existing message, follow Instruction C1, "Setting an Individual Message Indent".*

The message indent is the distance from the leading edge of a product to the first printed character. For products moving from right-to-left, the first printed character will be the beginning of the message. For products moving from left-to-right, the first printed character will be the end of the message.



1 Press SET-UP.

2 Press INDENT.

3 Type in indent value.

Set Message Indent:
001.0 inches

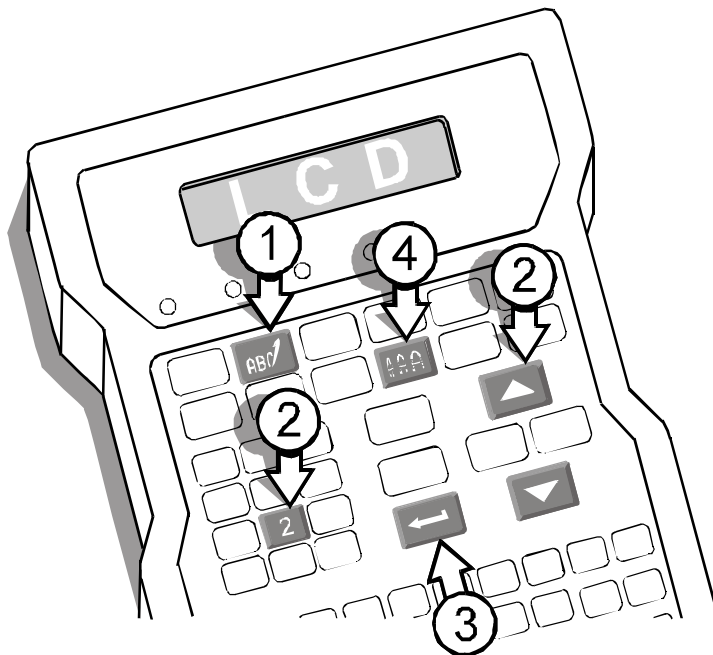
4 Press ENTER when done.

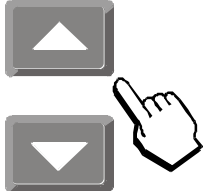
Changing the Character Width in a Message

C3

Changing the Character allows you to change the horizontal dots in a printed character. The default value is 6.

Character Width 1	Character Width 4	Character Width 6
ABCD	ABCD	ABCD



- 1** Press EDIT.
- 2** Press 2. Scroll until the target message is on-screen.
 
- 3** Press ENTER.
- 4** Press CHARACTER WIDTH.
- 5** The LCD will show a range of 1 (narrow) to 9 (wide).

Set Character Width:
6

Select a new width by scrolling and press ENTER.
- 6** Press ENTER to complete the edit change.

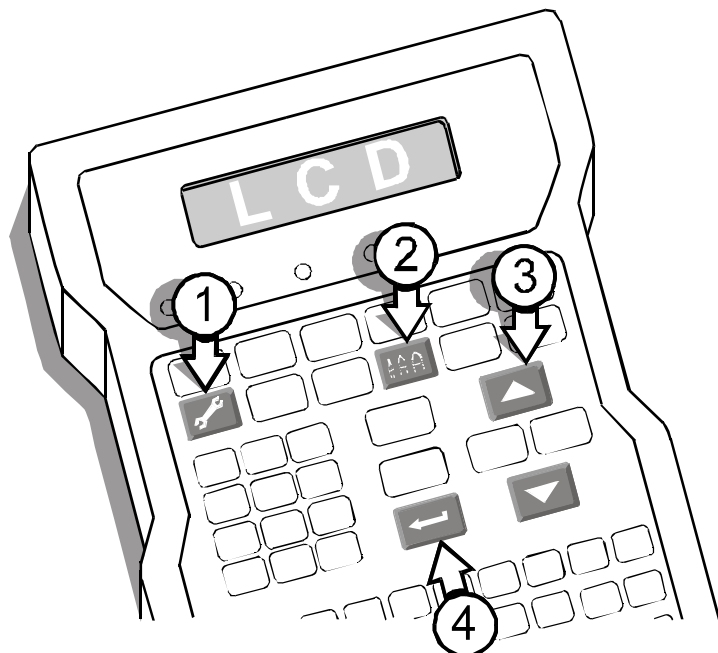
This feature is a part of sample message g5

Setting the Default Character Width

C4

CHANGING THE DEFAULT CHARACTER WIDTH: *The character width set in this routine will be the default character width for all messages created in the future. To change the character width in an existing message, follow Instruction C3, "Changing the Character Width in a Message".*

This feature enables you to set the horizontal space between the dots in a printed character. The default value is 6. See page C3 for scanned samples of different character widths.



- 1** Press SET-UP.
- 2** Press CHARACTER WIDTH.
- 3** The LCD will show a range of 1 (narrow) to 9 (wide).

Set Character Width:

6

Select a width by scrolling and press ENTER.

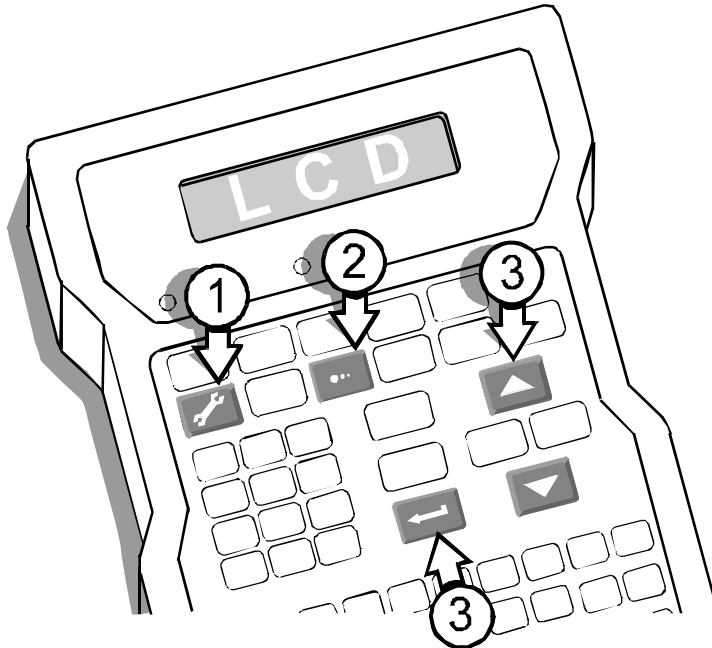


- 4** Press ENTER to finish.

Changing the Printed Dot Size

C5

The I.V./700 allows you to change the diameter of all the dots that form printed characters in a range from 0.05 inch (1.27mm) to 0.10 inch (2.54mm). The default dot size is 4.



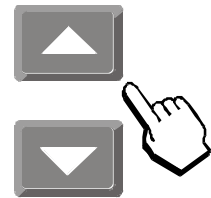
1 Press SET-UP.

2 Press DOT SIZE. The LCD will prompt for a dot diameter:

Dot diameter (1-9):

4

3 Scroll to a new dot diameter and press ENTER.



Try sample prints with the new dot diameter to see if you have improved the printing. If not, change the dot size and run more print samples.

The scanned samples following show the differences in printed characters when the dot size is 3, then 4 and finally 7.

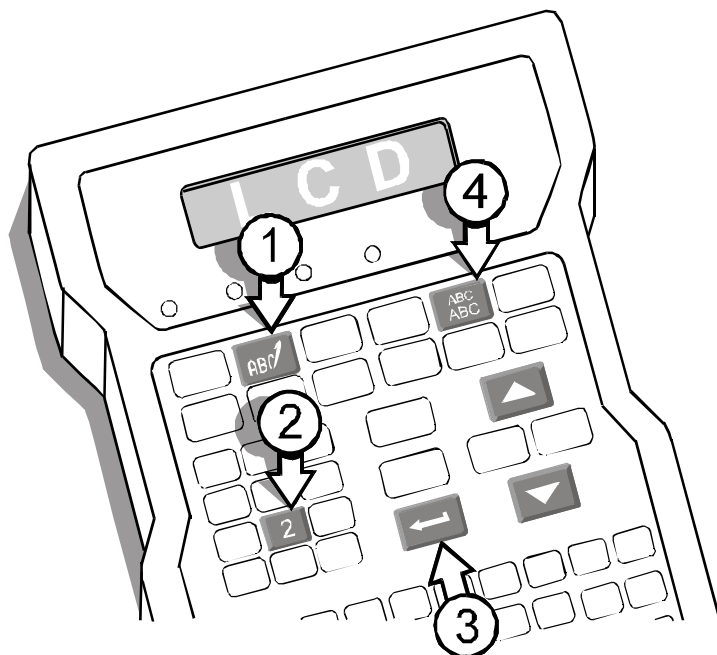
Dot Size 3	Dot Size 4	Dot Size 7

Changing the Font in a Single Message

C6

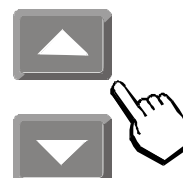
The I.V./700 has three fonts: 5 dot-tall, single dot(5S); 7 dot-tall, single dot (7S); and 7 dot-tall with double dots. See scanned samples on Instruction C7.

The routine that follows changes the font in a single message.



1 Press EDIT.

2 Press 2 and scroll until the target message is on-screen.



3 Press ENTER.

4 Press FONT. The LCD will prompt for a font selection.

1:7B 2:7S 3:5S
Set Font: **3**

5 Type the number of the new font and press ENTER



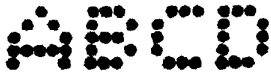
6 Press ENTER again to finish the edit.

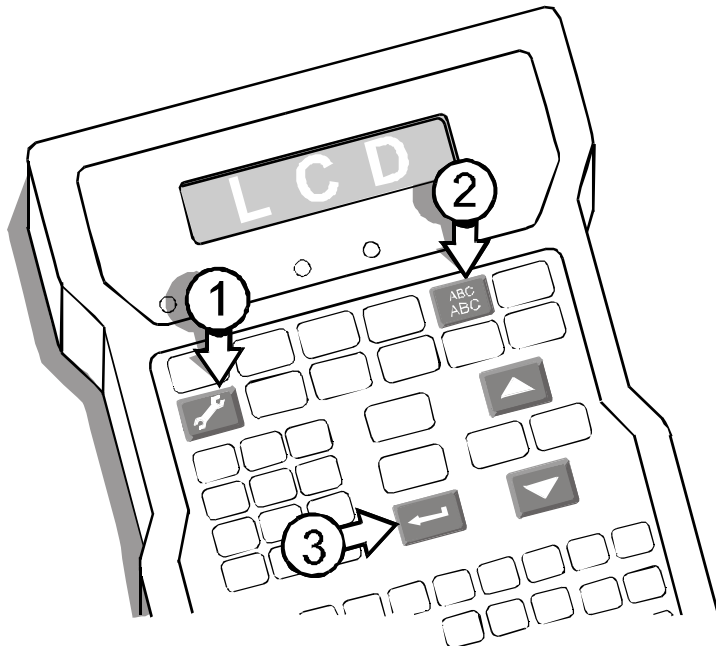
Changing the Default Font

C7

CHANGING THE MESSAGE FONT The font set in this routine will be the default font for all messages created in the future. To change the font in an existing message, follow the directions on Instruction C6, "Changing the Font in a Single Message".

The I.V./700 has three fonts:

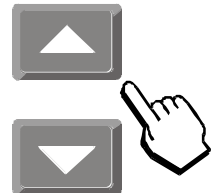
7B: Double line characters 7 dots tall ("B" for bold).	7S: Single line characters 7 dots tall	5S: Single line characters 5 dots tall.
		



- 1** To change the font, start by pressing SET-UP.
- 2** Press FONT. The LCD will prompt you to select a font.

1:7B 2:7S 3:5S
Set Font: **3**

- 3** Scroll to a new font and press ENTER.

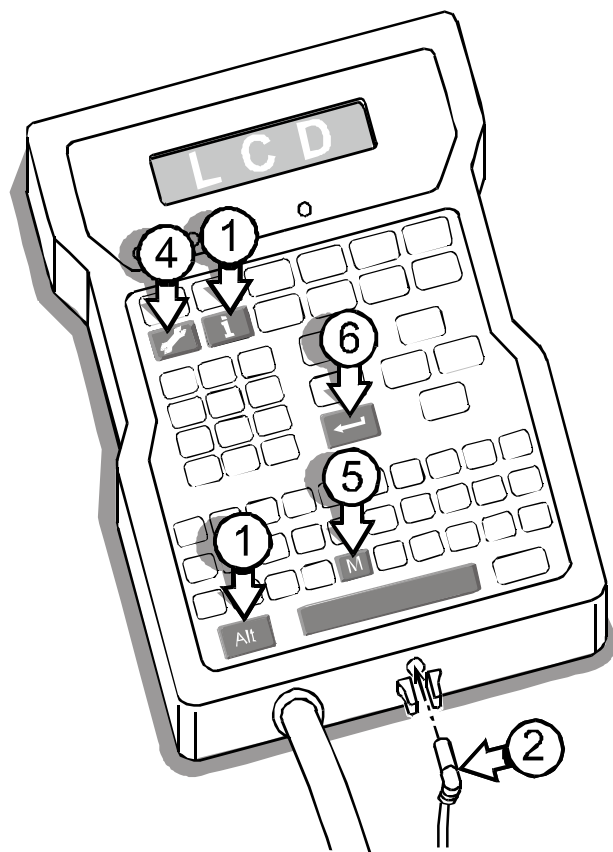


Rotating the Message

C8

This function will rotate the printed message 180 degrees, which enables you to print a readable message that is upside down. Rotated messages allow you to print very close to the bottom of a box if the box is moving upside down on the conveyor.

Setting the controller for rotated printing requires accessing a menu that is available only after a special initialization. Start by unplugging the barrel connector from the I.V./700.



- 1** Press and hold ALT+INFORMATION.
- 2** Plug in the barrel connector.
- 3** Release the keys when the LCD shows "Information".

Information 1-Unused Messages
--

- 4** Press SET-UP.
- 5** Press M on the QWERTY keypad. The LCD will prompt for a rotated message.

Rotate Message? 1-No 2-Yes :1
--

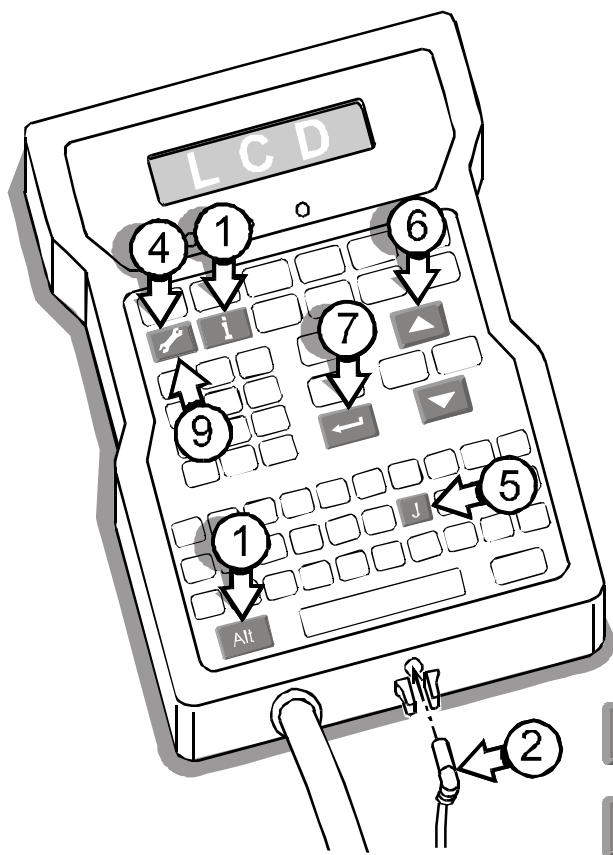
- 6** Press 2 to rotate the message.
- 7** Press ENTER to finish.

Adjusting a Single Dot Diameter

C9

This function allows you to change the dot diameter of individual dots from top to bottom by altering the stroke, in microseconds, of a piston in an ink channel. When the dots in a row are too small, they require a dot-size increase. If they are too large, they require a dot-size decrease.

Changing individual dot diameters requires a menu that is available only after a special initialization. Start by unplugging the I.V./700.



- 1 Press and hold ALT+INFORMATION.
- 2 Plug in the barrel connector.
- 3 Release the keys when the LCD shows "Information."

Information
1-Unused Messages

- 4 Press SET-UP
- 5 Press J on the QWERTY keypad. The LCD will prompt for the number of the dot that is not printing like the other dots. The top dot on the printhead is dot number 1 and the bottom dot is dot number 7.

Dot: 1

- 6 Scroll to the number of the problem dot.
- 7 Press ENTER.
- 8 The LCD will prompt for a new diameter of the selected dot. Move to the second digit (250) and scroll to a new value. The scroll changes by units of 10.

- 9 Press SET-UP. The LCD will ask if you want to keep the "Factory Setting Y/N?" Select "1-NO." When you select NO, the I.V./700 remembers the new dot pulse width value only until the next initialization.
By running print samples and altering pulse-width values, you can change a single dot until it matches the other dots.

- 10 When you achieve the best print, select "2-YES" when exiting this function. This choice makes the new pulse width value permanent.

The scanned samples below show the changes in appearance of a single dot with different diameters.

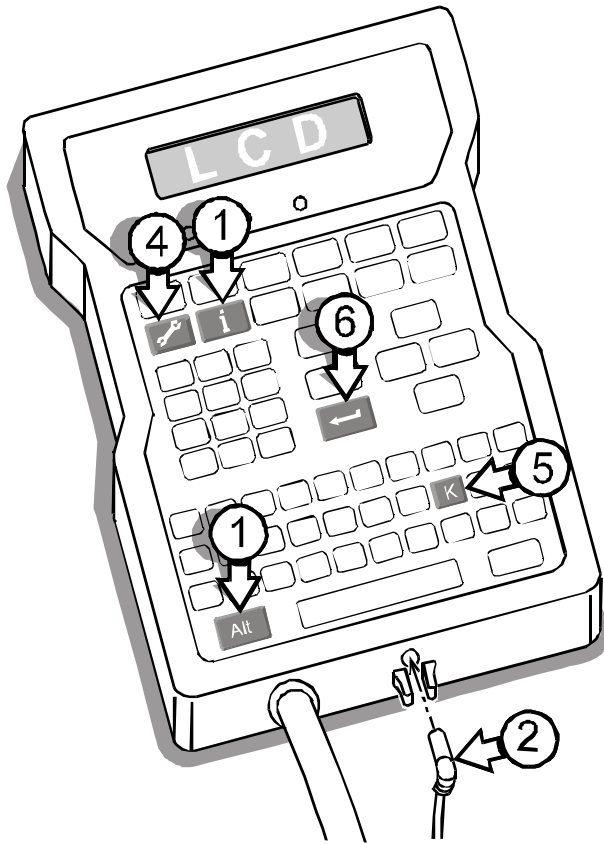
Dot #4 reduced by 25	Dot #4 at preset value	Dot #4 increased by 40

First Dot Adjustment

C10

When the I.V./700 has not printed for several minutes, the first dots printed in a message can be too small. You can prevent these initial small dots with First Dot Adjustment, which increases the dot sizes only on the first print. Dots in the second and all subsequent messages return to their defined dot-size settings, depending on the dot-size you choose. First dot adjustments are made at the factory but may require fine-tuning.

Adjusting the first dot size requires a menu that is available only after a special initialization. Start by unplugging the I.V./700.



1 Press and hold ALT+INFORMATION.

2 Plug in the barrel connector.

3 Release the keys when the LCD shows "Information."

Information
1-Unused Messages

4 Press SET-UP

5 Press K on the QWERTY keypad. The LCD will prompt for the time in seconds that the printer will stand idle."

1st dot time:000 sec

6 Type in the amount of time and press ENTER.

7 The LCD will show "1st Dot Adjust:1" for the first valve (dot) at the top of the printhead. Press ENTER.

1st dot adjust:1
Dot Adjustment:30

The second line of the LCD will prompt for "Dot Adjustment." If this dot is small in the sample print (see the first sample below), increase the value by 10 which increases the size of the dot for the first print.

If the dot was full-size, DO NOT enter a new value: leave the existing value and press ENTER

8 The display will change to "1st Dot Adjust:2" for the second valve. Press ENTER and the second line will prompt for "Dot Adjustment." Repeat this process through all seven dots.

9 After the seventh dot, press SET-UP. The LCD will prompt for "Factory Setting." Select "2-YES."

Wait the time designated in step 5, then print a message. If the print is satisfactory, unplug and replug to set the I.V./700 in print mode. If the print is unsatisfactory reset the first dot by repeating this procedure (C8) and run another sample. Repeat until you achieve a satisfactory first print.

The scans following show examples of first prints with a problem fourth dot.

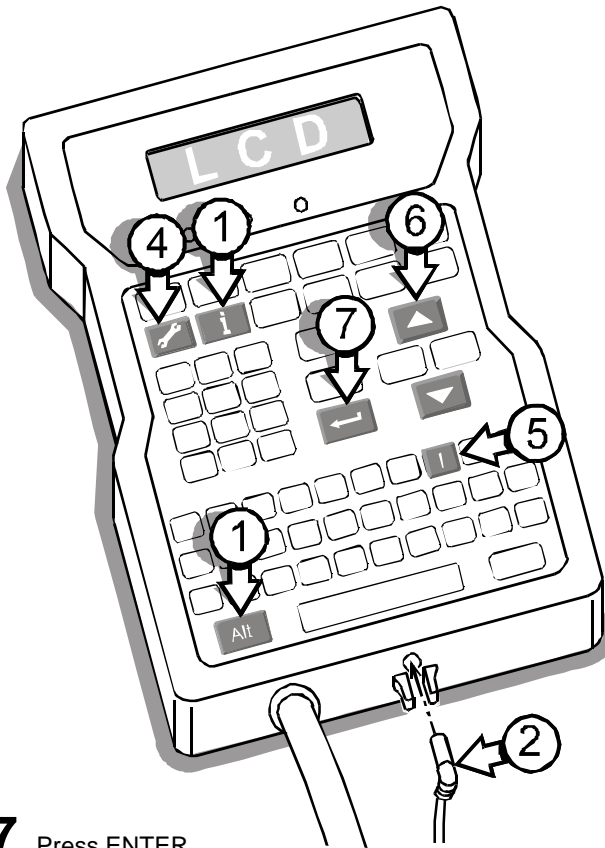
Small fourth dot	Fourth dot adjusted correctly	Fourth dot oversized
A B C D	A B C D	A B C D

Sizing Dots in Columns

C11

When the I.V./700 prints a single dot, the printing channel has individual access to ink pressure. When all seven channels print simultaneously, they share the ink pressure. This sharing can produce printed dots in columns that are slightly smaller in diameter than single printed dots. The column dot adjustment enables you to eliminate slight size variances between dots printed in rows and dots printed in columns.

Column dot adjustment requires a menu that is available only after a special initialization. Start by unplugging the I.V./700.



7 Press ENTER.

8 Run a print sample at the speed of a production run.

9 Continue adjusting until the dots in columns match the size of dots printed in rows.

The scanned samples below show the adjustments that can be made to dots in columns.

Dots with column adjustment set too low	Nominal letters	Dots with column adjustment set too high

1 Press and hold ALT and INFORMATION.

2 Plug in the barrel connector.

3 Release the keys when the LCD shows "Information."

Information
1-Unused Messages

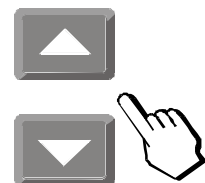
4 Press SET-UP

5 Press I on the QWERTY keypad. The LCD will prompt for a change in value of the column dot adjustment:

Column Dot Adjust:

3

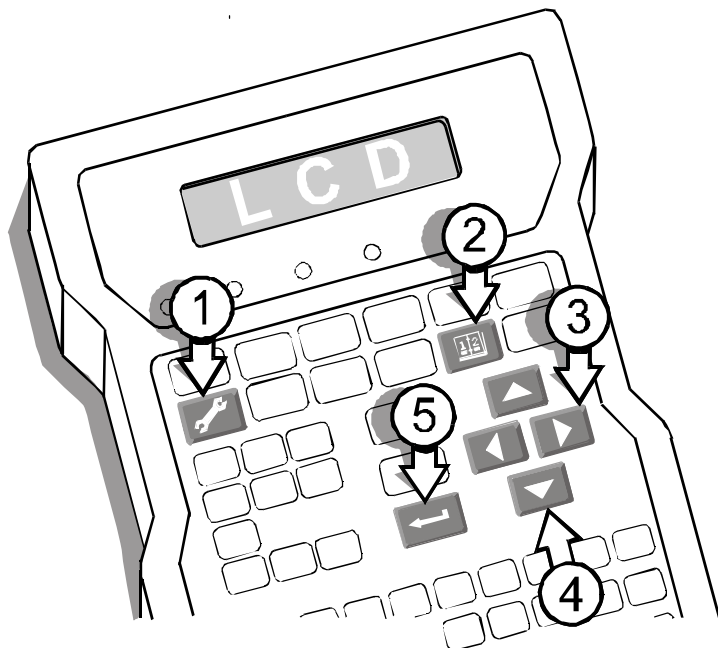
6 Scroll to a higher or lower number.



Setting Message Variables **D**

Setting the Date	D1
Setting an Expiration Date	D2
Setting the Time	D3
Setting the Work Shifts	D4
Setting the Shift Start (Code Date)	D5
Setting the Item Count	D6
Setting a Pallet Count.....	D7

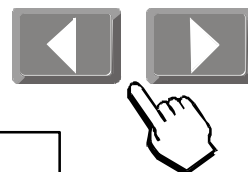
Setting the Date

D1


1 Press SET-UP.

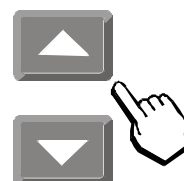
2 Press DATE. The LCD will show an entry screen with a four-place field for year, two places for the month, and two for the day.

3 Move the cursor to the first number in the year.



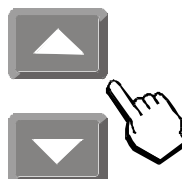
YYYY	/	MM	/	DD
1999	/	11	/	04

4 Scroll to the correct year.



5 Press ENTER then move the cursor to the second number in the month field. Scroll to the correct month.

YYYY	/	MM	/	DD
2000	/	11	/	04



6 Press ENTER then move the cursor to the second number in the day field. Scroll to the correct day.

YYYY	/	MM	/	DD
2000	/	12	/	04

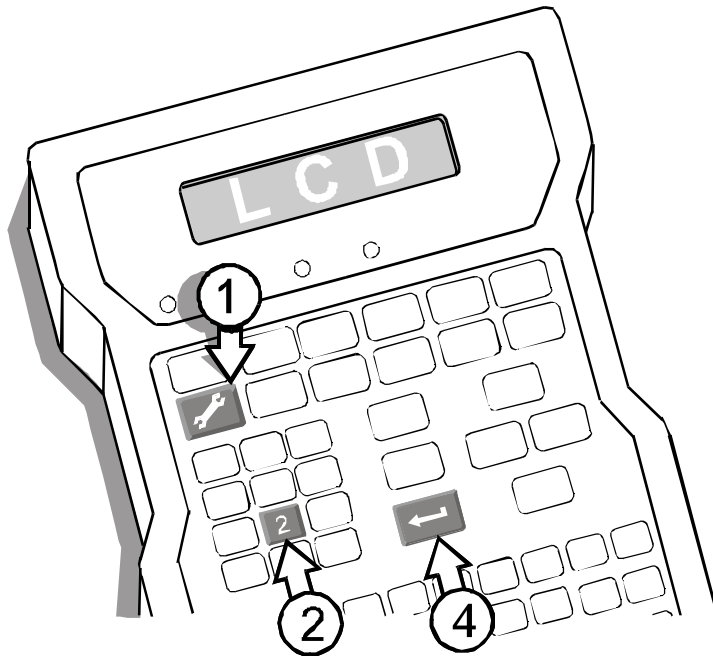
7 Press ENTER when done.

This feature is a part of sample messages G2 and g3

Setting the Expiration Date

D2

The I.V./700 sets the expiration date for a product by adding a user-defined number of days to the system date.



1 Press SET-UP.

4 Press 2 and the LCD will prompt for the number of days to add to the current system date.

Expiration Days
0000

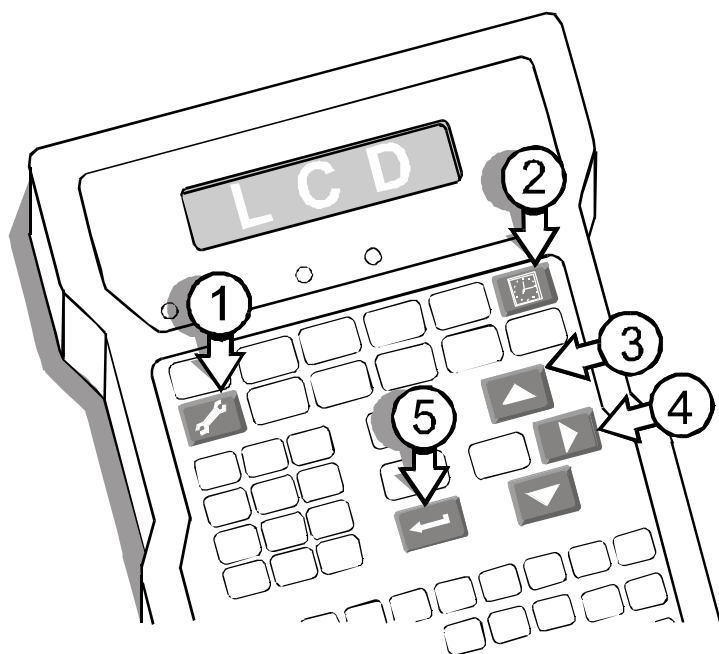
5 Type in the number of days before the product expires.

6 Press ENTER to finish.

NOTE: Instruction E2 shows all the various formats available for an expiration date in a message.

This feature is a part of sample message g3

Setting the Time

D3


1 Press SET-UP

2 Press TIME. The LCD will show the system time by hours (HH), minutes (MM) and AM or PM.

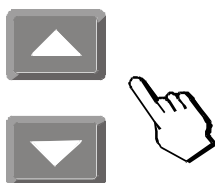
HH	:	MM	PM/AM
06	:	22	PM

3 Move the cursor to the second digit of the entry.



HH	:	MM	PM/AM
0	:	22	PM

4 Scroll until the correct time appears.



5 Press ENTER. The cursor will move to the minute (MM) entry.

6 Repeat steps 3, 4 and 5 to set the minute entry.

7 Type AM or PM to set the time before or after 12 noon.

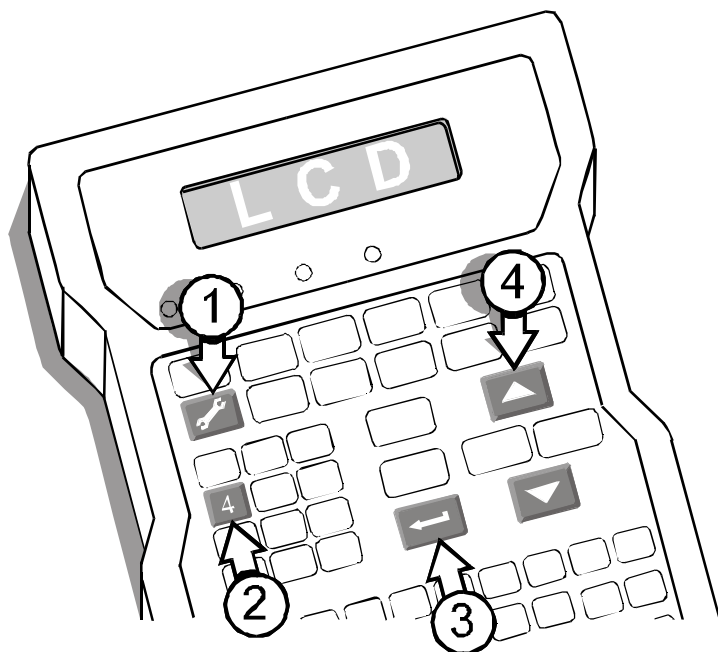
8 Press ENTER when done.

This feature is a part of sample message g5

Setting the Work Shifts

D4

This function enables you to divide the workday into shifts and assign a start time and a name to each shift.



1 Press SET-UP.

2 Press 4 for “4-Work Shifts.” The LCD will prompt “Set Shifts (1-6).”

Set Shifts (1-6):
Shift: **1**

3 Type the number of a shift to define and press ENTER.

4 The LCD will prompt for a start time from a 24-hour clock.

Start:
03:00

Scroll to the starting hour and press ENTER.

The cursor will move to minutes. Scroll to the starting minutes of the hour.

Press ENTER.



5 The LCD will prompt for the name of the shift.

Shift Name:
A<

Type a name for the shift (1 to 19 alphanumeric characters). This is the name that will print in your messages. The table at right shows the default values. Note that if you use less than three shifts, edit shift 3 by deleting the name “C.”

6 Repeat steps 2 through 5 to create additional shifts.

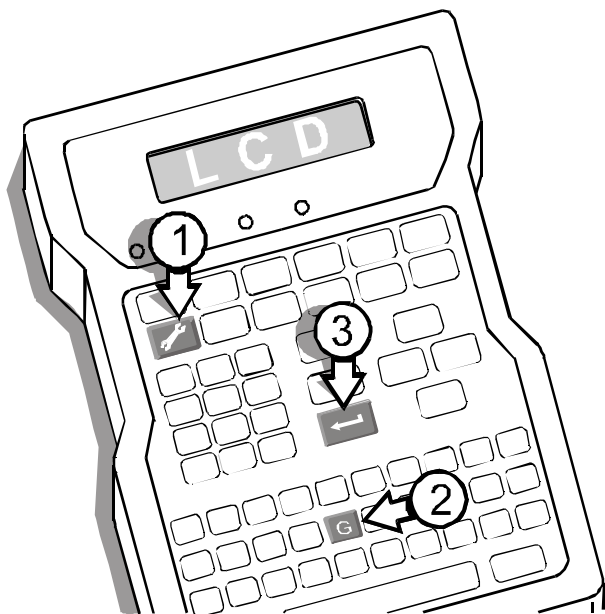
7 Press SET-UP to exit the work shift set-up.

Shift Number	Start Time	Shift Name
1	08:00	A
2	16:00	B
3	00:00	C
4	00:00	
5	00:00	
6	00:00	

Setting the Shift Start

D5

Code Date allows you to change the time for work shifts to begin from midnight to another hour in the day.



1 Press Set-Up

2 Press G for “G-Code Date.”

Rollover Hour (0-23):

00

The LCD will prompt for an entry from 0 to 23 that identifies the hour the work shifts start again.


3 Type the hour to restart work shifts and press ENTER.

If you want to keep the rollover hour at midnight, leave the default value of 00 and press ENTER.

Setting the Item Count

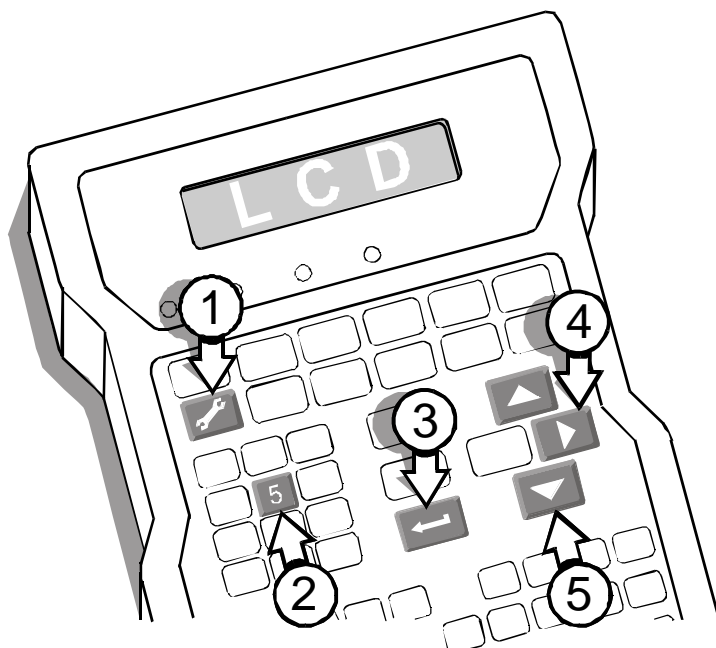
D6

Item count enables you to print increasing or decreasing numbers on each item. If the starting number is smaller than the ending number, the item count will increase with each printed message. If the starting number is larger than the ending number, the item count will decrease with each printed message. When the item count reaches the ending number, it will start again with the starting number. You can define starting and ending values from 0 to 9999999.

The I.V./700 remembers the item count progression whenever printing stops so that the next print run will start and continue with the previous count. To see the progress of the item count, pallet count or total count, press COUNT  at any time during the print cycle.

Resetting the item count requires editing the message that includes the item count. Whenever you change the parameters of item count, you will need to update all messages that contained item count prior to the change. Update by selecting a message to edit, erasing the old item count and inserting a new one by pressing COUNT.

If you do not have an item count autocode in your message and you press COUNT, you will see "Item Count" above a row of Xs. These Xs mean that either no messages with item count have been printed or no message contains the item count autocode.



1 Press SET-UP.

2 Press 5 for "5-Item Count." The LCD will prompt for a starting value.

Start:
0000001

3 If you want a starting number other than 1, move the cursor to the right and type a new starting number. Press ENTER.

4 Move the cursor to the right and type your ending number. Press ENTER.

End
0001000

5 For "Change" select either 1 or 2 with the arrow keys and press ENTER. Depending on your selection, the item count will increase or decrease by 1 or 2 with each print.

Change:
01

6 The LCD will prompt for the inclusion of leading zeros in the printed item count. Press 2 if you want zeros printed before the number. The width of the greatest count--which can be either the starting or ending number--determines the number of printed zeros.

If you want no leading zeros, press 1.


Leading Zero?
1-No 2-Yes : ☒

This feature is a part of sample message G2.

Setting the Pallet Count

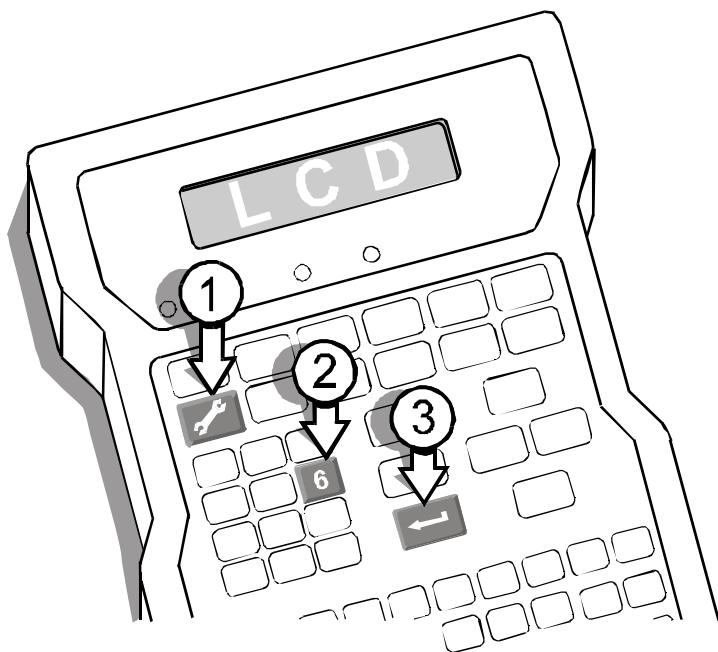
D7

Pallet Count enables you to print the same number on several products that all belong on the same pallet. For example, defining the pallet quantity as 20, causes the I.V./700 to print "1" on the first 20 items for the first pallet, "2" on the second 20 items and so on.

The I.V./700 remembers the pallet count progression whenever printing stops so that the next print run will start and continue with the previous count. To see the progress of the item count, pallet count or total count, press COUNT  at any time during the print cycle.

Resetting the pallet count requires editing the message that includes the pallet count. Whenever you change the parameters of pallet count, you will need to update all messages that contained pallet count prior to the change. Update by selecting a message to edit, erasing the old pallet count and inserting a new one by pressing COUNT.

If you do not have a pallet count autocode in your message and you press COUNT, you will see "Pallet Count" above a row of Xs. These Xs mean that either no messages with pallet count have been printed or no message contains the pallet count autocode.



1 Press SET-UP.

2 Press 6. The LCD will prompt for the number of items per pallet.

Items per Pallet:
000012

3 Move the cursor to the right and type the number of items for each pallet and press ENTER.

4 The LCD will prompt for the starting number to print on items for the first pallet.

Start
000001

Type a number and press ENTER.

5 The LCD will prompt for the "End" number, the number to print on items for the last pallet. Type a number and press ENTER.

End
0000100

6 The LCD will prompt for the inclusion of leading zeros in the pallet count. Press 2 if you want zeros printed before the number. The width of the greatest count--which can be either the starting or ending number--determines the number of printed zeros.

Leading Zero?
1-No 2-Yes : ☒

If you want no leading zeros, press 1.

This feature is a part of sample message G6.

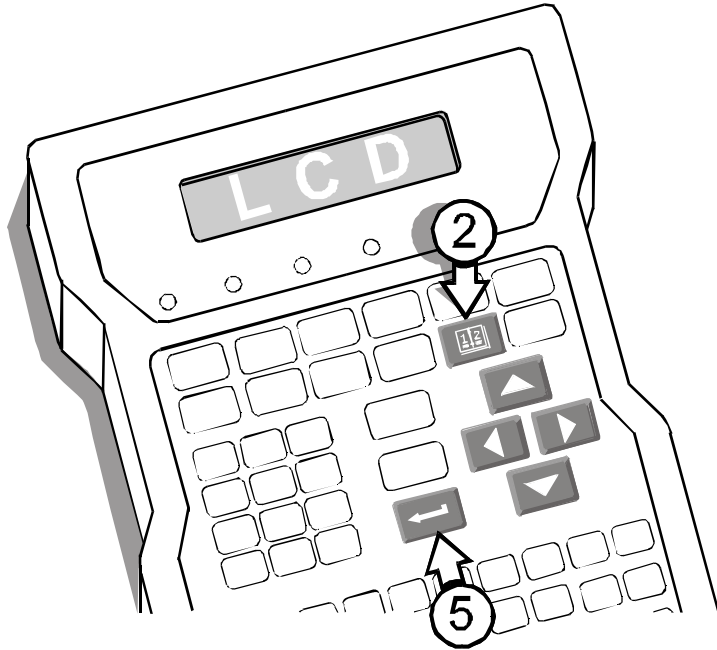
Placing Variables in Messages E

Placing the Date	E1
Placing the Expiration Date	E2
Placing the Time in a Message.....	E3
Placing a Work Shift	E4
Placing an Item Count	E5
Placing a Pallet Count	E6
Using Alternate Characters	E7

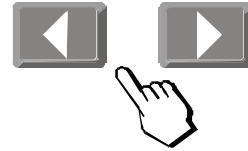
Placing the Date in a Message

E1

You must be in the edit mode to place a date in a message or change the format of the date. See Instruction A2, "Creating a Text Message" to enter the edit mode.



- 1** While editing, position the cursor where you want a date to appear.

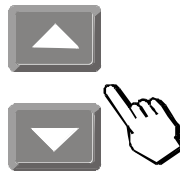


- 2** Press DATE. The LCD will show the date enclosed by braces. The braces appear only on-screen, not in the printed message.

- 3** Position the cursor under the initial brace of the message date. The first line of the LCD will now show the format of the message date in an abbreviated form.

DD/MM/YY
{ 04 / 07 / 01 } SHIPMENT

- 4** To change the date format, use the UP and DOWN ARROWS.



The chart below shows all the available date formats on the I.V./700 with examples for July 4, 2001.

Date in Message	Format Prompt	Explanation
{07/04/01}	MM/DD/YY	Two digits each for the month / the day / the year.
{JUL}	MON-ENGLISH	Month in three letters abbreviated from English
{A}	W/W	Current week as two alphabets. Week 53 = *
{G}	M	Month in a single letter: Jan is A, Feb is B, and so on.
{27}	WW	Current week as two digits.
{185}	DDD	Day of the year in three digits.
{07}	MM	Month in two digits.
{04}	DD	Day of the month in two digits.
{JUL}	MON	Month in three letters abbreviated from selected language.
{01}	YY	Last two digits of the year.
{2001}	YYYY	Year in four digits.
{04/07/01}	DD/MM/YY	Two digits each for the day / the month / the year.

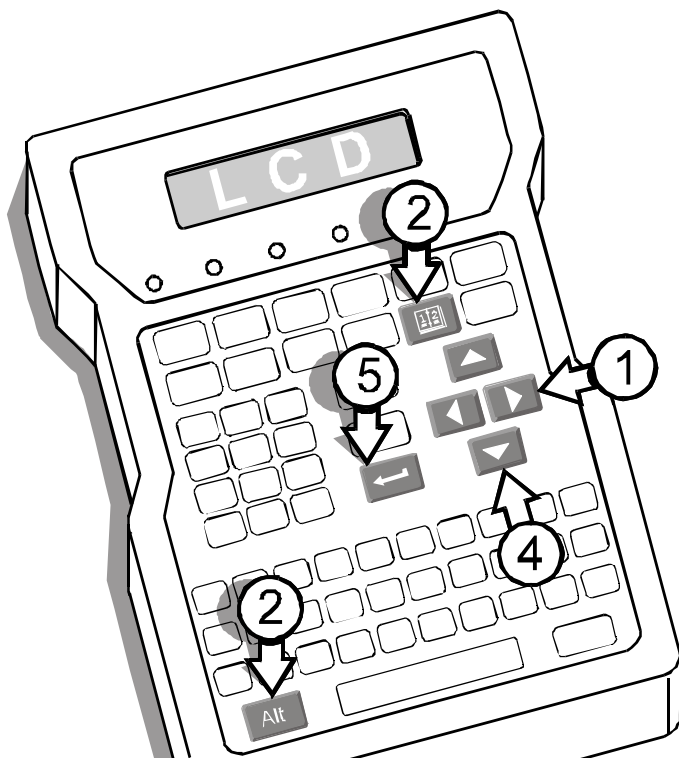
- 5** Press ENTER when done.

This feature is a part of sample message G2

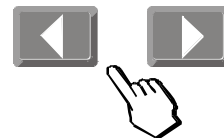
Placing the Expiration Date in a Message

E2

You must be in the edit mode to place an expiration date in a message or change the format of the expiration date. See Instruction A2, "Creating a Text Message" to enter the edit mode.



- 1 While editing, position the cursor where you want the expiration date to appear.

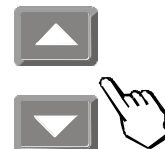


- 2 Press ALT+DATE. The LCD will show the expiration date enclosed by braces. The braces appear only on-screen, not in the printed message.

- 3 Position the cursor under the initial brace of the expiration date. The first line of the LCD will show the format of the expiration date in an abbreviated form.

XDD/MM/YY
{ 04 / 08 / 01 } SHIPMENT

- 4 Scroll to change the format.



The chart below shows all the available expiration date formats on the I.V./700 with examples for August 4, 2001.

Date in Message	Format Prompt	Explanation
{04/08/01}	XDD/MM/YY	Two digits each for the day / the month / the year.
{08/04/01}	XMM/DD/YY	Two digits each for the month / the day / the year.
{04/AUG/01}	XDD/MON/YY	Two digits for the day, three letters for the month and two digits for the year.
{AUG}	XMON-ENGLISH	Month in three letters abbreviated from English
{H}	XM	Month in a single letter: Jan is A, Feb is B, and so on.
{216}	XDDD	Day of the year in three digits.
{31}	XWW	Week as two digits.
{2001}	XYYYY	Year in four digits.
{01}	XYY	The last two digits of the year.
{08}	XMM	Month in two digits.
{AUG}	XMON	Month in three letters abbreviated from selected language.
{04}	XDD	Day of the month in two digits.
{AUG 01}	XMON YY	Month in three letters and the year in two digits

- 5 Press ENTER when done.

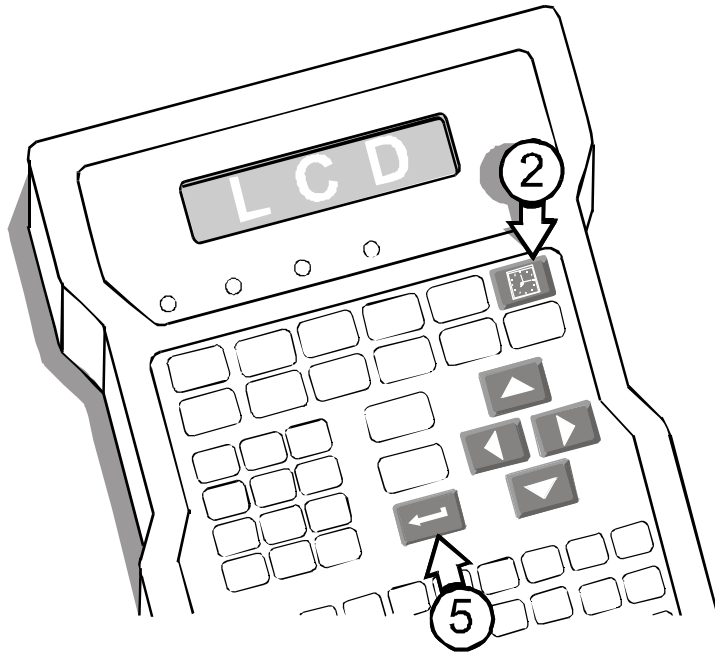
INDIVIDUAL EXPIRATION DATES - The expiration date set in this procedure will be the default expiration date for all future messages. To override this default for a single message, select the message while in the edit mode. Press ALT+DATE, type a new number and then press ENTER.

This feature is a part of sample message g3

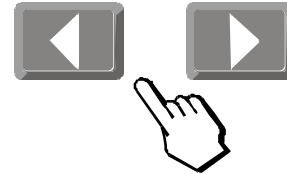
Placing the Time in a Message

E3

You must be in the edit mode to place the time in a message or change the format of the time. See Instruction A2, "Creating a Text Message" to enter the edit mode.



- 1 While editing, position the cursor where you want the time to appear.

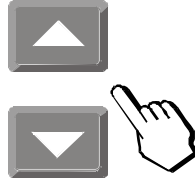


- 2 Press TIME. The LCD will show the time enclosed by braces. The braces appear only on-screen, not in the printed message.

- 3 Position the cursor under the initial brace of the message time. The first line of the LCD will now show the format of the message time in an abbreviated form.

hh:mm
[11:44] SHIPMENT

- 4 To change the time format, use the UP and DOWN ARROWS.



The chart below shows all the available time formats on the I.V./700 with examples for 11:44 AM. All prompts with "hh" in them will display and print as a twenty-four hour clock.

Time in Message	Format Prompt	Explanation
{11:44}	hh:mm	Hours and minutes, 2 digits each separated by a colon.
{1}	1:AM/2:PM	1 = before 12 noon. 2 = after 12 noon.
{AM}	AM/PM	AM for before 12 noon. PM for after 12 noon.
{44}	mm	Minutes only in 2 digits.
{11}	hh	The hour only in 2 digits.
{11:44AM}	hh:mmAM/PM	Hours and minutes with AM or PM appended.
{1144}	hhmm	Hours and minutes with no separation.

- 5 Press ENTER when done.

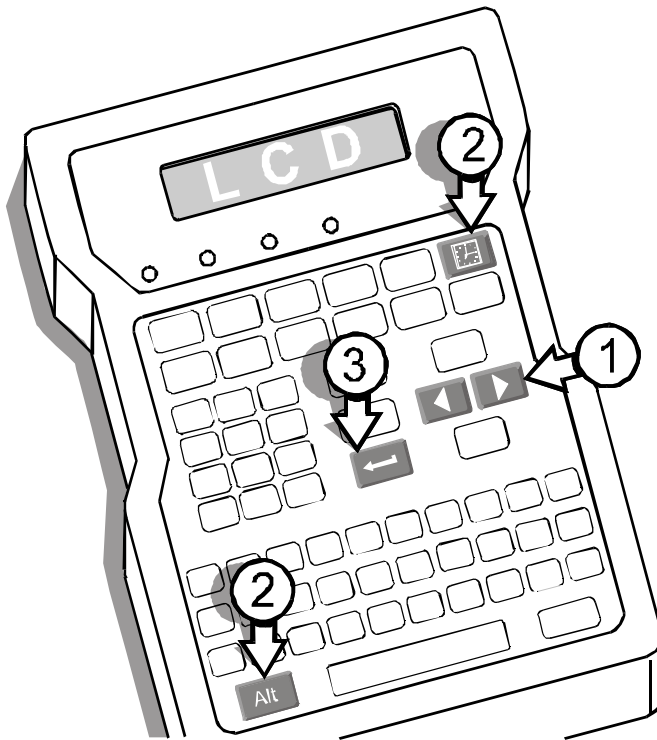
This feature is a part of sample message g5

Placing a Work Shift in a Message

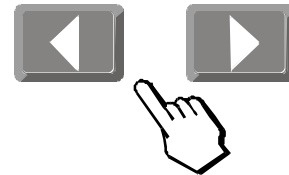
E4

Review work instruction D4, "Setting the Work Shifts" and D5, "Setting the Shift Start" before placing a work shift in a message.

You must be in the edit mode to place the work shift in a message. See Instruction A2, "Creating a Text Message" to enter the edit mode.



- 1 While editing, position the cursor where you want the work shift to appear.



- 2 Press ALT+TIME. The LCD will show the shift enclosed by braces. The braces appear only on-screen, not in the printed message.

SHIFT [B] SHIPMENT

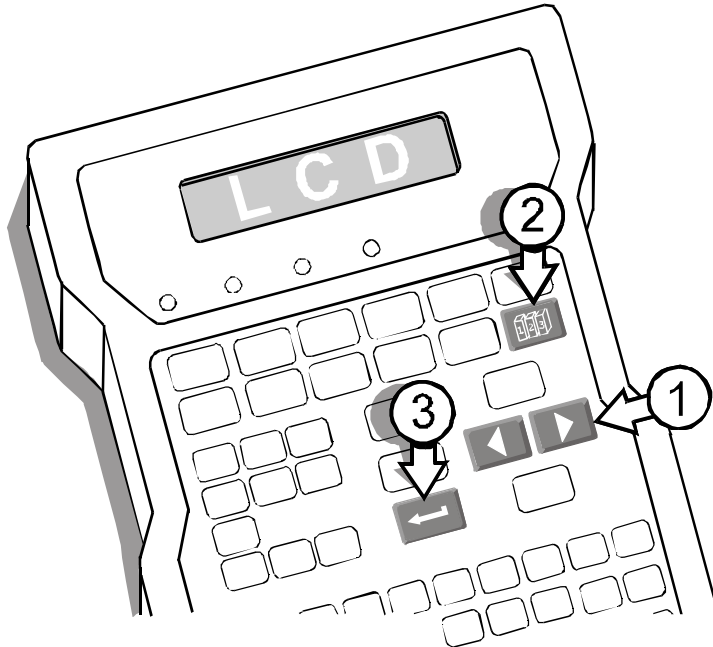
- 3 Press ENTER when finished.

Placing the Item Count in a Message

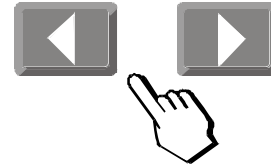
E5

Review work instruction D6, "Setting the Item Count" before inserting an item count into a message.

You must be in the edit mode to place the item count in a message. See Instruction A2, "Creating a Text Message" to enter the edit mode.



- 1** While editing, position the cursor where you want the item count to appear.



- 3** Press COUNT. The LCD will show the item count enclosed by braces. The braces appear only on-screen, not in the printed message. If you selected to print leading zeros (Instruction D6), then zeros will appear inside the braces.

COUNT 1, 2, 3 [1] SHIPMENT

- 3** Press ENTER when finished.

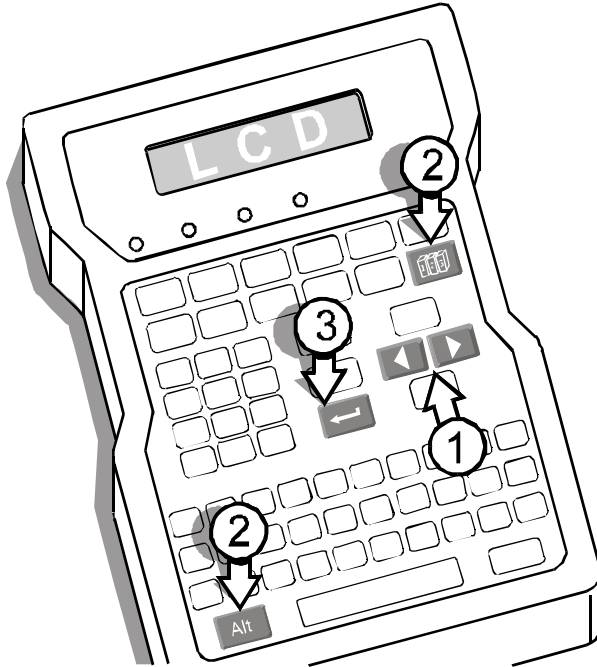
This feature is a part of sample message G2

Placing the Pallet Count in a Message

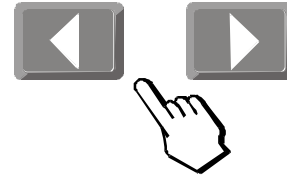
E6

Review work instruction D7, Setting the Pallet Count, before inserting the pallet count into a message.

You must be in the edit mode to place the pallet count in a message. See Instruction A2, "Creating a Text Message" to enter the edit mode.



- 1** While editing, position the cursor where you want the pallet count to appear.



- 2** Press ALT+COUNT. The LCD will show the pallet count enclosed by braces. The braces appear only on-screen, not in the printed message. If you selected to print leading zeros (Instruction D7), then zeros will appear inside the braces. To verify that you have inserted the correct code, place the cursor on the initial brace. The type of code will appear in the first line of the LCD.

PALLET 10, 20, 30 [1] SHIPMENT

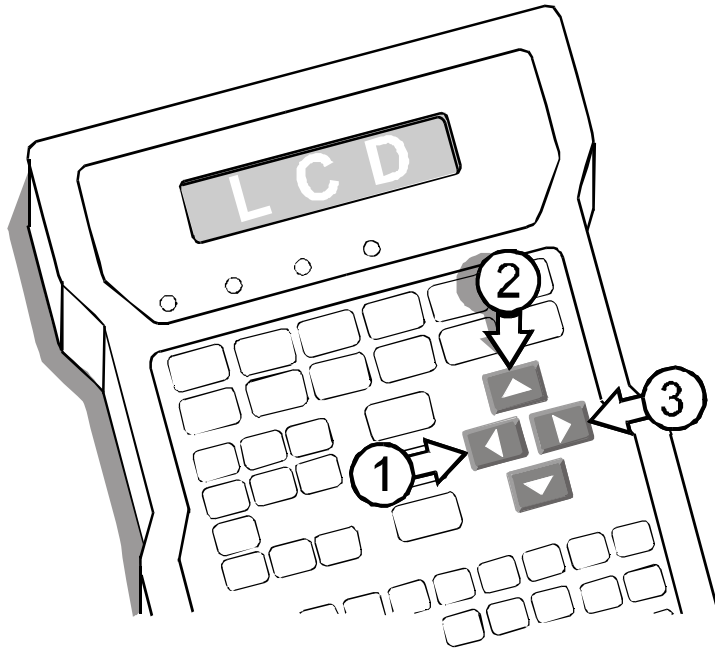
- 3** Press ENTER when finished.

THIS FEATURE IS A PART OF SAMPLE MESSAGE G6

Using Alternate Characters

E7

All alphabetic and numeric keys on the I.V./700 keypad can display alternate characters when used with the up and down arrows. The English vowel set and the consonants C, N and Y have alternate characters with phonetic marks such as the umlaut ("") and the acute accent ('). All consonant keys provide access to the entire alphabet in both uppercase and lowercase. The punctuation keys provide multiple punctuation marks. The instructions that follow explain how to access these characters.



- 1** While editing or creating a message, type a letter and then place the cursor on it.

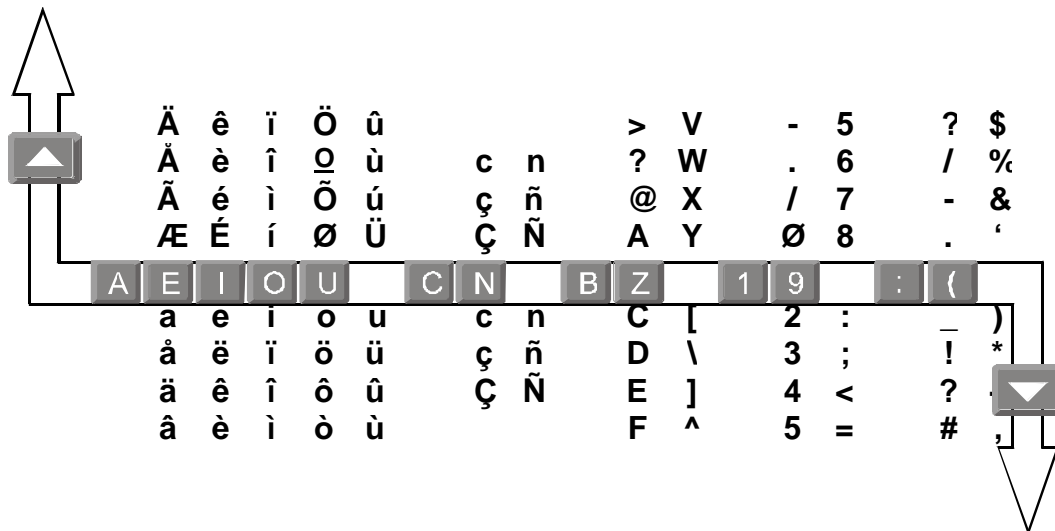
Editing...
TESTING<

- 2** Press the up or down arrow and the LCD will show the alternate characters.

Editing...
TESTING<

- 3** Press the right arrow when the character or mark you want appears onscreen.

The graphic below shows only some of the characters available. You can see all the characters by scrolling through each character onscreen or by reviewing Appendix C of the *I.V./700 Technical Manual* (5750-072).



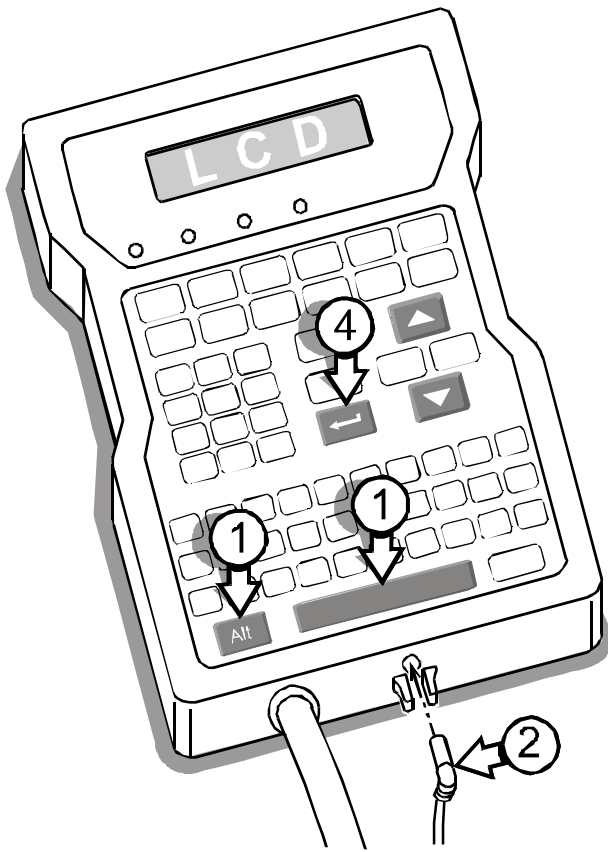
This feature is a part of sample message G4 and G5

System Operation **F**

Selecting a Language.....	F1
Setting the Date	F2
Setting Units of Measure	F3
Setting the Print Mode.....	F4
Setting the Message Gap	F5
Setting the Box Length	F6
Setting the Print Speed	F7
Setting the Print Direction	F8
Using a Password.....	F9
Using the External Photocell Model.....	F10

Selecting a Language

F1



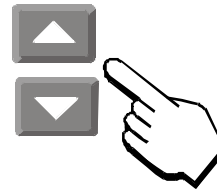
1 Press and hold ALT and SPACE.

2 Plug in the barrel connector.

3 Release the keys when the LCD shows "Self Test."

Self Test

4 Scroll to a language and press ENTER.



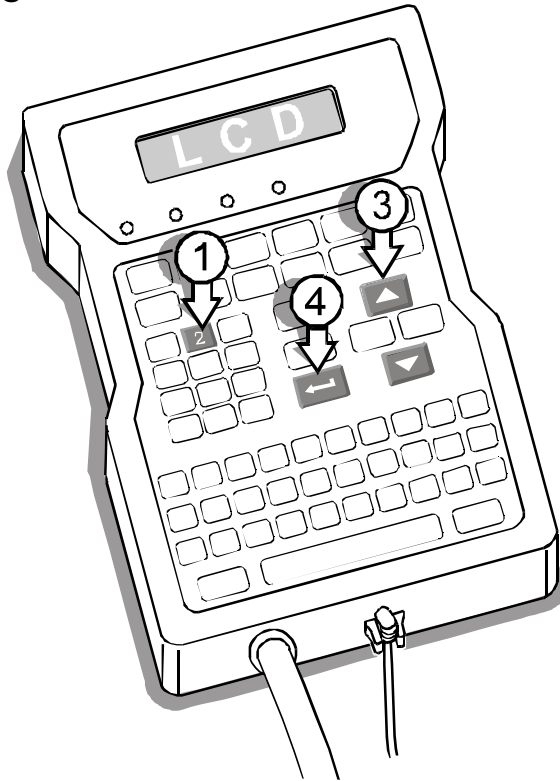
Language Choices:

1. English
2. Español
3. Deutsch
4. Français
5. Italiano

Setting the Date

F2

During Initialization



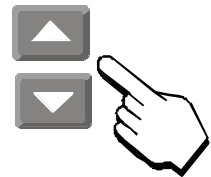
- 1** Press 2 when the LCD asks you to set the date.

Set Date		
1-No	2-Yes	:2

- 2** Move the cursor to the far right number in the year.

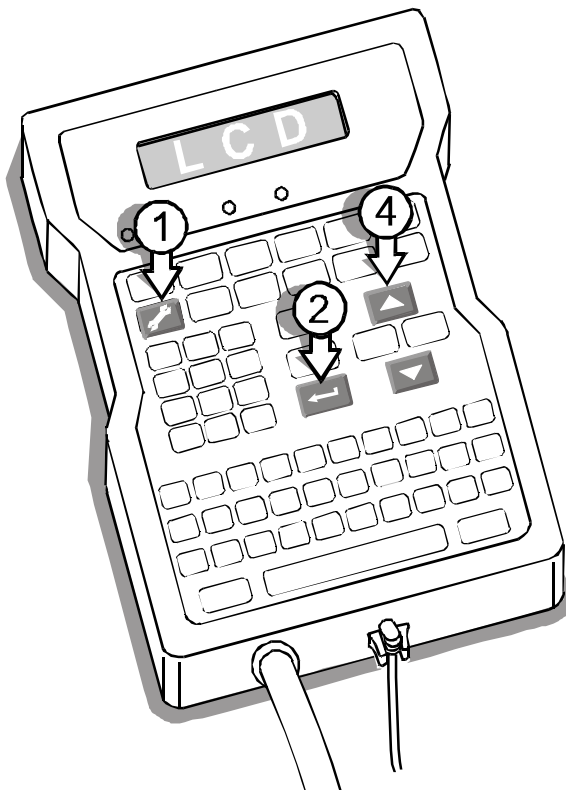
YYYY / MM / DD		
1999	07	/ 07

- 3** Scroll to the correct year.



- 4** Press ENTER. The cursor will move to the Month field. Repeat steps 2 and 3 to alter the month and the day.

While Editing.....



- 1** Press SET-UP.

Set-Up	
1-Date	-

- 2** Press ENTER.

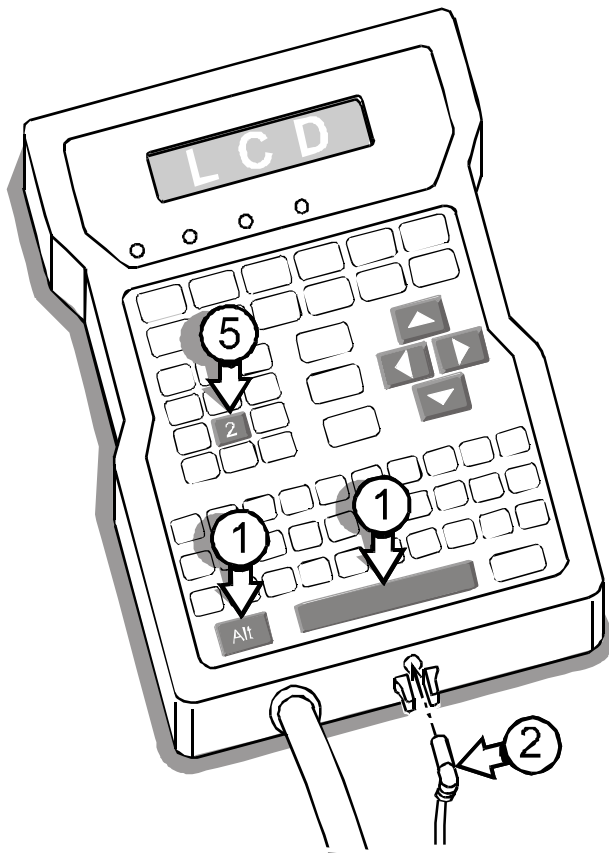
- 3** Move the cursor to the far right number in the year.

YYYY / MM / DD		
1999	07	/ 07

- 4** Scroll to the correct year.

- 5** Press ENTER. The cursor will move to the Month field. Repeat steps 3 and 4 to alter the month and the day.

Setting Units of Measure

F3


1 Press and hold ALT and SPACE.

2 Plug in the barrel connector.

3 Release the keys when the LCD shows "Self Test."

Self Test

4 Select a language, set the date and set the time (see instruction page F1).

5 Press 2 when the LCD prompts for units of measure.

Select Units

1-No 2-Yes :**2**

6 Press 1 for U.S. Customary or 2 for metric.

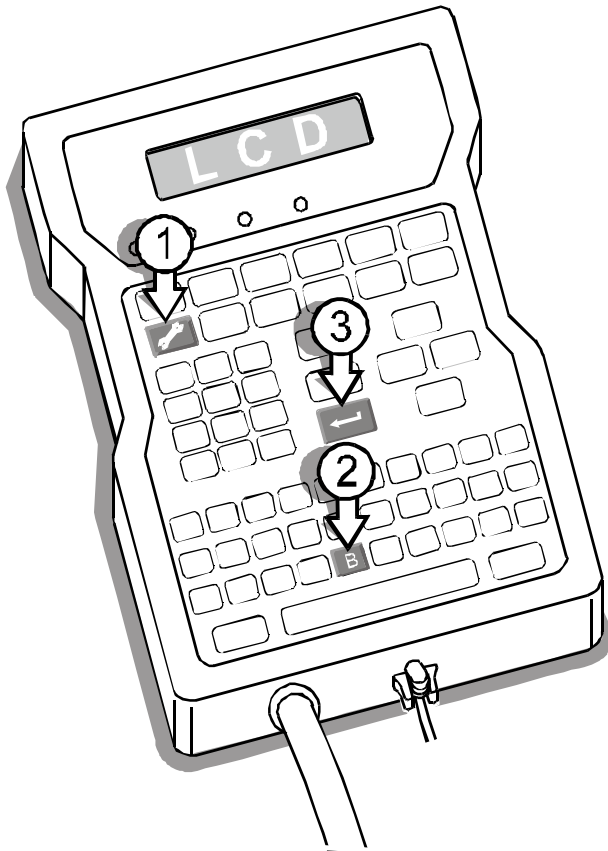
1-Inches 2:Meters

Units:**1**

Setting the Print Mode

F4

The I.V./700 has two print modes: single and multiple. In Single mode (the default), it prints once on each item. In Multiple mode, it prints a single message multiple times on one item. Multiple mode is useful for printing repeated messages on long items such as sheets of wallboard. When you select to print multiple prints, the I.V./700 will print until stopped by a photosensor signal.



1 Press SET-UP.

2 Press B for Print Mode. The LCD will prompt for multiple prints.

Print Multiple

1-No 2-Yes :2

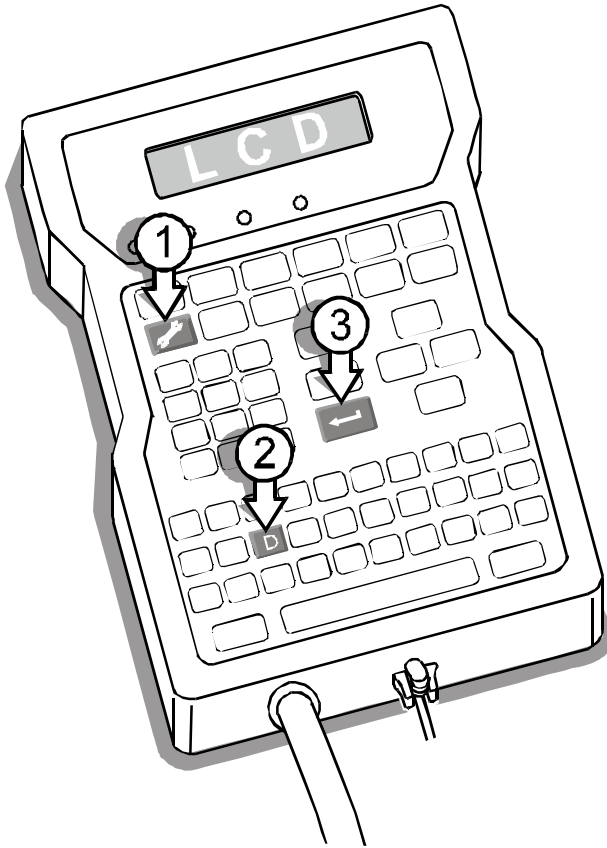
3 Make your choice and press ENTER. Either choice returns the display to the Set-Up menu

4 If you choose multiple prints, you will need to define the distance between prints with Message Gap (see instruction page F4).

Setting the Message Gap

F5

Message Gap defines the distance between the beginning of each messages when printing the same message repeatedly on the same item.



1 Press SET-UP.

2 Press D for "D-Message Gap."

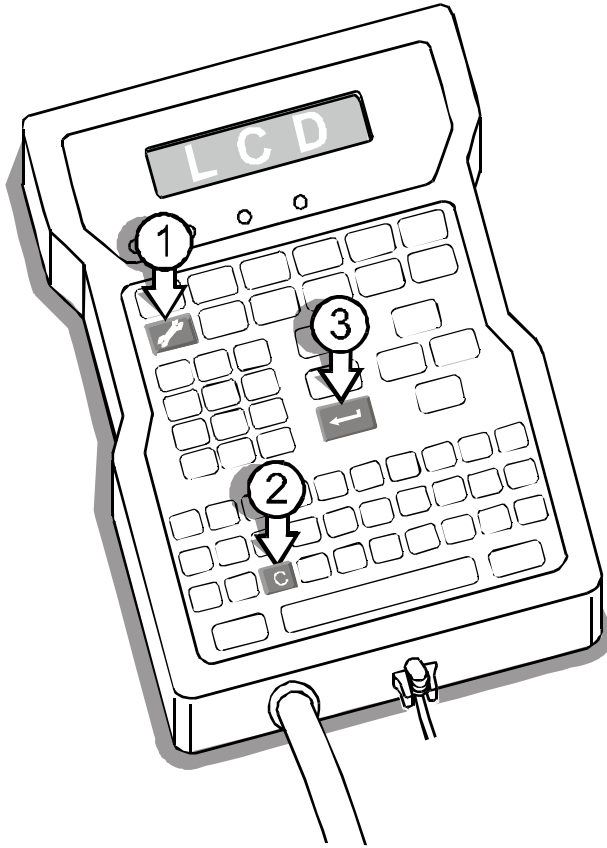
Message Gap: 000.4 inches

3 Type the distance in inches or centimeters between messages and press ENTER.

Setting the Box Length

F6

The I.V./700 has the ability to ignore photosensor signals after detecting the box. This feature is useful when you observe the I.V./700 printing between boxes or more than once per box. Setting an accurate box length will prevent unwanted prints. Do not set the box length to be longer than the length of the product: you can miss printing on the next box if it is following too closely.



1 Press SET-UP.

2 Press C for "C-Box Length." The display will prompt for distance.

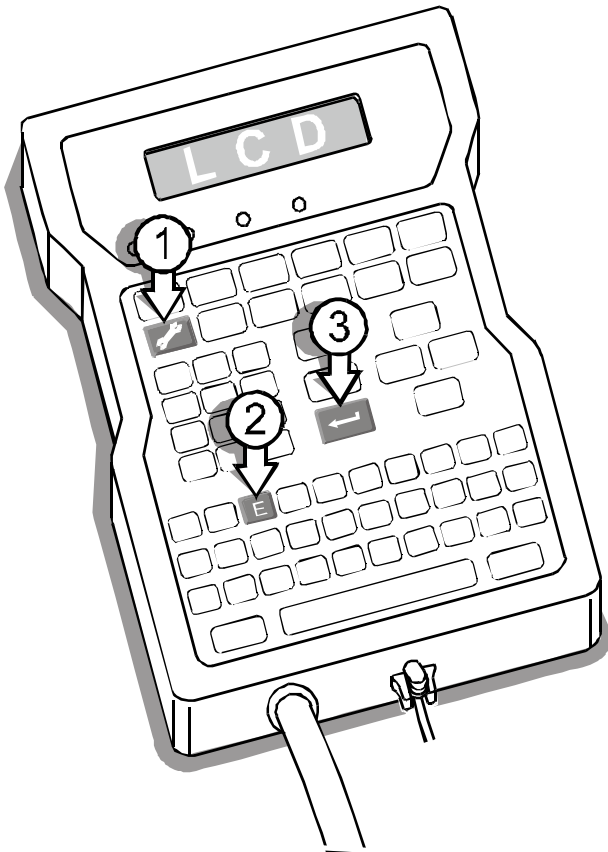
Box Length:
000.2 inches

3 Type in the box length in inches or centimeters

Setting the Print Speed

F7

The I.V./700 has the ability to print at a fixed speed while using the photosensors only to detect the arrival of a product, not to track the direction and speed of the product. Since the motion detection is off, fixed speed printing requires a fixed direction. Be sure to follow the directions on instruction page F8 to set the print direction. If the direction is not fixed, it is possible that your message will be unreadable.



1 Press SET-UP.

2 Press E for "E-Print Speed." The LCD will prompt for a Yes or No to fixed speed printing.

Fixed Speed (Y/N):
1-No 2-Yes :2

If you select "1-No", the display will return to the Set-Up menu. If you select "2-Yes", the LCD will ask for the speed in feet or meters per minute.

3 Type the speed and press ENTER.

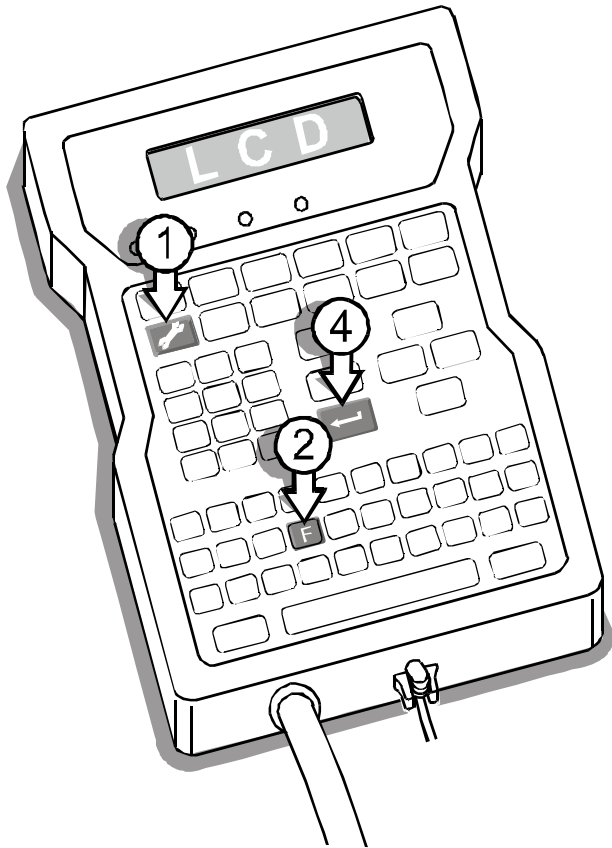
Print Speed:
040.0 ft/min

Follow the directions instructions on page F8 to set the print direction.

Setting the Print Direction

F8

The I.V./700 can print in the direction you choose. In normal mode, the photosensors detect the direction of the product and the controller adjusts the message to print correctly whether printing from left-to-right or from right-to-left. In fixed speed mode (instruction page F6) the message will still print in both directions but only one direction is correct: product moving in the other direction will receive a message printed backwards. To avoid backward printing, the direction of the printing must be fixed as well as the speed. The default direction is left-to-right.



- 1** Press SET-UP.
- 2** Press F for "F-Print Direction." The LCD will prompt for a Yes or No to fixed direction printing.

Fixed Direction (Y/N):

1-No 2-Yes :1

If you select 1-No, the LCD will return to the Set-Up menu.

- 3** If you select 2-Yes, the LCD will ask you to set the print direction:

Fixed Direction

1-:← 2-:→ :2

- 4** Select a direction and press ENTER.

Using a Password

F9-1

The I.V./700 can operate with password protection and lock out all functions except printing, purging and access to information.

When password protected, the screen will report "Invalid Password" whenever it receives an incorrect password. If you make a mistake during password entry, press ENTER and wait. The screen will refuse your entry, report "Invalid", wait 3 seconds and give you another chance. It will repeat this cycle until it receives the active password.

Valid passwords contain only alphabetic characters. Passwords CANNOT CONTAIN numbers, punctuation marks, icon key entries or scrolled (alternate) characters.

Accessing the Password Feature

1 Press SET-UP.

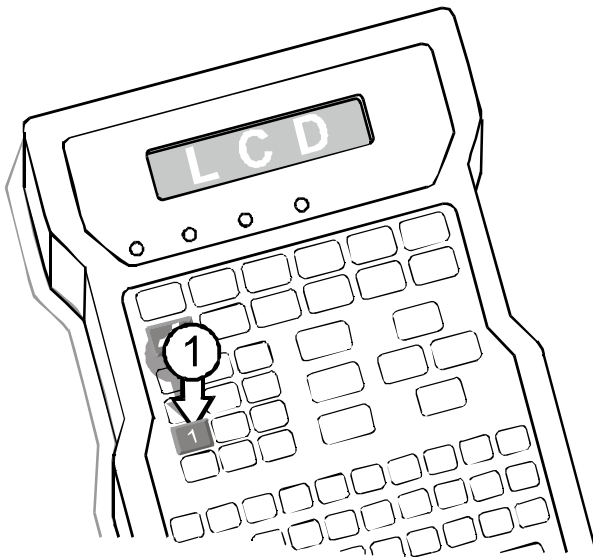
2 Press H. The Password menu offers three choices: 1. Enable; 2. Disable; and 3. Change.

Password 1-Password Enable

Password 2-Password Disable
--

Password 3-Change

Enabling Password Protection



1 Press 1. The LCD will prompt "PASSWORD" and show a blank second line.

Password _____

2 To enable password protection for the first time, type **DIAGRAPH** and press ENTER.

Password * * * * *

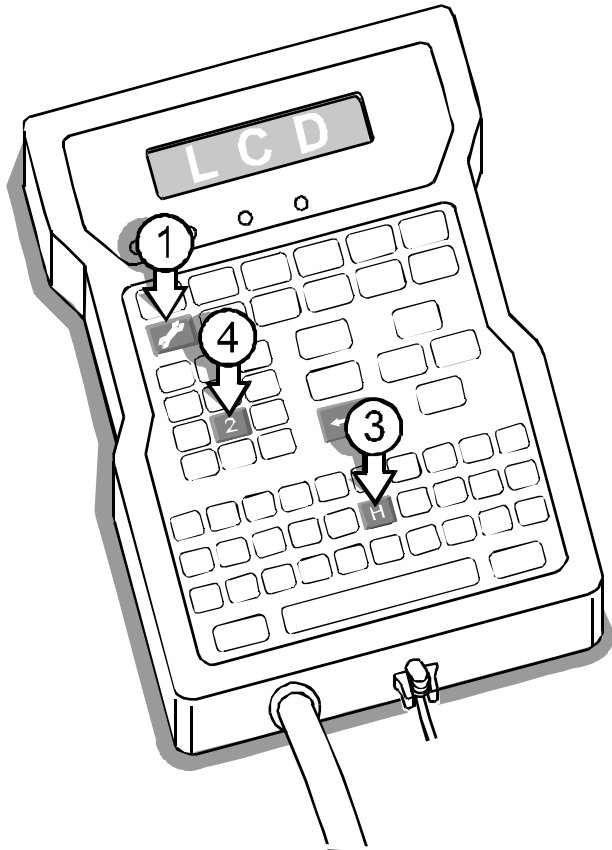
If you type DIAGRAPH correctly, the screen will respond with "OK." Your printer is now protected and will allow access only to Information, Print and Purge. All other functions now require password entry.

Using a Password

F9-2

To enable password protection after changing to a password other than DIAGRAPH, you must enter the new password when prompted for "PASSWORD." If you type the new password correctly, the screen will respond with "OK."

Disabling Password Protection



1 Press SET-UP.

2 Type the current password.

Password

3 Press H to access the Password menu.

Password
2-Password Disable

4 Press 2. The LCD will respond "Disabling Password..."

All functions are now accessible without password entry.

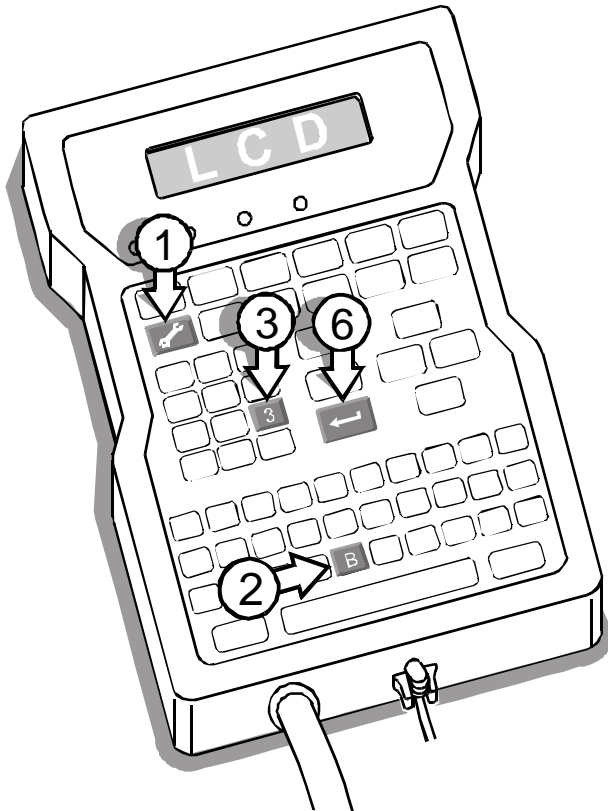
Using a Password

F9-3

Changing a Password

NOTE: You can change the password when password protection is disabled. If you do, record the new password where you can find it easily because when the time comes to enable password protection, the I.V./700 will no longer accept DIAGRAPH as the password.

Changing When Protection is Disabled



1 Press SET-UP.

2 Press H to access the Password menu.

Password
1-Password Enable

3 Press 3 to select "Change Password".

Password
3-Change

4 The LCD will respond with "Old Password" and a blank line. Type the current password and press ENTER. If correct, the screen will respond with "Old Password, OK" and request "New Password."

5 Type a new password. Note that no scrolled characters, numbers or punctuation marks will be accepted.

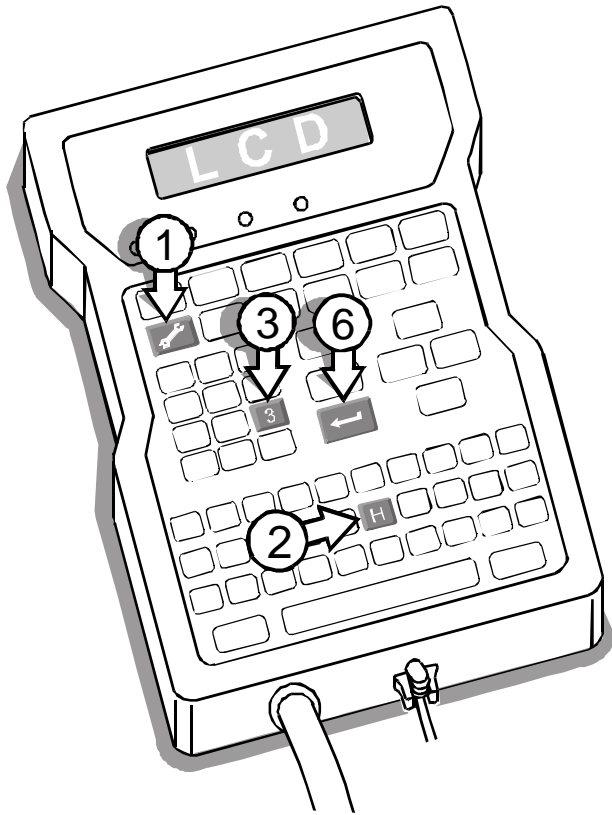
6 Press ENTER. The LCD will prompt "Confirm Password."

7 Type your new password exactly as you typed it before and press ENTER. If you vary your spelling, the LCD will respond "New Password" and you must redefine the new password. When you have entered your password successfully two times, the screen will return to the password menu.

Using a Password

F9-4

Changing When Protection is Enabled



1 Press SET-UP and type the current password. Press ENTER.

2 Press H to access the Password menu.

Password
1-Password Enable

3 Press 3 to select "Change Password".

Password
3-Change

4 The LCD will respond with "Old Password" and show a blank line.

Old Password

Type the current password and press ENTER. If correct, the screen will respond with "OK" and request "New Password."

5 Type a new password and press ENTER. The screen will prompt "Confirm Password."

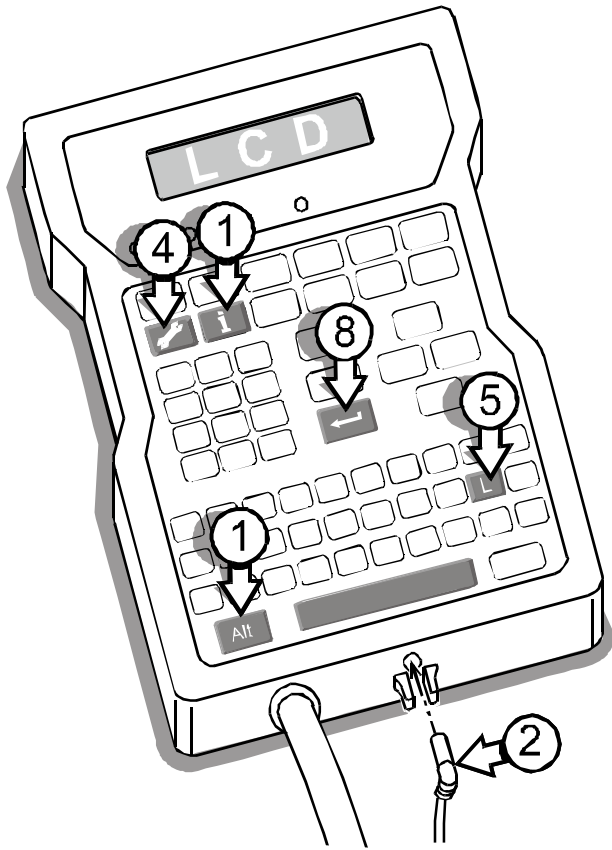
6 Type your new password exactly as you typed it before and press ENTER. When the LCD reports "OK", you have successfully changed the password.

Using the External Photocell Model

F10

These instructions cover the configuration of the I.V./700 with the external photosensor

Setting the controller for the external photosensor requires accessing a menu that is available only after a special initialization. **DO NOT USE THIS MENU** option if you are using the standard I.V./700 and its built-in photosensors. Start by unplugging the I.V./700



- 1** Press and hold ALT and INFORMATION.
- 2** Plug in the cannon connector.
- 3** Release the keys when the LCD shows "Information".

Information
1-Unused Messages

- 4** Press SET-UP.
- 5** Press L on the QWERTY keypad. The LCD will prompt for an external photocell.

External Photocell?
1-No 2-Yes :1

- 6** Press 2 and then ENTER. The LCD will prompt for a fixed print speed.

Print Speed:
040.0 ft/min

- 7** Type in a print speed and then ENTER. The LCD will prompt for a fixed print direction.

Fixed Direction:
1:<--- 2:---> :2

- 8** Select the print direction and press ENTER.

Sample Messages **G**

New Message.....	G1
Message with Date and Count.....	G2
Message with Expiration Date.....	G3
Message with Alternate Characters.....	G4
Wide Message with Time Mark.....	G5
Message with Count and Pallet.....	G6

New Message

G1

Message **2000 PRODUCTS IN 2000**

Goal Create a new message on the I.V./700.

Procedures: Pages Naming a message: A2
Adding text to a message: A2
Saving a message: A2, A3
Retrieving a message: A1, A3

1. Press EDIT to select a new message



1-New Message
2-Edit Message

2. Press 1 to start a new message



Name:
<

3. Type 2Y2 to name the message

Name:
2Y2<

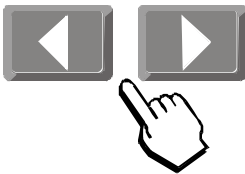
4. Press ENTER to access the message editor



Editing...
<

5. Type **2000 PRODUCTS IN 2000**.

Use the LEFT and RIGHT ARROW to see the entire message.



Editing...
2000 PRODUCTS IN 200<

- 6 Press **ENTER** to complete the message



Editing...
2000 PRODUCTS IN 200<

7. Press 1 to save the message



1-Save: 2Y2
2-Cancel Changes: 2<

Message with Date and Count

G2-1

Before starting, follow the directions on instruction pages D1, "Setting the Date", and D6, "Setting the Item Count".

Message

158/2

Goal

Create a message with the current date and the product count.

Tools: Pages

Naming a message: A2

Changing the Date Format: E1

Adding text to a message: A2

Placing the Item Count: E5

Saving a message: A2, A3

Placing the Date: E1

1. Press EDIT to select a new message



1-New Message
2-Edit Message

2. Press 1 to start a new message



Name:
<

3. Type **DATECOUNT** to name the message. Press ENTER.

DATECOUNT



Name:
DATECOUNT<

4. Press DATE.



Editing
{06/07/99}<<

6. Move the cursor under the first brace.



MM/DD/YY
{06/07/99

7. Scroll until the first line shows DDD, the day in three digits (Julian date).



DDD
{158}

8. Move the cursor to the end of the message.



Editing...
{158}

Message with Date and Count

G2-2

9. Press SLASH.



Editing...
{158}/

10. Press COUNT.



Editing...
{158}/{1}

11. Press **ENTER** to complete the message



1-Save:DATECOUNT
2-Cancel Changes:D

12. Press **1** to save the message.



1-New Message
2-Edit Message

13. Run sample prints to see the count increase in each message.

Message with Expiration Date

G3-1

Before starting, follow the directions on instruction pages D1, "Setting the Date", and D2, "Setting the Expiration Date."

Message

USE BY: AUG 99

Goal

Create a message with an expiration date.

Tools: Pages

Naming a message: A2

Adding text to a message: A2

Saving a message: A2, A3

Inserting an expiration date: E2

1. Press EDIT to select a new message



1-New Message
2-Edit Message

2. Press 1 to start a new message



Name:
<

3. Type **USEBY** to name the message

Name:
USEBY<

4. Press ENTER to access the message editor



Editing...
<

5. Type **USE BY:**.

Editing...
USE BY: []

- 6 Press ALT+DATE.



Expiration Days
0000<

7. Type in the number days when the product expires and press ENTER.

Example: Enter **0030** for thirty days.

Editing...
USE BY: {08/04/99} []

6. Move the cursor under the first brace and scroll until the XMON YY prompt appears on the first line of the LCD.



XMON YY
USE BY: [AUG 99]<

Message with Expiration Date

G3-2

11. Press **ENTER** to complete the message



1-Save:USEBY 2-Cancel Changes: U⁻

13. Press **1** to save the message.



1-New Message 2-Edit Message

Message with Alternate Characters

G4.1

Message

GRÜN BEANS- NT WT 20 lbs

Goal

Create a long message with alternate characters.

Tools: Pages

Naming a message:A2

Adding text to a message: A2

Saving a message: A2, A3

Using alternate characters: E7

1. Press EDIT to select a new message



1-New Message
2-Edit Message

2. Press 1 to start a new message



Name:
<

3. Type **GB** to name the message

Name:
GB<

4. Press ENTER to access the message editor



Editing...
<

5. Type **GRU**

Editing...
GRU

6. Move the cursor under the U and scroll up until the U-umlaut (ü) character appears.



Editing...
GRÜ<

7. Move the cursor to the right and type **N BEANS:**



Editing...
GRÜN BEANS:

8. Move the cursor under the colon (:) and scroll up until the hyphen (-) character appears.



Editing...
GRÜN BEANS-

9. Move the cursor to the right and type **NT WT 20 LBS**



Editing...
BEANS-NT WT 20 LBS

Message with Alternate Characters

G4-2

10. Move the cursor under the colon the L and scroll down until the lowercase l appears.

Move the cursor under the B and scroll down until the lowercase b appears.

Move under the S and scroll down until the lowercase s appears.

Editing...
BEANS-NT WT 20 lbs

11. Press **ENTER** to complete the message



1-Save:GB
2-Cancel Changes: G⁻

12. Press **1** to save the message.



1-New Message
2-Edit Message

Wide Message with Time Mark

G5

Before starting, review instruction pages D3, "Setting the Time", and C3, "Adjusting the Character Width".

Message

11:44AM

Goal

Create a message with wide characters that tells the time of printing.

Tools: Pages

Naming a message: A2
 Adding text to a message: A2
 Saving a message: A2, A3
 Using alternate characters: E7
 Adjusting character widths: C3

1. Press EDIT to select a new message

1-New Message
 2-Edit Message

2. Press 1 to start a new message

Name:
 <

3. Type **WTIME** to name the message

Name:
 WTIME<

4. Press ENTER to access the message editor

Editing...
 <

5. Press TIME.

Editing...
 {11:44}

6. Move the cursor under the first brace ({}) and scroll up until hh:mmAM/PM appears in the top line of the LCD.

hh:mmAM/PM
 {11:44AM}<

7. Press CHARACTER WIDTH and scroll down to 6.

Set Character Width
 6

8. Press ENTER twice to complete the message

1-Save:WTIME
 2-Cancel Changes: W

Message with Pallet Count and Item Count

G6-1

Before starting, follow the directions on instructions D6, "Setting the Item Count", and D7, "Setting the Pallet Count". Select YES for leading zeros when setting up the Item Count and NO for the pallet count.

Message

APPLES 2/0000001

Goal

zeros.

Create a message with a pallet count and an item count with leading

Tools: Pages

Naming a message:A2

Placing a Pallet Count: E6

Adding text to a message: A2

Saving a message: A2, A3

Placing the Item Count: E5

1. Press EDIT to select a new message



1-New Message
2-Edit Message

2. Press 1 to start a new message



Name:
<

3. Type **APPLES** to name the message. Press ENTER.



Name:
APPLES<

4. Type **APPLES** for the message text and press SPACE.

Editing...
APPLES

5. Press ALT + COUNT to insert the Pallet Count.



Editing...
APPLES {1}

6. Move the cursor to the initial brace to confirm that the code in the message is the Pallet Count code.



PALLET 10, 20, 30...
APPLES {1}

7. Move the cursor to the end of the message.



Editing...
APPLES {1}

Message with Pallet Count and Item Count

G6-2

8. Press SLASH.



Editing...
APPLES {1}/

9. Press COUNT.



Editing...
APPLES {1}/{0000001}

10. Move the cursor to the initial brace to confirm that the code in the message is the Item Count code.



COUNT 1,2,3
APPLES {1}/{0000001}<

10. Press ENTER to complete the message



1-Save:APPLES
2-Cancel Changes:A

11. Press 1 to save the message.



1-New Message
2-Edit Message

12. Press PRINT and then 1 to print this message



Name:APPLES
APPLES {1}/{0000001}

13. Press ENTER and the LCD will show the next count in the sequence of pallets. Press 2 to change the pallet count



Pallet Count=0000001
1-OK 2-Change :

14. The LCD will prompt for a different pallet count. Move the cursor to the right and type 2.



Pallet Count
0000002

15. Press ENTER and the LCD will prompt for the box number on the pallet. Press 2 to change.



Box # 1 of 12
1-OK 2-Change :1

Message with Pallet Count and Item Count

G6-3

16. Press ENTER and the LCD will prompt for a box number change.
Press ENTER again.



Set Box #
01 of 12

17. The LCD will show the next item count it will print in the APPLES message and offer you the opportunity to change that count. Press 2.



Item Count=0000001
1-OK 2-Change :1

18. The LCD will show the screen for changing the Item count.
Press ENTER to start printing.



Item Count
0000001

Troubleshooting **H**

Not Printing H1

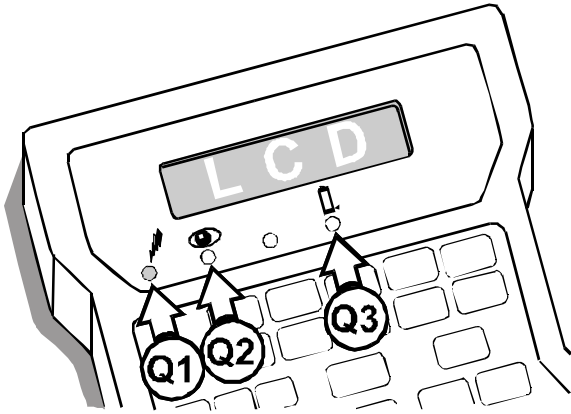
Unsatisfactory Printing H2

Troubleshooting the I.V./700

H1-1

Problems with the I.V./700 separate into two areas: either the unit is not printing or the unit is printing but the results are unsatisfactory.

Not Printing, Questions and Solutions



Q1 The I.V./700 is not printing and the power LED is not lighted. Why?

S1 The printer does not have power. Check the following:

- [1] The round plug connection at the base of the controller;
- [2] The cable connection at the base of the power supply;
- [3] The round plug for a 15 VDC output;
- [4] The cable connection at the rear of the printhead;
- [2] The wall receptacle to make sure that it is supplying power.

Q2 The I.V./700 is not printing and the photocell LED is not blinking. Why?

S2 The photosensors can not detect the product. They can be either too far from the product or dirty. Clean the photosensors and adjust the printhead within 0.25 inch of the product.

Q3 The I.V./700 is not printing and the ink LED is flashing. Why?

S3 The printer is out of ink. Replace the old ink can with a new can.

Q4 The I.V./700 is not printing but all LED signals are normal. Why?

S4 The character width setting is too small for the product line speed. Increase the character width by following the directions on instruction page C3.

Q5 The I.V./700 is not printing and ALL the LEDs are blinking. Why?

S5 A short-circuit has occurred. Disconnect the round plug connector, and the printhead. Connect the round plug connector, but DO NOT connect the printhead. If the unit initializes normally, replace the printhead. If the unit does not initialize normally, replace the controller. Call Diagraph support for directions.

Troubleshooting the I.V./700

H1-2

Unsatisfactory Print, Questions and Solutions

Q6 The I.V./700 is not printing even though all of the LED's are working normally.

S6 *Remove the four Phillips screws from the controller housing and check the cable connection between the printhead cable and the controller board.*

Q7 All indications are normal but the I.V./700 prints on every other box. Why?

S7 *The Photocell Off distance is longer than the length of the product. Decrease the Photocell Off distance by following the directions on instruction page F5.*

Q8 The I.V./700 is printing normally but it's the wrong message. Why?

S8 *The wrong message has been selected to print. Follow the directions on instruction page A1 and select another message to print.*

Q9 The I.V./700 is printing the correct message but the message is too far to one side. Why?

S9 *The message indent distance is incorrect. Adjust the distance by following the directions on instruction pages C1 and C2.*

Q10 The I.V./700 is printing normally but the message is too wide. Why?

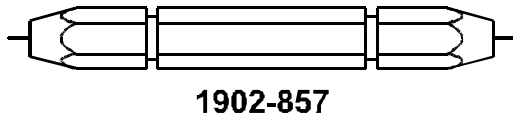
S10 *The character width is too big or too narrow. Perform one of the following procedures:*

[1] Shorten or widen the character width by following the directions on instruction page C3.

[2] Increase or decrease the fixed speed by following the directions on instruction page F6.

Troubleshooting the I.V./700

H1-3

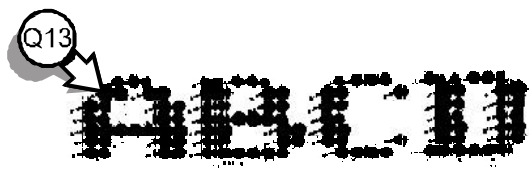


Q11 The I.V./700 is printing the correct message but ink dots are missing from some of the characters. Why?

S11 *The faceplate of the printhead is dirty and some of ink jet orifices are blocked. Clean the faceplate with water and purge the printhead. If any of the ink jet orifices remain blocked, then remove the obstruction using a Broach Kit (1902-857).*

Q12 The I.V./700 is printing the correct message but the ink dots are too small. Why?

S12 *The dot size is too small. Increase the dot size by following the directions on instruction page C4.*



Q13 The I.V./700 is printing the correct message but the characters are out of position and there are a lot of extra dots. Why?

S13 *The printhead is too far from the product. Adjust the printhead until it is closer to the box. The faster the box travels the closer the printhead must be to the box.*

Q14 After sitting idle for a few minutes, the dots in the in the first message are too small when the I.V./700 starts printing again. Why?

S14 *Undersized dots on startup can result from two adjustments: dot size and print delay. These variables need to be tested and set at the same time to achieve a satisfactory solution. Adjust the size of the first printed dots and the print delay by following the directions on instruction page C9.*

Q14 I selected fixed speed and now my I.V./700 prints random dots Why?

S14 *The I.V./700 print direction is wrong. Change the print direction by following the directions on instruction pages F8.*

Supplies and Parts **I**

Consumables	I1
Service Parts Kits	I2

Consumables

I1

Diagraph recommends using only Diagraph manufactured consumables and service parts.

The inks listed below are water-based and SARA-compliant. They ship in 13.5 fl oz (400 ml) canisters.

Supplies can be ordered at 1-800-521-3047. Orders can be faxed to 1-314-770-5707.

Product	Diagraph P/N	Package
I.V./700 Black Ink	5750-085	6/case
I.V./700 Blue Ink	5750-250	6/case
I.V./700 Green Ink	5750-251	6/case
I.V./700 Red Ink	5750-252	6/case
I.V./700 Orange Ink	5750-253	6/case
I.V./700 Yellow Ink	5750-254	6/case
I.V./700 Conditioner	5750-111	2/case
Lint Free Wipes	6600-171	300/pkg
Broach Refills	1901-563	12/pkg

Service Parts Kits

I2

1	I.V./700 Printhead	5750-199
2	I.V./700 Controller	5750-201
3	I.V./700 Power Supply	5750-113
4	I.V./700 Tubing Kit	5750-125
5	I.V./700 English/European Firmware Kit	5750-117
6	Broach Kit	1902-857

