

Linx 5900 & 7900



An Introduction to the
Operating Instructions for the
Linx 5900 & 7900 Printers

LINX

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An Introduction to the Operating Instructions for the Linx 5900 & 7900 Printers



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1 Introduction

This document provides an introduction to the *Linx 5900 & 7900 Quick Start Guide* and 'How To...' guides and the information they contain.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.

1.2 About the Quick Start and 'How To...' guides

Linx supplies a number of documents to provide instructions on how to operate the 5900 and 7900 printers:

- *Linx 5900 & 7900 Quick Start Guide*

This document provides an introduction to the basic and common functions of the 5900 and 7900 printers.

- 'How To...' guides

Instead of a large manual of instructions about advanced functions, this information is now arranged in short documents that describe single topics, called 'How To...' guides. This makes it easier for operators to find the information they require.

We hope the new style for the operating instructions is easier to use and less complex than having one large, complete manual. Any comments about the introduction of the 'How To...' guides are welcome. Contact Linx Technical Publications at techpubs@linx.co.uk.

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2 Content of Quick Start and 'How To...' guides

The following Quick Start and 'How To...' guides are available:

- Linx 5900 & 7900 Quick Start Guide
- How To Install and Set Up the 5900 & 7900 Printer ('How To...' guide 01)
- How To Change the Print Settings ('How To...' guide 02)
- How To Change the System Setup ('How To...' guide 03)
- How To Create Date and Time Formats ('How To...' guide 04)
- How To Create Text and Orientation Sequences ('How To...' guide 05)
- How To Configure the Message Editor and Logo Editor ('How To...' guide 06)
- How To Diagnose Problems ('How To...' guide 07)
- How To Create a Logo ('How To...' guide 08—7900 only)
- How To Create a Shift Code ('How To...' guide 09)
- How To Create Bar Codes ('How To...' guide 10—7900 only)
- How To Create a Sequential Number ('How To...' guide 11)
- How To Use the Spectrum Printer ('How To...' guide 12—7900 only)
- How To Create a Remote Field ('How To...' guide 13)
- How To Create a Production Schedule ('How To...' guide 14—7900 only)
- How To Use the Parallel I/O Option ('How To...' guide 15)
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- How To Use Keyboard Shortcuts ('How To...' guide 17)
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- How To Use a Different Keyboard ('How To...' guide 19)
- How To Use the 7900 Food Grade Printer ('How To...' guide 20—7900 only)
- How To Use the USB Connection ('How To...' guide 21)
- How To Use Prompted Fields ('How To...' guide 22)
- How To Use Dynamic Message Orientation ('How To...' guide 23—5900 only)

The contents of the Quick Start and 'How To...' guides are divided as follows.

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2.1 Linx 5900 & 7900 Quick Start Guide

The *Linx 5900 & 7900 Quick Start Guide* helps you do the most common jobs on the 5900 and 7900 printers. The guide describes the layout of the printers, the controls, and the displays. The guide shows you how to do the following tasks:

- Switch on the printer.
- Create a message to print.
- Select a font style and a font size for your message.
- Create a Date field or a Time field and edit the field.
- Edit a message.
- Print a message on a product.
- Pause printing.
- Change the print position on a product.
- Stop the printer and turn it off.

2.2 'How To...' guides

01 How To Install and Set Up the 5900 & 7900 Printer

This document describes how to install and set up the 5900 and 7900 printers. You can use these instructions to move the printer or make changes to the production line setup.

02 How To Change the Print Settings

This document describes how to change the Print Settings on the 5900 and 7900 printers. The **Print Settings** page contains the following options:

- Print Delay
- Print Width
- Print Height
- Lock Aspect Ratio
- Print Count
- Message Orientation Mode (5900 only)
- Message Orientation
- Reset All Message Sequences
- Total Print Count

This document is for operators and line supervisors who know how to use the printer, and have performed the tasks described in the *Linx 5900 & 7900 Quick Start Guide*.

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03 How To Change the System Setup

This document describes the Line setup options and the Installation setup options for the 5900 and 7900 printers. The following options are described:

- Trigger setup
- Line speed
- Alarm setup
- Installation options
- Security options

04 How To Create Date and Time Formats

This document lists the available date and time formats for the 5900 and 7900 printers. It also shows how you can make new Date and Time field formats for the 7900 printer.

05 How To Create Text and Orientation Sequences

This document describes the Text and Orientation sequences in the 7900 printer and shows how you create new Text and Orientation sequences. This functionality is not available on the 5900 printer.

06 How To Configure the Message Editor and Logo Editor

This document describes how you use the **Editor Defaults** page to define the default parameters of new messages and logos that you create. Any changes you make to Editor Defaults become the starting settings for new messages and logos that you create.

07 How To Diagnose Problems

This document describes how you check the condition of the 5900 and 7900 printers and find the cause of any problems. It includes information on test messages, the event log, the **Monitor Jet** page, maintenance times, and the **Print and Consumables** pages.

The System Events (warnings and faults) are described in the *Linx 5900 & 7900 Quick Start Guide* and are not described in this document.

08 How To Create a Logo

This document describes how to create and use logos for the 7900 printer. A logo is an image that is made from a grid of square picture elements ('pixels'). You can use the Logo Editor to set each pixel to make a complete image. You can import logos to the 5900 printer via a USB memory stick.

09 How To Create a Shift Code

This document describes how to set up shift codes for the printer. A shift code records the time or the day of the week during which a message was printed. You can use the shift code to help you identify each batch of products. The 5900 and 7900 printers can generate two types of shift code field:

- Daily—this type of shift code is repeated each day and indicates the time during which a message was printed.
- Weekly—this type of shift code is repeated each week and indicates the day on which a message was printed.

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10 How To Create Bar Codes

This document describes how you create and edit bar codes for the 7900 printer. The printer can generate bar codes in a number of formats. There are two methods that you can use to create a bar code:

- Edit an existing field and encode the field.
- Create a bar code field, then enter the source data or link the bar code to an existing field.

This functionality is not available on the 5900 printer.

11 How To Create a Sequential Number

This document describes how to create a Sequential Number field for the 5900 and 7900 printers. A Sequential Number field is a field that contains a number that is updated automatically. The printer updates the number at each occurrence of a trigger event, which you can define.

12 How To Use the Spectrum Printer

This document contains additional information for anyone who uses the 7900 Spectrum printer. The guide includes information about the Mixing Sequence, system events, and maintenance.

13 How To Create a Remote Field

This document describes how to create a remote field for the 5900 and 7900 printers. A remote field in a message reserves an area that you can use for data downloaded from a remote computer or other equipment. A single message can have more than one remote field, and you can use the remote field data in more than one message.

14 How To Create a Production Schedule

This document tells you how you create a Production Schedule for the 7900 printer. A production schedule allows you to print a sequence of messages automatically. You can set the number of repeats for each message, or use a trigger signal to change to the next message. You can use an external device or an internal signal (for example, the time or date) to provide the trigger signal.

This functionality is not available on the 5900 printer.

15 How To Use the Parallel I/O Option

This document tells you how to configure the Parallel I/O (Parallel Input/Output) option on the 5900 and 7900 printers. This option allows a remote host device (PLC or computer) to control the printer, or monitor the printer status.

16 How To Use the Communications Options

This document describes how to set up the 5900 and 7900 printers for remote communications. The printers use protocols to enable communication with remote devices like bar code scanners, programmable logic controllers (PLCs) and PCs. You can use remote devices to control the printers and to download messages and data for printing.

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17 How To Use Keyboard Shortcuts

This document describes how to use keyboard shortcuts to access printer pages or common functions on the 5900 and 7900 printers.

18 How To Use Advanced Editing

This document describes some additional options that you can use to edit messages on the 5900 and 7900 printers.

19 How To Use a Different Keyboard

This document describes how to use different keyboards on the 5900 and 7900 printers. It tells you how to access the extended character sets from the keyboard and the additional character set through the character selector for the European keyboard. This document also tells you how to use the Pinyin system for Traditional and Simplified Chinese, and the Korean character selector.

20 How to Use the 7900 Food Grade Printer

This document contains information for anyone who uses the 7900 Food Grade printer. The guide includes information about how to clean the MidiEC printhead.

21 How to Use the USB Connection

This document describes how to use the USB connection of the 5900 and 7900 printers to save messages from the printer to a USB memory stick and transfer messages and logos to the printer from a memory stick. This document also tells you how to make a backup of the printer settings to a memory stick. You can restore the settings to the same printer, or transfer the settings to another printer.

22 How to Use Prompted Fields

This document describes how to create prompted fields for the 5900 and 7900 printers. Prompted fields are fields within a message that require the user to enter or select text before a message is printed. They reduce the need to edit a message and make sure that all message data is entered before a message is printed. Prompted fields also allow you to reuse message content between messages. For example, you can copy messages, and then edit the prompted fields that they contain.

23 How to Use Dynamic Message Orientation

This document describes how to configure message orientation settings and printer hardware for traversing operations on the 5900 Dairy Coder printer. This functionality is available on the 7900 printer through the use of orientation sequences (see *How to Create Text and Orientation Sequences*).

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1 Installation

1.1 Introduction

This document describes how to install and set up the 5900 and 7900 printers. You can use these instructions to move the printer to a new location or make changes to the production line setup.

If you are not sure about any procedure, contact your local Linx distributor, who will be pleased to advise you or send a trained Linx-approved service engineer.

1.2 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.

1.3 Equipment information

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.

1.4 Tools required

There are no special tools required to install the printer.

1.5 Where to install the printer

Install the printer in an area with good ventilation. Install the printer on a strong base, near a power supply that does not have electrical interference.

Make sure that:

- The vents at the base of the printer are not blocked.
- Air can flow freely around the bottom of the printer.
- There is a minimum clearance of 150 mm at the rear of the printer to allow some space for the printhead conduit to bend.

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Figure 1 shows the layout of the rear panel of the Linx 5900 and 7900 printers.

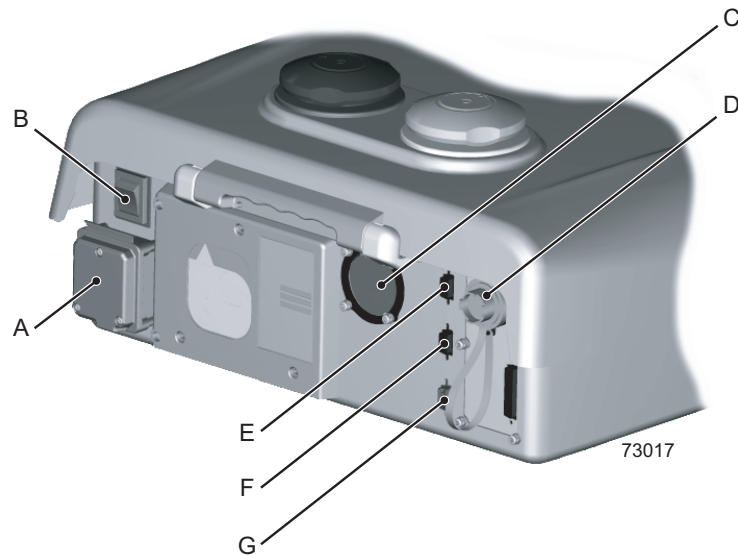


Figure 1. Linx 5900/7900 printer rear panel

Figure 1 shows the following items:

- A External power connection
- B Mains power supply switch
- C Printhead conduit entry/exit
- D External alarm connection
- E Primary trigger/shaft encoder
- F Secondary trigger/shaft encoder
- G RS232 interface

1.6 Connect to a power source

The Linx 5900 and 7900 printers uses a single-phase, 50/60 Hz AC supply of 100 V (maximum current 3 A) to 230 V (maximum current 1 A). Any AC voltage within this range provides acceptable power.

NOTE: Before you turn on the printer, make sure that the information shown on the label on the rear panel matches your power source.

Make sure that the Mains Power Supply Switch (item B in Figure 1) is in the Off (O) position before you connect the printer to the power supply.

The mains cable has a socket on one end, which connects to the printer. A local plug is fitted to the other end of the cable.

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One of two types of cable is supplied. The cables have the same specification but the colours of the wires are different. The wire colours in the cable are as follows.

WIRE COLOUR		CONNECTION
Green-Yellow	Green	Earth/Ground
Blue	White	Neutral
Brown	Black	Live

Figure 2. Wire colours



WARNING: THIS PRINTER MUST BE EARTHED/GROUNDED.



WARNING: THE PRINTER MUST BE ELECTRICALLY WIRED ONLY BY A QUALIFIED AND COMPETENT ELECTRICIAN. LINX CANNOT ACCEPT RESPONSIBILITY FOR ANY INJURY TO PERSONNEL OR DAMAGE TO MACHINERY CAUSED BY INCORRECT OR FAULTY WIRING.

1.7 Fit the printhead to the production line

You can set the printhead at any angle. Use a Linx printhead bracket to hold the printhead correctly and prevent vibration—a number of bracket types are available.

The distance between the end of the printhead and the product is the '*throw distance*'. To make sure that the print quality is good, set the throw distance to the recommended distance shown in the table below.

Printhead	Recommended distance
Midi	6 mm for a 25 Linear Speed message type, 12 mm for all other message types
Ultima	12 mm
Midi <i>plus</i>	12 mm
Ultima <i>plus</i>	12 mm
Mini	The first digit in the name of the message type is the throw distance in millimetres. For example '4T...' indicates 4 mm. For the 5900, only 4 mm and 8 mm throw distances are available. The 7900 printer also has a 12 mm throw distance available.
Micro (7900 only)	4 mm

Figure 3. Recommended throw distances

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1.7.1 Printhead conduit

The printer, conduit, and printhead are supplied as a unit. Follow these guidelines for the conduit:

- Do not bend the conduit at a sharp angle. The minimum radius for the conduit is 75 mm for static operation and 150 mm for dynamic applications (traversing).
- Make sure that the conduit has enough support.
- Make sure that you have access to the printhead for maintenance.
- Make sure that when the machinery guards are closed, the guards do not damage the conduit.
- Make sure that the conduit does not touch any sharp edges.
- For dynamic applications (traversing), Linx recommends that you use a 4-metre conduit. Leave a loop in the conduit to absorb the movement as shown below.

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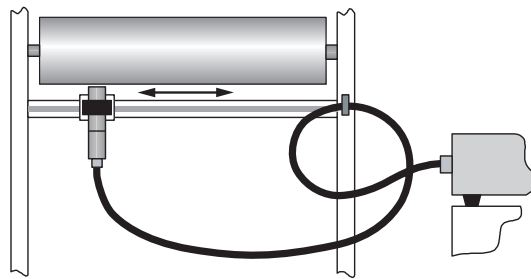


Figure 4. Printhead conduit with loop



2 Product sensor setup

The Linx 5900 and 7900 printers can use a product sensor to detect the presence of the product. Normally, the message is printed when the printer receives a trigger signal from the product sensor.

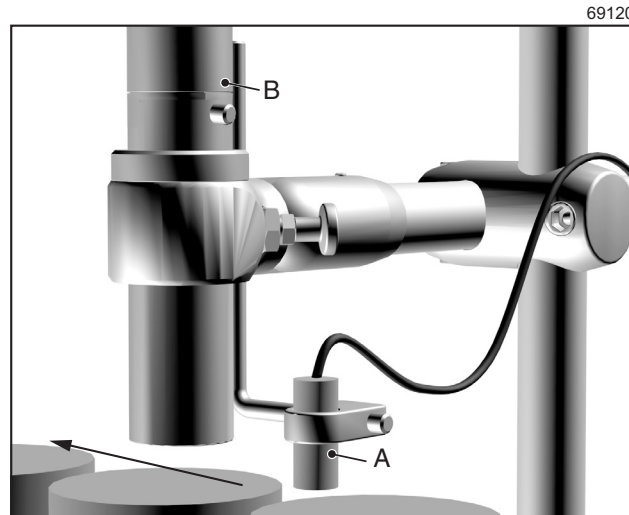


Figure 5. Product sensor setup

Normally, the product passes the product sensor first, then the printhead. The distance between the printhead and the product sensor must be less than the distance between the products.

Figure 5 shows the product sensor (A) and the printhead (B). The arrow shows the direction of movement of the product along the production line.

The **Print Delay** parameter controls the distance between the product sensor and the printed message. For information on how to adjust the **Print Delay**, see the *Linx 5900 & 7900 Quick Start Guide*.

The following product sensor types are available from Linx:

- Fibre optic control unit, 5 m D-type
- Retro-reflective light beam, 5 m D-type
- Inductive switch, 5 m D-type
- Reflection light beam scanner, 5 m D-type
- Background suppression sensor, 5 m D-type
- Colour registration mark scanner, 5 m D-type

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2.1 Product Sensor connection

You must use a 9-pin, D-type connector to connect the product sensor to the printer. The following table describes the function of each pin.

Function	Connection
+ 24 V	Pin 1
0 V	Pin 2
Secondary Trigger	Pin 4
Primary Trigger	Pin 6

Figure 6. Product sensor pin connections

Connect the screen of the product sensor cable to the shell of the connector. The connector shell must connect to the printer chassis. Do *not* connect the screen to 0 volts.

To maintain the IP65 rating of the 7900 printer, the connector of the product sensor must have an IP65 rating. Linx product sensors have a D-type connector that has an IP67 rating.

CAUTION: Use only Linx-approved accessories. The EMC performance of the printer can change if you use other product sensors and cables.



3 Line speed detection setup

Linx recommends that you use a shaft encoder or dual trigger to detect the line speed on production lines where the speed can change. If your system has a fixed line speed, you can go to the next section.

The shaft encoder generates a pulse for a fixed distance of product movement. The pulses enable the printer to print at a constant width if the line speed changes.

For information about setting the line speed, see *How To Change the System Setup*.

Normally the shaft encoder is attached to a drive shaft on the production line. Install the shaft encoder in the best position to follow the movement of the products.

Linx offers the following range of shaft encoders for line speed detection:

- 2500 pulses per revolution (p.p.r.)
- 5000 p.p.r.
- 10000 p.p.r.

Each shaft encoder has a 5-metre cable fitted with a 9-pin D-type connector.

To measure the line speed, you can connect the shaft encoder to a drive shaft on the line, or to an encoder wheel. Linx provides the following range of encoder wheels:

- 500 mm circumference
- 333 mm circumference
- 304.8 mm (1 foot) circumference
- 200 mm circumference
- 60 mm circumference

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3.1 Shaft encoder connection

You must use a 9-pin, D-type connector to connect the shaft encoder to the printer. The following table describes the function of each pin.

Function	Connection pin
+ 24 V	Pin 1
0 V	Pin 2
+ 5 V	Pin 3
Single-ended input	Pin 8

Figure 7. Shaft encoder pin connections

Connect the screen of the shaft encoder cable to the shell of the connector. The connector shell must connect to the printer chassis. Do *not* connect the screen to 0 volts.

To maintain the IP65 rating of the 7900 printer, the connector of the shaft encoder must have an IP65 rating. Linx shaft encoders have a D-type connector that has an IP67 rating.

CAUTION: Use only Linx-approved accessories. The EMC performance of the printer can change if you use other shaft encoders and cables.

3.1.1 Select the shaft encoder, encoder wheel, and Print Width

If you use a shaft encoder, you *must* perform the following calculations to calculate the number of pulses per millimetre and the drop pitch. The calculations require a series of steps as shown below:

- 1 Define the Required Raster Pitch.
- 2 Select the shaft encoder, the encoder wheel, and the Pitch Factor to get a raster pitch that approximately equals the correct pitch.
- 3 Make sure that the calculated performance is acceptable (message length and print speed).
- 4 Use the Pitch Factor to calculate the number of encoder pulses per millimetre. Enter this value into the **Speed** page (**Line Setup > Speed**).
Calculate the raster pitch and use this value for the **Print Width** parameter (**Print Settings > Print Width**).
- 5 Check the print samples for performance.

If you do not follow these calculation steps, your messages are not printed at the required size. The spaces between the rasters are too small or too large.



3.1.2 Example calculation

The calculation below uses the following example:

- The message is a 16 Linear Quality Message Type.
- The printer has an Ultima 62 μm printhead, which requires 132 rasters for this message.
- The Print area is 50 mm long.

Step 1: Define the required Raster Pitch

To get the best print quality a 1:1 aspect ratio is needed—the vertical pitch (drop spacing) must equal the horizontal pitch. This drop pitch is the *'Ideal Raster Pitch'*. The Ideal Raster Pitch depends on the printhead type and the message type.

The effect of raster pitch is shown in Figure 8.

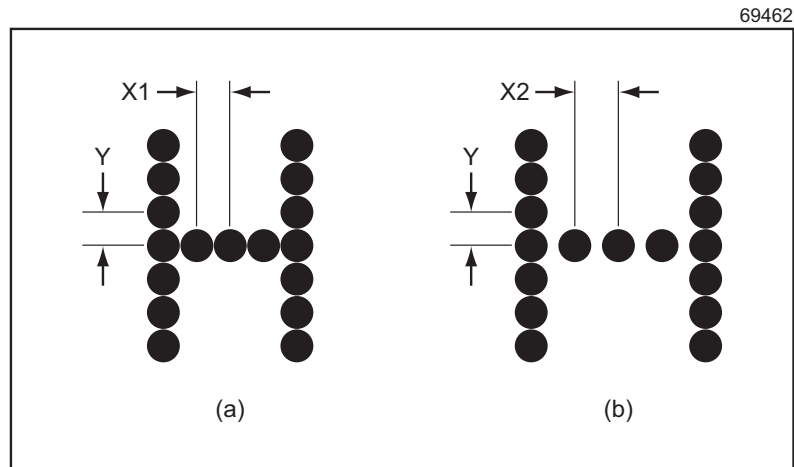


Figure 8. Raster Pitch

In Figure 8 (a) the letter 'H' is printed at the Ideal Raster Pitch—the horizontal spacing ($X1$) is equal to the vertical spacing (Y). In Figure 8 (b), the raster pitch is larger than the Ideal Raster Pitch—the horizontal spacing ($X2$) is larger than the vertical spacing (Y).

The section 'Ideal Raster Pitch tables' on page 18 contains tables that show the following parameters for each combination of printhead and message type:

- **Character matrices** (character width)
- **Ideal Raster Pitch** (mm)
- **Maximum raster rate** (kHz)
- **Maximum line speed** for the ideal raster pitch

If the raster pitch in your application does not equal the Ideal Raster Pitch, you can adjust the **Print Height** setting to make the aspect ratio 1:1.

NOTE: Not all message types listed in the Ideal Raster Pitch tables are available on the 5900 printer.

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To calculate the required Raster Pitch

Use the formula:

$$\text{Required Raster Pitch (mm)} = \frac{\text{Printed Length (mm)}}{\text{Number of Rasters in Message}}$$

where:

Printed length = the length of the printed message on the product. This length must not be greater than the length of the area that is left clear for printing.

Number of Rasters in Message: Where all the characters in the font have the same width, this value = Number of characters x Character width (rasters). If the characters have different widths, you can use the Cursor Position value in the **Message Editor** page to measure the printed length.

In this example, the length of the area that is available for the message is 50 mm and the message contains 132 rasters. The calculation is as follows:

$$\text{Required Raster Pitch (mm)} = \frac{50 \text{ mm}}{132} = 0.378 \text{ mm}$$

If the pitch is greater than this value, the message does not fit into the 50 mm print area.

The ideal raster pitch for the 16 Linear Quality Message Type and Ultima 62 μm is 0.353 mm (see the table on page 20). In this example, the space between the drops, in the horizontal direction, is greater than the ideal raster pitch. This difference causes small spaces between the drops.

NOTE: Before you purchase any components, consider other products that you plan to put on the same line. Repeat the raster pitch calculations for other products as necessary.

Step 2: Select the encoder, encoder wheel, and pitch factor

Each combination of encoder and encoder drive (gears or wheels) gives a different 'encoder pitch'. The encoder pitch is the distance that the product moves for each encoder output pulse. The encoder pitch and the pitch factor (a whole number) are multiplied together to give the actual raster pitch. This value must be as close as possible to the required raster pitch.

The table below gives the encoder pitch for standard Linx encoders and wheels.

To calculate the encoder pitch for other gearing or drives, use the following:

$$\text{Encoder Pitch} = \frac{\text{Encoder wheel circumference}}{\text{Encoder pulses per revolution}}$$

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where:

Encoder wheel circumference = the distance that the product moves for one rotation of the encoder. This value depends on the application. For example, the wheel circumference can be 3.14 x roller diameter, or 3.14 x star-wheel diameter.

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Encoder p.p.r.	Wheel Circumference/Encoder Pitch (mm)					
	Your Application	500 mm	333 mm	304.8 mm	200 mm	50 mm
2500		0.200	0.133	0.121	0.080	0.020
5000		0.100	0.066	0.060	0.040	0.010
10000		0.050	0.033	0.030	0.020	0.005

Figure 9. Encoder Pitch for standard Linx encoders and wheels

The encoder pitch is multiplied by a whole number (or pitch factor) to give the actual raster pitch. Select an encoder and gearing to make the actual raster pitch close to the required raster pitch.

$$\text{Actual Raster Pitch (mm)} = \text{Encoder Pitch (mm)} \times \text{Pitch Factor}$$

where the Pitch Factor is a whole number.

Select a combination of an encoder and gearing, calculate the encoder pitch, then multiply this value by whole numbers to get the actual raster pitch. Repeat this process until you get a value that is close to the required raster pitch.

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	Encoder/Gearing	Encoder Pitch	x	Pitch Factor	=	Actual Raster Pitch
Try 1						
Try 2						
Try 3						

Figure 10. Calculate the Pitch Factor

For each encoder pitch that you try, use the following formula to find the starting point for the pitch factor calculation:

$$\text{Pitch Factor}^* = \frac{\text{Required Pitch (mm)}}{\text{Encoder Pitch (mm)}}$$

* This value is calculated to the nearest whole number.

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In this example, the required raster pitch is 0.378 mm. You can use a standard Linx encoder and wheel to try to match this value.

	Encoder/Gearing	Encoder Pitch	x Pitch Factor	= Actual Raster Pitch
Try 1	2500 p.p.r./200 mm	0.080 mm	4	0.32 mm
				Too Low ←
Try 2	2500 p.p.r./200 mm	0.080 mm	5	0.40 mm
				Too High ←
Try 3	5000 p.p.r./200 mm	0.040 mm	9	0.36 mm

Figure 11. Calculate the Pitch Factor: example

The actual raster pitch in Try 3 is acceptable because the value is close to the required raster pitch. Also the required raster pitch is the maximum. You can use a 5000 p.p.r. encoder and a 200-millimetre wheel. The pitch factor is 9.

You can see that when the encoder p.p.r. is greater, the actual raster pitch is closer to the required pitch. If the encoder p.p.r. is greater, you can adjust the required pitch, but the encoder cost is higher and the maximum print speed can decrease.

Step 3: Check the calculated print performance

If there is any difference between the required raster pitch and the actual raster pitch, the print performance can decrease. You must also consider the maximum frequency of the encoder signal.

For this step, you must perform the following steps:

- 1 Calculate the length of the printed message:

$$\text{Number of Rasters (step 1)} \times \text{Actual Raster Pitch (step 2)}$$

- 2 Calculate the maximum print speed for the message type

$$\text{Actual Raster Pitch (step 2)} \times \text{Raster Rate* (kHz)}$$

* The raster rate depends on the printhead type and the message type—see the table on page 20.

To make sure that the print quality is acceptable, the maximum print speed must be greater than the line speed. If necessary, select a message type that has a higher raster rate.

- 3 Calculate the maximum encoder speed:

$$\text{Encoder Pitch (Figure 9)} \times \text{Maximum Signal Frequency (kHz)}$$

NOTE: The maximum signal frequency for Linx standard encoders is 80 kHz.

- 4 Compare the maximum line speed with the maximum encoder speed.

If the maximum line speed is not less than the maximum encoder speed, repeat the selection process.

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The following table shows the maximum encoder speeds for standard Linx encoders and wheels.

Encoder p.p.r.	Maximum Encoder Speeds (m/s)				
	500 mm	333 mm	304.8 mm	200 mm	50 mm
2500	16.00	10.66	9.68	6.40	1.60
5000	8.00	5.33	4.80	3.20	.80
10000	4.00	2.66	2.40	1.60	.40

68546

Figure 12. Maximum encoder speeds for standard Linx encoders and wheels

In this example, the actual raster pitch is 0.36 mm (step 2) and the number of rasters is 132 (step 1).

$$\begin{aligned}
 \text{Printed Message Length (mm)} &= 132 \times 0.36 \text{ (mm)} \\
 &= 47.52 \text{ (mm)}
 \end{aligned}$$

This result shows that the message fits into the target area of 50 mm.

For a 16 Linear Quality message type and an Ultima 62 µm printhead, the raster rate is 1.74 kHz (see the table on page 20).

$$\begin{aligned}
 \text{Maximum Print Speed (m/s)} &= 0.36 \times 1.74 \text{ (kHz)} \\
 &= 0.626 \text{ m/s}
 \end{aligned}$$

The encoder/gearing that was selected has an encoder pitch of 0.040 mm (step 2), and a maximum encoder frequency of 80 kHz.

$$\begin{aligned}
 \text{Maximum Line Speed (m/s)} &= 0.040 \text{ (mm)} \times 80 \text{ (kHz)} \\
 &= 3.2 \text{ m/s}
 \end{aligned}$$

This calculation shows that in this example the maximum print speed is not decreased by the maximum encoder frequency.

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Step 4: Enter the calculated values

- 1 Select the shaft encoder.

Go to the **Speed** page (**Line Setup > Speed**).

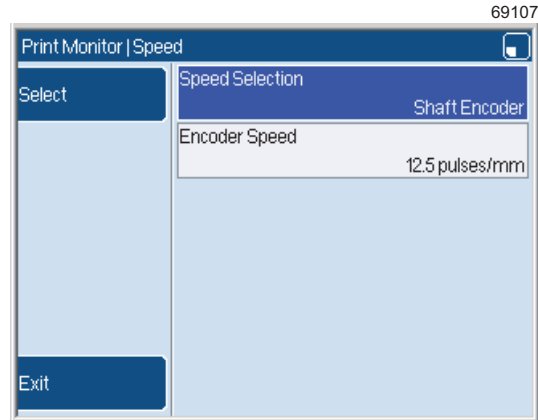


Figure 13. Speed page

Make sure that the **Speed Selection** parameter is set to 'Shaft Encoder' as shown.

- 2 Enter the Pulses/mm value.

At the **Speed** page (see Figure 13), enter the calculated Pulses/mm value into the **Encoder Speed** parameter.

The Pulses/mm value is the number of pulses of the encoder output signal for every millimetre of the product movement.

The following table shows the pulses per mm values for the combinations of Linx standard encoders and encoder wheels.

68550					
Encoder Pulses per mm for Wheel Circumferences					
Shaft Encoder p.p.r.	500 mm	333 mm	304.8 mm	200 mm	50 mm
2500	5.0	7.5	8.2	12.5	50.0
5000	10.0	15.0	16.4	25.0	100.0
10000	20.0	30.0	32.8	50.0	200.0

Figure 14. Encoder pulses/mm for Linx standard encoders and wheels

- 3 Enter the Actual Raster Pitch (calculated from step 2).

At the **Print Monitor** page, press the **Print Setting** key to display the **Print Settings** page.

Select the **Print Width** option and enter the calculated Actual Raster Pitch value.

The printer adjusts the value to the next lowest raster pitch given by a pitch factor, which is a whole number. To make sure that the corrected value is accepted, and prevent any rounding errors, enter the following raster pitch:

$$\text{Selected Encoder Pitch} \times (\text{Pitch Factor} + 0.5)$$

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The value required for this example is as follows:

$$0.040 \times (9 + 0.5) = 0.38$$

The printer changes the value to 0.36 when you press the **OK** key.

Step 5: Check the print performance

Create a message that uses the character size and the message type that you used in the calculations.

Make a sample of the print for different line speeds to confirm that the settings are correct. The line speeds must include the maximum line speed that you plan to use.

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3.1.3 Summary

1. Calculate:

$$\text{Required Raster Pitch} = \frac{\text{Printed Length}}{\text{Number of Rasters in Message}}$$

2. Refer to the tables in the section 'Ideal Raster Pitch tables' to get the Ideal Raster Pitch for your printhead and message type.

3. Calculate:

$$\text{Encoder Pitch} = \frac{\text{Encoder wheel circumference}}{\text{Encoder pulses per revolution}}$$

4. Calculate:

$$\text{Pitch Factor}^* = \frac{\text{Required Raster Pitch}}{\text{Encoder Pitch}}$$

* This value is calculated to the nearest whole number.

5. Calculate:

$$\text{Actual Raster Pitch} = \text{Encoder Pitch} \times \text{Pitch Factor}$$

6. Calculate:

$$\text{Printed Message Length} = \text{Number of Rasters} \times \text{Actual Raster Pitch}$$

Make sure that the Printed Message Length is less than the Printed Length in step 1.

7. Calculate the Maximum Print Speed for this message type:

$$\text{Maximum Print Speed} = \text{Actual Raster Pitch} \times \text{Raster Rate}$$

8. Calculate:

$$\text{Maximum Encoder Speed} = \text{Encoder Pitch} \times \text{Maximum Encoder Frequency}$$

(Maximum Encoder Frequency is 80 kHz for Linx standard encoders.)

9. Make sure that the Maximum Line Speed (step 7) is less than the Maximum Encoder Speed (step 8).
10. Make sure that the line speed is never greater than either the Maximum Print Speed or the Maximum Encoder Speed.
11. At the **Speed** page, enter the **Encoder Speed** value (pulses/mm) for the encoder and wheel combination.
12. At the **Print Settings** page, set the **Print Width** parameter to the value that you calculated for the Actual Raster Pitch (step 5).
13. Check the print performance.

How To Install and Set Up the 5900 & 7900 Printer



3.2 Ideal Raster Pitch tables

NOTE: The rasters available depend upon the printer type (5900 or 7900) and the software configuration.

3.2.1 Midi and MidiEC printheads

69493

MIDI PRINTHEAD				
Message Type	Character matrices (no. of lines x H x W)	Ideal raster pitch (mm)	Maximum raster rate (kHz)	Maximum line speed at ideal raster pitch (m/s)
5 Linear Flexible	1Lx5x5	0.423	6.66	2.60
5 Linear Quality	1Lx5x5	0.353	8.00	2.56
5 Linear Wide	1Lx5x5	0.550	13.33	6.28
7 Linear Flexible	1Lx7x5	0.423	5.00	1.99
7 Linear Quality	1Lx7x5	0.353	5.71	1.88
7 Linear Wide	1Lx7x5	0.550	10.00	4.88
8 Linear Flexible	1Lx8x5	0.423	4.22	1.69
8 Linear Quality	1Lx8x5	0.353	4.70	1.56
8 Linear Wide	1Lx8x5	0.469	8.00	3.75
9 Linear Flexible	1Lx9x7	0.423	3.64	1.47
9 Linear Quality	1Lx9x7	0.353	4.44	1.48
16 Linear Flexible	1Lx16x10 2Lx7x5	0.423	1.29	0.53
16 Linear Quality	1Lx16x10 2Lx7x5	0.353	1.54	0.53
16 Linear Speed	1Lx16x10 2Lx7x5	0.353	2.10	0.72
18 Linear Flexible	1Lx18x10 2Lx8x5	0.423	1.07	0.44
18 Linear Quality	1Lx18x10 2Lx8x5	0.353	1.27	0.44
18 Linear Speed	1Lx18x10 2Lx8x5	0.353	1.57	0.54
21 Linear Flexible	1Lx21x12 2L mixed	0.423	1.05	0.43
21 Linear Quality	1Lx21x12 2L mixed	0.353	1.16	0.40
25 Linear Quality	1Lx25x16 3Lx7x5	0.353	0.82	0.28
25 Linear Speed	1Lx25x16 3Lx7x5	0.353	1.11	0.38
34 Linear Quality	1Lx34x24 2Lx16x10 4Lx7x5	0.353	0.53	0.18
2x7 Stitched Speed	2Lx7x5	0.353	4.00	1.34
2x8 Stitched Speed	2Lx8x5	0.353	3.48	1.17
3x7 Stitched Quality	3Lx7x5	0.353	2.42	0.70
3x7 Stitched Speed	3Lx7x5	0.353	2.42	0.83
3x7 Stitched Wide	3Lx7x5	0.423	2.96	1.25
3x8 Stitched Speed	3Lx8x5	0.353	2.11	0.72
4x7 Stitched Quality	4Lx7x5	0.423	1.18	0.50

Figure 15. Midi printhead: Ideal Raster Pitch and Raster Rate

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NOTE: The MidiEC printhead can print a maximum of three lines of text or graphics. The four line options shown in Figure 15 are not available.

How To Install and Set Up the 5900 & 7900 Printer



3.2.2 Ultima printhead

69494

ULTIMA PRINthead				
Message Type	Character matrices (no. of lines x H x W)	Ideal raster pitch (mm)	Maximum raster rate (kHz)	Maximum line speed at ideal raster pitch (m/s)
5 Linear Flexible	1Lx5x5	0.423	7.27	2.82
5 Linear Quality	1Lx5x5	0.353	8.89	2.82
5 Linear Speed	1Lx5x5	0.353	11.43	3.53
5 Linear Wide	1Lx5x5	0.469	13.33	6.25
7 Linear Flexible	1Lx7x5	0.423	5.00	1.99
7 Linear Quality	1Lx7x5	0.353	6.15	2.01
7 Linear Speed	1Lx7x5	0.353	10.00	3.53
7 Linear Wide	1Lx7x5	0.469	10.00	4.69
8 Linear Flexible	1Lx8x5	0.423	4.44	1.69
8 Linear Quality	1Lx8x5	0.353	5.33	1.76
8 Linear Speed	1Lx8x5	0.353	7.27	2.35
8 Linear Wide	1Lx8x5	0.469	8.89	4.16
9 Linear Flexible	1Lx9x7	0.423	3.64	1.47
9 Linear Quality	1Lx9x7	0.353	4.71	1.56
16 Linear Flexible	1Lx16x10 2Lx7x5	0.423	1.54	0.63
16 Linear Quality	1Lx16x10 2Lx7x5	0.353	1.74	0.56
16 Linear Speed	1Lx16x10 2Lx7x5	0.400	2.11	0.82
16 Linear Wide	1Lx16x10 2Lx7x5	0.469	3.20	1.44
18 Linear Quality	1Lx18x10 2Lx8x5	0.353	1.45	0.50
18 Linear Speed	1Lx18x10 2Lx8x5	0.400	1.82	0.71
21 Linear Quality	1Lx21x12 2L mixed	0.353	1.16	0.40
21 Linear Speed	1Lx21x12 2L mixed	0.353	1.38	0.47
25 Linear Quality	1Lx25x16 3Lx7x5	0.353	1.11	0.38
25 Linear Speed	1Lx25x16 3Lx7x5	0.353	1.45	0.51
2x5 Stitched Quality	2Lx5x5	0.353	5.33	1.88
2x7 Stitched Quality	2Lx7x5	0.353	3.81	1.34
2x7 Stitched Speed	2Lx7x5	0.353	5.71	2.01
2x7 Stitched Wide	2Lx7x5	0.424	5.71	2.42
2x8 Stitched Quality	2Lx8x5	0.353	3.33	1.17
2x8 Stitched Speed	2Lx8x5	0.353	5.00	1.76
3x7 Stitched Quality	3Lx7x5	0.353	2.05	0.70
3x7 Stitched Speed	3Lx7x5	0.353	2.96	1.00

Figure 16. Ultima printhead: Ideal Raster Pitch and Raster Rate



3.2.3 Midi *plus* printhead

68589

MIDI <i>plus</i> PRINTHEAD				
Message Type	Character matrices (no. of lines x H x W)	Ideal raster pitch (mm)	Maximum raster rate (kHz)	Maximum line speed at ideal raster pitch (m/s)
5 Linear Quality	1Lx5x5	0.428	5.33	2.10
7 Linear Quality	1Lx7x5	0.428	4.00	1.61
9 Linear Quality	1Lx9x7	0.428	2.46	1.01
16 Linear Quality	1Lx16x10 2Lx7x5	0.428	0.98	0.41
25 Linear Quality	1Lx25x16 3Lx7x5	0.428	0.68	0.28
34 Linear Quality	1Lx34x24 2Lx16x10 4Lx7x5	0.428	0.37	0.15

Figure 17. Midi *plus* printhead: Ideal Raster Pitch and Raster Rate



3.2.4 Ultima *plus* printhead

68590

ULTIMA <i>plus</i> PRINTHEAD				
Message Type	Character matrices (no. of lines x H x W)	Ideal raster pitch (mm)	Maximum raster rate (kHz)	Maximum line speed at ideal raster pitch (m/s)
5 Linear Quality	1Lx5x5	0.428	6.40	2.73
5 Linear Speed	1Lx5x5	0.428	10.66	4.56
5 Linear Wide	1Lx5x5	0.569	12.80	7.28
7 Linear Quality	1Lx7x5	0.428	3.76	1.61
7 Linear Speed	1Lx7x5	0.428	8.00	3.42
7 Linear Wide	1Lx7x5	0.569	9.14	5.20
9 Linear Quality	1Lx9x7	0.428	3.55	1.52
16 Linear Quality	1Lx16x10	0.428	1.28	0.54
16 Linear Speed	1Lx16x10	0.428	1.82	0.78
16 Linear Wide	1Lx16x10	0.560	1.88	1.05
21 Linear Quality	1Lx21x12	0.428	1.08	0.46
21 Linear Speed	1Lx21x12	0.428	1.36	0.58
25 Linear Quality	1Lx25x16	0.428	0.87	0.37
2x5 Stitched Quality	2Lx5x5	0.428	4.26	1.82
2x5 Stitched Speed	2Lx5x5	0.428	6.40	2.73
2x7 Stitched Quality	2Lx7x5	0.428	3.20	1.36
2x7 Stitched Speed	2Lx7x5	0.428	4.57	1.95
2x7 Stitched Wide	2Lx7x5	0.510	4.57	2.33
3x7 Stitched Quality	3Lx7x5	0.428	1.60	0.68
3x7 Stitched Speed	3Lx7x5	0.428	2.37	1.01

Figure 18. Ultima *plus* Printhead: Ideal Raster Pitch and Raster Rate

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3.2.5 Mini printhead

MINI PRINTHEAD				
Message Type	Character matrices (no. of lines x H x W)	Ideal raster pitch (mm)	Maximum raster rate (kHz)	Maximum line speed at ideal raster pitch (m/s)
4T 1x 5 Quality 2.27 m/s	1Lx5x5	0.285	8.00	2.28
4T 1x 5 Speed 2.73 m/s	1Lx5x5	0.285	9.60	2.73
4T 1x 5 Speed 4.55 m/s	1Lx5x5	0.285	16.00	4.56
4T 1x 5 WIDE 6.83 m/s	1Lx5x5	0.428	16.00	6.84
4T 1x 6 Quality 2.27 m/s	1Lx6x5	0.285	8.00	2.28
4T 1x 6 Speed 3.41 m/s	1Lx6x5	0.285	12.00	3.42
4T 1x 7 Quality 1.95 m/s	1Lx7x5	0.285	6.85	1.95
4T 1x 7 Speed 2.27 m/s	1Lx7x5	0.285	8.00	2.28
4T 1x 7 Speed 3.03 m/s	1Lx7x5	0.285	10.66	3.04
4T 1x 7 Speed 3.41 m/s	1Lx7x5	0.285	12.00	3.42
4T 1x 7 WIDE 5.12 m/s	1Lx7x5	0.428	12.00	5.13
4T 1x 8 Quality 1.70 m/s	1Lx8x5	0.285	6.00	1.71
4T 1x 8 Speed 2.10 m/s	1Lx8x5	0.285	7.38	2.10
4T 1x 9 Quality 1.51 m/s	1Lx9x7	0.285	5.33	1.52
4T 1x 9 Speed 1.95 m/s	1Lx9x7	0.285	6.85	1.95
4T 1x12 Quality 1.13 m/s	1Lx12x8	0.285	4.00	1.14
4T 1x12 Speed 1.30 m/s	1Lx12x8	0.285	4.57	1.30
4T 1x12 Speed 1.50 m/s	1Lx12x8	0.314	4.80	1.50
4T 1x16 Quality 0.85 m/s	1Lx16x10	0.285	3.00	0.85
4T 2x 5 Quality 1.43 m/s	2L5x5	0.285	5.05	1.44
4T 2x 5 Speed 1.95 m/s	2L5x5	0.285	6.85	1.95
4T 2x 5 Speed 2.27 m/s	2L5x5	0.285	8.00	2.28
4T 2x 5 WIDE 2.56 m/s	2L5x5	0.428	6.00	2.56
4T 2x 5 WIDE 2.93 m/s	2L5x5	0.428	6.85	2.93
4T 2x 6 Quality 1.18 m/s	2L6x5	0.285	4.17	1.19
4T 2x 6 Speed 1.60 m/s	2L6x5	0.285	5.64	1.60
4T 2x 7 Quality 0.78 m/s	2L7x5	0.285	2.74	0.78
4T 2x 7 Speed 0.97 m/s	2L7x5	0.285	3.42	0.97
4T 2x 7 Speed 1.30 m/s	2L7x5	0.285	4.57	1.30

Figure 19. Mini Printhead: Ideal Raster Pitch and Raster Rate

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MINI PRINTHEAD				
Message Type	Character matrices (no. of lines x H x W)	Ideal raster pitch (mm)	Maximum raster rate (kHz)	Maximum line speed at ideal raster pitch (m/s)
8T 1x 5 Quality 1.82 m/s	1Lx5x5	0.285	6.4	1.82
8T 1x 5 Speed 2.73 m/s	1Lx5x5	0.285	9.6	2.73
8T 1x 5 WIDE 6.83 m/s	1Lx5x5	0.428	16.0	6.84
8T 1x 6 Speed 2.27 m/s	1Lx6x5	0.285	8.0	2.28
8T 1x 7 Quality 1.30 m/s	1Lx7x5	0.285	4.57	1.30
8T 1x 7 Speed 1.95 m/s	1Lx7x5	0.285	6.85	1.95
8T 1x 7 WIDE 5.12 m/s	1Lx7x5	0.428	12.0	5.13
8T 1x 8 Quality 1.13 m/s	1Lx8x5	0.285	4.0	1.14
8T 1x 8 Speed 1.70 m/s	1Lx8x5	0.285	6.0	1.71
8T 1x 9 Quality 1.01 m/s	1Lx9x7	0.285	3.55	1.01
8T 1x 9 Speed 1.51 m/s	1Lx9x7	0.285	5.33	1.52
8T 1x12 Quality 1.13 m/s	1Lx12x8	0.285	4.0	1.14
8T 1x16 Quality 0.85 m/s	1Lx16x10	0.285	3.0	0.85
8T 2x 5 Quality 1.82 m/s	2Lx5x5	0.285	6.4	1.82
8T 2x 6 Quality 1.51 m/s	2Lx6x5	0.285	5.33	1.52
8T 2x 6 WIDE 2.15 m/s	2Lx6x5	0.428	5.05	2.16
8T 2x 7 Quality 1.24 m/s	2Lx7x5	0.285	4.36	1.24
12T 2x 7 WIDE 1.95 m/s	2Lx7x5	0.428	4.57	1.95
12T 2x 7 WIDE 2.27 m/s	2Lx7x5	0.428	5.33	2.28

Figure 19. Mini Printhead: Ideal Raster Pitch and Raster Rate (Continued)

How To Install and Set Up the 5900 & 7900 Printer



3.2.6 Micro printhead (7900 only)

MK 7 MICRO PRINTHEAD				
Message Type	Character matrices (no. of lines x H x W)	Ideal raster pitch (mm)	Maximum raster rate (kHz)	Maximum line speed at ideal raster pitch (m/s)
4T 1x 5 Quality 1.82m/s	1Lx5x5	0.228	8.00	1.82
4T 1x 5 Wide 4.10m/s	1Lx5x5	0.342	12.00	4.10
4T 1x 7 Quality 1.30m/s	1Lx7x5	0.228	5.71	1.30
4T 1x 7 Wide 2.93m/s	1Lx7x5	0.342	8.57	2.93
4T 1x 7 Wide 5.47m/s	1Lx7x5	0.456	12.00	5.47
4T 1x 7 Wide 8.41m/s	1Lx7x5	0.912	9.23	8.42
4T 1x 8 Quality 1.13m/s	1Lx8x5	0.228	5.00	1.14
4T 1x 8 Wide 2.56m/s	1Lx8x5	0.342	7.50	2.57
4T 1x 8 Wide 3.41m/s	1Lx8x5	0.456	7.50	3.42
4T 1x 8 Wide 6.07m/s	1Lx8x5	0.456	13.33	6.08
4T 1x 9 Quality 1.01m/s	1Lx9x7	0.228	4.44	1.01
4T 1x 9 Wide 2.27m/s	1Lx9x7	0.342	6.67	2.28
4T 1x 9 Wide 3.03m/s	1Lx9x7	0.456	6.67	3.04
4T 1x 9 Wide 5.47m/s	1Lx9x7	0.456	12.00	5.47
4T 1x12 Quality 0.59m/s	1Lx12x8	0.228	2.61	0.59
4T 1x12 Speed 0.68m/s	1Lx12x8	0.228	3.00	0.68
4T 1x16 Quality 0.50m/s	1Lx15x10	0.228	2.22	0.51
4T 1x24 Quality 0.29m/s	1Lx23x16	0.228	1.28	0.29
4T 1x24 Quality 0.29m/s	1Lx25x16	0.228	1.28	0.29
4T 1x32 Quality 0.19m/s	1Lx32x24	0.228	0.85	0.19
4T 2x 5 Quality 0.91m/s	2Lx5x5	0.228	4.00	0.91
4T 2x 5 Wide 1.36m/s	2Lx5x5	0.342	4.00	1.37
4T 2x 5 Wide 2.05m/s	2Lx5x5	0.342	6.00	2.05
4T 2x 5 Wide 2.73m/s	2Lx5x5	0.456	6.00	2.74
4T 2x 7 Speed 0.65m/s	2Lx7x5	0.228	2.86	0.65
4T 2x 7 Speed 0.97m/s	2Lx7x5	0.228	4.29	0.98
4T 2x 7 Wide 0.97m/s	2Lx7x5	0.342	2.86	0.98
4T 2x 7 Wide 1.46m/s	2Lx7x5	0.342	4.29	1.47
4T 2x 7 Wide 1.95m/s	2Lx7x5	0.456	4.29	1.95

Figure 20. Micro Printhead: Ideal Raster Pitch and Raster Rate

Linx 5900 & 7900



How To Change the Print Settings

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how you can change the Print Settings on the 5900 and 7900 printers. The **Print Settings** page contains the following options:

- Print Delay
- Print Width
- Print Height
- Lock Aspect Ratio
- Print Count
- Message Type (7900 only)
- Message Orientation Mode (5900 only)
- Message Orientation
- Reset All Message Sequences
- Total Print Count

You need a User Level B password to access the **Print Settings** page.

NOTE: This document is for operators and line supervisors who know how to use the printer, and have performed the tasks described in the *Linx 5900 & 7900 Quick Start Guide*.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 The Print Settings page

The options that are described in this document are all in the **Print Settings** page. At the **Print Monitor** page, press the **Print Settings** key to display the **Print Settings** page.

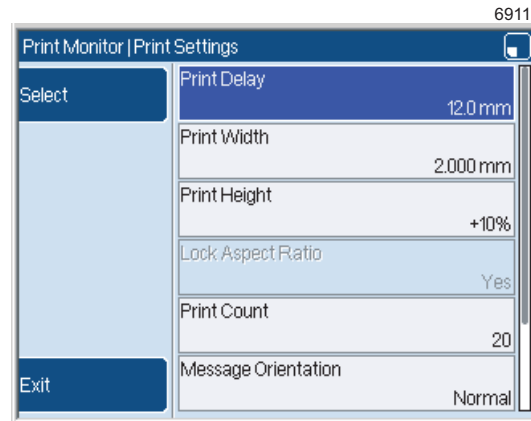


Figure 1. Print Settings page

NOTE: The **Print Settings** page is not available unless a Current Message is selected.

2.1 Print Settings options

2.1.1 Print Delay

You can change the **Print Delay** setting to make sure that the printed message appears in the right position on the product.

For more information, refer to the *Linx 5900 & 7900 Quick Start Guide*.

2.1.2 Print Width

The **Print Width** setting is the horizontal distance between the drops in the message characters (Actual Raster Pitch). For more information about Print Width and raster pitch, refer to *How To Install and Set Up the 5900 & 7900 Printer*.

Normally, the aspect ratio of the message changes when you change the width because the height does not change. To maintain the aspect ratio when you change the width, see 'Lock Aspect Ratio' on page 6.

You can apply the Print Width value and test the result while you are printing.

When you change the value, the change applies only to the Current Message. You can use a different value for each message.

The values that are allowed depend on the message type and other factors. If you enter a value that is not allowed, the printer makes a small adjustment to correct the value.



To change the Print Width

At the **Print Monitor** page, press the **Print Settings** key to display the **Print Settings** page. Then select the **Print Width** option to display the **Print Width** page:

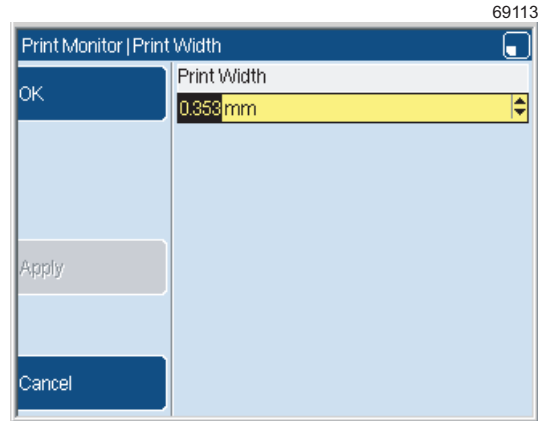


Figure 2. Print Width page

Use the Up arrow key or the Down arrow key to adjust the value, or use the keyboard to enter the new value. The **Apply** key is not available unless you change the value.

Do one of the following:

- Press the **Apply** key to save the **Print Width** value and keep the page open.
- Press the **OK** key to save the setting and return to the **Print Settings** page. Then press the **Exit** key to display the **Print Monitor** page.
- Press the **Cancel** key to discard any changes and return to the **Print Settings** page.



2.1.3 Print Height

You can make small adjustments to the height of the printed message. The adjustment range depends on the message type.

Normally the aspect ratio of the message changes when you change the height because the width does not change. To maintain the aspect ratio when you change the height, see 'Lock Aspect Ratio' on page 6.

You can apply the setting and test the result while you are printing.

When you change the setting, the change applies only to the Current Message. You can use a different setting for each message.

To change the Print Height

At the **Print Monitor** page, press the **Print Settings** key to display the **Print Settings** page. Then select the **Print Height** option to display the **Print Height** page.

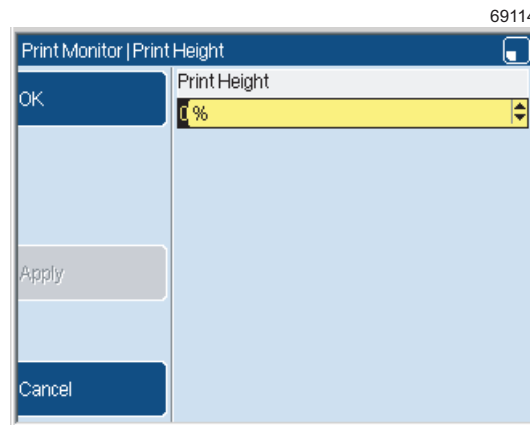


Figure 3. Print Height page

The default value is 0%. Enter a negative value to decrease the character height, or enter a positive value to increase the character height. Use the Up arrow key or the Down arrow key to adjust the value, or use the keyboard to enter the new value. The **Apply** key is not available unless you change the value.

Do one of the following:

- Press the **Apply** key to save the **Print Height** value and keep the page open.
- Press the **OK** key to save the setting and return to the **Print Settings** page. Then press the **Exit** key to display the **Print Monitor** page.
- Press the **Cancel** key to discard any changes and return to the **Print Settings** page.



2.1.4 Lock Aspect Ratio

Normally the aspect ratio of the message changes when you change the height or the width. If you use a 'Flexible' message type, you can use the **Lock Aspect Ratio** option to maintain the aspect ratio.

NOTE: This option is available only for 'Flexible' message types.

To change the Lock Aspect Ratio option

You cannot change the setting unless the printer status is 'PRINTING'.

At the **Print Monitor** page, press the **Print Settings** key to display the **Print Settings** page. Then select the **Lock Aspect Ratio** option to display the **Lock Aspect Ratio** page:

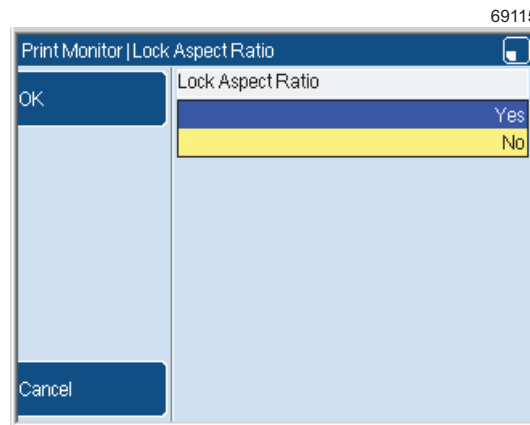


Figure 4. Lock Aspect Ratio page

Use the Up arrow key or the Down arrow key to highlight the **Yes** option or the **No** option as required. Then do one of the following:

- Press the **OK** key to save the setting and return to the **Print Settings** page. Then press the **Exit** key to display the **Print Monitor** page.
- Press the **Cancel** key to discard any changes and return to the **Print Settings** page.

2.1.5 Print Count

The Print Count option shows the number of prints that the printer made with the current message. You can use this option to change the Print Count for the current message. You can use any value from 0 to 4,294,967,295.

For more information, refer to the *Linx 5900 & 7900 Quick Start Guide*.



2.1.6 Message Type

This option is only available on the 7900 printer. It enables you to manually select a different raster type for a given message without the need to select that message on the **Message Editor** page. This allows you to change the raster for a message more quickly to optimize the appearance of the printed message. For more information, refer to the *Linx 5900 & 7900 Quick Start Guide*.

2.1.7 Message Orientation Mode

This option is only available on the 5900 Dairy Coder printer. It enables you to configure message orientation settings for traversing applications. For more information, refer to *How To Use Dynamic Message Orientation*.

2.1.8 Message Orientation

You can use this option to change the orientation of the printed message. You can select any of the following four orientations:

- Normal:

TEST⁶¹⁰⁹

- Horizontal Flip:

TEST⁶¹¹⁰

- Vertical Flip:

TEST⁶¹¹¹

- Horizontal + Vertical Flip:

TEST⁶¹¹³

When you change the setting, the change applies only to the Current Message. You can use a different setting for each message.

To change the Message Orientation:

This option is available in the 'IDLE' state and the 'JET RUNNING' state, but not in the 'PRINTING' state.



At the **Print Monitor** page, press the **Print Settings** key to display the **Print Settings** page. Then select the **Message Orientation** option to display the **Message Orientation** page.

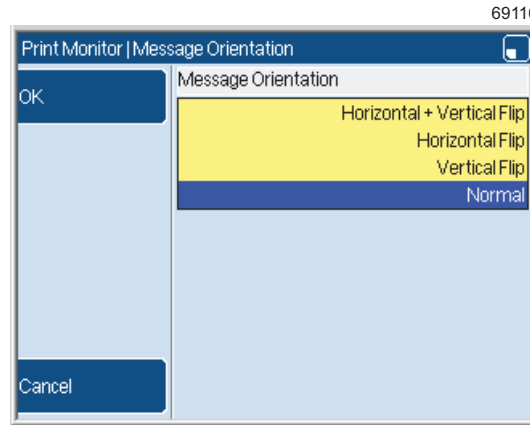


Figure 5. Message Orientation page

Use the Up arrow key or the Down arrow key to highlight the required orientation. Then do one of the following:

- Press the **OK** key to save the setting and return to the **Print Settings** page. Then press the **Exit** key to display the **Print Monitor** page.
- Press the **Cancel** key to discard any changes and return to the **Print Settings** page.

2.1.9 Reset All Message Sequences

This option resets every sequential field in the Current Message to the start of the sequence. The following field types are reset:

- Sequential Number
- Text Sequence (7900 only)
- Orientation Sequence (7900 only)

This option is available in the 'IDLE' state and the 'JET RUNNING' state, but not in the 'PRINTING' state.

To Reset All Message Sequences:

At the **Print Monitor** page, press the **Print Settings** key to display the **Print Settings** page. Then select the **Reset All Message Sequences** option.



The printer resets all the sequences then displays the following confirmation page.

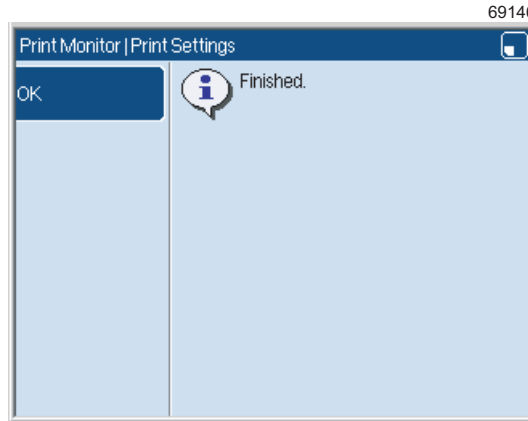


Figure 6. Reset All Message Sequences: confirmation page

2.1.10 Total Print Count

The **Total Print Count** option displays the total number of prints made by the printer. This value is the total of the **Print Count** values for all messages.

You can see the **Total Print Count** value at User Level C but you cannot select the option.

Linx 5900 & 7900



How To Change the System Setup

LINX

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1 Introduction

This document describes the Line setup options and the Installation setup options for the 5900 and 7900 printers.

The following options are described:

Options in the Line Setup menu

- Trigger setup
- Line speed
- Alarm setup

Options in the Setup menu

- Installation options
- Security options

You need a User Level C password to change some parameters.

For information about the serial communications interface and the Parallel IO interface, refer to the *Linx Remote Communications Interface Reference Manual* and *How To Use the Parallel I/O Option*.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Line setup

This section describes how to use the **Line Setup** page to configure the following:

- Trigger setup
- Line Speed setup
- Alarm setup

2.1 Trigger

Use this option to set up the following parameters:

- Print Trigger type
- Trigger to Printhead Distance
- Inter-Print Distance

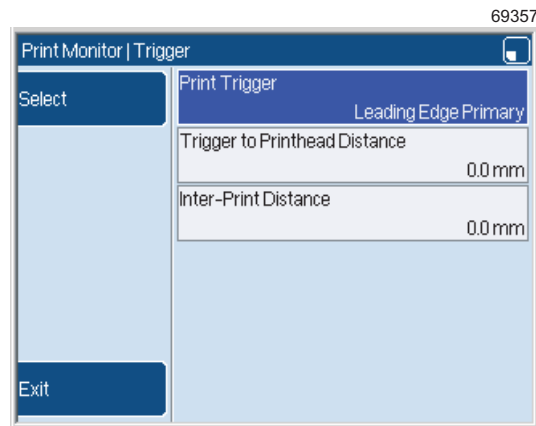


Figure 1. Trigger page

2.1.1 Print Trigger

A trigger is a signal that tells the printer to print or update a message. Select the **Print Trigger** option to display a list of the trigger types that are available.

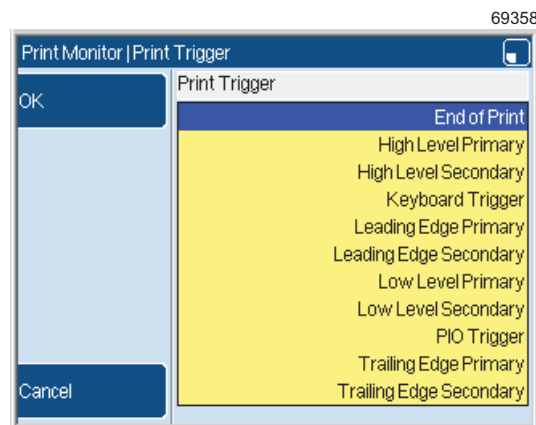


Figure 2. Print Trigger page



The following trigger types are available:

End of Print

The trigger for the next printed message is generated after the last raster of the previous message.

High Level Primary Trigger or High Level Secondary Trigger

The printer continuously prints or updates the message while the product sensor detects the presence of a product (the signal is active).

Keyboard Trigger

The printer prints or updates the message when you press the [alt] and [T] keys together.

Leading Edge Primary Trigger or Leading Edge Secondary Trigger

The printer prints or updates the message when the product sensor detects the leading edge of a product.

Low Level Primary Trigger or Low Level Secondary Trigger

The printer continuously prints or updates the message while the product sensor does *not* detect the presence of a product (the signal is not active).

PIO Trigger

A signal from the Parallel I/O connection generates the trigger.

Trailing Edge Primary Trigger or Trailing Edge Secondary Trigger

The printer prints or updates the message when the product sensor detects the trailing edge of the product.

Continuous

This mode does not use an external trigger signal for printing and the printer prints the message continuously. The **Inter-Print Distance** option controls the rate of printing.

Every Second

The printer automatically generates a trigger every second.

Edge triggers and Level triggers

The following trigger types are Edge triggers:

- Leading Edge Primary Trigger
- Trailing Edge Primary Trigger
- Leading Edge Secondary Trigger
- Trailing Edge Secondary Trigger



The following trigger types are Level triggers:

- High Level Primary Trigger
- Low Level Primary Trigger
- High Level Secondary Trigger
- Low Level Secondary Trigger

The Edge trigger types generate a single trigger when the sensor signal changes. The Level trigger types define a continuous trigger *condition* (active or not active) that depends on the state of the sensor signal.

To change the trigger option, make sure that the printer is not in the 'PRINTING' state.

2.1.2 Trigger to Printhead Distance

Use this option to set the distance between the trigger and the printhead. The default value is 0 mm. Figure 3 helps you understand the difference between the **Trigger to Printhead Distance** and the **Print Delay**. The large arrow shows the direction of the movement of the product.

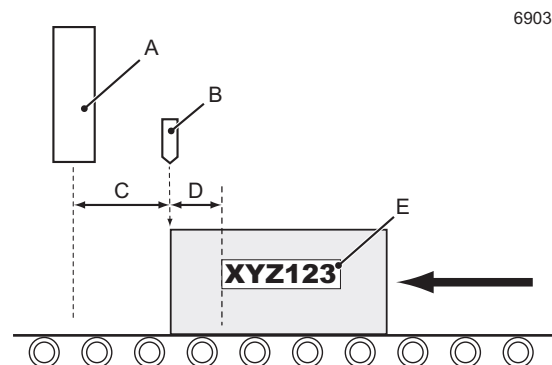


Figure 3. Trigger to Print Head Distance

In this example, there is a fixed distance (C) between the printhead (A) and the sensor (B) that detects the edge of the product. This distance is the '*Trigger to Printhead Distance*'. If the printhead and the sensor do not move, the Trigger to Printhead Distance is the same for all products and all messages. The distance is zero if the printhead and the sensor are in the same position. The installation engineer enters this measurement into the printer during the installation, but you can change the value if the sensor position is changed.

In Figure 3, the trigger signal from the sensor occurs at the edge of the product, but the message area (E) is not at the edge of the product. The distance between the sensor position and the print position (E) is the **Print Delay** (D). This distance depends on the product. The **Print Delay** parameter is described in the *Linx 5900 & 7900 Quick Start Guide*.



2.1.3 Inter-Print Distance

The Inter-Print Distance is the distance between the end of one message and the end of the next message—the dimension 'A' in Figure 4.



Figure 4. Inter-Print Distance

The **Inter-Print Distance** is used only for continuous printing. (For continuous printing, set the **Print Trigger** option to 'Continuous' or use one of the Level trigger types.)

2.2 Speed

Use this option to configure the speed measurement for the production line. The **Speed** page options depend on the **Speed Selection** option. The options shown in Figure 5 are for the Fixed Speed setting.

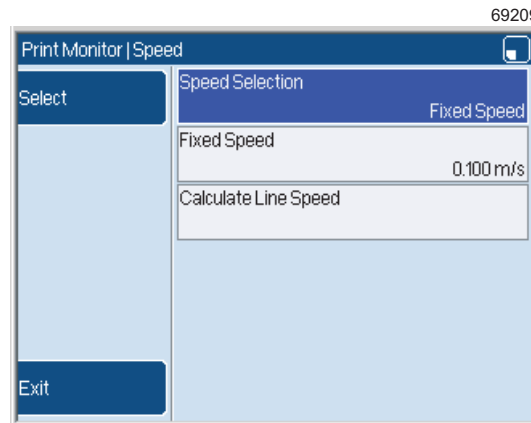


Figure 5. Speed page: Fixed Speed



2.2.1 Speed Selection

Use the **Speed Selection** page to select the measurement method.

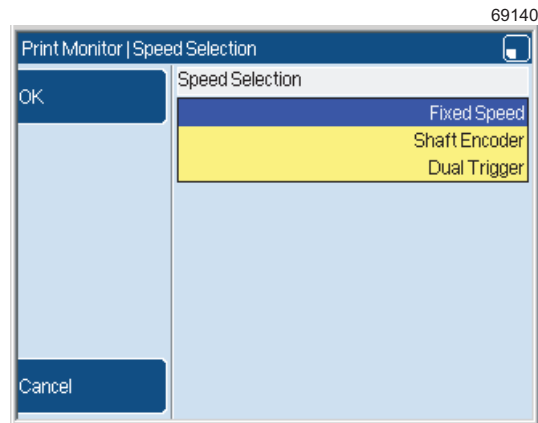


Figure 6. Speed Selection page

You can use any of the following settings:

Fixed Speed

You tell the printer the line speed, and the printer prints at the correct rate.

Shaft Encoder

Use a shaft encoder to make sure that the print speed matches the line speed.

Dual Trigger

Use the time difference between two trigger devices to continuously measure the line speed.

2.2.2 Fixed Speed

This option is not displayed unless you set the **Speed Selection** option to 'Fixed Speed'. Use this option to enter the value for the line speed. If you do not know the line speed, see 'Calculate Line Speed' below.



2.2.3 Calculate Line Speed

This option is not displayed unless you set the **Speed Selection** option to 'Fixed Speed'.

If you do not know the line speed, you can use this option to calculate the line speed. To calculate the line speed, the printer measures the time that is needed for the test item to pass the product sensor as shown below:

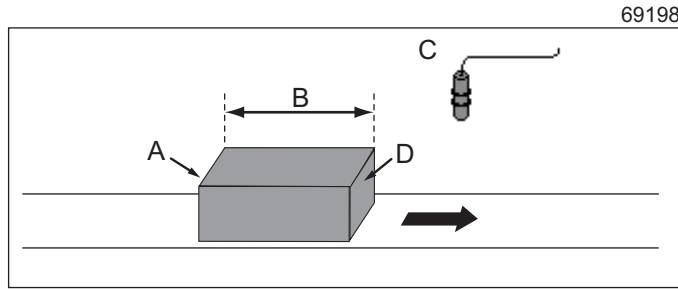


Figure 7. Line Speed Calibration

Put a test item on the conveyor, as shown. The large arrow in Figure 7 shows the direction of the movement of the test item. The test item has a known length (B). This length is the **Inter-Trigger Distance** (see Figure 8). The product sensor (C) measures the time difference between the leading edge (D) of the test item and the trailing edge (A). The printer uses the **Inter-Trigger Distance** and the time difference to calculate the line speed.

Calibration

To calibrate the line speed, select the **Calculate Line Speed** option to display the **Calculate Line Speed** page.

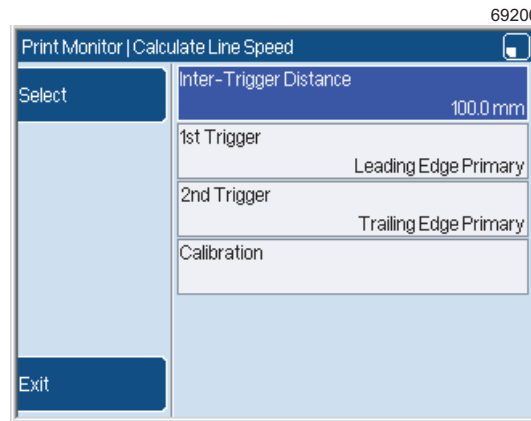


Figure 8. Calculate Line Speed page

The options on this page are as follows:

Inter-Trigger Distance

Set this value to the distance between the sensor devices. The Inter-Trigger Distance in Figure 7 is the length of the test item (B).



1st Trigger

Use this option to define the trigger signal for the leading edge of the test item.

2nd Trigger

Use this option to define the trigger signal for the trailing edge of the test item. You can use the same sensor device for the 1st Trigger and the 2nd Trigger, as shown in Figure 7 and Figure 8.

Calibration

To measure the line speed, select the **Calibration** option and follow the instructions that the printer displays.

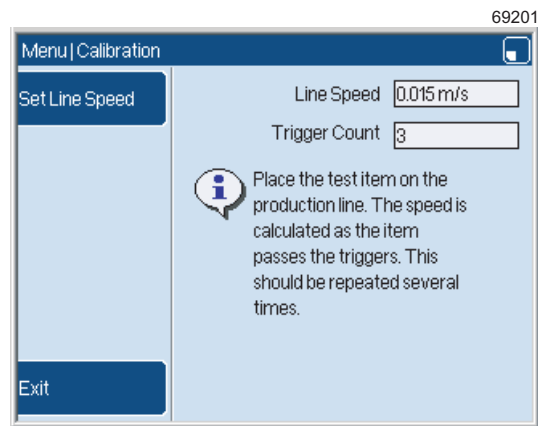


Figure 9. Calibration page

When the test item passes the sensors, the printer measures the line speed and calculates a new average for each occurrence. The **Calibration** page displays the average value and counts the number of passes as shown in Figure 9. The test item must pass the sensor a minimum of ten times for a good result. When the Line Speed reaches a value that does not change, press the **Set Line Speed** key to store the value.



2.2.4 Encoder Speed

This option is not displayed unless you set the **Speed Selection** option to 'Shaft Encoder' as shown below.

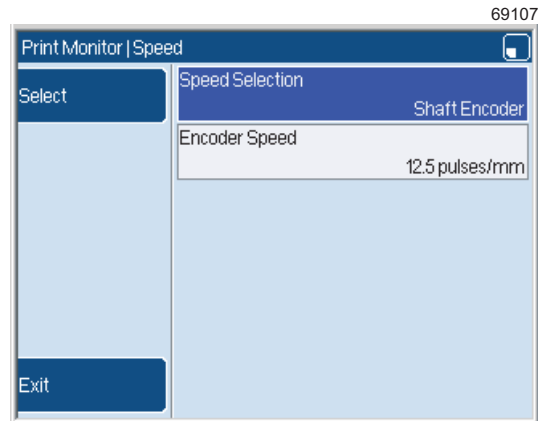


Figure 10. Speed page: Shaft Encoder

Set the **Encoder Speed** option to match the encoder that you use. The value required is the number of pulses per millimetre of movement of the product.

To configure the printer correctly for a shaft encoder and an encoder wheel, refer to *How to Install and Set Up the 5900 & 7900 Printer*.

2.2.5 Dual Trigger

Use this setting if the printer uses two trigger devices. The printer uses the information from the two triggers to calculate the line speed.

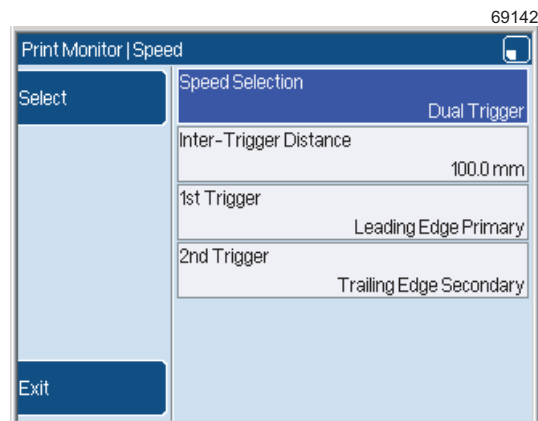


Figure 11. Speed page: Dual Trigger

The Dual Trigger mode is like the **Calculate Line Speed** function and the trigger options on this page are the same (see 'Calculate Line Speed' on page 8). The difference is as follows:

- The **Calculate Line Speed** option helps you measure the line speed value that you need for the Fixed Speed mode.
- In the Dual Trigger mode, the printer does not tell you the line speed, but continuously monitors the line speed to control the printing speed.



2.3 Alarm and dual alarm

The printer has an alarm that controls internal alarm tones and alarm output signals. The alarm output signals go to either one or two connectors on the rear panel of the printer — a default 24 V connector and an optional Volt Free Contact (VFC) connector. You can use the alarm output signals to control one or two external alarm beacons. The 24 V connector controls the default Alarm and the VFC connector controls the optional Alarm2.

NOTE: You must enter a configuration code to use the Alarm2 option on the 5900 and 7900 printer.

The alarms can indicate a range of system events, for example failures and warnings. The alarms operate in one of the following modes:

- **Pulsed**—the alarm pulses twice if an alarm condition occurs.
- **Pulsed - Constant**—the alarm pulses continuously until the alarm condition is cleared.
- **Constant**—the alarm is turned on and remains on until the alarm condition is cleared.

You can use any of the alarm indication modes to indicate any alarm condition.

To set the alarms

At the **Print Monitor** page, select **Line Setup > Alarm** to display the **Alarm** page.

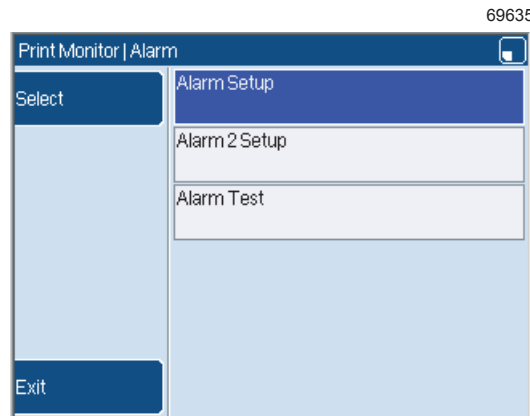


Figure 12. Alarm page



Select the **Alarm Setup** or **Alarm 2 Setup** option to display the **Alarm Setup** or **Alarm 2 Setup** page.

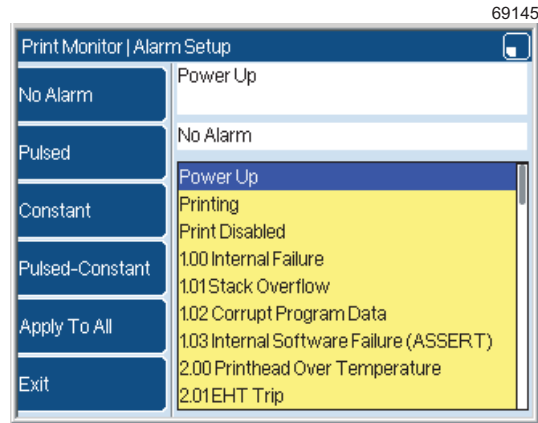


Figure 13. Alarm Setup page

These pages both display a list of all the conditions and events that can generate an alarm. To configure the alarms, use the Up arrow and Down arrow keys to highlight an item in the list, then press one of the following keys:

No Alarm	The event does not generate any alarm
Pulsed	The event generates a pulsed alarm
Constant	The event generates a constant alarm
Pulsed-Constant	The event generates a continuous pulsing alarm
Apply To All	Apply the current alarm setting to all the events in the list

NOTE: If the event message has the prefix "4" (for example, "4.02 Normal Start") you can use only the 'Pulsed' setting or the 'No Alarm' setting. The **Apply To All** key does not change the setting for these event types.

To return to the **Print Monitor** page, press the **Exit** key three times.

To test the alarm, select the **Alarm Test** option in the **Alarm** page (see Figure 12 on page 11). The alarm pulses twice.

Alarm priority

For Alarm and Alarm2, each alarm type has a different priority—a Constant alarm has the highest priority, followed by a Pulsed-Constant alarm, then a Pulsed alarm. If an alarm is active, and an event occurs with a higher-priority alarm type, the higher-priority alarm becomes active. For example, if a Constant alarm and a Pulsed-Constant alarm are both active, the printer generates a Constant alarm.



3 Setup parameters

This section describes how to change the general Setup parameters for the printer. These settings include the time, the printhead height, and the system locale.

To access the Setup parameters from the Print Monitor page, select **Menu > Setup**. The printer displays the **Setup** page.

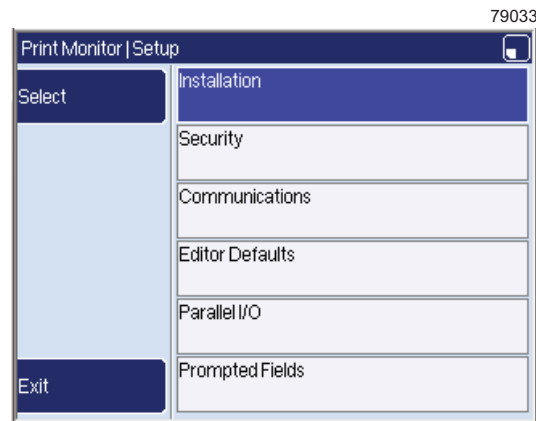


Figure 14. Setup page

The Setup parameters are arranged in the following categories:

- Installation
- Security
- Communications
- Editor Defaults
- Parallel I/O
- Prompted Fields

Only the **Installation** and **Security** pages are described in this guide. For information about the **Communications** page, refer to *How To Use the Communications Options*. For information about the **Editor Defaults** page, refer to *How To Configure the Message Editor and Logo Editor Options*. For information about the **Parallel I/O** page, refer to *How To Use the Parallel I/O Option*. For information about the **Prompted Fields** page, refer to *How To Use Prompted Fields*.

3.1 Installation settings

You can use the **Installation** option to change the following parameters:

- **Date and Time**
- **Printhead Height**
- **USB Printer Name**
- **Locale**



3.1.1 Date and Time

To change the system time, first make sure that the printer is not in the 'PRINTING' state.

At the **Print Monitor** page, select **Menu > Setup > Installation > Date & Time > Current Time**.

The printer displays the current time in a text box.

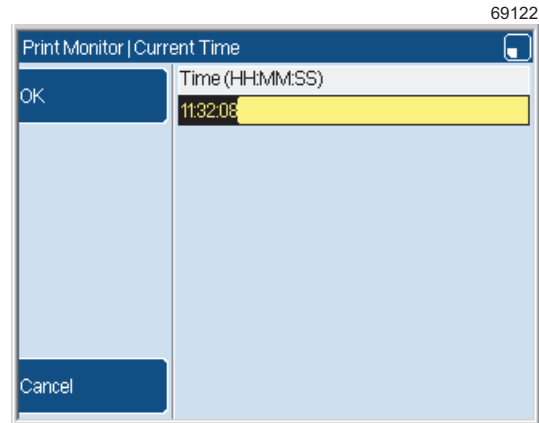


Figure 15. Current Time page

Enter the correct time then press the **OK** key to return to the **Date & Time** page. The **OK** key is not available if you enter a time format that is invalid.

You can use the same method with the **Current Date** option to set the current date.

3.1.2 Printhead height

The printhead height is the height *difference* between the printhead and the cabinet. The difference is measured from the base of the printer to the end of the printhead, as shown below.

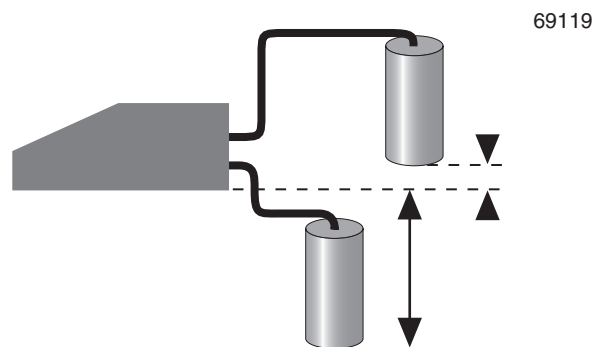


Figure 16. Printhead height measurement

Enter a negative height if the printhead is lower than the base of the printer. The range for the height difference is -2 metres to +2 metres. It is not necessary to enter the '+' sign for positive numbers.

Always make sure that the **Printhead Height** setting is correct because the printer uses it to calculate the correct internal pressures.



To set the printhead height, first make sure that the printer is in the 'IDLE' state.

At the **Print Monitor** page, select **Menu > Setup > Installation > Printhead > Printhead Height** to display the **Printhead Height** page.

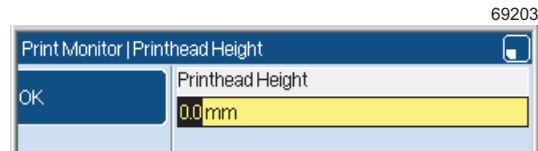


Figure 17. Printhead Height page

Enter the correct value, then press the **OK** key. Press the **Exit** key four times to return to the **Print Monitor** page.

3.1.3 Locale

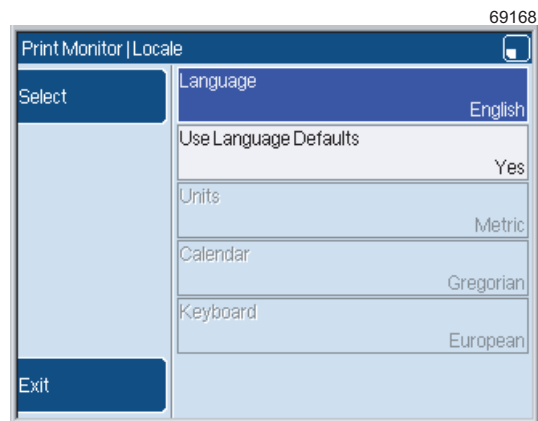


Figure 18. Locale page

Use the **Locale** page to set the following parameters:

- **Language**
- **Use Language Defaults**
- **Units**
- **Calendar**
- **Keyboard**

These options are described below.

Language

This option sets the language that the printer uses in all of the pages that are displayed.

To set the printer language, first make sure that the printer is not in the 'PRINTING' state.

At the **Print Monitor** page, select **Menu > Setup > Installation > Locale > Language** to display the list of available languages. Select the required language from the list then press the **OK** key.

Press the **Exit** key four times to return to the **Print Monitor** page.



Use Language Defaults

The **Use Language Defaults option** changes the method that you use to set the following three options (which are described below):

- **Units**
- **Calendar**
- **Keyboard**

If you set the **Use Language Defaults option** to Yes, the printer automatically uses default settings for these three options. The three options are not available, as shown in Figure 18 on page 15. You cannot change the default settings, which depend on the setting of the **Language** option (see above). For example, if you set the language to French, the printer uses metric units.

If you set the **Use Language Defaults option** to 'No', you can set the three options as required.

Units

Select this option to change the units of measurement that the printer uses. You can select any of the following measurement units:

- **Metric**
- **Engineering**
- **Imperial**

The Engineering units are useful for the service engineer. If you select these units, the printer uses numbers in the range 0 to 255 to display some internal parameters.

Calendar

These Calendar types are available:

- **Gregorian**
- **Gregorian (USA)**
- **Hijri**

The Hijri calendar is used in some Islamic countries, other countries use one of the Gregorian calendar options.

The **Gregorian (USA)** option uses the American system of numbers for the days in a leap year. This option also changes the format of some date formats that you can create for the 7900 printer. (Refer to *How To Create Date and Time Formats* for more information.)

Keyboard

This option tells the printer the type of keyboard that is fitted. The keyboard that is fitted at the factory depends on the country where the printer is used. Normally, the installation engineer sets the **Keyboard** option as required and it is not necessary to change this option.

If you change the setting and press a key, the printer can generate a character that does not match the key. For example, if your keyboard is European but the **Keyboard** option is set to Russian, the keyboard generates Russian characters.



If you select the **Keyboard** option the printer displays a list of keyboard types (countries).

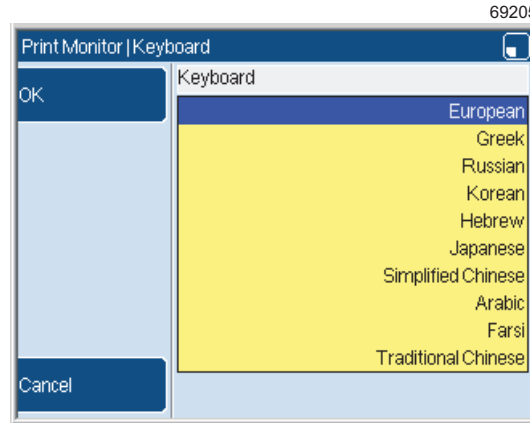


Figure 19. Keyboard page

To change the setting, highlight an item in the list then press the **OK** key to return to the **Locale** page.

Press the **Exit** key four times to return to the **Print Monitor** page.

Secondary Keyboard

This option allows you to select a secondary keyboard layout that is different from the primary keyboard. For example, you can change between European and Japanese keyboards, which allows you to use a European keyboard to generate Japanese characters. Refer to *How To Use a Different Keyboard* for more information.

3.2 Security settings

This option enables you to change the following Security parameters:

- **Keylock** (On or Off)
- **Keylock Timeout** period
- **Change Password**

3.2.1 Keylock

If you set this option to On and you do not use the keyboard for some time (see 'Keylock Timeout' below), the printer locks the keyboard. A password prompt page is displayed. To unlock the printer, enter a password. You must use the password that was in use before the lock was activated, or a higher level password.

3.2.2 Keylock Timeout

The Keylock Timeout period is the time that passes before the printer locks the keyboard if the keyboard is not used. Use the **Keylock Timeout** option to increase or decrease the period. The allowed range is from 1 to 60 minutes.



3.2.3 Change Password

You can use this option to change your password or the password for any User Level that is lower than your level. For example at User Level C you can change the Level A, Level B and Level C passwords.

To change the password, select the **Change Password** option to display the **Change Password** page.

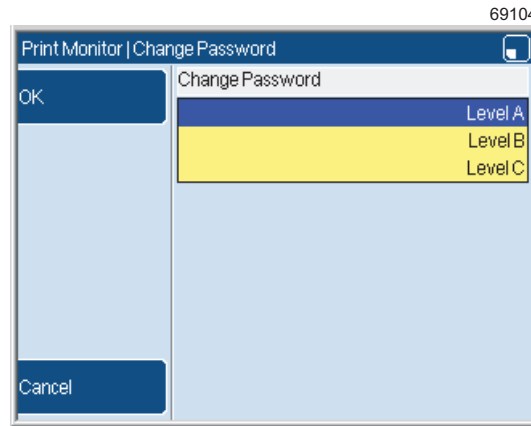


Figure 20. Change Password page

Select the User Level as required then press the **OK** key.

The printer displays the following prompt screen.

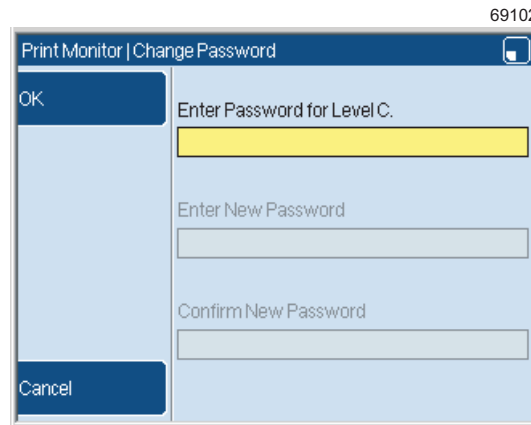


Figure 21. Change Password page

Note that the **Enter New Password** and **Confirm New Password** text boxes are not active. You must enter your current password *and* the new password, as follows:

- 1 Enter the *current* password in the active box and press the **OK** key. The **Enter New Password** text box is activated.
- 2 Enter the *new* password in the active box and press the **OK** key. The **Confirm New Password** text box is activated.
- 3 Enter the *new* password in the active box and press the **OK** key to confirm the new password.

The **Security** page is displayed.



Press the **Exit** key four times to return to the **Print Monitor** page.

3.2.4 Allow Print Delay Access

5900 only. This option allows you to control access to the **Print Delay** option on the **Print Settings** page for User Level A users who do not normally have access to this option.

The default is No. If set to Yes, the **Print Settings** soft key on the **Print Monitor** page is available for User Level A users. Press the **Print Settings** soft key to open the **Print Settings** page. Only the **Print Delay** option is available at this lowest User Level. Refer to the *Linx 5900 & 7900 Quick Start Guide* for information about how to change the Print Delay.

Linx 5900 & 7900



How To Create Date and Time Formats

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document shows how you can create a new Date and Time field format for the 7900 printer. It also includes details of available time formats for the 5900 and 7900 printers.

NOTE: You cannot create new Date and Time formats on the 5900 printer.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Date and Time store

In the *Linx 5900 & 7900 Quick Start Guide* you learnt how use the Message Editor to add a **Date and Time** field to your message. You can select any of the default formats to display the date or time in a different style, as follows.

TIME AND DATE FORMATS: ENGLISH	
Format	Usage / Example
d (Day of Week digit)	1 through 7
dd (Day of Month)	1 through 31
dd mmm yy	15 DEC 06
dd mmm yyyy	15 DEC 2006
dd.mm.yy	15.12.06
dd/mm/yy	15/12/06
dd/mm/yyyy	15/12/2006 (5900 only)
HH	00 through 23
HH (12hr)	01 through 12
HH:MM	16:35
HH:MM:SS	16:35:57
HH:MMam/pm	04:35 pm
HHMM	0435
HHMM am/pm	0435 pm
jjj (Julian Date USA)	001 through 366
jjj (Julian Date)	001 through 366
MM (Minute)	00 through 59
mm (Month of Year)	1 through 12
mm/dd/yy	12/15/06
mmm (Month)	JAN through DEC
mmm dd yy	DEC 15 06
mmm dd yyyy	DEC 15 2006
SS (Second)	00 through 59
ww (Week of Year)	1 through 53
y (Year of Decade)	0 through 9
yy (Year of Century)	00 through 99
yy.mm.dd	06.12.15
YYYY	2006
yjjj (Year of Decade + Julian Date)	0 through 9, 001 through 366 (5900 only)
yjjj (USA) (Year of Decade + Julian Date)	0 through 9, 001 through 366 (5900 only)
mm (2 letter month of Year)	JA, FE, MR, AL, MA, JN, JL, AU, SE, OC, NO, DE (5900 only)

Figure 1. Date and Time formats

How To Create Date and Time Formats



If you need a special format that is not in this list, follow the steps in this document to build a customized format.

NOTE: You cannot create new Date and Time formats on the 5900 printer.

2.1 Create a new format

This section shows you how you build a new Date and Time format.

2.1.1 Elements and separators

Each format normally contains some elements and separators as shown in the following examples:

Format	Element 1	Separator	Element 2
23-59	HH (24hr)	-	MM (Minutes)
31/12	dd (Day of Month)	/	mm (Month)

How To Create Date and Time Formats



You can use any of the following elements to create a format.

TIME AND DATE FORMAT ELEMENTS			
Element type	Element name	Default style	Range
Day of Week	day (Day of Week)	MON, TUE, WED...	MON through SUN
	d (Day of Week)	1, 2, 3...	1 through 7
Day of Month	dd (Day of Month)	01, 02, 03...	01 through 31
Julian Date	jjj (Julian Date)	001, 002, 003...	001 through 366
Week of Year	ww (Week of Year)	01, 02, 03...	01 through 53
Month	mmm (Month)	JAN, FEB, MAR...	JAN through DEC
	mm (Month)	01, 02, 03...	01 through 12
Year	yy (Year)	00, 01, 02...	00 through 99
	y (Year)	0, 1, 2...	0 through 9
	yyyy (Year)	2000, 2001, 2002...	N/A
Seconds	SS (Seconds)	00, 01, 02...	00 through 59
Minutes	MM (Minutes)	00, 01, 02...	00 through 59
15 minutes	15 min (15 min of day)	01, 02, 03...	01 through 96
30 minutes	30 min (30 min of day)	01, 02, 03...	01 through 48
Hours	HH (12hr)	00, 01, 02...	00 through 11
	HH (24hr)	00, 01, 02...	00 through 23
Before/After Noon	am/pm (Before/After Noon)	am, pm	am or pm
(Round)	(See page 31)		
(Macro)	(See page 16)		

Figure 2. Date and Time format elements

The separators are optional, but if there are no separators, the field is less clear. The following separators are available:

/ : - . , [space]

(These symbols are the default separators, but you can create your own separators.)

In this example, you create the following format for a **Date & Time** field in your message.

Item	Details
Element 1	day (Day of Week)
Separator 1	-
Element 2	HH (24hr)
Separator 2	:
Element 3	MM (Minutes)

Figure 3. Custom format example

How To Create Date and Time Formats



If the current day is Monday and the current time is 11:59 p.m., your message displays the following:

“MON-23:59”

The following instructions show how you create this format.

2.1.2 Example

- 1 At the **Print Monitor** page, select **Menu > Stores > Date & Time Store**. The printer displays the **Date & Time Store** page.

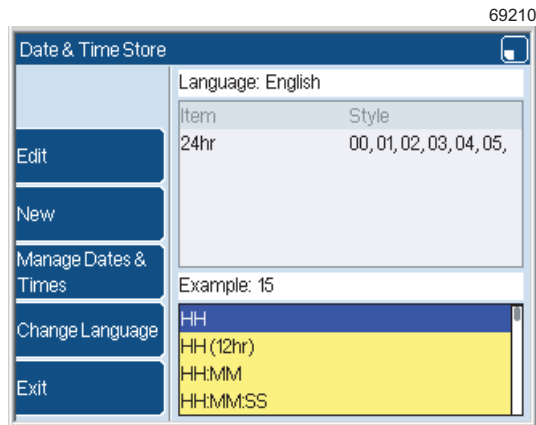


Figure 4. Date & Time Store page

This page displays a list of the existing Date and Time formats.

(You can access this page from the Message Editor but the **Edit** key and the **Manage Dates & Times** key are not displayed.)

NOTE: The **Edit** key and the **Manage Dates & Times** key are described later. The **Change Language** key in the **Date & Time Store** page changes the default formats that are available. For more information, see the *Linx 5900 & 7900 Quick Start Guide*.

- 2 At the **Date & Time Store** page, press the **New** key. The printer displays the **Date & Time Editor** page.

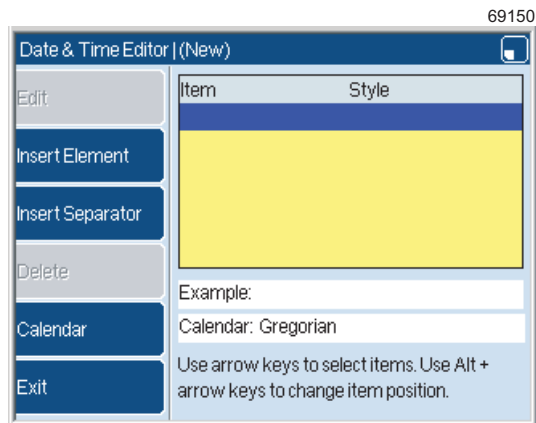


Figure 5. Date & Time Editor page

How To Create Date and Time Formats



The page title displays the word “New” when you create a new format, as shown.

- 3 To insert the first element of your format, press the **Insert Element** key. The printer displays a list of the available elements.

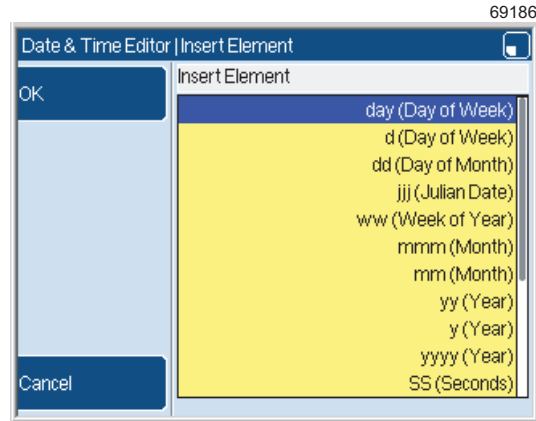


Figure 6. Insert Element page

- 4 For this example, the first element that you need is “day (Day of Week)”. Make sure that this element is highlighted then press the **OK** key to return to the **Date & Time Editor** page:

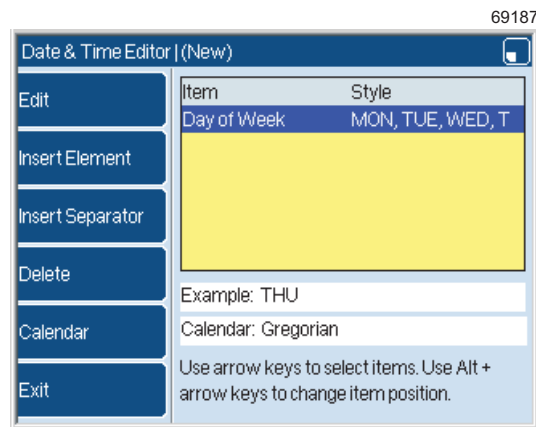


Figure 7. Date & Time Editor page

The page shows the element that you selected and some examples of the format: “MON, TUE, WED...”.

NOTES:

1. The days of the week and the months are shown in the default language. You can change the language that the format uses (see ‘Change Language’ on page 14).
2. You can change the content of any element—see ‘Edit Strings’ on page 11.

How To Create Date and Time Formats



- The next item that you need is a separator. Use the Down arrow key to move the highlight to the next row (which is empty) then press the **Insert Separator** key. The printer displays the **Insert Separator** page.

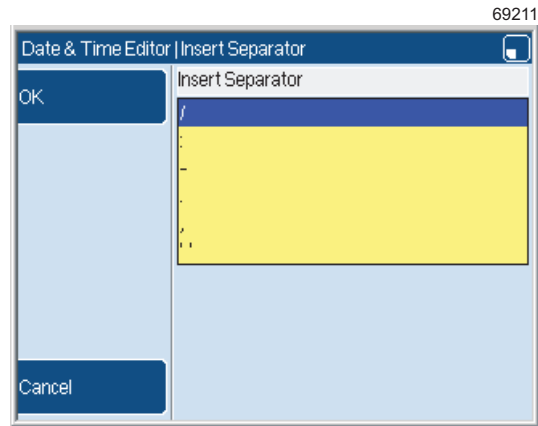


Figure 8. Insert Separator page

- For this example, the first separator that you need is the hyphen (“-”). Use the Down arrow key to highlight the “-” then press the **OK** key to return to the **Date & Time Editor** page.

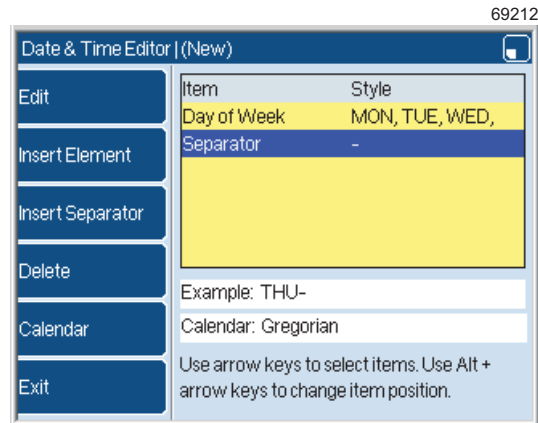


Figure 9. First element and separator

How To Create Date and Time Formats



- 7 Repeat steps 4 to 6 to add the second element, the second separator, and the third element. The completed format is shown below.

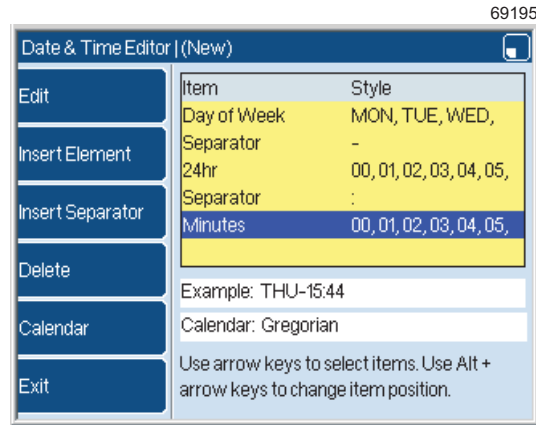


Figure 10. Complete format

You can see an example of the complete format next to the word “Example” on the **Date & Time Editor** page.

Save your format

When the Date and Time format is completed, press the **Exit** key to display the **Save As** page.

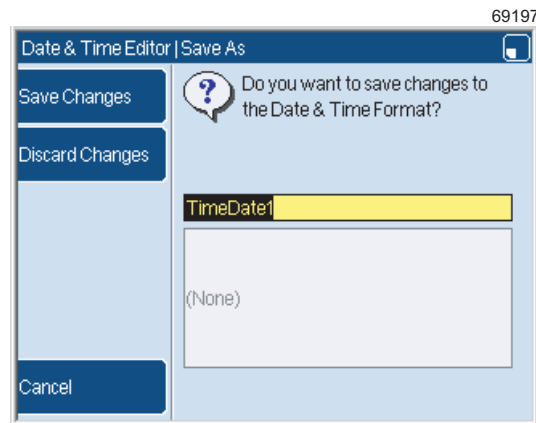


Figure 11. Save As page

You can save the format or discard your changes, or change the default name that is shown. Press the **Cancel** key to return to the previous page. The box below the default name shows the names of other formats that you created. If there are no customized formats, the box is empty as shown in Figure 11.

If you use an existing name, the printer displays a warning that your changes are seen in all messages that use the format.

2.1.3 Edit key

At the **Date & Time Store** page (Figure 4 on page 6), you can use an existing format instead of a blank format when you begin to create a new format. The method you use to build the format is the same.

How To Create Date and Time Formats



At the **Date & Time Store** page, highlight an existing format that is like the format that you need and press the **Edit** key. Then you can edit this format and use a new name to save the changed version.

2.1.4 Manage Dates & Times

You can use the **Manage Dates & Times** key to copy a format, change a format name, delete a format, or change the language. (You cannot delete or change the name of any of the formats that are supplied with the printer.) The **Copy** option, the **Rename** option, and the **Delete** option are not described in this document. These options are like the options in the **Message Store > Manage Messages** page, which is described in the *Linx 5900 & 7900 Quick Start Guide*.

2.1.5 Change the order of the elements

You can change the position of the elements in the format. Use the Arrow keys to highlight an element. Press the [alt] key and the Up or Down arrow key to drag the element towards the top or bottom of the list.

2.1.6 Calendar types

You can use the **Calendar** option to select the calendar for your Date & Time format. Press the **Calendar** key to display the available calendar types, as follows.

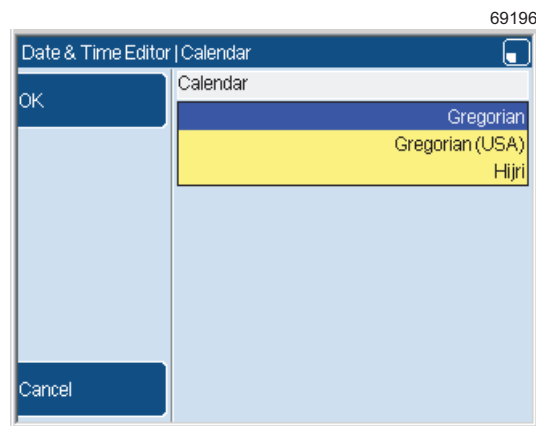


Figure 12. Calendar page

Highlight the required calendar and press the **OK** key to return to the **Date & Time Editor** page.

NOTE: All the elements in a format must use the same calendar.

- Use the **Gregorian** option if you need a Julian Date element that uses the European style.
- Use the **Gregorian USA** option if you need a Julian Date element that uses the American style.

How To Create Date and Time Formats



Julian Date formats

The European version of the Julian Date and the American version are different, as shown in Figure 13. The default Julian Date format that is used depends on the Installation setup (see *How To Change the System Setup*).

6016

	EUROPEAN	AMERICAN
Non-Leap Year	1 Jan = Day 001	1 Jan = Day 001
	28 Feb = Day 059	28 Feb = Day 059
	1 Mar = Day 060	1 Mar = Day 060
	31 Dec = Day 365	31 Dec = Day 365
Leap Year	1 Jan = Day 001	1 Jan = Day 001
	28 Feb = Day 059	28 Feb = Day 059
	29 Feb = Day 366	29 Feb = Day 60
	1 Mar = Day 060	1 Mar = Day 061
	31 Dec = Day 365	31 Dec = Day 366

Figure 13. Julian Date

2.1.7 Edit Strings

The following description applies to the **Days of the Week** element, but the method is the same for the other elements.

You can use this page to change the text description for the days of the week. For example “MON-23:59” becomes “AAA-23:59” and “TUE-08:00” becomes “BBB-08:00”.

NOTE: You can use the following method to edit a separator too, so that you can use a symbol that is not one of the default separators.

- 1 In the **Date & Time Editor** page (Figure 7 on page 7), use the arrow keys to highlight an element. Press the **Edit** key to display the **Edit Strings** page.

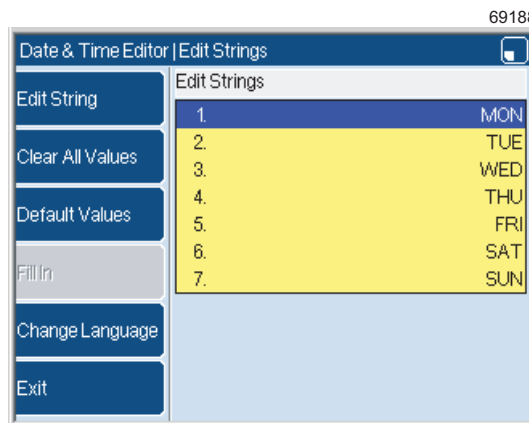


Figure 14. Edit Strings page

How To Create Date and Time Formats



- Press the **Edit String** key to display the selected string (“MON” in this example). Enter the new text “AAA” to overwrite the old text as shown below.

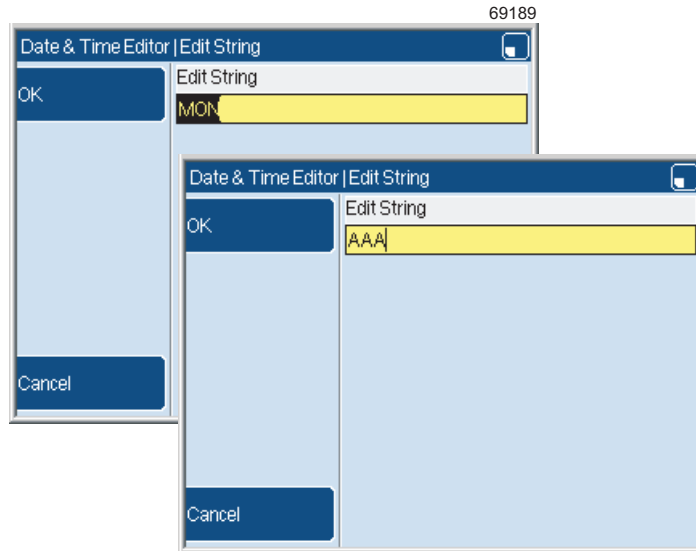


Figure 15. Edit a string

- Press the **OK** key to return to the **Edit Strings** page, which now shows that the first day of the week is “AAA”.

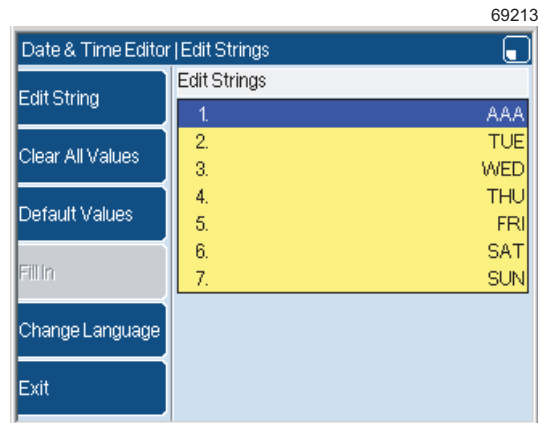


Figure 16. New string: “AAA”

Repeat steps **2** and **3** if necessary to change the other days of the week, then press the **Exit** key to finish.

Clear All Values

To delete all the existing strings in *only this element*, press the **Clear All Values** key. This key does not change the other elements in the format.

How To Create Date and Time Formats



The **Edit Strings** page shows that all of the text descriptions are clear.

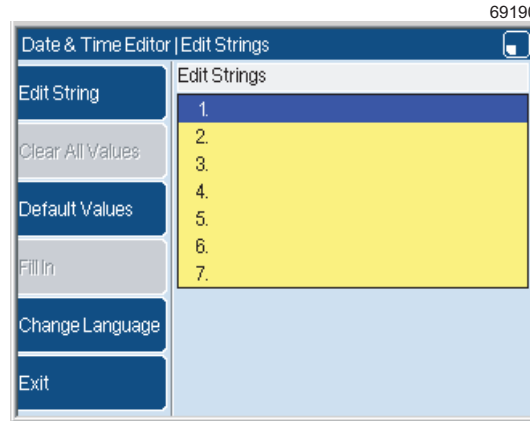


Figure 17. Edit Strings page

You can enter new text for each string as shown in Figure 15 on page 12.

Default Values

To reset all the strings to their default values, press the **Default Values** key. In the example above, “AAA” is reset to “MON”.

Fill In

If you press the **Fill In** key at the **Edit Strings** page, the printer automatically enters a string into every row. The printer uses the first string (or the first two strings) to calculate the strings for the other rows.

The **Fill In** key is not available if the printer cannot calculate the other strings.

The string that you enter in the first row or the second row must be one of the following:

- The default name for this item, or the first part of the default name. For example, you can set the first day of the week to “Monday” or “mOnD”. You cannot use “Mnday” because the letters are incorrect. You cannot use “Tuesday” because that is the wrong day.
- A single letter—the printer uses the next letters of the alphabet for the next strings. For example you can use the sequence “A, B, C...” or “R, S, T...”.
- A whole number—the printer uses the next number for the next string. For example you can use the sequence “1, 2, 3...” or “527, 528, 529...”.

The difference between the steps can be more than 1. For example:

120, 125, 130, 135,...

To create a sequence like this example, enter the numbers for the first string and the second string (100 and 125 in this example). The printer calculates the difference (125 - 120 = 5), and uses this difference to calculate the other numbers.

How To Create Date and Time Formats



To use the **Fill In** key, first enter a string into the first row of the data.

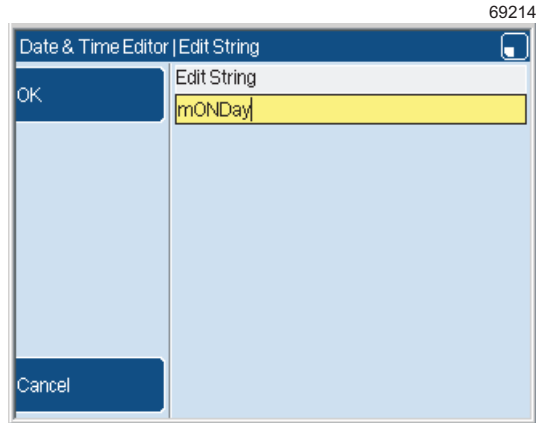


Figure 18. Edit String page

Press the **OK** key to return to the previous page, then press the **Fill In** key. The printer copies the capitalization of the first string, as shown in the following example.

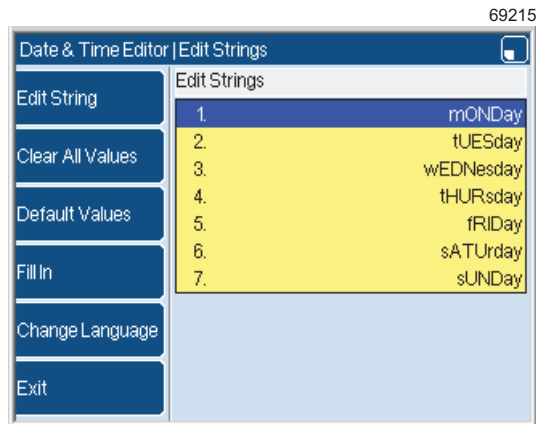


Figure 19. Edit Strings page with new defaults

Change Language

NOTE: The **Change Language** key in the **Edit Strings** page is different from the **Change Language** key in the **Date & Time Store** page (Figure 4 on page 6).

How To Create Date and Time Formats



To change the language of the string, press the **Change Language** key and select the required language from the list. Press the **OK** key to return to the **Edit Strings** page, which shows the language change.

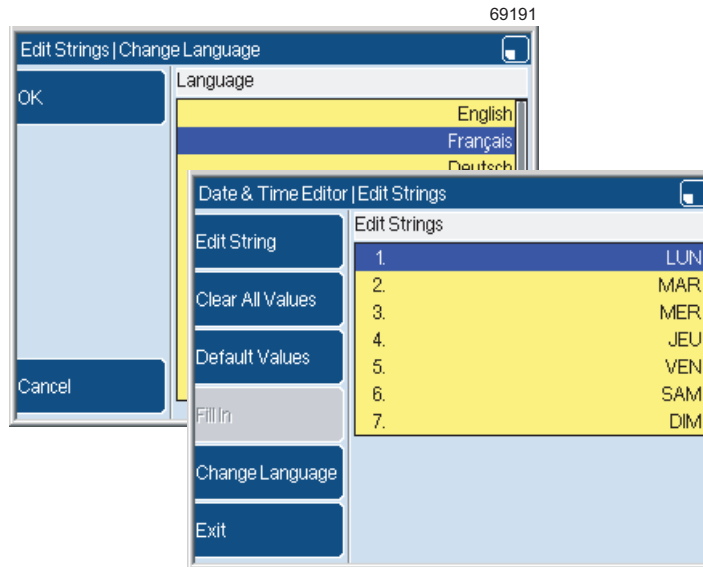


Figure 20. Change the language

The **Change Language** key changes only this element of the format.

NOTE: The **Change Language** key changes a numeric element to a text element. For example, “d(Day of Week)” changes to “day(Day of Week)”.

Exit

When you have completed the changes to the Day of the Week element, press the **Exit** key to return to the **Date & Time Editor** page.



3 Macro

3.1 Introduction

A Macro element is part of a Date and Time format. You use a Macro element to generate a customized Date and Time format that does not use the standard date or time elements. To create a Macro element you must write a simple program which controls the text that is printed. You can write a short and simple program, or a long and complex program.

To use a Macro element, you insert the Macro element into a Date and Time format, as shown in the following example.

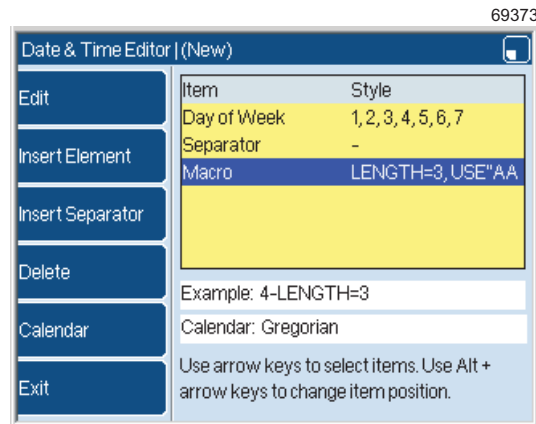


Figure 21. Date and Time format with Macro

This simple example is not useful, but shows you how a Macro element is used. The Date and Time format in Figure 21 contains the following elements:

- The day of the week (1 to 7)
- A separator (“-”)
- A Macro element

The Macro element tells the printer to print the text string “AAA” after the separator. If the day of the week is 7, the printed date is “7-AAA”.

NOTE: All the lines of the Macro program are contained in a single line in the **Date & Time Editor** page, as shown in Figure 21.

To help you follow the description, the lines in a program are shown in a different font (‘Courier’), like this example:

This line uses the courier font.

The next section shows you the commands that you can use to make a Macro element. Then you learn how a Macro element is inserted into a Date and Time format.

How To Create Date and Time Formats



3.2 Macro structure

A Macro program must contain a minimum of two lines and a maximum of 100 lines. Every Macro program must contain the following lines:

- A **Length** command
- A **Use** command

The **Length** command must be the first line of your Macro program.

3.2.1 Length

The **Length** command defines the length of the text string that the Macro element generates. The length is an integer in the range 1 to 32. For example, to print the text "AAA", the first line of the Macro program must be as follows:

```
length = 3
```

3.2.2 Use

This command defines the characters that are displayed in the Macro element of the Date and Time format. When a **Use** command is performed, the printer ignores any lines that follow the **Use** command.

The **Use** command can generate any of the following:

- A text string
- A number
- A numeric expression

Text

To print a text string, enclose the characters in quotation marks, as follows:

```
use "AAA"
```

This command tells the printer to print the text string "AAA". The length of the text string must match the length that you defined in the **Length** command.

Number

To print a number, enclose the number in brackets, as follows:

```
use (25)
```

If the number of digits is less than the **Length** setting, you can add two 'format' symbols to control the alignment of the numbers. For example:

```
use (25)_#
```

NOTE: Do not insert a space between the ")" and the format symbols.

How To Create Date and Time Formats



The following table shows the format symbols that you can use. The table shows an example for each format that shows how the format changes a 5-character string.

Format symbols	Description	Example
#_	Left aligned (default)	"25 "
_#	Right aligned	" 25"
0#	Right aligned, with leading zeros	"00025"

Figure 22. Format symbols

If you do not add the format symbols, the printer uses the default alignment (left aligned).

Numeric expression

A numeric expression is one of the following:

- A number in the range 0 to 999,999,999.
- A time that uses the format "HH:MM" (for example "23:59"). The numeric value is (HH x 60) + MM.

For example, "23:59" = (23 x 60) + 59 = 1439.

- A time that uses the format "HH:MM:SS" (for example "23:59:30"). The numeric value is (HH x 3600) + (MM x 60) + SS.

For example, "23:59:30" = (23 x 3600) + (59 x 60) + 30 = 86,370.

- A time value—see below.

You can use some mathematical symbols to build a numeric expression that is more complex. For example:

$$(6+10)$$

$$(24/2)$$

$$(6+10) + (24/2)$$

You can use any of the following mathematical symbols.

Symbol	Description
+	Add the two numbers.
-	Subtract the second number from the first number.
*	Multiply the two numbers.
/	Divide the first number by the second number.
%	Calculate the remainder after the first number is divided by the second number. For example, 28 % 5 = 3.

Figure 23. Numeric operators

3.2.3 Time value

A time value—for example, "MOH" (Minute of Hour)—generates a number that depends on the current time. If the time is 23:59, the time value "MOH" generates the number 59.

How To Create Date and Time Formats



The following table describes the time values that are available.

Time value	Description
SOH	Second of Hour. The number of seconds that have passed after the start of the hour. The value is in the range 0 to 3599.
SOD	Second of Day. The number of seconds that have passed after the start of the day (today at 00:00:00). The value is in the range 0 to 86399.
MOH	Minute of Hour. The value is in the range 0 to 59.
MOD	Minute of Day. The number of minutes that have passed after the start of the day (today at 00:00). The value is in the range 0 to 1439.
MOW	Minute of Week. The number of minutes that have passed after the start of the week (Monday at 00:00). The value is in the range 0 to 10079.
HOD	Hour of Day. The value is in the range 0 to 23.
HOW	Hour of Week. The number of hours that have passed after the start of the week (Monday at 00:00:00). The value is in the range 0 to 167.
HOM	Hour of Month. The number of hours that have passed after the start of the month (1st of month at 00:00:00). The value is in the range 0 to 744.
DOW	Day of Week. The value is 1 for Monday, 2 for Tuesday, ..., 7 for Sunday.
DOM	Day of Month. The value is in the range 1 to 28, 29, 30 or 31 depending upon the month.
DOY	Day of Year. The value is in the range 1 to 365 (or 366 for a leap year).
WOM	Week of Month. The value is in the range 1 to 5.
WOY	Week of Year. The value is in the range 1 to 53.
MOY	Month of Year. The value is in the range 1 to 12.
MOE	Month of Decade. The value is in the range 1 to 120.
YOE	Year of Decade. The value is in the range 0 to 9.
YOC	Year of Century. The value is in the range 0 to 99.

Figure 24. Time values

For example, if the current day of the month is 31, then $(DOM - 10) = 21$.

How To Create Date and Time Formats



3.2.4 If

You can use this keyword to compare two values, and make a decision that depends on the comparison. The following examples show how you use this keyword.

Example 1

```
if (moh = 59) use "AAA"
```

In example 1, if the time value 'minute of hour' is equal to 59, the text string "AAA" is used. If the two values are not equal, the printer ignores the **Use** command.

Numeric comparator

In example 1, the "=" symbol compares two numeric values. The result of the comparison is 'true' or 'false'. For numeric values, the comparator symbol can be any of the following.

Symbol	Name	Result of comparison
<	Less than	<ul style="list-style-type: none"> 'True' if the left number is less than the right number. 'False' if the left number is <i>not</i> less than the right number.
<=	Less than or equal	<ul style="list-style-type: none"> 'True' if the left number is less than or equal to the right number. 'False' if the left number is <i>greater</i> than the right number.
=	Equal	<ul style="list-style-type: none"> 'True' if the left number is equal to the right number. 'False' if the left number is <i>not</i> equal to the right number.
>=	Greater than or equal	<ul style="list-style-type: none"> 'True' if the left number is greater than or equal to the right number. 'False' if the left number is <i>less</i> than the right number.
>	Greater than	<ul style="list-style-type: none"> 'True' if the left number is greater than the right number. 'False' if the left number is <i>not</i> greater than the right number.

Figure 25. Numeric comparator symbols

Logical expression

In this example, "(moh = 59)" is a *logical expression*. A logical expression has the value 'true' or 'false'.

The logical expression "moh = 59" is true if the 'minute of hour' is 59 (for example, the current time is 08:59 or 23:59). If the time is 08:58 or 23:58, then the 'minute of hour' is *not* 59 and the logical expression is false.

How To Create Date and Time Formats



Example 2

```
if ((moh = 59) & (dow = 7))
{
use "AAA"
}
```

The program in this example has a different layout—see ‘Blocks’.

In example 2, the printer uses the text string “AAA” if:

- The ‘minute of hour’ is 59, *and*
- The ‘day of week’ is 7.

In example 2, the “&” symbol compares two logical expressions. The logical expressions in this example are:

- “(moh = 59)”
- “(dow = 7)”

When you compare two logical expressions (which are each true or false), the result of the comparison is also ‘true’ or ‘false’. You can use one of the following two comparator symbols.

Symbol	Name	Result of comparison
&	AND	• ‘True’ if the left expression <i>and</i> the right expression are both true.
		• ‘False’ if the left expression <i>or</i> the right expression is false.
|	OR	• ‘True’ if the left expression is true <i>or</i> the right expression is true.
		• ‘False’ if the left expression and the right expression are both false.

Figure 26. Logical comparator symbols

3.2.5 Blocks

In example 2, the **If** comparison and the **Use** command are on separate lines. If you separate the lines, you must insert the “{” and “}” brackets as shown (*use the correct type of brackets*). You can insert a number of lines (a ‘*block*’ of lines) between the brackets. The following example shows a block that contains three lines:

```
if (hod < 12)
{
    if (dow = 1) use "AAA"
    if (dow = 2) use "BBB"
    if (dow = 3) use "CCC"
}
```

NOTE: In the above example the lines are formatted to make the structure clear.

How To Create Date and Time Formats



If you put a number of lines in a block, the printer processes all the lines together. In this example:

- If the time value 'hour of day' is less than 12, the logical expression "(hod < 12)" is 'true'. The printer processes *all three* lines in the block that follows.
- If the logical expression is 'false', the printer ignores *all three* lines in the block.

3.2.6 Else

You can use the **If** and **Else** keywords together to create a structure like the following example:

```
if (hod < 12)
  {
    block 1
  }
else
  {
    block 2
  }
```

In this example, 'block 1' and 'block 2' contain a number of lines.

- If the expression "(hod < 12)" is true, the printer processes the commands in block 1 and ignores block 2.
- If the expression "(hod < 12)" is false, the printer ignores block 1 and processes the commands in block 2.



3.3 Macro examples

3.3.1 Example 1

```
length = 3
use "ABC"
```

This simple example shows you the smallest structure for a Macro element. The example generates a string that does not change. (Normally you do not use a Macro element for this purpose).

The printer prints the text "ABC".

3.3.2 Example 2

```
length = 3
use (yoc/2)
```

This example uses the time value 'YOC' ('year of century'). The printer divides the value by 2, and uses two digits to display the result. The printer uses the default alignment (left alignment) because there are no format symbols.

The **Length** command sets the length of the element to 3, so that there is a space after each number. The space separates the Macro element from any element that follows.

For the years 2006, 2007, 2008, 2009,... the printer prints the text "03 ", "03 ", "04 ", "04 "...

3.3.3 Example 3

```
length = 3
use (doy)0#
```

This example prints the day of the year, as a 3-digit string, right aligned with leading zeros.

The printer prints the text "001", "002", "003",...

3.3.4 Example 4

```
length = 4
if ((doy % 2) > 0)
{
    use "AAA "
}
else use "BBBB"
```

This example generates the following text strings:

- "AAA " if the time value 'day of year' is 1, 3, 5, 7... ...363, 365.
- "BBBB" if the time value 'day of year' is 2, 4, 6, 8... ...364, 366.

There is a space at the end of the string "AAA " because both strings must have the same length.

This example uses the remainder symbol "%".

How To Create Date and Time Formats



3.3.5 Example 5

```
Length = 1
if (mod < 06:00) use "A"
if (mod < 14:00) use "B"
if (mod < 22:00) use "C"
use "A"
```

This example generates a shift code. The printer changes each of the times (06:00, 14:00, and 22:00) to a numeric value (number of minutes).

If any comparison result is 'true', the printer processes the **Use** command for that comparison and ignores the next lines in the program.

The result for all three comparisons is 'false' for any time from 22:00 to 23:59, and the final command is processed.

3.3.6 Example 6

```
length = 3
if ((dow = 1) | (dow = 2))
{
  if (hod < 12) use "AAA"
  if (hod < 18) use "BBB"
  use "CCC"
}
else use "DDD"
```

This example generates the following:

- "AAA" on Monday and Tuesday from 00:00 to 11:59.
- "BBB" on Monday and Tuesday from 12:00 to 17:59.
- "CCC" on Monday and Tuesday from 18:00 to 23:59.
- "DDD" at other times.

This example uses the comparator symbol "|" (the 'OR' comparator).

How To Create Date and Time Formats



3.4 Create a Macro element

The following example shows how you use a Macro element in a Date and Time format. In this example, the Date and Time format has the following elements:

- d(Day of Week)
- A separator “-”
- A Macro element

The Macro element is the simple example shown on page 16. The Macro contains the following lines:

```
length = 3
use "AAA"
```

If the day of the week is 7, the printed date is “7-AAA”.

To create this Macro element, perform the following steps.

- 1 Create a new, blank Date and Time format—select **Menu > Stores > Date & Time Store > New > Insert Element**. (See steps 1 to 3 of the example on page 6.)

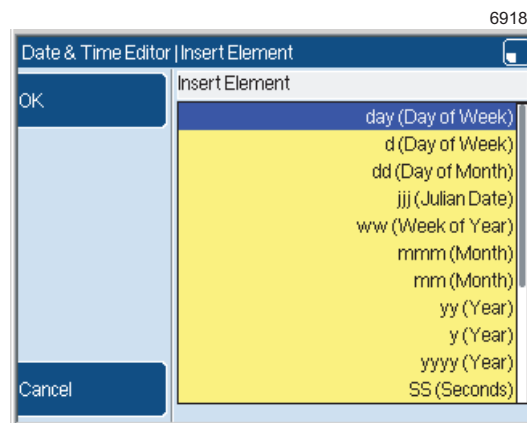


Figure 27. Insert Element page

- 2 Insert the first two elements of the Date and Time format: “d(Day of Week)” and the separator “-”. (See steps 4 to 6 on page 7 and page 8.)

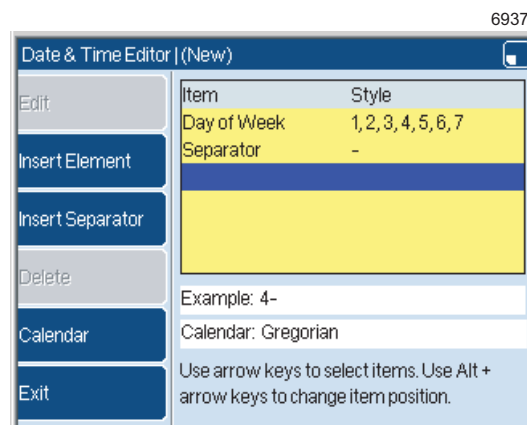


Figure 28. Date and Time format with two elements

How To Create Date and Time Formats



- 3 At the **Date & Time Editor** page, move the highlight to the empty position, as shown in Figure 28 on page 25, then press the **Insert Element** key.
- 4 At the **Insert Element** page, use the Down arrow key to highlight the '(Macro)' element.

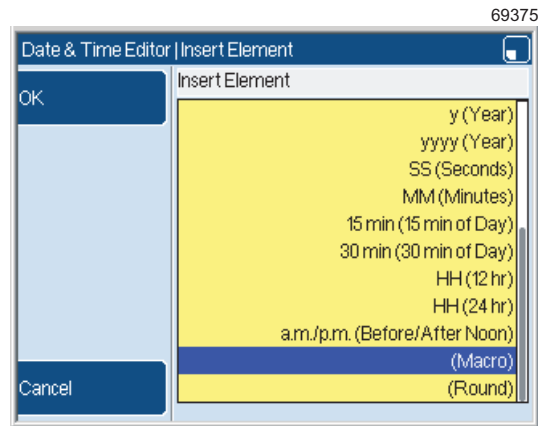


Figure 29. Insert Element: Macro

- 5 Press the **OK** key to return to the **Date & Time Editor** page.

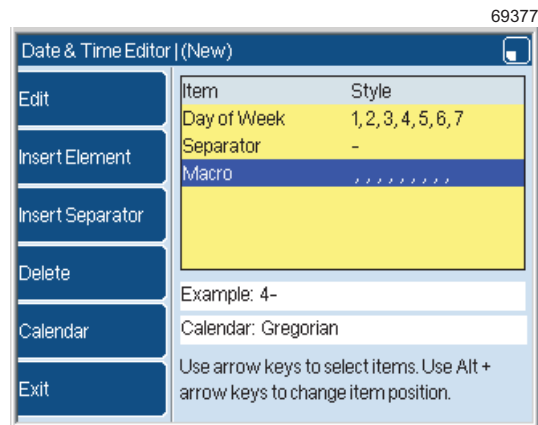


Figure 30. Date & Time Editor page with Macro element

The empty Macro element is shown in the list of elements in Figure 30. Each comma is an empty line in the Macro.

How To Create Date and Time Formats



- Press the **Edit** key to display the **Edit Strings** page.

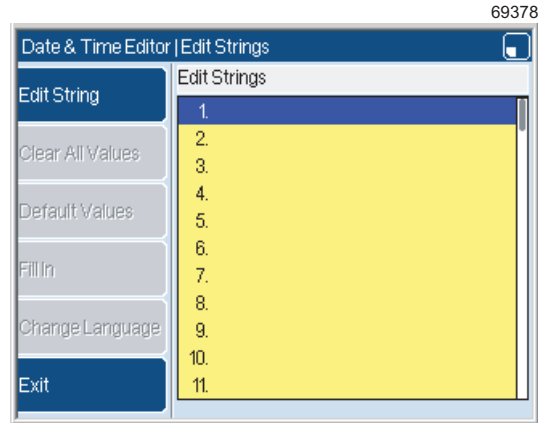


Figure 31. Edit Strings page

The **Edit Strings** page shows you all the lines of the Macro program. (All the lines in Figure 31 are empty.) If the Macro is long, you can use the Down arrow key or the [page down] key to see the other lines. (The maximum length of a Macro is 100 lines.)

- Press the **Edit String** key to display the **Edit String** page, and enter the first line of the program, as shown below.

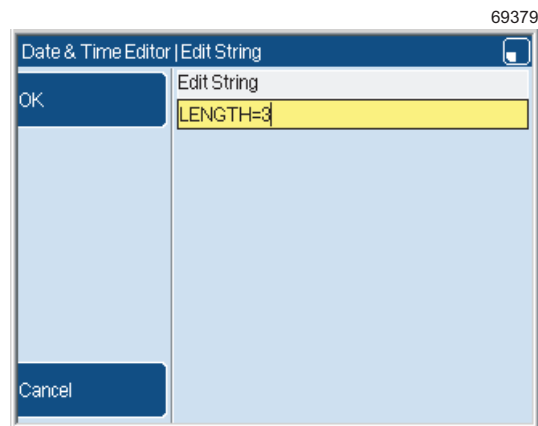


Figure 32. Edit String page: Length command

NOTE: The printer accepts upper case or lower case characters.

How To Create Date and Time Formats



- 8 Press the **OK** key to return to the **Edit Strings** page.

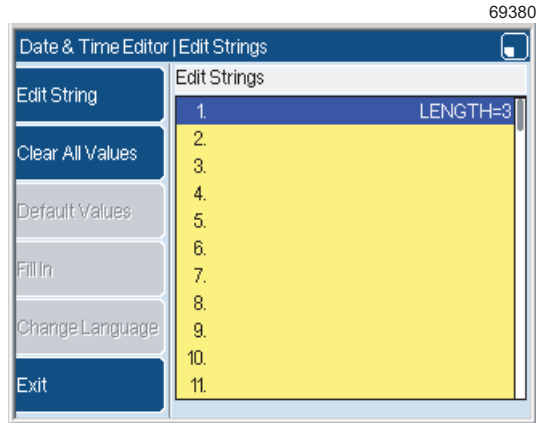


Figure 33. Edit Strings page with first string

If you make an error, you can use the **Edit String** key to change the contents of the string. The **Clear All Values** key deletes *all* the lines.

CAUTION: If you press the Clear All Values key accidentally, you must enter all the lines again.

- 9 Move the highlight to the first empty position (line 2) then press the **Edit String** key to display the **Edit String** page.
- 10 Enter the second line of the program, as shown below.

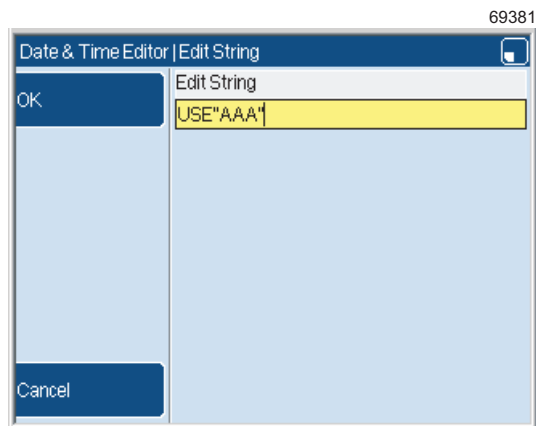


Figure 34. Edit String page

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- 11 Press the **Exit** key to return to the **Edit Strings** page.

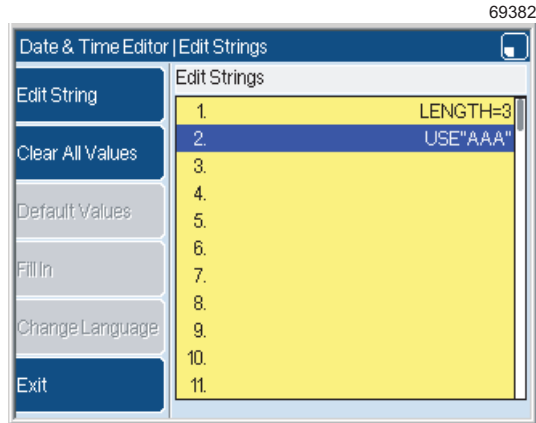


Figure 35. Edit Strings page with two strings

The Macro element is complete.

- 12 Press the **Exit** key. If there are no errors in your Macro element the printer displays the **Date & Time Editor** page. This page shows you the complete Date and Time format as shown below.

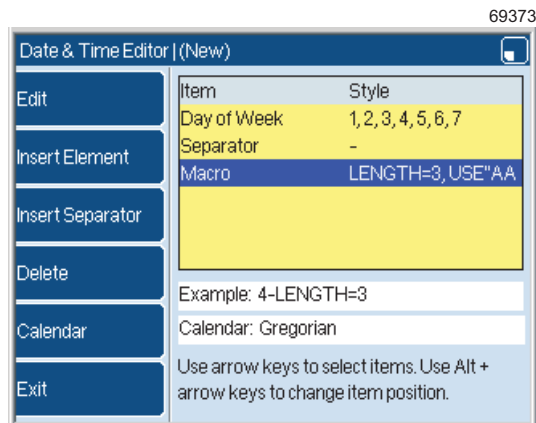


Figure 36. Date & Time Editor page with completed format

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If you entered a line that contains an error, the printer displays an information page like the one shown below.

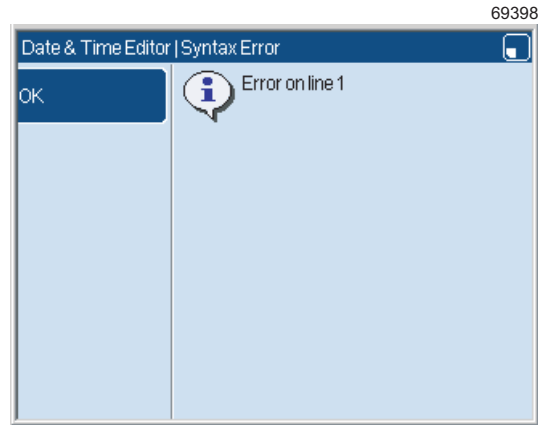


Figure 37. Syntax Error page

The **Syntax Error** page tells you which line contains the error. Press the **OK** key to return to the **Edit Strings** page, then correct the problem and try again.

- 13** To make changes to the Macro element, press the **Edit** key, or press the **Exit** key to finish and display the **Save As** page.



4 Round

4.1 Introduction

You can insert the Round element into a Date and Time format to adjust the printed date or the time. The Round element is not printed in the message, but adjusts the Date and Time elements that follow in the format. You cannot use a Round element without other Date and Time elements.

The adjustments that you can perform with the Round element are not available if you use only the **Date Offset** or **Time Offset** options. (These options are described in the *Linx 5900 & 7900 Quick Start Guide*.)

For example, the printer can print the same date on every day of the week and change the date each week, as shown below. The sequence of dates in this example starts on Monday 18 December. The first nine days of the sequence are as follows.

Day	Printed Date
Monday (Day 1)	"18-12"
Tuesday (Day 2)	"18-12"
...	
Sunday (Day 7)	"18-12"
Monday (Day 8)	"25-12"
Tuesday (Day 9)	"25-12"
...	

The example on page 34 shows you how to use the Round element to print this sequence of dates.

How To Create Date and Time Formats



4.2 Command parameters

You must use a 'command parameter' with each Round element, and each command parameter has a number, for example:

"NEXTMOH,30"

(Note that there is no space between the comma and the number in a command parameter.)

The command parameter tells the printer how to adjust the date and time. The table below shows the available command parameters and describes how each parameter changes the printed date or time.

Command	Description
NEXTMOH,n	Sets the Minutes element of the time used by the Date and Time field forward to n. If the current minute is equal to n, the printer adds one hour to the time. The value of n is in the range 0 to 59.
NEXTHOD,n	Sets the Hours element of the time used by the Date and Time field forward to n. If the current hour is equal to n, the printer adds one day to the date. The value of n is in the range 0 to 23.
NEXTDOW,n	Sets the Days element of the date used by the Date and Time field forward to day n of the week. If the current day is equal to n, the printer adds one week to the date. The value of n is in the range 1 to 7.
NEXTDOM,n	Sets the Days element of the date used by the Date and Time field forward to day n of the month. If the current day is equal to n, the printer adds one month to the date. The value of n is in the range 1 to 31. If the month does not have n days, the day element is set to the last day of the month.
FWDMOH,n	Like NEXTMOH except that if the current minute is equal to n, the time is not changed.
FWDHOD,n	Like NEXTHOD except that if the current hour is equal to n, the date is not changed.
FWDDOW,n	Like NEXTDOW except that if the current day of week is equal to n, the date is not changed.
FWDDOM,n	Like NEXTDOM except that if the current day of month is equal to n, the date is not changed.
PREVMOH,n	Sets the Minutes element of the time used by the Date and Time field back to n. If the current minute is equal to n, the printer subtracts one hour from the time. The value of n is in the range 0 to 59.
PREVHOD,n	Sets the Hours element of the time used by the Date and Time field back to n. If the current hour is equal to n, the printer subtracts one day from the date. The value of n is in the range 0 to 23.
PREVDOW,n	Sets the Days element of the date used by the Date and Time field back to day n of the week. If the current day is equal to n, the printer subtracts one week from the date. The value of n is in the range 1 to 7.
PREVDOM,n	Sets the Days element of the date used by the Date and Time field back to day n of the month. If the current day is equal to n, the printer subtracts one month from the date. The value of n is in the range 1 to 31. If the month does not have n days, the day element is set to the last day of the month.

Figure 38. Command parameters for Round

How To Create Date and Time Formats



Command	Description
BAKMOH,n	Like PREVMOH except that if the current minute is equal to n, the time is not changed.
BAKHOD,n	Like PREVHOD except that if the current hour is equal to n, the time is not changed.
BAKDOW,n	Like PREVDOW except that if the current day of week is equal to n, the date is not changed.
BAKDOM,n	Like PREVDOM except that if the current day of month is equal to n, the date is not changed.
Reset	Resets the date and time to the current date and time.

Figure 38. Command parameters for Round (Continued)



4.3 Insert a Round element

The following example shows how you use a Round element in a Date and Time format. The command parameter is “BAKDOW,1”. This parameter makes sure that the printed date is always a Monday, like the example on page 31.

- 1 Create a new, blank Date and Time format—select **Menu > Stores > Date & Time Store > New > Insert Element**. (See steps 1 to 3 of the example on page 6.)
- 2 At the **Insert Element** page, use the Down arrow key to highlight the ‘(Round)’ element.

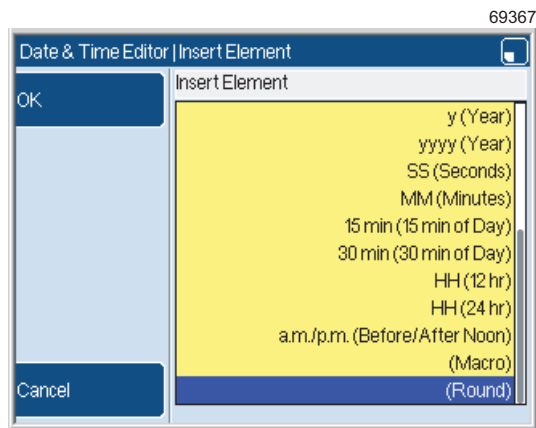


Figure 39. Insert Element: Round

- 3 Press the OK key to return to the **Date & Time Editor** page.

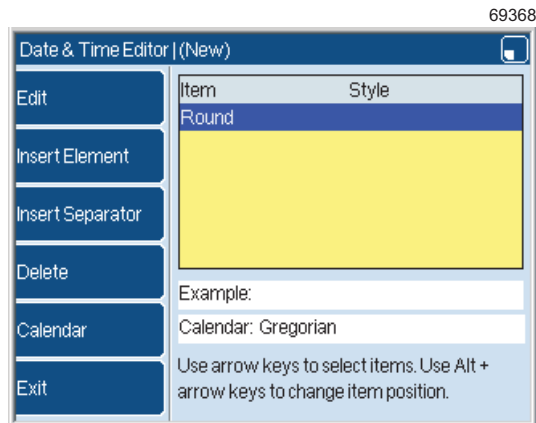


Figure 40. Round element with no parameter

How To Create Date and Time Formats



- 4 Press the **Edit** key then the **Edit String** key.

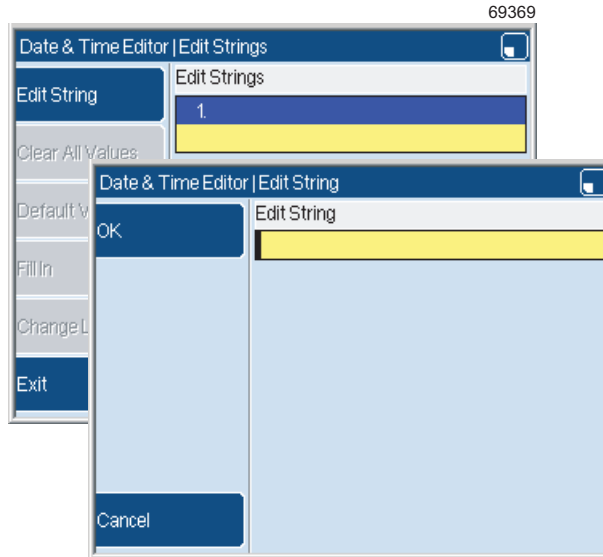


Figure 41. Edit String page

- 5 Enter the required parameter. For this example, enter “BAKDOW,1” then press the **OK** key to return to the **Edit Strings** page.

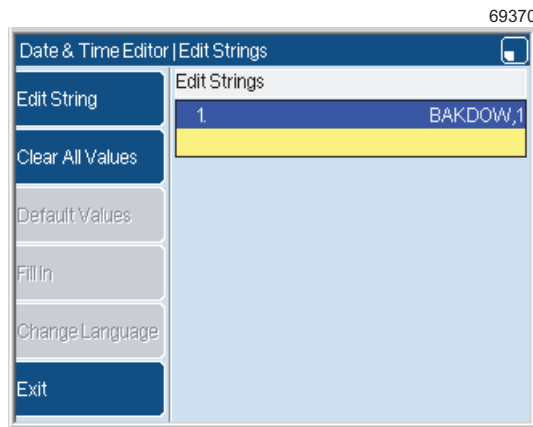


Figure 42. Edit Strings page with BAKDOW parameter

If you make an error, you can use the **Clear All Values** key on this page to delete the contents of the string.

How To Create Date and Time Formats



- 6 Press the **Exit** key to return to the **Date & Time Editor** page.

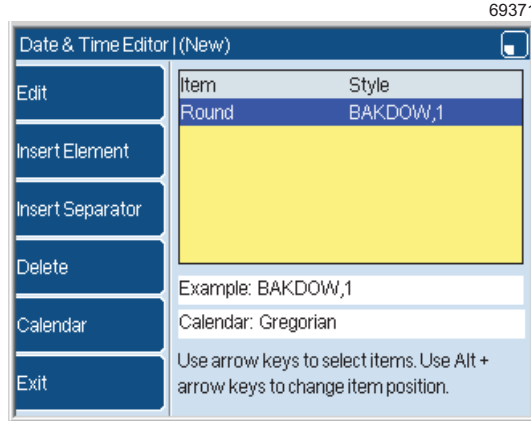


Figure 43. Date & Time Editor with Round element

The Round element is complete. The next items in the Date and Time format are the date elements and the separator.

- 7 Add the other two elements and the separator, as shown in steps **3** to **7** on page 7 to page 9. The other elements are “dd(Day of Month)” and “mm(Month)”. The separator is “-”. The complete format is as shown below.

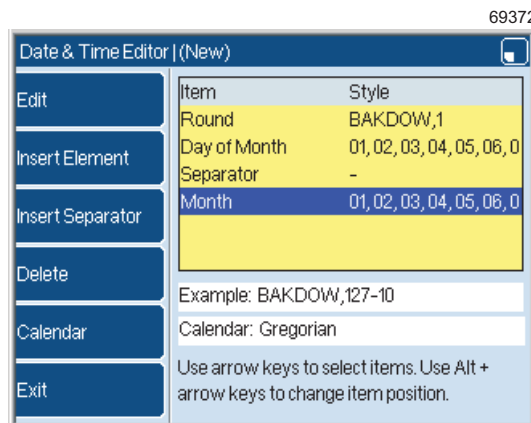


Figure 44. Date & Time Editor page with completed format

- 8 Press the **Exit** key to finish, and display the **Save As** page.



4.4 Command parameter examples

The following table contains some examples to show how each command parameter changes the printed date or time. In each example, the current time and date is **12:22pm on Friday, 7-April**. The 'Day of Week' number for Friday is 5 (Monday is day 1, and Sunday is day 7).

COMMAND PARAMETER EXAMPLES			
Command Parameter	Example	Printed time:	Printed date:
NEXTMOH	NEXTMOH,30	12:30	7-April (not changed)
	NEXTMOH,22	13:22	7-April (not changed)
	NEXTMOH,19	13:19	7-April (not changed)
NEXTHOD	NEXTHOD,15	15:22	7-April (not changed)
	NEXTHOD,12	12:22 (not changed)	8-April
	NEXTHOD,10	10:22	8-April
NEXTDOW	NEXTDOW,7	12:22 (not changed)	9-April
	NEXTDOW,5	12:22 (not changed)	14-April
	NEXTDOW,1	12:22 (not changed)	10-April
NEXTDOM	NEXTDOM,9	12:22 (not changed)	9-April
	NEXTDOM,7	12:22 (not changed)	7-May
	NEXTDOM,1	12:22 (not changed)	1-May
FWDMOH	FWDMOH,30	12:30	7-April (not changed)
	FWDMOH,22	12:22 (not changed)	7-April (not changed)
	FWDMOH,19	13:19	7-April (not changed)
FWDHOD	FWDHOD,15	15:22	7-April (not changed)
	FWDHOD,12	12:22 (not changed)	7-April (not changed)
	FWDHOD,10	10:22	8-April
FWDDOW	FWDDOW,7	12:22 (not changed)	9-April
	FWDDOW,5	12:22 (not changed)	7-April (not changed)
	FWDDOW,1	12:22 (not changed)	10-April
FWDDOM	FWDDOM,9	12:22 (not changed)	9-April
	FWDDOM,7	12:22 (not changed)	7-April (not changed)
	FWDDOM,1	12:22 (not changed)	1-May
PREVMOH	PREVMOH,30	11:30	7-April (not changed)
	PREVMOH,22	11:22	7-April (not changed)
	PREVMOH,19	12:19	7-April (not changed)

Figure 45. Command parameter examples

How To Create Date and Time Formats



COMMAND PARAMETER EXAMPLES			
Command Parameter	Example	Printed time:	Printed date:
PREVHOD	PREVHOD,15	15:22	6-April
	PREVHOD,12	12:22 (not changed)	6-April
	PREVHOD,10	10:22	7-April (not changed)
PREVDOW	PREVDOW,7	12:22 (not changed)	2-April
	PREVDOW,5	12:22 (not changed)	31-March
	PREVDOW,1	12:22 (not changed)	3-April
PREVDOM	PREVDOM,9	12:22 (not changed)	9-March
	PREVDOM,7	12:22 (not changed)	7-March
	PREVDOM,1	12:22 (not changed)	1-April
BAKMOH	BAKMOH,30	11:30	7-April (not changed)
	BAKMOH,22	12:22 (not changed)	7-April (not changed)
	BAKMOH,19	12:19	7-April (not changed)
BAKHOD	BAKHOD,15	15:22	6-April
	BAKHOD,12	12:22 (not changed)	7-April (not changed)
	BAKHOD,10	10:22	7-April (not changed)
BAKDOW	BAKDOW,7	12:22 (not changed)	2-April
	BAKDOW,5	12:22 (not changed)	7-April (not changed)
	BAKDOW,1	12:22 (not changed)	3-April
BAKDOM	BAKDOM,9	12:22 (not changed)	9-March
	BAKDOM,7	12:22 (not changed)	7-April (not changed)
	BAKDOM,1	12:22 (not changed)	1-April

Figure 45. Command parameter examples (Continued)

Linx 5900 & 7900



How To Create Text and
Orientation Sequences

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes the Text and Orientation sequences in the 7900 printer and shows how you create new Text and Orientation sequences.

NOTE: You cannot create or edit text or orientation sequences for the 5900 printer, but the four standard orientations (Horizontal + Vertical Flip, Horizontal Flip, Normal, and Vertical Flip) are available in the Orientation Sequence Store (see 'Orientation sequence' on page 3). These orientations are used for basic traversing applications for the 5900 Dairy Coder printer. Refer to *How To Use Dynamic Message Orientation* for more information.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Sequences

Two types of sequence are described in this document:

- Text sequence
- Orientation sequence

You use the same procedure to create and customize each type of sequence. Most of the pages and options are the same but the page names are different.

2.1 Text sequence

Use this type of sequence when you need a series of messages that contain different text. You can use a text sequence to print a batch code on a product, like the following example.

Batch	Batch Code	Quantity
1	"AAA"	300
2	"BBB"	200
3	"CCC"	400

Figure 1. Batch Code sequence

The printer prints the batch code "AAA" on the first 300 products, then prints the batch code "BBB" on 200 products, and "CCC" on 400 products. The sequence automatically restarts when the sequence of 900 messages is complete.

Normally the printer updates the counter each time it prints a message. However, you can also use an external trigger signal to update the counter.

2.2 Orientation sequence

An Orientation sequence is a list of orientations that the printer applies to a text field when you print the message. The following orientations are available:

- Normal:

TEST⁶¹⁰⁹

- Vertical Flip:

TEST⁶¹¹¹

- Horizontal Flip:

TEST⁶¹¹⁰

- Horizontal + Vertical Flip:

TEST⁶¹¹³

How To Create Text and Orientation Sequences



You can use this type of sequence if the printhead changes its direction during the print process (this process has the name 'traversing'). The following example prints a message on 15 items. The items are in a box that has three rows with five items in each row. The printhead changes direction after each row.

Step	Orientation	Quantity
1	Normal	5
2	Horizontal Flip	5
3	Normal	5

Figure 2. Orientation sequence

The printer reverses the message on the second set of five items because the printhead direction is reversed. The sequence automatically restarts when the sequence of 15 messages is complete.

Normally the printer updates the counter when it prints a message. You can use an external trigger signal to update the counter.

NOTE: For details of how to use these orientations in traversing applications for the 5900 Dairy Coder printer, refer to *How To Use Dynamic Message Orientation*.

2.3 Create a sequence

To create a Text sequence:

At the **Print Monitor** page select **Menu > Stores > Text Sequence Store** to display the **Text Sequence Store** page.

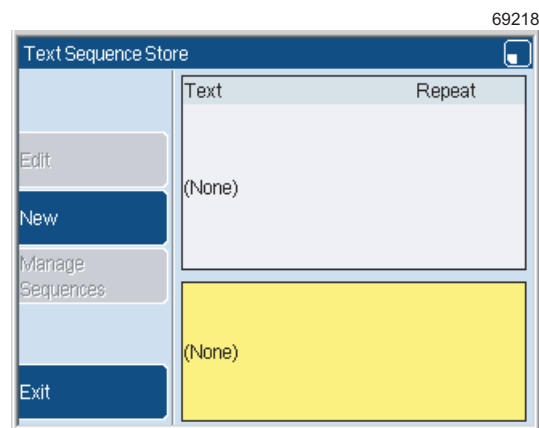


Figure 3. Text Sequence Store page

How To Create Text and Orientation Sequences



To create an Orientation sequence:

At the **Print Monitor** page, select **Menu > Stores > Orientation Sequence Store** to display the **Orientation Sequence Store** page.

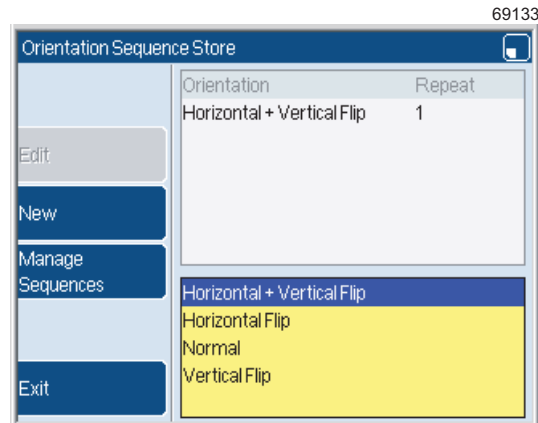


Figure 4. Orientation Sequence Store page

The **Edit** and the **Manage Sequences** keys are available only when there are items in the Store.

The Orientation Sequence Store is never empty because it always contains the four orientation sequences shown in Figure 4. The **Manage Sequences** key is always available when you display the **Orientation Sequence Store** page. The **Edit** key is available if you select an Orientation Sequence that you can edit.

The Text Sequence Store is empty until you create and save a Text sequence. The **Manage Sequences** key is available in the **Text Sequence Store** page only when the Text Sequence Store contains at least one Text sequence. The **Edit** key is available if you select a Text sequence.

2.3.1 Manage Sequences

You can use the **Manage Sequences** key to copy a sequence, change a sequence name, or delete a sequence. The **Copy** option, the **Rename** option, and the **Delete** option are not described in this document. These options are like the options in the **Message Store > Manage Messages** page, which is described in the *Linx 5900 & 7900 Quick Start Guide*.

How To Create Text and Orientation Sequences



2.3.2 Example sequences

The following example shows how you create both types of sequence. Many of the next steps are the same for both types of sequence. The figures show the pages that are displayed for both types of sequence.

- 1 Press the **New** key to begin. The printer displays the **Text Sequence Editor** page or the **Orientation Sequence Editor** page.

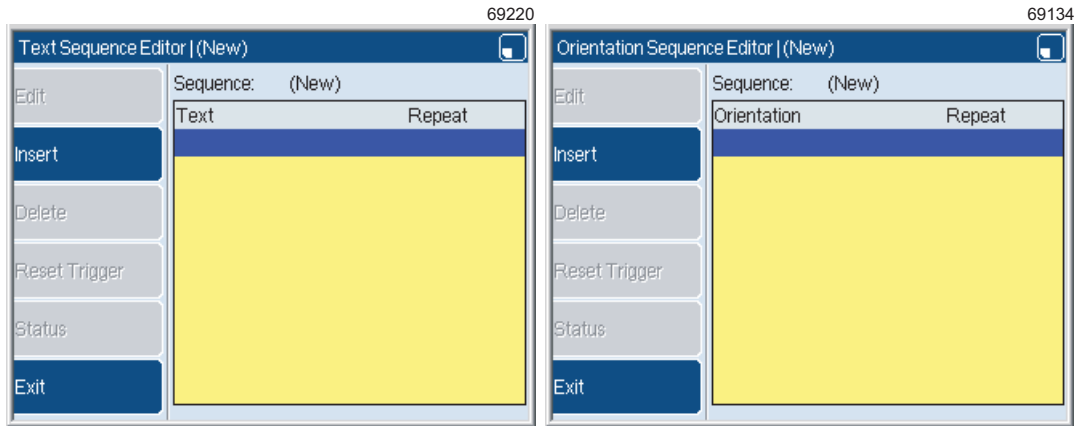


Figure 5. Editor pages

This page shows you that the sequence is empty.

- 2 Press the **Insert** key to display the **Insert Item** page.

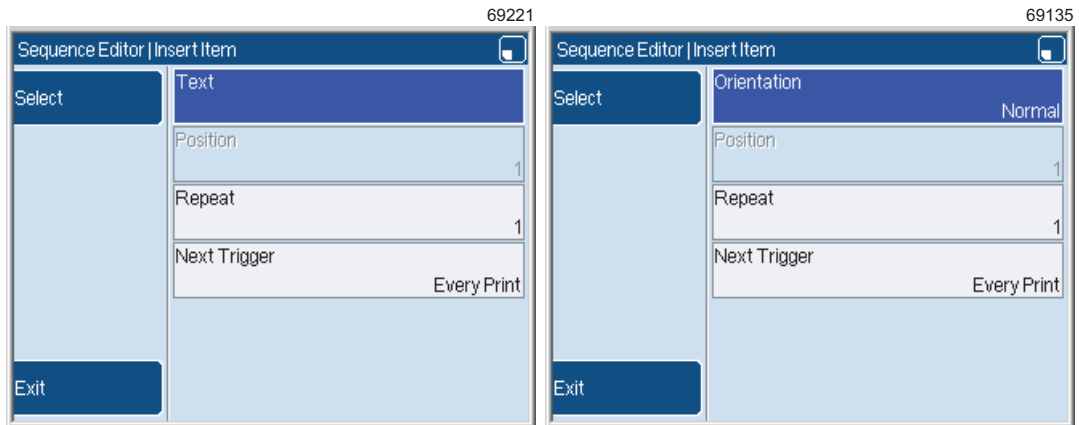


Figure 6. Insert Item pages

The **Position** option, the **Repeat** option, and the **Next Trigger** option are described on page 11.

How To Create Text and Orientation Sequences



- To insert an item in a sequence, perform one of the following steps.

For a Text sequence:

Select the **Text** option to display the **Text** page.

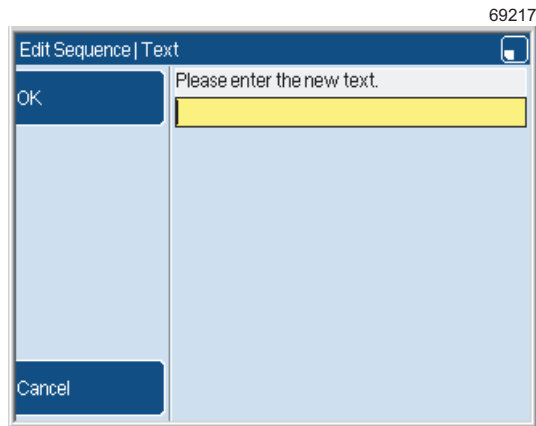


Figure 7. Edit Sequence: Text page

Use this page to enter the text for the first item. For this example, enter “AAA”.

For an Orientation sequence:

Select the **Orientation** option to display the **Orientation** page.

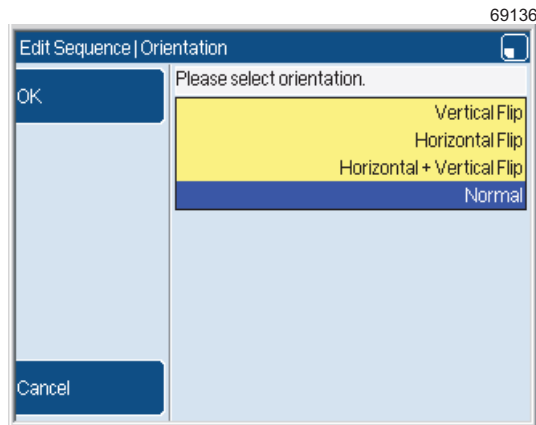


Figure 8. Edit Sequence: Orientation page

Highlight the first orientation for the sequence. For this example, select “Horizontal Flip”.

How To Create Text and Orientation Sequences



- Press the **OK** key to return to the **Insert Item** page. The **Insert Item** page shows the first item in the sequence.

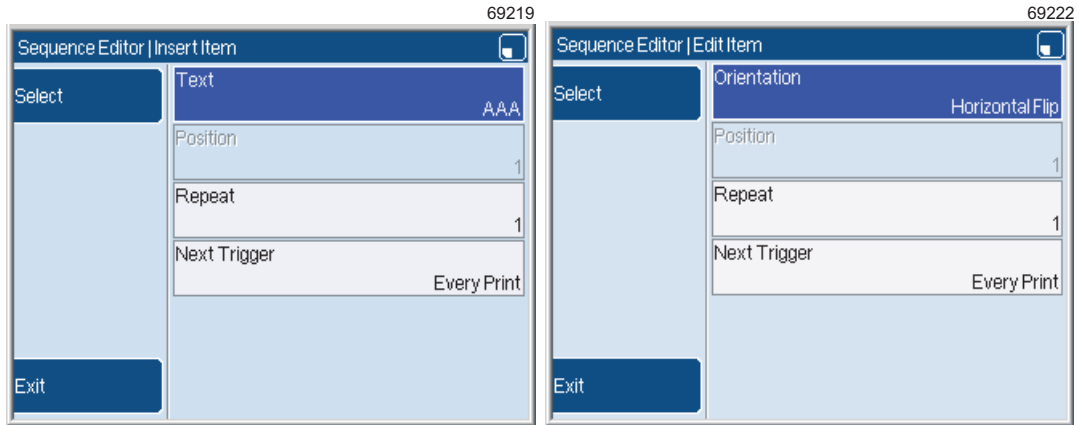


Figure 9. Insert Item pages: first item

- Press the **Exit** key to display the sequence. This page is like Figure 5 on page 6 but now the sequence contains one item.

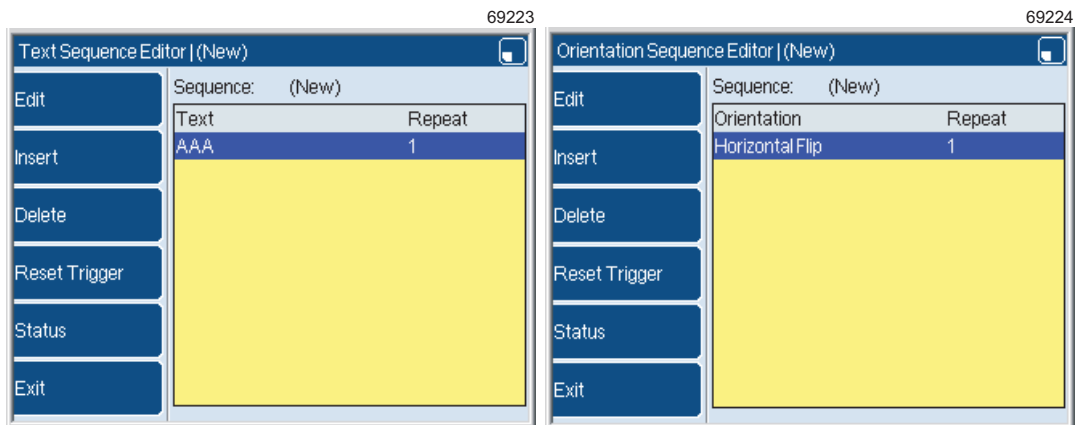


Figure 10. Sequence with first item

- To insert the next item in the sequence, use the **Down** arrow key to move the highlight into the empty position below the first item.

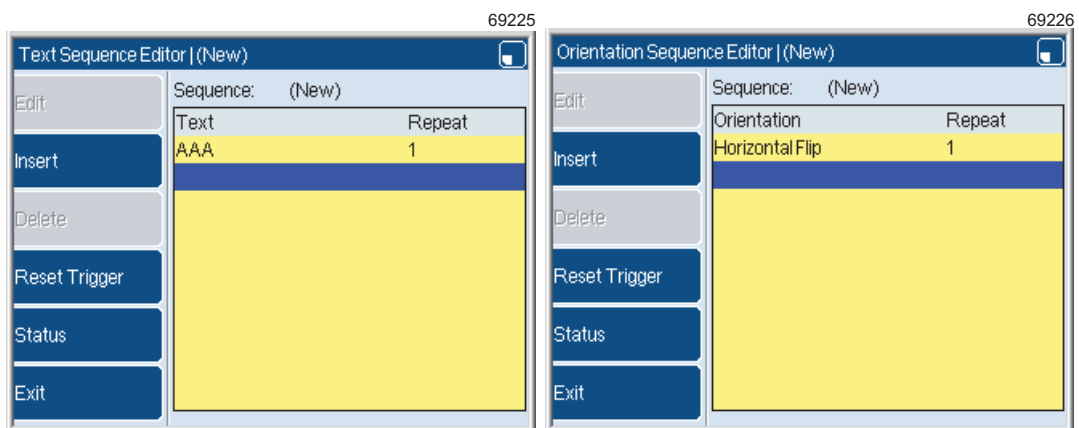


Figure 11. Empty position

How To Create Text and Orientation Sequences



- 7 Repeat steps 2 to 6 to add two more items to each sequence, as follows:
- In the Text sequence, add the text strings “BBB” and “CCC”.
 - In the Orientation sequence add the orientations “Vertical Flip” and “Normal”.
- For this example, the completed sequences are like Figure 12.

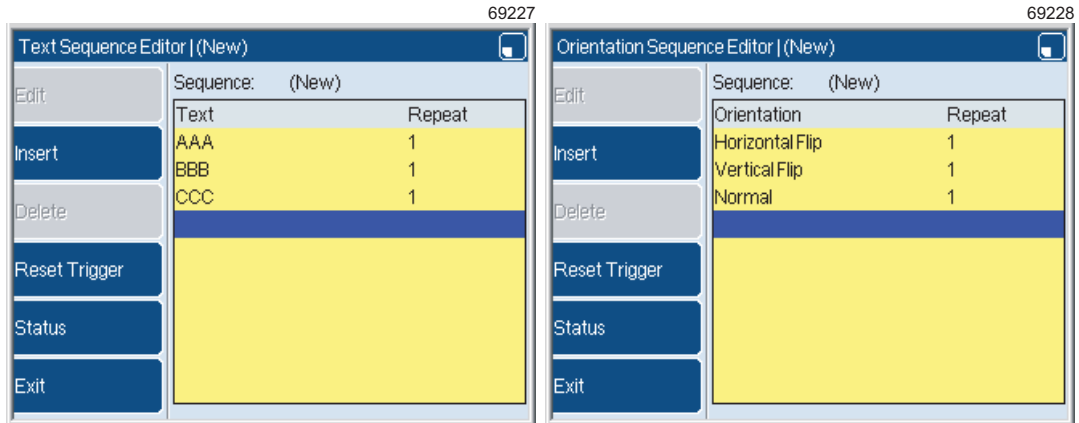


Figure 12. Sequence completed

Save your changes

To save your sequence, press the **Exit** key. The printer displays one of the following pages.

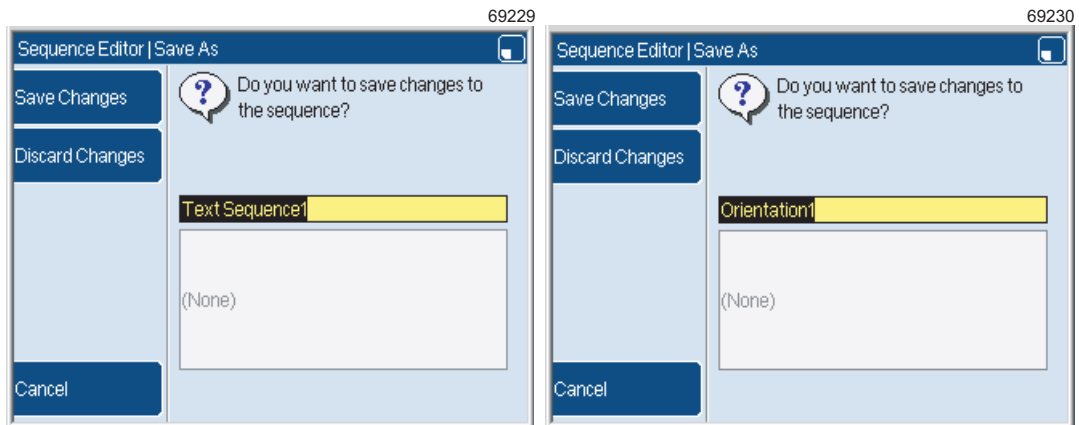


Figure 13. Save the sequence

Change the default name if necessary, then save your changes, discard the changes, or cancel the process and return to the editor page.

How To Create Text and Orientation Sequences



If you press the **Save** key, the printer displays the store page and displays your completed sequence in the list of sequence names. The upper part of the screen displays the contents of the sequence.

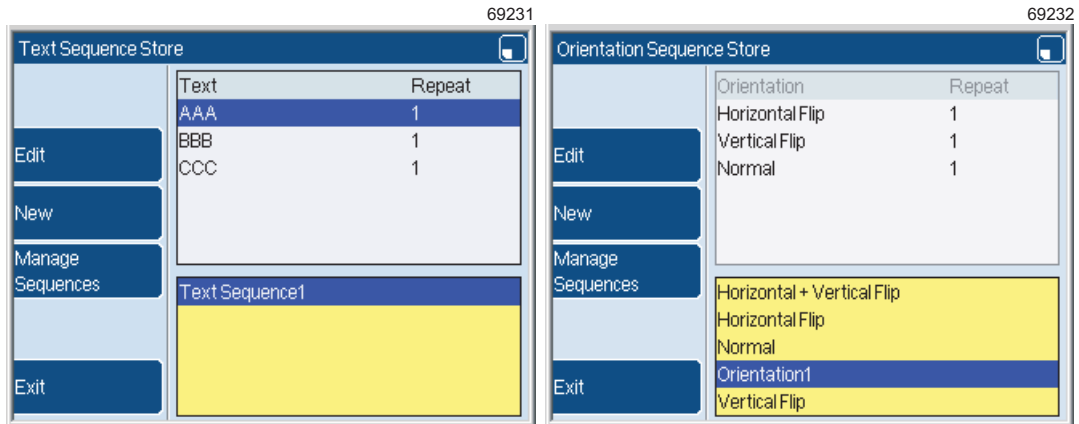


Figure 14. Sequence Store pages

2.3.3 Edit an item in a sequence

To change one of the items in a sequence, highlight the sequence in the store page, as shown in Figure 14. Press the **Edit** key to display the items in the sequence.

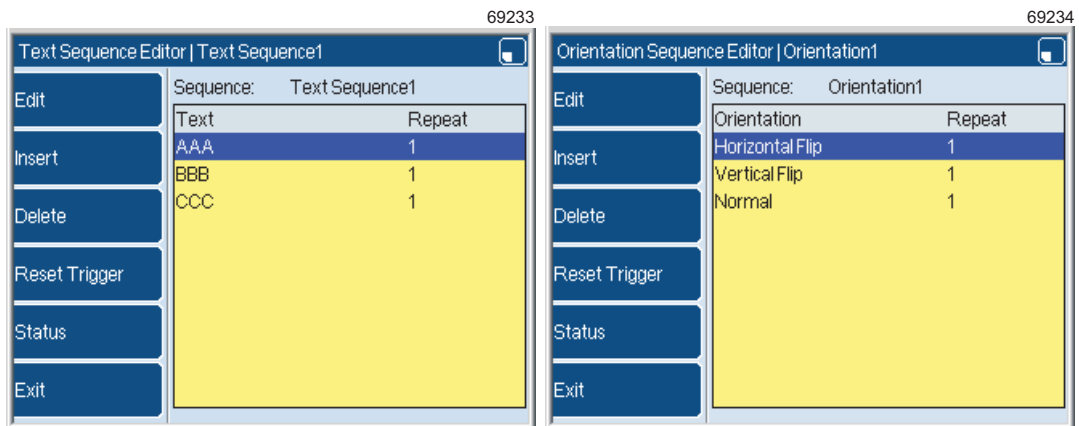


Figure 15. Sequence Editor pages

How To Create Text and Orientation Sequences



To edit an item, highlight the required item, as shown in Figure 15 on page 10, and press the **Edit** key again. The printer displays the **Edit Item** page.

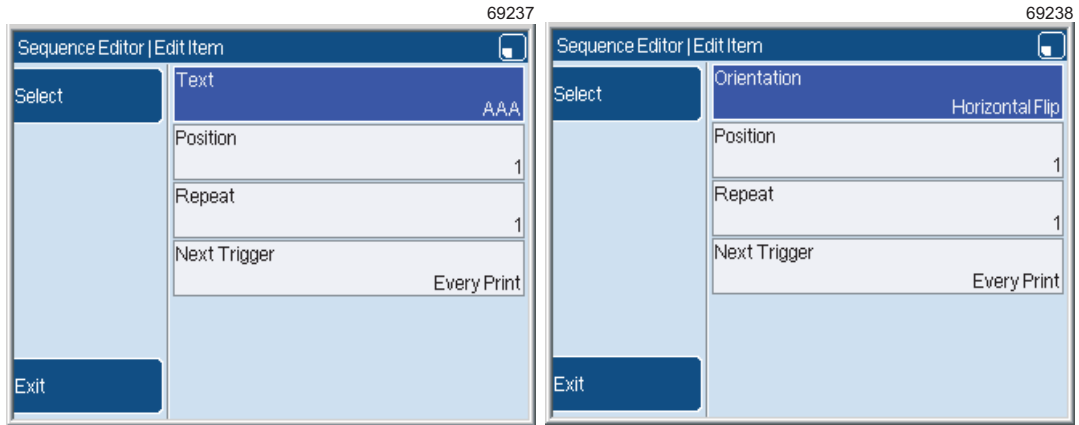


Figure 16. Edit Item pages

The **Edit Item** page is like the **Insert Item** page, and the options are the same.

2.3.4 Position

You can use the **Position** option to set the position of an item in the sequence.

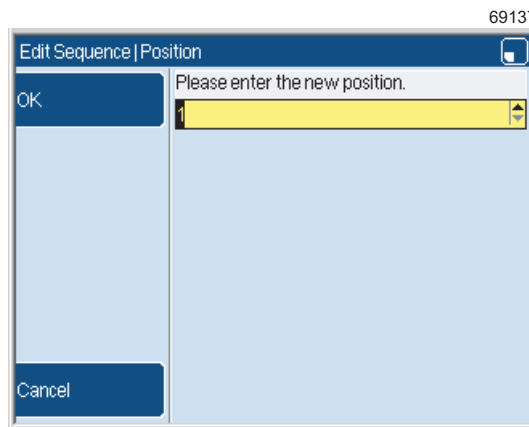


Figure 17. Position page

How To Create Text and Orientation Sequences



If you change the setting to “3” for the text item “AAA” in the example Text Sequence, the item moves to the end of the sequence.

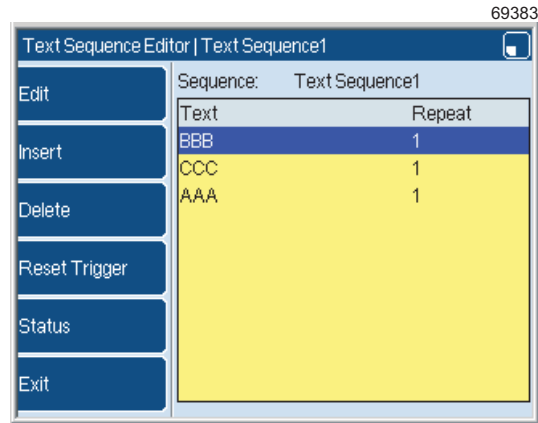


Figure 18. Text sequence with order changed

You can also drag the item to a new position. Use the arrow keys to highlight an item, then press the [alt] key and the Up or Down arrow key to move the item.

2.3.5 Repeat

This option controls the number of occurrences of each item. In the example Text sequence, the printer makes one print of each Text item. In the example Orientation sequence, the printer makes one print with each orientation.

To create a batch code sequence like the example in Figure 1 on page 3, which is repeated in Figure 19 below, select the **Repeat** option for each item in the Text sequence. Enter the correct quantity (for example 300, 200, or 400 in this example).

Batch	Batch Code	Quantity
1	“AAA”	300
2	“BBB”	200
3	“CCC”	400

Figure 19. Batch Code sequence

How To Create Text and Orientation Sequences



The complete sequence is shown below.

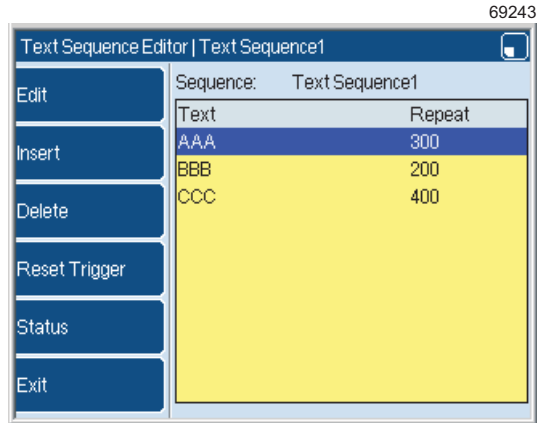


Figure 20. Text sequence: batch code example

2.3.6 Next Trigger

Use this option to define the trigger signal that the printer uses to count the occurrences of each item. You can use a different **Next Trigger** setting for each item in the sequence.

When you select the **Next Trigger** option, the printer displays the **Trigger** page.

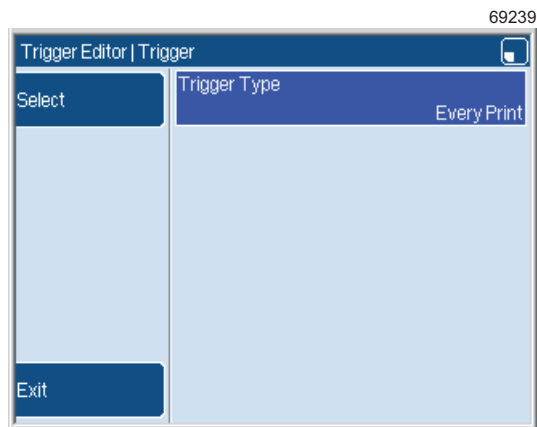


Figure 21. Trigger Editor page: Every Print

How To Create Text and Orientation Sequences



Select the **Trigger Type** option to display a list of the trigger types that are available.

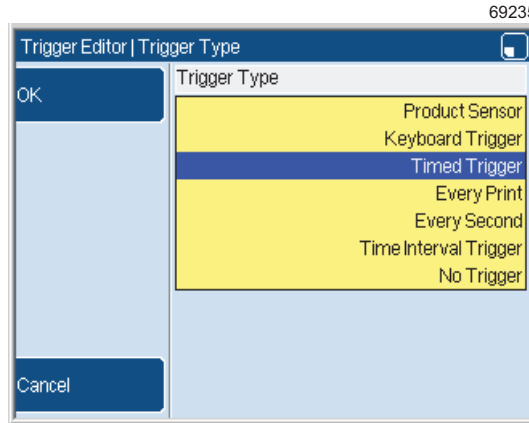


Figure 22. Trigger Type page

The trigger type that you use controls the printer operation as follows:

Product Sensor

If the **Repeat** option is set to 5, the printer prints the message “AAA” until 5 pulses are received from the product sensor.

For many applications the **Product Sensor** trigger and the **Every Print** trigger give the same result. This is because the product sensor starts a print for each product that it detects.

If you use this type of trigger, the printer displays an additional option.

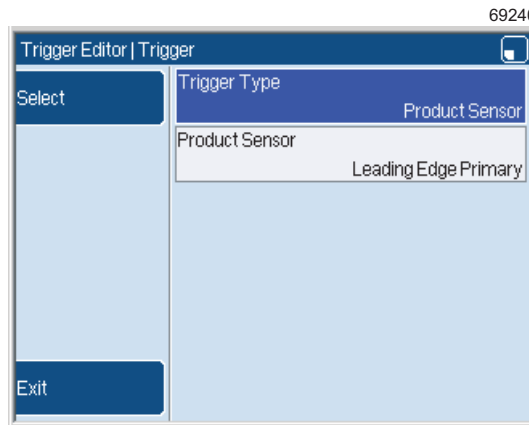


Figure 23. Trigger page: Product Sensor

How To Create Text and Orientation Sequences



Product Sensor

Use the **Product Sensor** option to select the product sensor setup that you use.

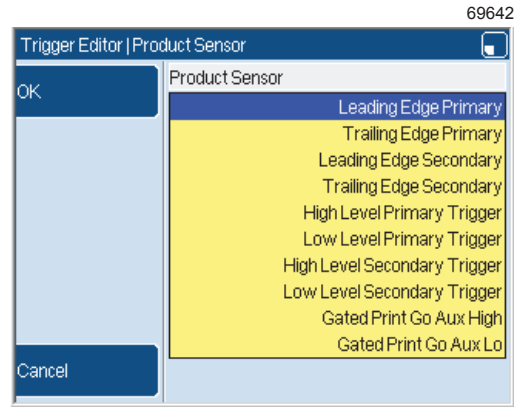


Figure 24. Trigger Editor: Product Sensor page

Leading Edge Primary

The printer updates the message when the primary product sensor detects the leading edge of a product.

Trailing Edge Primary

The printer updates the message when the primary product sensor detects the trailing edge of the product.

Leading Edge Secondary

The printer updates the message when the secondary product sensor detects the leading edge of a product.

Trailing Edge Secondary

The printer updates the message when the secondary product sensor detects the trailing edge of the product.

High Level Primary Trigger or High Level Secondary Trigger

The printer continuously prints or updates the message while the product sensor detects the presence of a product (the signal is active).

Low Level Primary Trigger or Low Level Secondary Trigger

The printer continuously prints or updates the message while the printer does *not* detect the presence of a product (the signal is not active).

Gated Auxiliary Input Triggers

You can use an auxiliary input (the Secondary Trigger input) to control the operation of a sequence in the Current Message. The example in Figure 25 on page 16 shows a Text sequence or Orientation sequence in the Current Message. The labels N, N+1, N+2... show the state of the sequence, and the 'Print Go' signal is the signal that starts each print.

How To Create Text and Orientation Sequences



The printer checks the state of the Secondary Trigger input at the start of every message. The printer does not update the sequence for the next message unless the Secondary Trigger input is in the correct state.

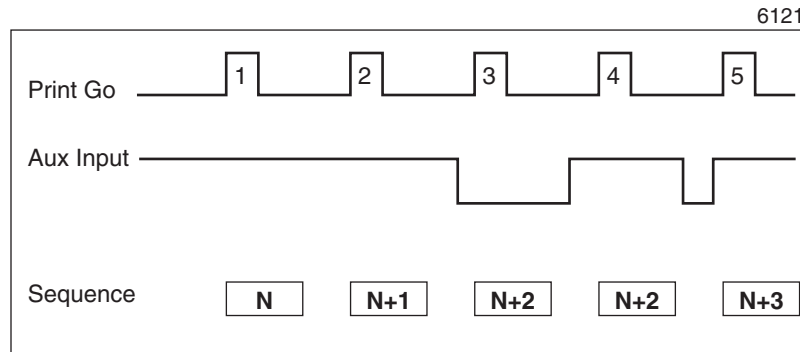


Figure 25. Sequential field

Gated Print Go Aux High

The printer updates the sequence for the next message if the Secondary Trigger input signal is in the high state.

Figure 25 shows how the printer updates the sequence when you use the Gated Print Go Aux High trigger setting.

- When the Print Go signal number 2 occurs, the Secondary Trigger input is in the high state. The printer updates the sequence to prepare the message for Print Go number 3.
- When the Print Go signal number 3 occurs, the Secondary Trigger input is in the low state. The printer does *not* update the sequence to prepare the message for Print Go number 4.

Gated Print Go Aux Low

The printer updates the sequence for the next message if the Secondary Trigger input is low.

Keyboard Trigger

If the **Repeat** option is set to 5, the printer prints “AAA” on every product until you generate a keyboard trigger signal 5 times. (To generate a keyboard trigger signal, press the [alt] key and the [T] key together.)

Timed Trigger

The printer increases the count at the same time every day, every week, every month, or every year.

If you use this type of trigger, the printer displays an additional option:

Timed Trigger

You can set this option to Daily, Weekly, Monthly, or Yearly. The operation of the sequence is as follows.

- Daily The sequence changes every day at the same time of day. If the **Repeat** option is set to 5, the printer uses the same sequence item for five days, then changes to item 2.

How To Create Text and Orientation Sequences



Weekly	The sequence changes on the same day of every week, and at the same time of day. If the Repeat option is set to 5, the printer uses the same sequence item for five weeks, then changes to item 2.
Monthly	The sequence changes on the same day of every month, and at the same time of day. If the Repeat option is set to 5, the printer uses the same sequence item for five months, then changes to item 2.
Yearly	The sequence changes on the same day of every year, and at the same time of day. If the Repeat option is set to 5, the printer uses the same sequence item for five years, then changes to item 2.

If you use this type of trigger, the printer displays additional options that you must set. These additional options are described below.

Time

Use this option to set the time of day at which the trigger occurs.

Day of Week

If you set the **Timed Trigger** option to “Weekly”, use this option to set the day of the week and the time of day for the trigger.

Day of Month

If you set the **Timed Trigger** option to “Monthly” or “Yearly”, use this option to set the day of the month for the trigger. The range of values allowed for the day of the month is 1 to 31, or “End Of Month”.

NOTE: If a month does not include the day you set for the Monthly trigger, the trigger does not occur in that month. For example, if you set **Day of Month** to 31, the trigger does not occur in February, April, June, September, and November.

Month

If you set the **Timed Trigger** option to “Yearly”, use this option to set the month of the year for the trigger.

Every Print

In the batch code example, you use the **Every Print** option as shown in Figure 22 on page 14. The printer increases the batch count at every print. The printer makes 300 prints with the first item (“AAA”), then changes to the second item (“BBB”).

Every Second

The count increases every second. In the batch code example, the printer prints “AAA” on every product that passes the printhead within 300 seconds. (The number of products is not defined.)

Time Interval Trigger

The printer begins the sequence at the Start Time that you set. The Time Interval that you set defines the times at which the sequence moves to the next step.

How To Create Text and Orientation Sequences



You can set any Start Time between 00:00:00 and 23:59:00. You can set any Time Interval from 00:01:00 until 23:59:00. If you set a Time Interval of 00:00:00, the printer uses 00:01:00 for the Time Interval.

NOTE: When a sequence finishes, the printer starts the sequence again. If you start the print before or after the sequence Start Time, the printer adjusts the sequence position for the Current Message. This adjustment sets the sequence to the correct position for the current date and time.

No Trigger

The count is disabled and the printer always prints the first item.

How To Create Text and Orientation Sequences



2.4 Edit a sequence

NOTE: If the printer status is 'PRINTING', you cannot edit an orientation sequence that is used in the Current Message.

To make changes to a sequence, highlight the sequence in the store page, as shown in Figure 14 on page 10. Press the **Edit** key to display the sequence.

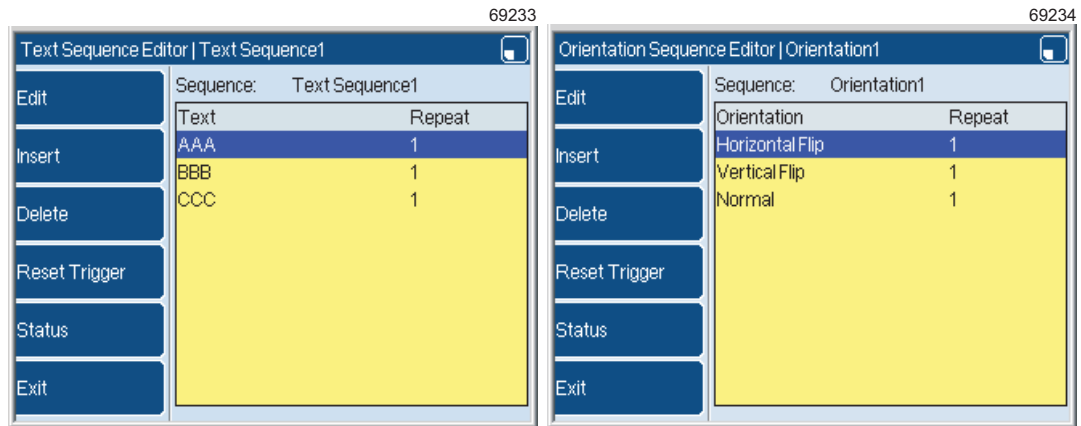


Figure 26. Edit the sequence

2.4.1 Insert

Use this option to insert a new item into the sequence. The new item is inserted before the highlighted item.

2.4.2 Delete

Use this option to delete the highlighted item from the sequence. The printer displays a confirmation page before the item is deleted.

2.4.3 Reset Trigger

You can use a trigger signal to reset the sequence to the start before the sequence is complete. Use the **Reset Trigger** option to define the type of trigger signal that you use to reset the sequence.

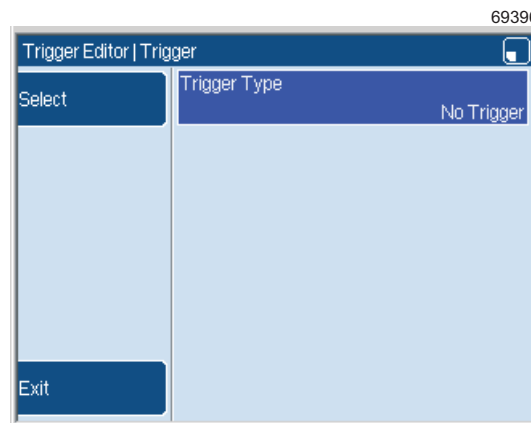


Figure 27. Trigger Editor page: No Trigger

How To Create Text and Orientation Sequences



Select the **Trigger Type** option to display a list of the trigger signals that are available.

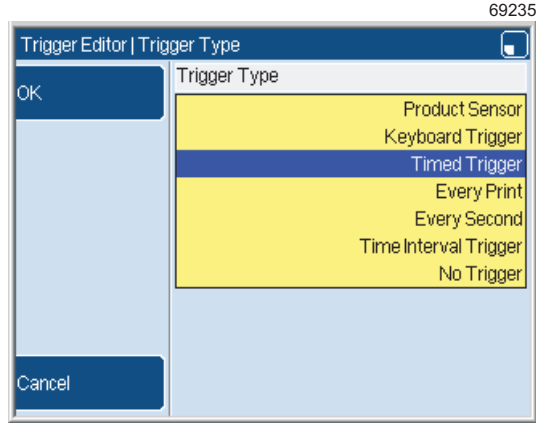


Figure 28. Trigger Type page

You can use any of the following trigger types:

Product Sensor

The printer resets the sequence when a signal is received from the product sensor. If you use this type of trigger, the printer displays an additional option.

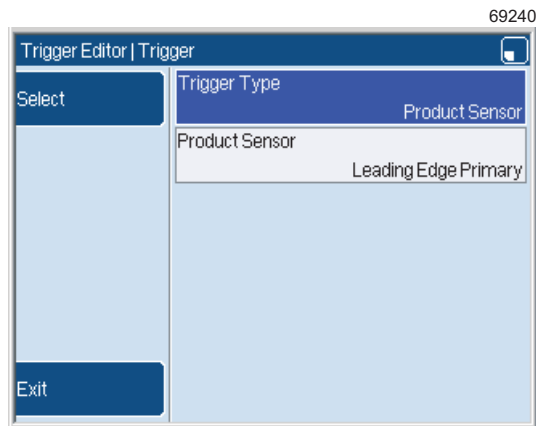


Figure 29. Trigger Editor page: Product Sensor

How To Create Text and Orientation Sequences



Product Sensor

Use the **Product Sensor** option to select the product sensor setup that you use.

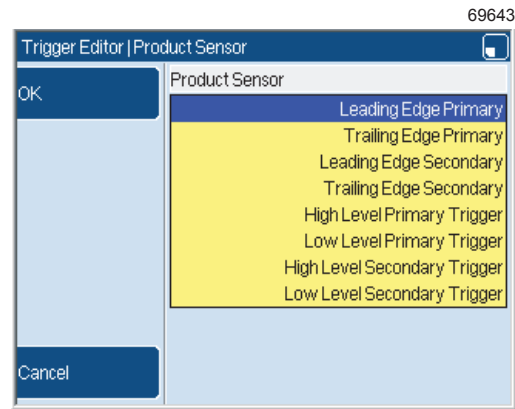


Figure 30. Product Sensor page

Leading Edge Primary

The printer resets the sequence when the primary product sensor detects the leading edge of a product.

Trailing Edge Primary

The printer resets the sequence when the primary product sensor detects the trailing edge of the product.

Leading Edge Secondary

The printer resets the sequence when the secondary product sensor detects the leading edge of a product.

Trailing Edge Secondary

The printer resets the sequence when the secondary product sensor detects the trailing edge of the product.

High Level Primary Trigger or High Level Secondary Trigger

The printer continuously prints or updates the message while the product sensor detects the presence of a product (the signal is active).

Low Level Primary Trigger or Low Level Secondary Trigger

The printer continuously prints or updates the message while the printer does *not* detect the presence of a product (the signal is not active).

Keyboard Trigger

The printer resets the sequence when you generate a keyboard trigger. (To generate a keyboard trigger signal, press the [alt] key and the [T] key together.)

How To Create Text and Orientation Sequences



Timed Trigger

The printer resets the sequence at the same time every day, every week, every month, or every year.

If you use this type of trigger, the printer displays an additional option:

Timed Trigger

You can set this option to Daily, Weekly, Monthly, or Yearly.

The **Timed Trigger** settings for the **Reset Trigger** option are like the **Timed Trigger** settings for the **Next Trigger** option. Refer to 'Timed Trigger' on page 16 for a description of these settings.

Every Print

The printer resets the sequence at every print. The sequence does not move forward.

Every Second

The printer resets the sequence every second.

Time Interval Trigger

The printer resets the sequence at the Start Time that you set. The Time Interval that you set defines the times at which the printer resets the sequence again.

You can set any Start Time between 00:00:00 and 23:59:00. You can set any Time Interval from 00:01:00 until 23:59:00. If you set a Time Interval of 00:00:00, the printer uses 00:01:00 for the Time Interval.

No Trigger

The sequence is not reset—the printer always prints the whole sequence.

How To Create Text and Orientation Sequences



2.4.4 Status

Select this option to display the **Status** page.

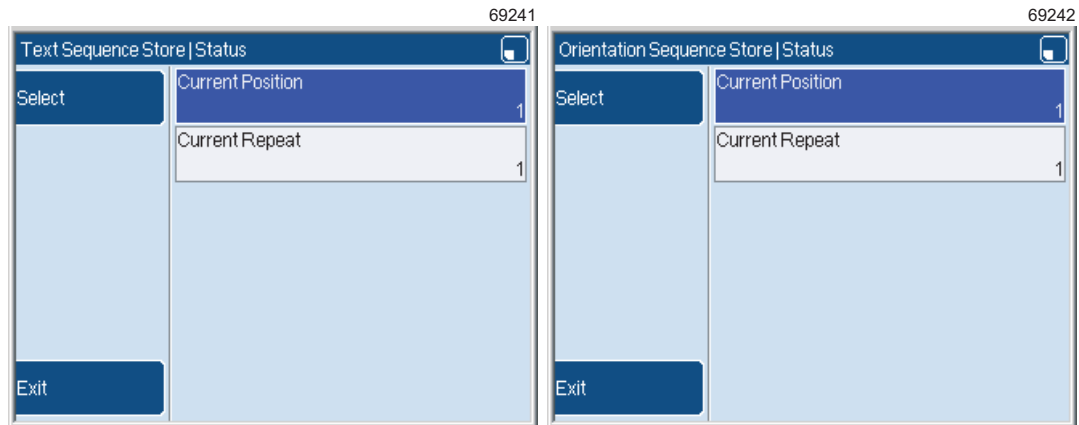


Figure 31. Sequence: Status pages

This page contains the following options:

Current Position

This option displays the item number of the current item in the sequence. You can change the value to make the printer change to a different item in the sequence. For example, if a problem occurs and some products are not marked, you can repeat a part of the sequence and try again.)

Current Repeat

This option displays the number of prints that the printer made with the current item. You can change the value to any number from 1 to the maximum value.

In the batch code example (see Figure 20 on page 13), the maximum value is 300 for item 1 (“AAA”). The maximum value is 200 for item 2 and 400 for item 3. The minimum value for any item is 1.

NOTE: If the printer status is ‘PRINTING’, you cannot change the status of a text sequence that is used in the Current Message.

Linx 5900 & 7900



How To Configure the Message Editor and Logo Editor

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how you use the **Editor Defaults** page to define the default parameters of new messages and, for the 7900 printer only, any logos that you create.

Any changes you make to the **Editor Defaults** become the starting settings for new messages and logos that you create.

You need a User Level B password to perform all the tasks that are described in this document with the exception of setting date offset limits which requires a User Level D password.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Editor Defaults

All the options described in this document are accessed from the **Editor Defaults** page. To access the **Editor Defaults** page from the **Print Monitor** page, select **Menu > Setup > Editor Defaults**. The printer displays the **Editor Defaults** page.

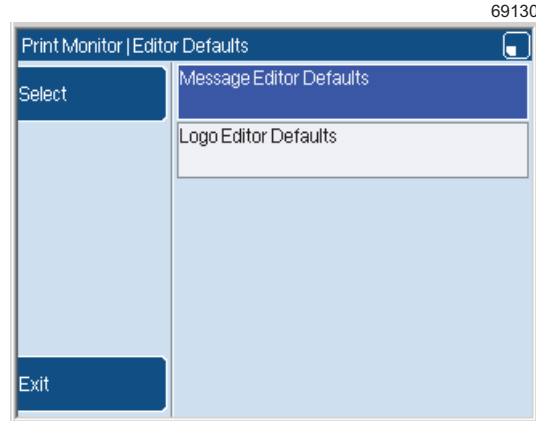


Figure 1. Editor Defaults page

NOTE: The Logo Editor Defaults option is not available on the 5900 printer.

You can now select either the **Message Editor Defaults** page described below, or the **Logo Editor Defaults** page. See 'Logo Editor Defaults' on page 12 for information about the **Logo Defaults** page.

2.1 Message Editor Defaults

The options in this section are accessed from the **Message Editor Defaults** page.

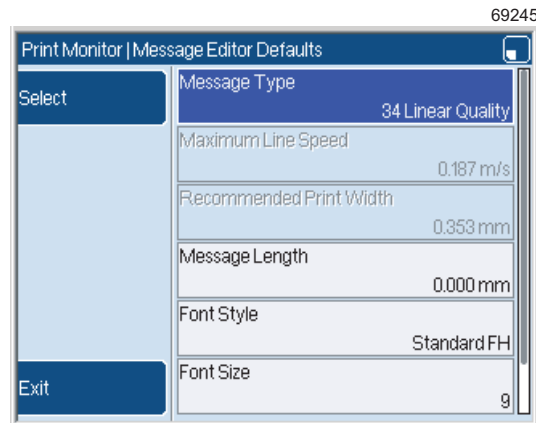


Figure 2. Message Editor Defaults page



2.1.1 Message Type

The printer can use a number of different message types to print. The message types set the total height of the printed message and the maximum line speed. The available range of message types depends on the printer configuration and the printhead type. The maximum line speed is different for each message type.

The height of the message (number of drops) can be from 5 drops to 34 drops for the 7900 printer and up to 25 drops for the 5900 printer. The name of the message type tells you the total height of the message. For example, the total height of the 21 Linear Quality message is 21 ink drops.

You can set the **Font Size** for the text characters in the message. The **Font Size** sets the height of the text characters in the message. Refer to 'Font Size' on page 8.

You can set the **Print Height** for the message. This setting makes small adjustments to the height of the printed message. The adjustment range depends on the message type. Refer to *How to Change the Print Settings*.

Linear and stitched message types

Figure 3 shows two messages that contain the same two lines of text. Each line begins with the letter "F" which is made from 7x5 drops of ink. Two different message types are used. The illustration shows how the printer uses 14 ink drops to make the left edges of the characters.

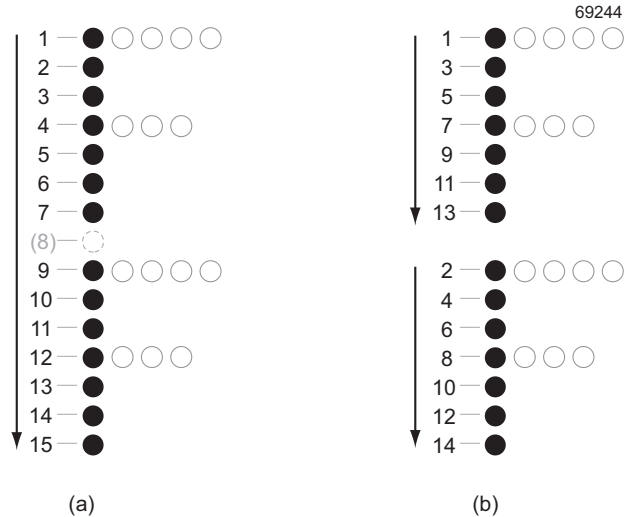


Figure 3. Linear and Stitched message types

Figure 3 (a) shows a 16-Linear message type. The 14 drops are printed in two straight lines (1 to 7 and 9 to 15). To make a space between the lines of text, the drop in position 8 is not printed. To print the continuous lines of ink drops the printer must insert a delay between each pair (1 and 2, 2 and 3, 3 and 4, ...). This delay is necessary because the printer cannot print one drop next to another drop accurately unless there is a delay between the drops. During the delay, the printer generates additional drops that are not printed.

How To Configure the Message Editor and Logo Editor



Figure 3 (b) shows a 2×8 Stitched message type. The order of the drops is different, as shown. The stitched message type is faster than the linear type because each pair of drops is separated, so that no time delay is needed. For example, there is a space between drop 1 and drop 3 in the first line because the printer puts drop 2 into the second line.

The stitched message types are available for Quality, Speed, or Wide message types, and can print two, three, or four lines of text. Because the lines of text are separated and the line of ink drops is not continuous, you cannot use these message types for logos or graphics.

Flexible, Quality, Speed, and Wide message types

The 'Flexible' message type allows you to lock the aspect ratio for the message. If you lock the aspect ratio, the printer makes small adjustments to the **Print Width** if you adjust the **Print Height**. These small adjustments maintain the aspect ratio. The option to lock the aspect ratio is not available unless you use a 'Flexible' message type. Refer to *How to Change the Print Settings* for more information.

The 'Quality' message type allows you to print the message at high quality. To print a 'Quality' message type, the printer includes additional drops that are not printed for each character. This mode increases the time taken to print each character. The maximum line speed when you use a 'Quality' message type is lower than for other message types.

The 'Speed' message type allows you to print the message at high speed. To print a 'Speed' message type the printer decreases the number of additional drops that are not printed for each character. This mode decreases the time taken to print each character. The maximum line speed when you use a 'Speed' message type is faster than for other message types. When you use this message type, each character has the same width.

NOTE: If you use a 'Speed' message type with a low line speed, characters can print at low quality.

The 'Wide' message type uses wide characters to print the message.

When you select the message type, the printer calculates the **Recommended Print Width** setting for that message type.

2.1.2 Maximum Line Speed

The printer needs a minimum time to generate the characters and print each character on the product. The time that is needed depends on the message type. The printer displays the maximum line speed for the message type that you selected and you cannot change the value.

If the line speed is greater than the maximum line speed, the printer prints characters that are wider than the **Recommended Print Width**.

NOTE: When you print at or near the maximum line speed, stitched message types provide better print quality than linear message types.

2.1.3 Recommended Print Width

To get the best print quality a 1:1 aspect ratio for the position of the printed drops is needed—the vertical pitch (drop spacing) must equal the horizontal pitch. This drop pitch is the 'Ideal Raster Pitch'. The Ideal Raster Pitch depends on the type of printhead and the message type.

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For more information about Ideal Raster Pitch, refer to *How To Install and Set Up the 5900 & 7900 Printer*.

The **Recommended Print Width** option displays the Ideal Raster Pitch for the message type that you selected and you cannot change the value.

2.1.4 Message Length

You can use this option to set the maximum length of the message. The **Message Editor** page shows the height and width of the message. In Figure 4, the arrows indicate the message boundary (the white area). The grey area (A) is outside the boundary.

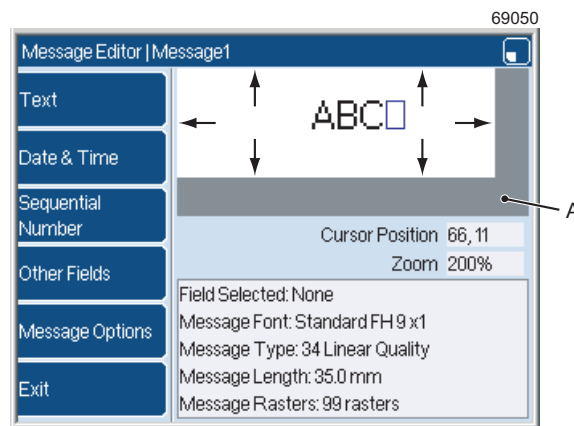


Figure 4. Message boundary

The lower edge of the white rectangle indicates the height of the message, which depends on the message type.

The minimum length is 1 mm and the maximum length is 32,000 rasters, which is approximately 10,000 mm for the 7900 printer, or 3,800 rasters, which is approximately 1,200 mm for the 5900 printer. If the **Message Length** option is set to zero, the printer sets the Message Length to match the message contents.

NOTE: The printer does not print outside the message boundary. If there are characters or parts of characters outside the boundary, the **Message Editor**, **Message Store**, and **Print Monitor** pages shows them in red. See Figure 8 on page 8.



2.1.5 Font Style

This option sets the font style for the message. Select the **Font Style** option to display the **Font Style** page.

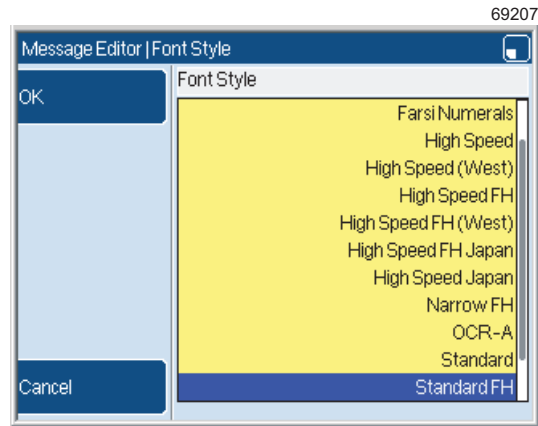


Figure 5. Font Style page

NOTE: Not all font styles shown in Figure 5 are available on the 5900 printer.

Highlight a font style then press the **OK** key. If you change the default font style, you must also select the default font size. The printer automatically displays the **Font Size** page (see 'Font Size' on page 8).

Non-FH and FH fonts

Figure 6 (a) shows a normal font, where some lower case letters have a lower base than the other letters. Figure 6 (b) shows an FH font. The lower case letters are raised if necessary, so that all the letters are on the same baseline.

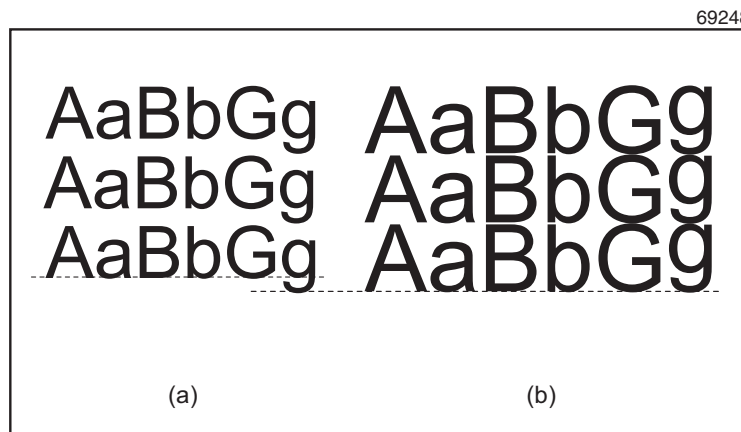


Figure 6. Non-FH and FH fonts

The FH fonts generate larger characters than the normal fonts when the same font size is used. For example a 9-high character in an FH font is as large as a 12-high character in a normal font. If you use an FH font you can put the lines of text closer together, as shown in Figure 6 (b).

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Standard and High Speed fonts

Standard fonts can provide high quality characters, but print at lower speeds. Standard fonts also provide proportional spacing between characters, so that the text is easier to read.

High speed fonts have fixed width and fixed character spacing, and print at high speed.

NOTE: Only high speed fonts are available on the 5900 printer.

2.1.6 Font Size

This option sets the default font size for new messages. Select the **Font Size** option to display the **Font Size** page.

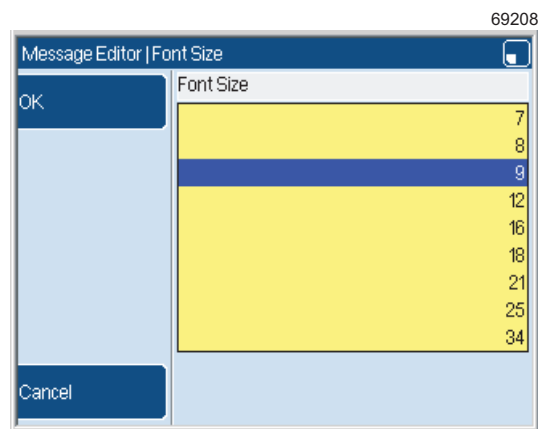


Figure 7. Font Size page

NOTE: Not all font sizes shown in Figure 7 are available on the 5900 printer.

Highlight the font size you require then press the **OK** key.

NOTE: If you set a font size that is more than the height allowed by the message type, parts of the message will not print. The parts of the message that will not print are shown in red on the **Print Monitor** page, as shown in Figure 8.



Figure 8. Non-printing part of message

How To Configure the Message Editor and Logo Editor



2.1.7 Allow Save in Message

When you create a message you can insert a date & time format, a shift code sequence, a logo, or a text sequence (7900 only) in the message. The printer must save this additional information. The **Allow Save in Message** option allows you to set where the printer saves the additional information:

- If you set the **Allow Save in Message** option to Yes, the printer allows you to save the additional information in the store or in the message.
- If you set the **Allow Save in Message** option to No, the printer always saves the additional information in the store. There is no option to save the additional information in the message.

NOTE: You can use additional information saved in the store in more than one message, but if this information changes it changes in all the messages that use the information.

2.1.8 Default Orientation

The printer allows you to print a message field in a different direction with a horizontal or vertical or horizontal and vertical flip. You can set the default orientation of fields within a message. Select the **Default Orientation** option to display the **Default Orientation** page.

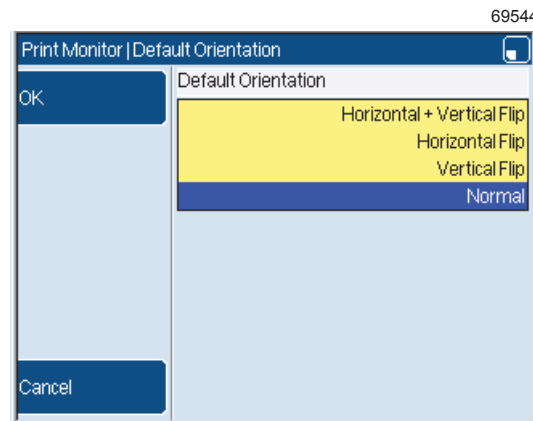


Figure 9. Default Orientation page

How To Configure the Message Editor and Logo Editor



The orientation options are as follows:

- **Horizontal + Vertical Flip**—the field orientation is turned horizontally and vertically as shown below.

TEST⁶¹¹³

- **Horizontal Flip**—the field orientation is turned horizontally as shown below.

TEST⁶¹¹⁰

- **Vertical Flip**—the field orientation is turned vertically as shown below.

TEST⁶¹¹¹

- **Normal**—the field orientation is not changed as shown below. This option is the default option.

TEST⁶¹⁰⁹

Highlight the orientation you require then press the **OK** key.

2.1.9 Default Field Justification

This option allows you to set the default justification of any text within a message field to either right justified or left justified. Select the **Default Field Justification** option to display the **Field Justification** page and select either Right or Left.

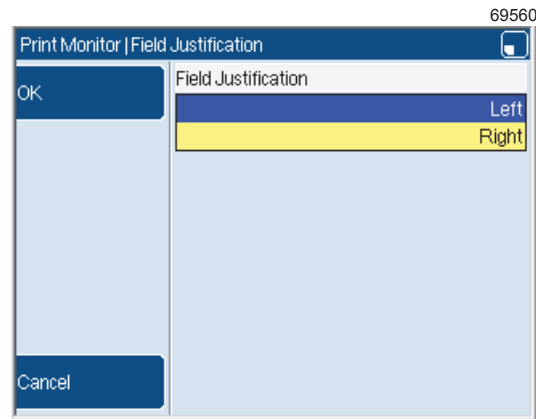


Figure 10. Field Justification page

The default justification is Left. For languages that are written from right to left on a page (like Hebrew, Arabic, and Farsi) you can use Right justification. This option makes sure that the text in the message field displays correctly when you use these language options.

2.1.10 Date Offset Limits

NOTE: You need a User Level D password to set date offset limits on the printer. This option is set to No by default.

How To Configure the Message Editor and Logo Editor



If this option is set to Yes, your supervisor can set the type of offset units used (for example days only). They can set an upper and lower limit for each date offset unit (days or weeks or months or years) or for all four units. If date offset limits are set, at User Level C or below you cannot enter a date offset value outside the selected range. Any invalid value entered is shown in red. The default limits for each unit are shown in Figure 11.

Message Editor | Date Offset Limits	
Select	Enable Offset Limits Yes
	Allowed Offset Units All
	Day Offset Limits -365 : 365
	Week Offset Limits -52 : 52
	Month Offset Limits -12 : 12
Exit	Year Offset Limits -20 : 20

Figure 11. Date Offset Limits

How To Configure the Message Editor and Logo Editor



2.2 Logo Editor Defaults

The options in this section are accessed from the **Logo Editor Defaults** page. These options are only available on the 7900 printer.

To access the **Logo Editor Defaults** page from the **Print Monitor** page, select **Menu > Setup > Editor Defaults > Logo Editor Defaults**. The printer displays the **Logo Editor Defaults** page.

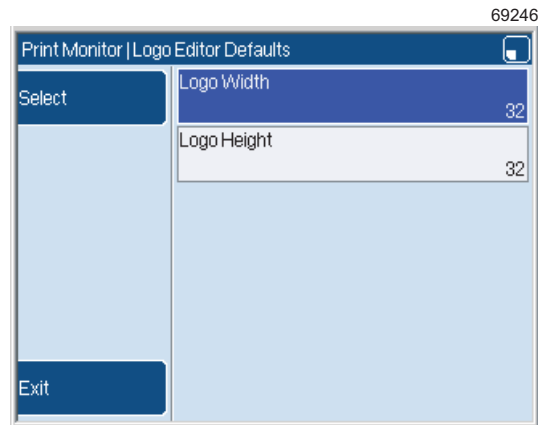


Figure 12. Logo Editor Defaults page

You can use the options on this page to change the default width and height of a new logo. The width and height are displayed at the top of the **Logo Editor** page.

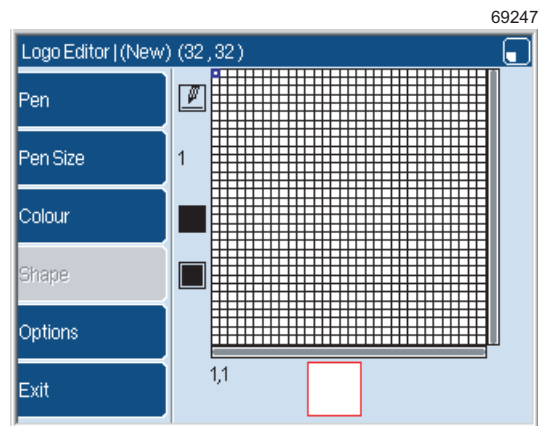


Figure 13. Logo Editor: new logo

2.2.1 Logo Width

Use this option to change the default width for a new logo. The minimum value is 1 and the maximum value is 256.

2.2.2 Logo Height

Use this option to change the default height for a new logo. The minimum value is 1 and the maximum value is 34.

Linx 5900 & 7900



How To Diagnose Problems

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how you check the condition of the 5900 and 7900 printers and find the cause of any problems.

The System Events (warnings and faults) are described in the *Linx 5900 & 7900 Quick Start Guide* and are not described in this document.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Test message

The printer can generate a test message automatically. You can use a test message to make sure that the printer operates correctly and to check the print quality. The test message contains a number of shapes and fields. For example, the message displays the current date and time, and a counter field.

Figure 1 below shows an example test message.



Figure 1. Test message

2.1 Create a test message

To create a test message, select **Menu > Maintenance > Test Message**.

The printer displays a list of the message types that are available.

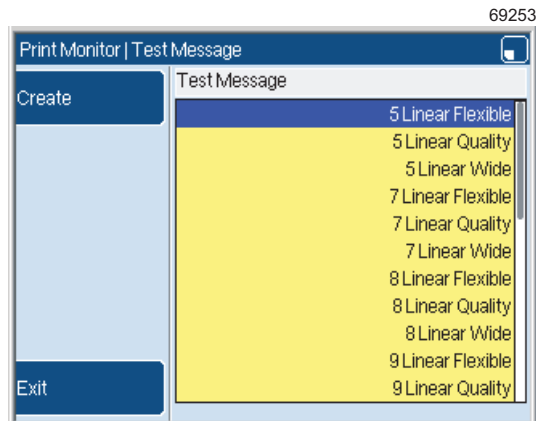


Figure 2. Test Message: message types



Normally, to test the complete raster you select the largest message type that is available for your printhead (34 Linear Quality for example). When you select the message type, the printer creates the test message and displays the following page.

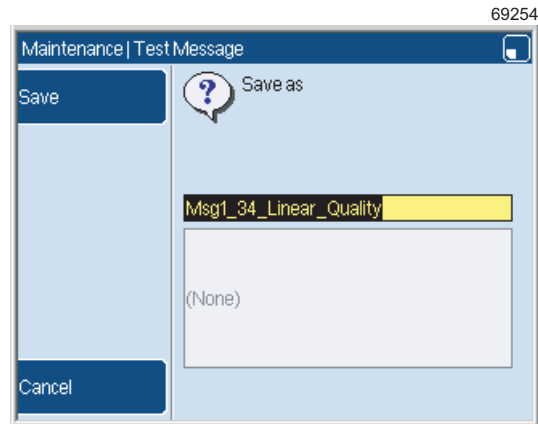


Figure 3. Test Message: save the message

The default name includes the message type. You can change this name before you save the test message.

The printer saves the test message in the message store. To print the test message you must first select it from the message store.



3 Event Log

The printer maintains a list of events that occur during the operation of the printer. The list can include all these events, or you can apply a filter, so that some events are not included in the list.

You can use the list of events to check the operation of the printer. The list tells you if one event occurs many times (for example “3.20 No Time of Flight”).

3.1 Use the Event Log

At the **Print Monitor** page, press the **Menu** key to access the **Menu** page. Then select the **Event Log** option to display the **Current Events** page.

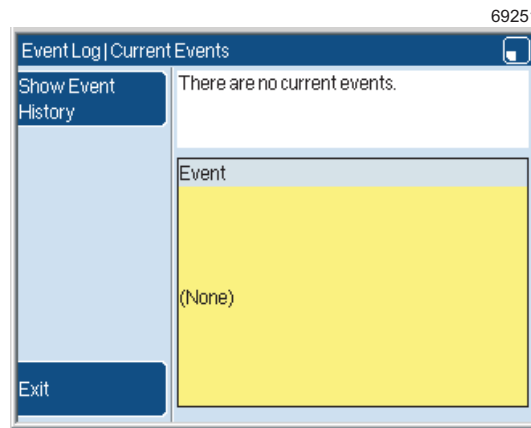


Figure 4. Current Events page

If there is an active event (for example “3.03 Ink Low”), the event is displayed in the **Current Events** page.

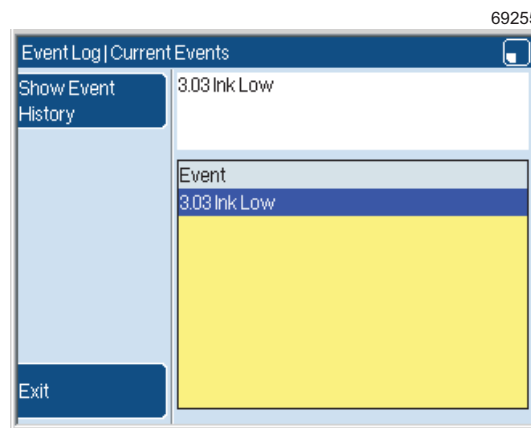


Figure 5. Current Events page: Ink Low event



3.1.1 Event History

Press the **Show Event History** key to display the **Event History** page. This page contains a list of all failures and warnings that occurred. The newest events are shown at the top of the list.

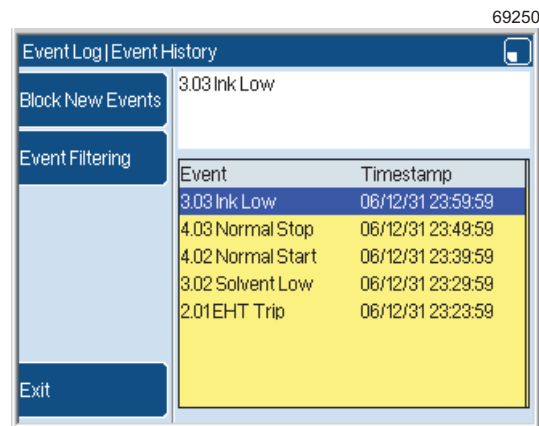


Figure 6. Event History page

You can use the **Event History** page to see any events that occur many times.

Block New Events

If you select this option, new events do not appear in the list while the **Event History** page is displayed. You can use this option to prevent any changes while you inspect the list. When you return to the **Menu** page the printer cancels this option and records new events.

If you select the **Block New Events** option, the soft key label changes to **Track New Events**.

Track New Events

This option cancels the **Block New Events** action (described above) and the soft key label changes to **Block New Events**. The list changes to include any events that occurred (but were not shown) while the **Block New Events** action was in use.



Event Filtering

If there is a large number of items in the list and the length of the list causes a problem, you can hide some items. The items remain in the list but are not shown. To hide some events, press the **Event Filtering** key. The printer displays the **Event Filtering** page.

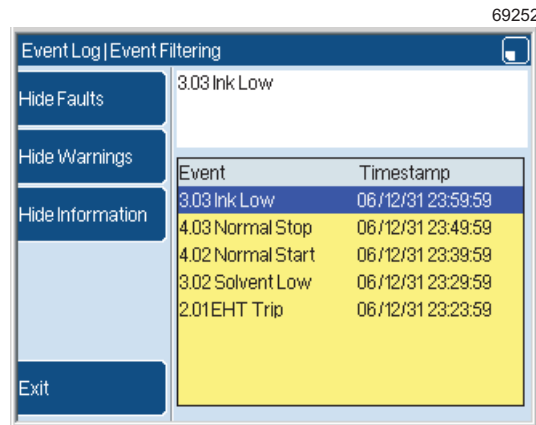


Figure 7. Event Filtering page

There are three types of event that you can hide, as shown below:

Hide Faults

Use this option to hide any Print Failure events (events that begin with the number “2”). For example, the printer removes the event “2.01 EHT Trip” from the list that is shown in Figure 7.

If you select the **Hide Faults** option, the soft key label changes to **Show Faults**.

Hide Warnings

Use this option to hide any Warning events (events that begin with the number “3”). For example, the printer removes the “3.03 Ink Low” event and the “3.02 Solvent Low” event from the list that is shown in Figure 7.

If you select the **Hide Warnings** option, the soft key label changes to **Show Warnings**.

Hide Information

Use this option to hide any Information events (events that begin with the number “4”). For example, the printer removes the “4.03 Normal Stop” event and the “4.02 Normal Start” event from the list that is shown in Figure 7.

If you select the **Hide Information** option, the soft key label changes to **Show Information**.



4 Monitor Jet

The **Monitor Jet** page gives you a summary of important technical information about the state of the printer. If you report a problem, this information can enable Linx Technical Support to find the cause. For some faults Linx Technical Support can help you to correct the cause, so that the service technician does not need to go to your site.

4.1 Technical description

The following description helps you understand the parameters that are displayed in the **Monitor Jet** page.

4.1.1 Pressure

The printer has an ink pump that generates a pressure to send the ink through the printhead conduit then through a small nozzle in the printhead. The ink drops then go through a slot in the printhead cover tube. To maintain the best print quality the printer adjusts the ink pressure to maintain the correct speed for the ink drops.

4.1.2 Time of Flight (TOF)

The printer measures the time that is needed for the ink drops to pass between two sensors in the printhead. This time difference is the *Time Of Flight* (TOF). The TOF measurement allows the printer to monitor the speed of the drops. The ink drops must leave the printhead at the correct speed to maintain the best print quality.

4.1.3 Control of ink viscosity

The ink contains some solvent which evaporates during use. When the solvent evaporates, the ink viscosity increases. The increased viscosity makes the ink drops move more slowly. When the drop speed falls, the TOF value increases. The printer raises the ink pressure to maintain the correct TOF value.

When the pressure reaches a preset value, the printer adds some solvent to the ink tank. The solvent causes a decrease in the ink viscosity. The drop speed increases and the TOF value falls. The printer lowers the ink pressure to maintain the correct TOF value.

This process controls the viscosity of the ink and maintains the correct speed of the drops.

4.1.4 Modulation, Charge, and Phase

The printer generates a high-frequency signal that separates the jet into a series of drops. This signal is the *Modulation* signal (waveform D in Figure 8 on page 9).

Each drop must receive an electrical charge and the printer generates a high-frequency signal to charge the drops. This signal is the *Charge* signal (the pulse A in Figure 8 on page 9).

The Modulation signal and the Charge signal have the same frequency. The printer can apply a small time difference between the signals to provide the correct electrical charge on the ink drops. The delay between the signals is the *Phase* value. The Phase value is in the range 0 to 15.



Figure 8 shows how a phase value is defined.

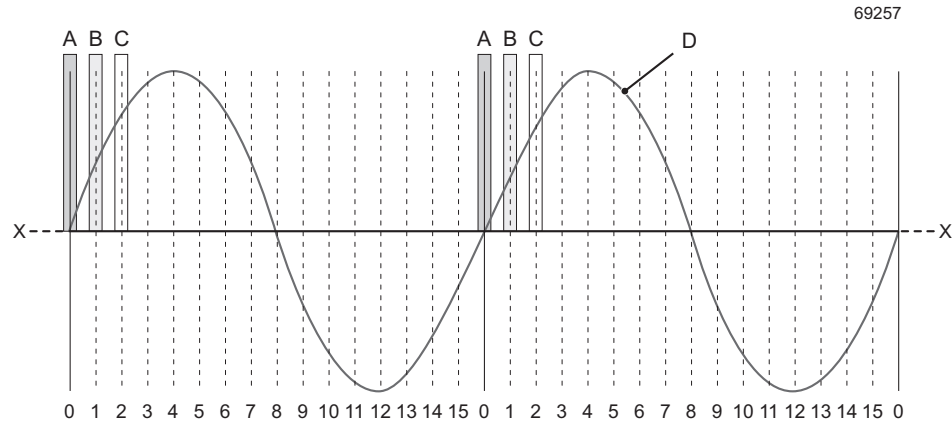


Figure 8. Phase values

The Modulation signal (D) and the Charge signal (A) are generated at the same frequency. The Charge signal appears when the Modulation signal increases through zero volts (the line "X ... X").

To adjust the charge on the ink drops, the printer can delay the Charge signal (for example to B or to C). The delay (Phase value) depends on a number of factors, for example the ink type and the temperature.

There are 16 possible phase values as shown in Figure 8. The phase value for Charge signal A is 0, the value for signal B is 1, and the value for signal C is 2. The printer tries each phase value to find the setting that gives the correct charge.

NOTE: The waveform and the pulses in Figure 8 are for example and are not accurate illustrations of the signals in the printer.

The number shown for the Phase value is not important, but the value must not change quickly or by a large amount. The number changes while the ink temperature increases after you start the printer. After the printer has operated for a number of minutes, the Phase value changes by only 1 or 2 in each minute of operation.



4.2 Monitor Jet page

To understand the parameters displayed on the **Monitor Jet** page, make sure you read the previous section ('Technical description' on page 8).

To access the **Monitor Jet** page from the **Print Monitor** page, press the **Menu** key to display the **Menu** page. Then select **Maintenance > Monitor Jet** to display the **Monitor Jet** page.

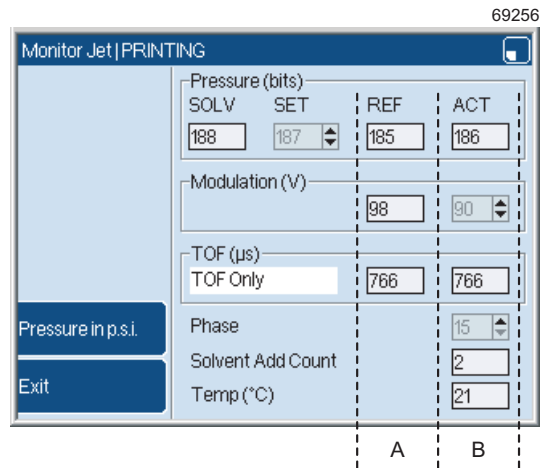


Figure 9. Monitor Jet page

The **Monitor Jet** page contains a number of boxes that display a value.

Figure 9 shows three boxes in the column (A) that has the label "REF". These boxes contain fixed "reference" values that the printer uses in its calculations. These values are set when the printer is installed.

There are six boxes in the column (B) that has the label "ACT". These boxes are updated continuously and contain the current values of the parameters.

NOTE: The values shown in the **Monitor Jet** page are for display only. You cannot change these values.

4.2.1 Pressure

There are four boxes in this group and each box contains an ink pressure value. The units of measurement are shown in the brackets that follow the label "Pressure" (for example "bits" in Figure 9).

(See also 'Pressure key' on page 12.)

SOLV

(See 'Control of ink viscosity' on page 8.)

When the ink pressure reaches the value in this box, the printer adds some solvent to the ink tank. The solvent causes a decrease in the ink viscosity and lowers the pressure. A number of minutes passes before you see a change in the displayed value.



SET

This value is the calculated ink pressure that is required to make sure that the drop speed is correct. The printer monitors the TOF value and updates the **SET** value continuously.

REF

This pressure value is a fixed number that depends on the printhead type and the ink type. The printer uses this value in the calculation for the **SOLV** Pressure.

ACT

This value is the current pressure in the ink system. There can be a small difference between the **SET** value and **ACT** value.

Fault Diagnosis

When the printer operates normally, the **SOLV**, **SET**, **REF**, and **ACT** boxes show about the same values. If the values are different, there can be a problem in the printer.

4.2.2 Modulation (V)

The modulation value is the voltage of the signal that separates the ink jet to make a continuous series of ink drops.

- The box in the **REF** column shows the reference value for the Modulation voltage. The reference value depends on the type of printhead and on the ink type. The printer uses the reference value in the calculation of the current value.
- The box in the **ACT** column shows the current value of the Modulation voltage. The printer adjusts the current value to maintain the best print quality if the operating parameters change when you print.

4.2.3 TOF (μs)

(See 'Time of Flight (TOF)' on page 8.)

TOF mode

The first box in the TOF group shows which parameters are monitored. The printer can measure both the TOF value and the Phase value, or only the TOF value (see 'Technical description' on page 8). The box displays one of the following modes:

TOF/Phase

The printer monitors the TOF value and the Phase value. This mode is used after the jet startup is complete.

TOF only

The printer monitors only the TOF value. This mode allows the printer to monitor the TOF parameter of the ink jet when the phase value is not set. The printer uses this mode for a short period when the jet starts until the pressure is adjusted to generate the correct TOF.

**Off**

The printer does not monitor TOF or Phase. The printer is in this mode while the jet does not run (the printer is in the "IDLE" state).

TOF (REF)

The box in the **REF** column shows the reference value for the TOF measurement. The measurement units are microseconds. The value depends on the printhead type.

TOF (ACT)

The box in the **ACT** column shows the current value of the TOF measurement. While the jet runs, the printer updates this value continuously.

4.2.4 Phase

This box shows the current value of the Phase. While the jet runs, the printer updates this value continuously. There is no value displayed when the TOF mode is set to "TOF Only".

4.2.5 Solvent Add Count

When the printer adds some solvent to the ink tank, the value in this box increases by 1. The value is reset to 0 when you start the jet.

4.2.6 Temp (°C)

This box shows the internal temperature of the printhead.

4.2.7 Pressure key

Use this key to change the units of measurement for the four boxes in the Pressure group. When you change the units, the key label changes to show the next available units of measurement (for example "Pressure in bar").

The following measurement units are available:

- p.s.i.
- bar
- Bits

If the units of measurement are "Bits", each value is displayed as a number in the range 0 to 255.



5 Maintenance Times

The printer maintains a record of the times during which the printer is used or turned on. This record allows the printer to calculate the date of the next Scheduled Maintenance, for example. The **Maintenance Times** page shows you the information in the record.

Print Monitor | Maintenance Times	
Select	Power On Time (Total) 1:00 (hours:mins)
	Power On Time (Present) 0:10 (hours:mins)
	Jet Run Time (Total) 0:42 (hours:mins)
	Jet Run Time (Present) 0:05 (hours:mins)
	Maintenance Due Within 985:00 (hours:mins)
Exit	Maintenance Due By 2009-12-31

Figure 10. Maintenance Times page

5.1 Maintenance Times page

The menu options on this page are for display only. You cannot select the options or change the values.

5.1.1 Power On Time (Total)

This item shows you the total number of hours and minutes that the printer power was turned on (from the date of the printer installation).

5.1.2 Power On Time (Present)

This item shows you the number of hours and minutes that have passed after the last time that the printer power was turned on.

5.1.3 Jet Run Time (Total)

This item shows you the total number of hours and minutes during which the jet was active (from the date of the printer installation).

5.1.4 Jet Run Time (Present)

This item shows you the total number of hours and minutes during which the jet was active (from the last time that the printer power was turned on).

5.1.5 Maintenance Due Within

This item shows you the number of hours and minutes that remain before the next Scheduled Maintenance.



5.1.6 Maintenance Due By

This item shows you the date of the next Scheduled Maintenance.



6 System Information page

The **System Information** page gives you access to four pages of information about the configuration of your printer. To access this page from the **Print Monitor** page, press the **Menu** key then the [end] key to highlight the **System Information** option. Press the **Select** key to display the **System Information** page.

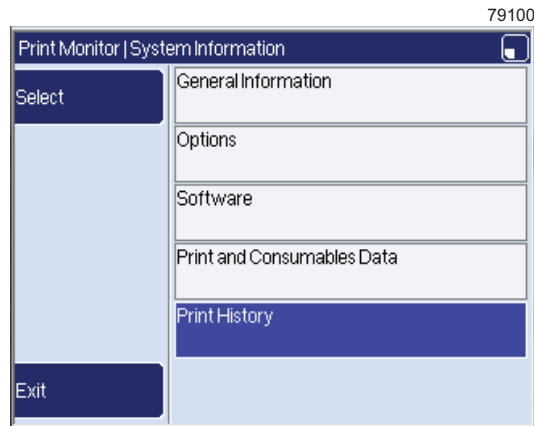


Figure 11. System Information page

At the **System Information** page, select the **General Information** option to display the following page.

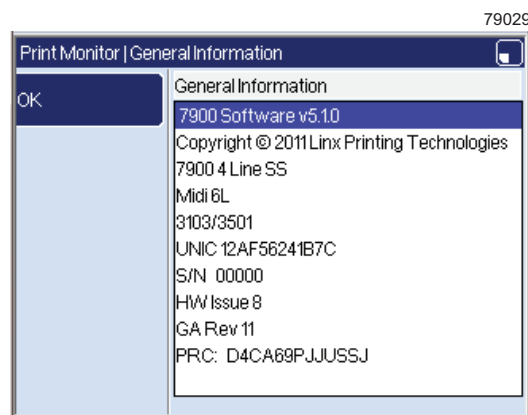


Figure 12. General Information page

The **General Information** page shows you the following information:

- Line 1: Software version information.
- Line 2: Copyright information.
- Line 3: Printer configuration.
- Line 4: Printhead.
- Line 5: Ink type.
- Line 6: UNIC code (a unique serial number that identifies the printer).
- Line 7: An optional label that identifies the printer. (This line can contain any text.)
- Lines 8 and 9: Version information for the electronics inside the printer.



The **Options** page shows you which optional features are installed in the printer.

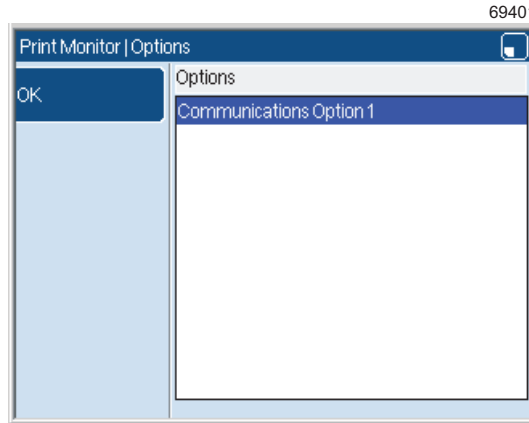


Figure 13. Options page

The **Software Information** page shows additional information about the printer software and the storage capacity for messages and other data. The service technician can use this page to check the status of the data storage capacity of the printer.

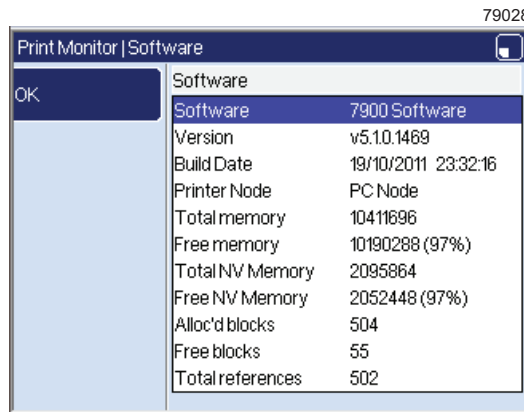


Figure 14. Software information page

The **Print and Consumables Data** page is described on page 20.



The **Print History** page (7900 only) displays details of the recent history of print sessions on the printer. The page is visible at all user levels.

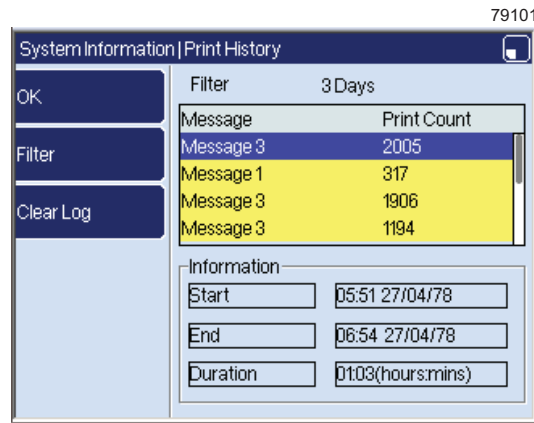


Figure 15. Print History page

A print session is any period of continuous printing. A session begins when the printer enters the 'Printing' state, and ends when the printer leaves the 'Printing' state (for any reason). At least one print must be made before information is recorded in the print history. The current print session is not visible on the page until the session has ended.

A print history entry contains the following information:

- The name of the message being printed
- The number of prints made during the session.
- The Start and End times of the session and its duration.

Highlight a specific message to see its print history.

NOTE: Messages printed as part of a production schedule are not included on the **Print History** page.

The maximum number of entries in the print history is 400. You cannot configure this value. If the maximum number of entries is reached, the printer overwrites the oldest entry as new print sessions are recorded.

You can use the **Filter** key to view the previous hours, days, or weeks of print history information. The filter shows all completed sessions for the selected filter period. Users at all levels can use the filter functionality.

Users at level C security and above can press the **Clear Log** key to clear all print history information on the printer. This option is not enabled if the printer is in the 'Printing' state.

NOTE: You can use the **[alt] +[H]** keyboard shortcut to open the **Print History** page from any printer page.



7 Print and Consumables pages

There are two pages of information that help you manage the ink and solvent use.

7.1 Print and Consumables History

To access this page from the Print Monitor page, press the **Menu** key. Then select **Maintenance > Print and Consumables History**.

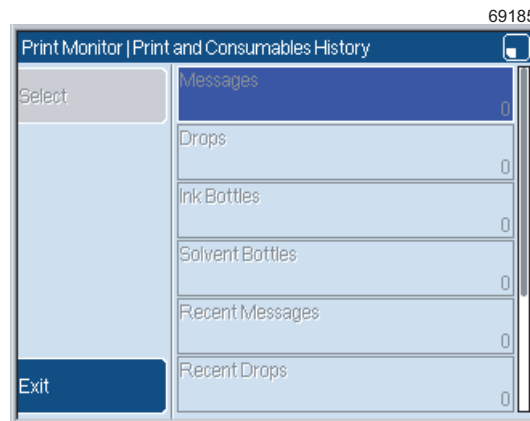


Figure 16. Print and Consumables History Page

The **Print and Consumables History** page gives you some information about the rate at which the printer has used ink and solvent.

The counter which is next to each item shows the number of the items that the printer has used. The counters calculate from the date when the printer was installed and from the time that the counters were reset to zero. (You cannot reset the counters if you have a User Level C password—the service technician performs this task.)

The information helps you monitor ink and solvent use, and gives the service technician information about the past performance of the printer.

The information in the **Print and Consumables History** page is approximate because many variables control the rate at which the consumables are used. The calculations for the next time that the ink or solvent are refilled are also approximate. (See also 'Print and Consumables Data' on page 20.)

7.1.1 Messages

This item shows the total number of messages printed from the time that the printer was installed.

7.1.2 Drops

This item shows the total number of drops printed from the time that the printer was installed.



7.1.3 Ink Bottles

This item shows the total number of ink bottles that the printer has used from the time that the printer was installed.

7.1.4 Solvent Bottles

This item shows the total number of solvent bottles that the printer has used from the time that the printer was installed.

7.1.5 Recent Messages

This item shows the number of messages printed from the time that the counter was last reset to zero.

7.1.6 Recent Drops

This item shows the number of drops printed from the time that the counter was last reset to zero.

7.1.7 Recent Ink Bottles

This item shows the number of ink bottles that the printer has used from the time that the counter was last reset to zero.

7.1.8 Recent Solvent Bottles

This item shows the number of solvent bottles that the printer has used from the time that the counter was last reset to zero.



7.2 Print and Consumables Data

To access this page from the Print Monitor page, press the **Menu** key. Then select **System Information > Print and Consumables Data**.

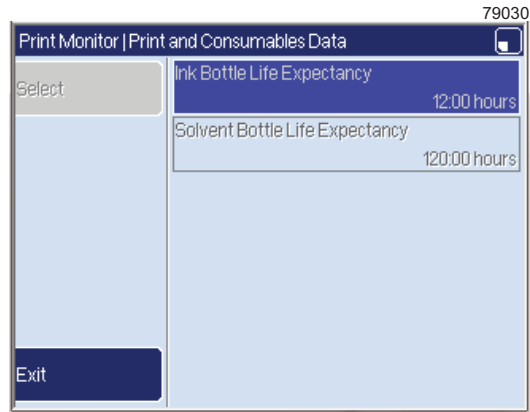


Figure 17. Print and Consumables Data page

The **Print and Consumables Data** page tells you the average number of hours of use for each bottle of ink or solvent. This page also tells you the approximate number of hours that remain before you must refill the ink tank or the solvent tank.

The information in the **Print and Consumables Data** page is approximate because many variables control the rate at which the consumables are used.

7.2.1 Ink Bottle Life Expectancy

This item shows the number of hours of use for each ink bottle.

7.2.2 Solvent Bottle Life Expectancy

This item shows the number of hours of use for each solvent bottle.

Linx 5900 & 7900



How To Create a Shift Code

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to set up shift codes for the 5900 and 7900 printers.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Shift codes

A shift code records the time or the day of the week during which a message was printed. You can use the shift code to help you identify each batch of products. The 5900 and 7900 printers can generate two types of shift code field—Daily or Weekly. These types are described below.

2.1 Examples

The two types of shift code are shown in the examples that follow.

2.1.1 Example 1: Daily shift code

This type of shift code is repeated each day and indicates the time during which a message was printed. For example:

Time	Shift Code
06:00 to 14:00	“AAA”
14:00 to 22:00	“BBB”
22:00 to 06:00	“CCC”

Figure 1. Daily shift code

The start time of each period defines the end of the previous period.

2.1.2 Example 2: Weekly shift code

This type of shift code is repeated each week and indicates the day on which a message was printed. For example:

Day and Time	Shift Code
Monday 00:00 to Friday 23:59	“AAA”
Saturday 00:00 to Saturday 23:59	“BBB”
Sunday 00:00 to Sunday 23:59	“CCC”

Figure 2. Weekly shift code

When you create a Weekly shift code, you can set the time at which the code changes on each day. The start day and time of each period defines the end of the previous period.



3 Shift Code Editor

You use the Shift Code Editor to create a shift code. To access the Shift Code Editor from the **Print Monitor** page, press the **Menu** key. Then select **Stores > Shift Code Store** to display the **Shift Code Store** page.

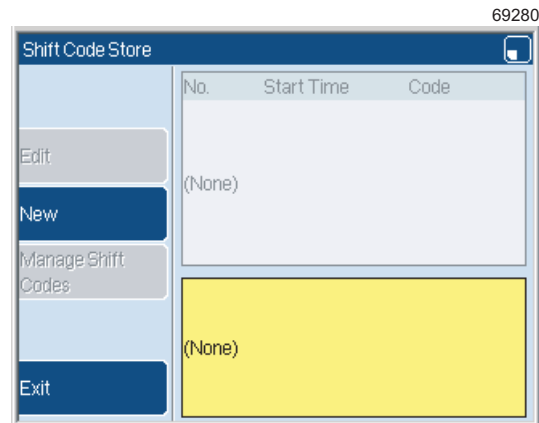


Figure 3. Shift Code Store page

If there are shift codes in the store, this page shows a list of the shift code names. If there are no shift codes in the store, the **Edit** key and the **Manage Shift Codes** key are not available.

3.1 Create a shift code

To create a new shift code, do the following.

- 1 At the **Shift Code Store** page, press the **New** key to display the **Shift Code Editor** page. The printer displays the **Shift Code Editor** page, which contains a new blank shift code.

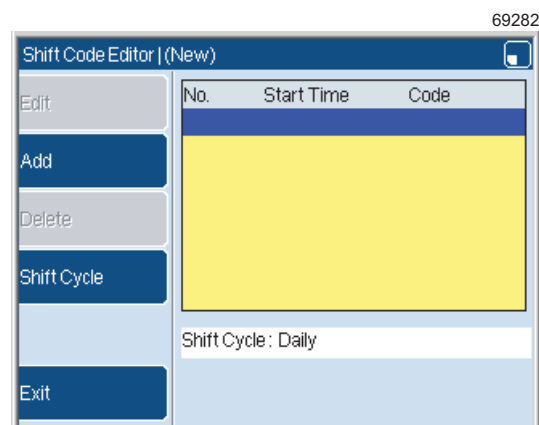


Figure 4. New shift code

The **Shift Code Editor** page shows the current type of Shift Cycle (“Daily” in Figure 4). Before you begin, you must select one of the shift cycle types—Weekly or Daily.

NOTE: You *cannot* change the type after you add an item to the shift code.

How To Create a Shift Code



- 2 Press the **Shift Cycle** key to display the **Shift Cycle** page.

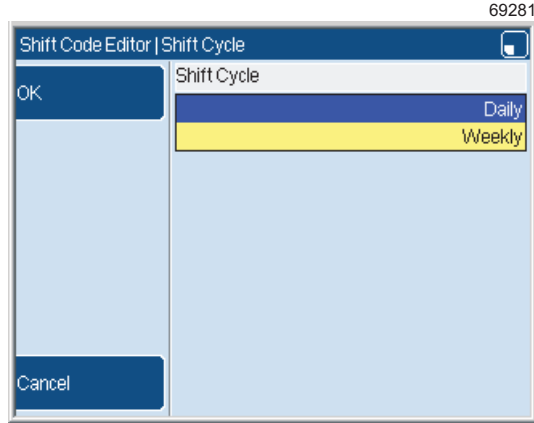


Figure 5. Shift Cycle page

- 3 Highlight the required type then press the **OK** key to return to the **Shift Code Editor** page.
- 4 To insert the first item, press the **Add** key. The printer displays the **Add** page (Figure 6). If you selected a Daily shift code, the **Start Day** option is not available.

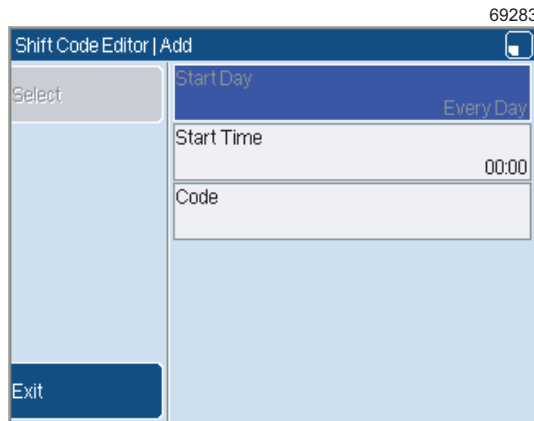


Figure 6. Add page: Daily shift code

How To Create a Shift Code



If you selected a Weekly shift code, the option is available, as shown below.

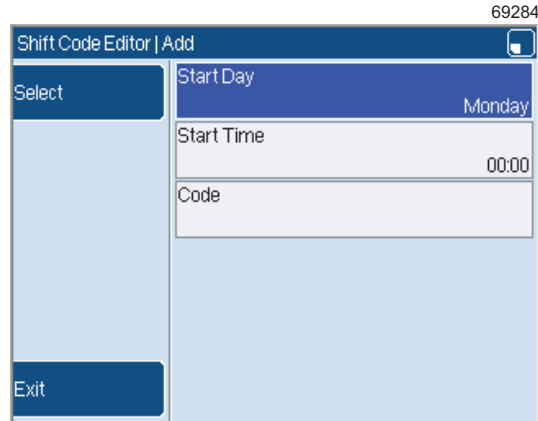


Figure 7. Add page: Weekly shift code

- 5 For a Weekly shift code, select the **Start Day** option to display the **Start Day** page.

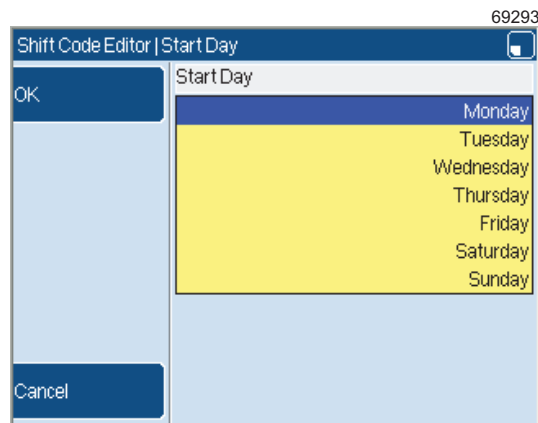


Figure 8. Start Day page

In Example 2 on page 3, the first Start Day is Monday. Highlight the required day and press the **OK** key to return to the **Add** page.

How To Create a Shift Code



- 6 To set the time at which the shift begins, select the **Start Time** option to display the **Setup** page.

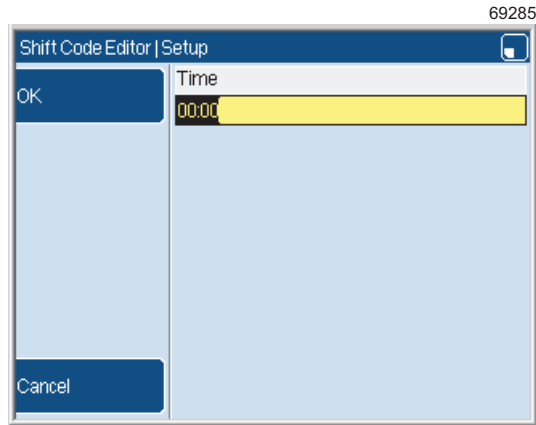


Figure 9. Setup page: time

For the “Daily” example on page 3, the first Start Time is “06:00”. For the “Weekly” example, the Start Time for each day is “00:00”.

Enter the start time and press the **OK** key to return to the **Add** page.

- 7 To enter the text for the shift code, select the **Code** option to display the **Shift Code** page.

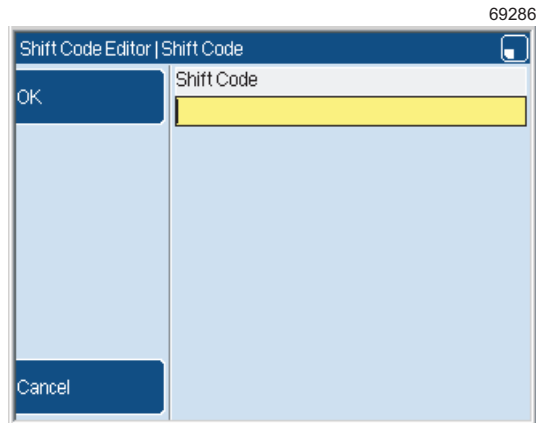


Figure 10. Shift Code page

For both examples, the text for the first item is “AAA”. Enter these letters *without* the quotation marks, then press the **OK** key to return to the **Add** page.

How To Create a Shift Code



The **Add** page shows you the information that you entered for the first item. The page for the Daily shift code is as follows.

69287

Shift Code Editor | Add	
Select	Start Day Every Day
	Start Time 06:00
	Code AAA
Exit	

Figure 11. Add page: Daily shift code

The page for the Weekly shift code is as follows.

69294

Shift Code Editor | Add	
Select	Start Day Monday
	Start Time 00:00
	Code AAA
Exit	

Figure 12. Add page: Weekly shift code

- 8 Press the **Exit** key to return to the **Shift Code Editor** page. The page shows the first item in the shift code.

69288

Shift Code Editor | (New)		
Edit	No.	Start Time
Add	1	06:00
Delete		Code
Shift Cycle		AAA
Exit	Shift Cycle : Daily	

Figure 13. Shift Code Editor page: first item



- 9 Repeat steps 4 to 8 to add the next two items. The **Shift Code Editor** page shows the three items in the shift code.

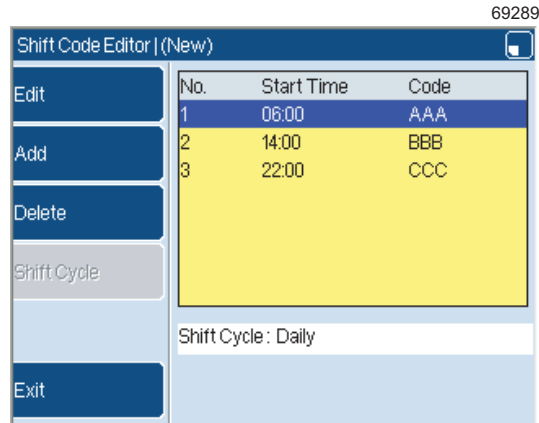


Figure 14. Shift Code Editor page: Daily shift code

- 10 To save the shift code, press the **Exit** key. The printer displays the **Save As** page.

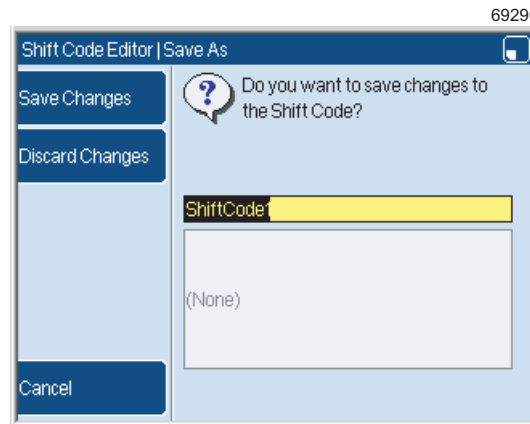


Figure 15. Save As page

The *Linx 5900 & 7900 Quick Start Guide* describes how you use the **Save As** page.



3.2 Edit a shift code

To edit an existing shift code, do the following.

At the **Print Monitor** page, press the **Menu** key. Then select **Stores > Shift Code Store**. The printer displays the **Shift Code Store** page.

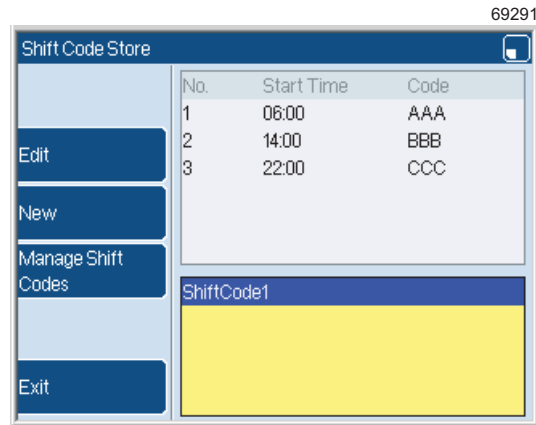


Figure 16. Shift Code Store page: Daily shift code

The page shows you a list of the shift codes that are in the store. Highlight the name of the required shift code and press the **Edit** key. The printer displays the **Shift Code Editor** page.

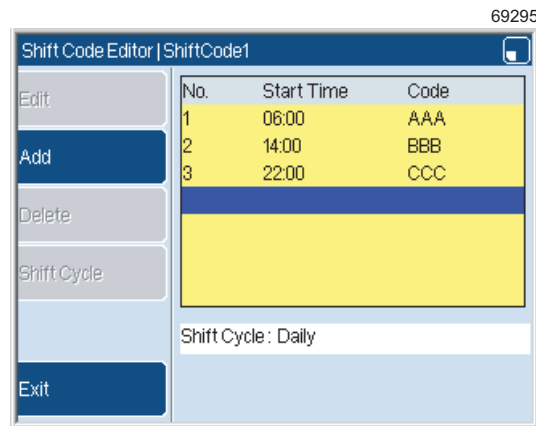


Figure 17. Shift Code Editor page: ShiftCode1

To add an item to the shift code, press the **Add** key (see step 4 on page 5). When you add an item, the position of the cursor is not important. The printer puts the new item in the correct position in the list. The position depends on the Start Time of the new item. For a Weekly shift code, the position depends on the Start Day and the Start Time.

How To Create a Shift Code



To make other changes, move the cursor to highlight an item. The **Edit** key and the **Delete** key become available.

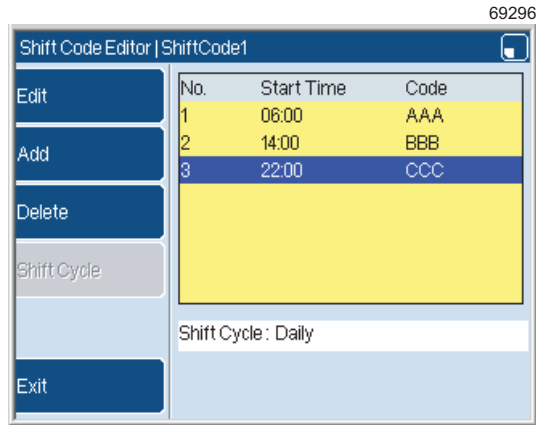


Figure 18. Shift Code Editor page: ShiftCode1

Press the **Delete** key to delete the highlighted item. The printer displays a confirmation page.

To edit the highlighted item, press the **Edit** key to display the **Edit** page.

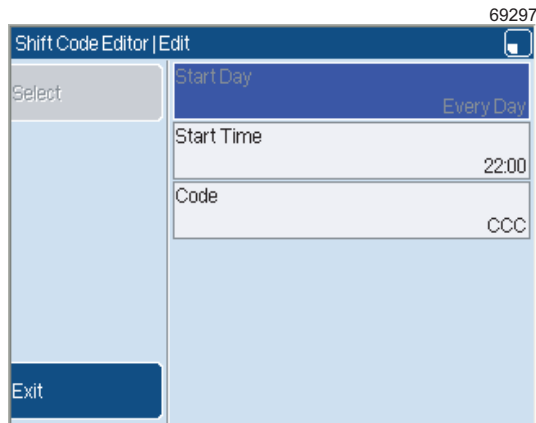


Figure 19. Edit page

The **Edit** page is like the **Add** page which is described on page 5.



3.3 Manage shift codes

At the **Shift Code Store** page (see Figure 16 on page 10), press the **Manage Shift Codes** key to display the **Manage Shift Codes** page.

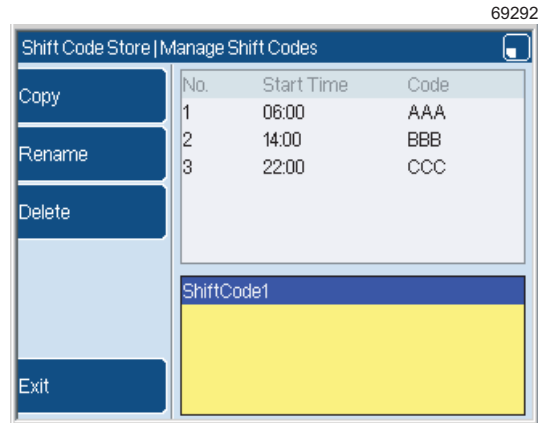


Figure 20. Manage Shift Codes page

You can use the **Manage Shift Codes** page to copy a shift code, change a shift code name, or delete a shift code. The **Copy** option, the **Rename** option, and the **Delete** option are not described in this document. These options are like the options in the **Message Store > Manage Messages** page, which is described in the *Linx 5900 & 7900 Quick Start Guide*.

Linx 5900 & 7900



How To Create a Sequential Number

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document tells you how you create a Sequential Number field.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About Sequential Numbers

A Sequential Number field is a field that contains a number that is updated automatically. The printer updates the number at each occurrence of a trigger event, which you can define. The number can contain both numerals (0 to 9) and letters (a to z, or A to Z). The number can contain Arabic or Farsi numerals.

2.1 Ranges

A Sequential Number normally contains a single range. The range can include numbers or letters, or a mixture of numbers and letters. Figure 1 shows some examples of acceptable ranges for a Sequential Number field.

Range	How the Sequential Number field changes
000 to 999	001, 002, 003, ..., , ..., 998, 999, 001, 002, ...
5001 to 10000	5001, 5002, 5003, ..., , ..., 9999, 10000, 5001, ...
A0a to Z9z	A0a, A0b, A0c, ..., , ..., Z9y, Z9z, A0a, ...

Figure 1. Example Sequential Number ranges

The three example ranges shown in Figure 1 are of a different size:

- There are 999 numbers in the first example range.
- There are 5000 numbers in the second example range.
- There are $26 \times 10 \times 26$ (6760) numbers in the third range.

The Sequential Number field changes at each occurrence of the trigger event. In the examples shown in Figure 1, the Sequential Number field changes by an interval of 1 for each trigger event. See 'Interval' on page 12 to set the printer to use a different interval.

2.2 Format characters

You can insert a space or other character that is not a numeral or letter. For example:

/ = < > + . * @

You can put these characters in any position to format the printed number. When the number is updated, these characters do not move or change. For example, the following sequence of 999 numbers contains the “#” symbol:

0#01, 0#02,... ..9#98, 9#99

2.3 Multiple ranges

NOTE: You cannot create multiple sequential number ranges on the 5900 printer.

You can create Sequential Numbers that contain more than one range. If you do this, the printer prints the first range of the sequence, then the following ranges. For example, if you create a Sequential Number that includes all three ranges shown in Figure 1, the printer prints the following:

000, 001, ..., , 998, 999, 5001, 5002, ..., , 9999, 10000, A0a, A0b, ..., , Z9y, Z9z.



3 Create a Sequential Number

This example shows how to create a Sequential Number field that contains the range 001 to 999.

To create the field, perform the following steps:

- 1 At the **Print Monitor** page, select **Message Store > New** to display the **Message Editor** page with a new, blank message.

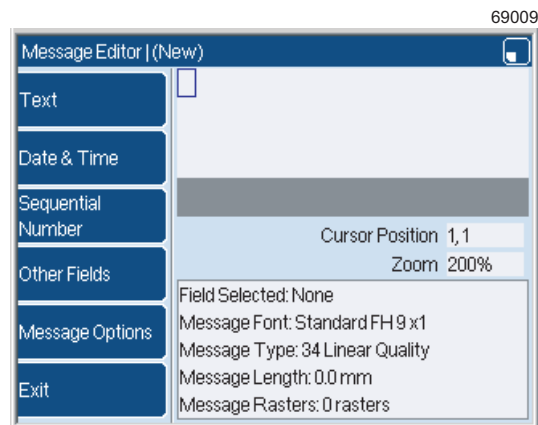


Figure 2. Message Editor page

- 2 Press the **Sequential Number** key to display the **Insert Sequential Number** page.

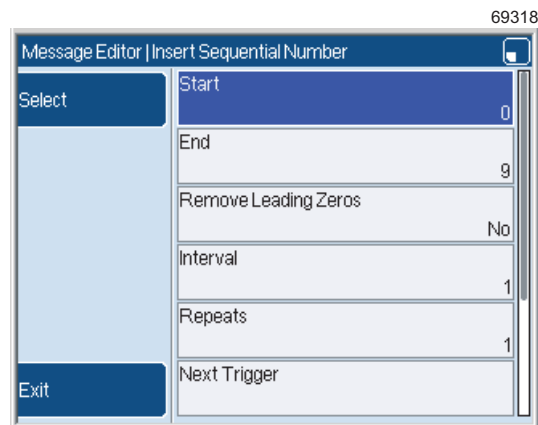


Figure 3. Insert Sequential Number page

This page shows the default values for the new range. The number has one digit and the range starts at 0 and ends at 9.

NOTE: Only the **Start** and **End** options are used in this example. The other options on this page are described in the next section (see 'Sequential Number configuration' on page 11).



- 3 Select **Start** to display the **Start** page.

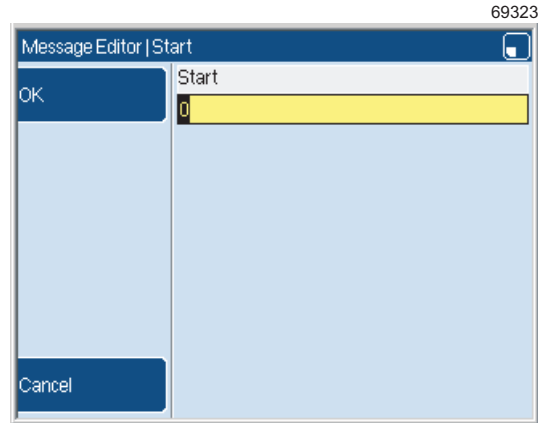


Figure 4. Start page

- 4 Change the displayed value to "001" then press the **OK** key to return to the **Insert Sequential Number** page.

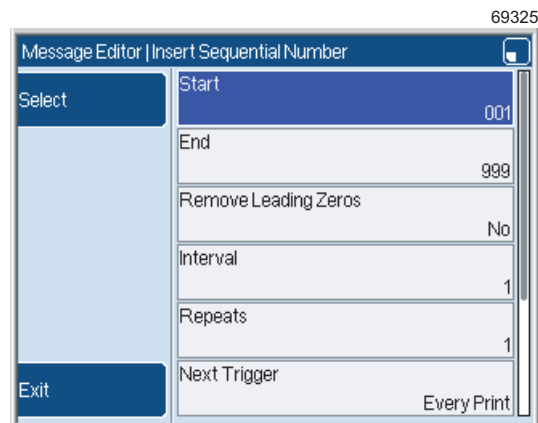


Figure 5. Insert Sequential Number page

The Start number has three digits and the printer adjusts the End number automatically, so that the number of digits is the same. The **Start** and **End** options show the new values.

NOTE: The range is complete. If you want to add a range to the Sequential Number, use the Down arrow key to highlight the **Add More Ranges** option (7900 printer only—the **Add More Ranges** option is not available on the 5900 printer). Then press the **Insert** key and repeat steps **3** to **4** to add a range.



- Press the **Exit** key to return to the **Message Editor** page. The Sequential Number field is displayed in the message. The page displays the number 001, which is the Start number for this sequence.

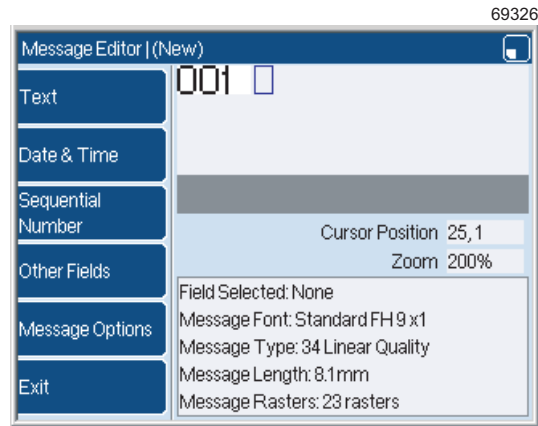


Figure 6. Message Editor page and Sequential Number field

Now you can exit from the **Message Editor** page and save your message, as shown in the *Linx 5900 & 7900 Quick Start Guide*.

Change the Start or End numbers

When you enter the Start number, the printer calculates the End number, as shown on page 5. If you change the Start number, and the End number becomes invalid, the printer must calculate a new value for the End number. The printer displays an information page.

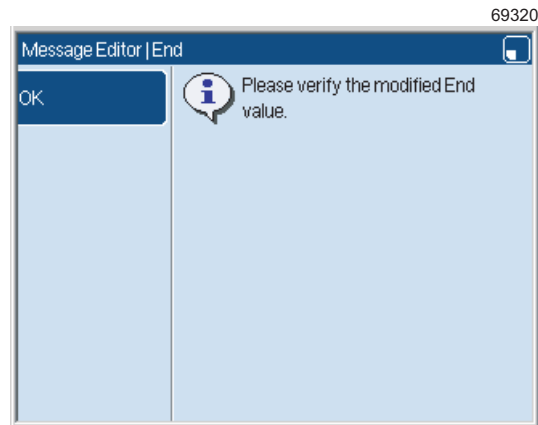


Figure 7. End value confirmation page

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Press the **OK** key to display the **End** page. The printer shows you the new value that it calculated.

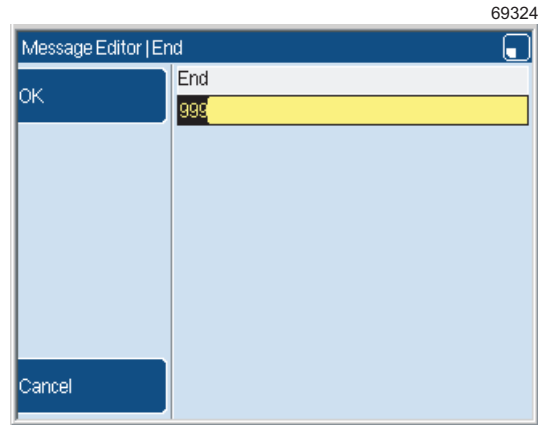


Figure 8. End page

Press the **OK** key to accept the new value.

The printer also displays an information page if you change the End number and the Start number becomes invalid.



3.1 Edit the Sequential Number

At the **Message Editor** page, select the Sequential Number field to see the edit options.

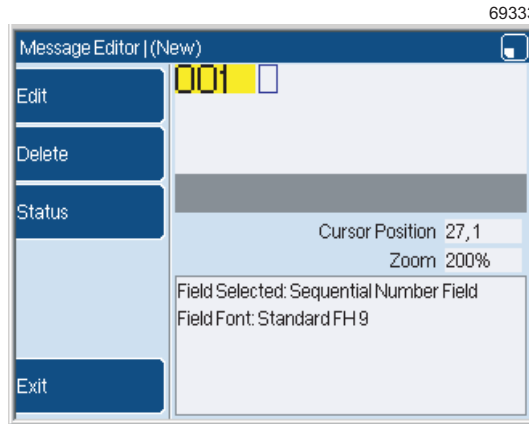


Figure 9. Sequential Number selected

Press the **Exit** key to remove the highlight, or select one of the following options.

3.1.1 Edit

Select this option to display the **Edit Sequential Number** page.

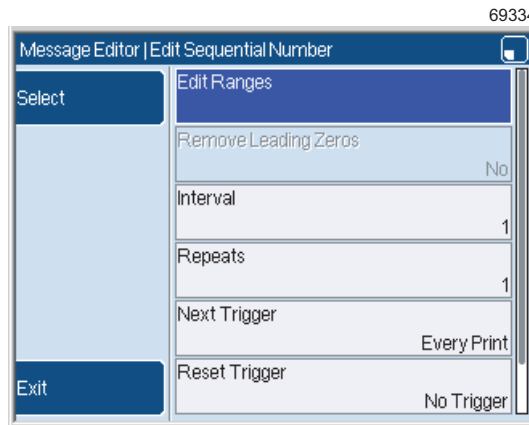


Figure 10. Edit Sequential Number page

The options are described in 'Configuration options' on page 11.

NOTE: If you select this option on the 5900 printer, the **Edit Ranges** option is not available.

3.1.2 Delete

Select this option to delete the Sequential Number field.



3.1.3 Status

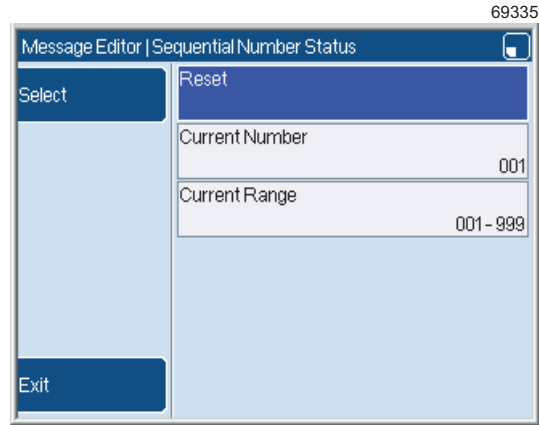


Figure 11. Sequential Number Status page

You can use this page to change the current status of the sequential number.

Reset

If you select this option, the printer immediately resets the sequence to the first number in the first range of the sequence.

Current Number

Use this option to set the current number. The number must be in the current range—see below.

NOTE: The printer does not accept any value that does not match the format of the numbers in the current range.



Current Range

NOTE: You cannot select this option on the 5900 printer. The option shows the current single range saved in the printer.

Use this option to change the current range of the sequence. The printer displays the ranges in the sequence.

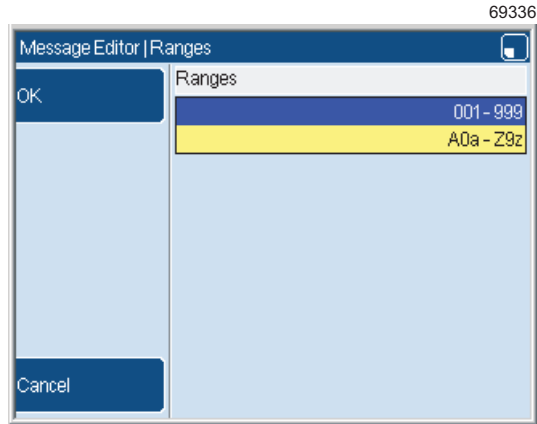


Figure 12. Ranges page

Highlight the required range and press the **OK** key to change the range.



4 Sequential Number configuration

The section 'Create a Sequential Number' beginning on page 4 tells you how to use the **Insert Sequential Number** page and the **Edit Sequential Number** page. This section tells you how to configure the settings for a Sequential Number field.

4.1 Configuration options

The **Insert Sequential Number** page is like the **Edit Sequential Number** page, but some options are different. These pages contain the following options.

4.1.1 Edit Ranges

NOTE: This option is not available on the 5900 printer.

This option is in the **Insert Sequential Number** page and in the **Edit Sequential Number** page. Select this option to display the **Ranges** page.

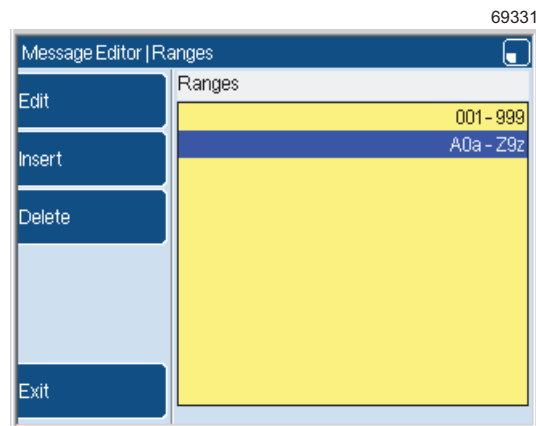


Figure 13. Ranges page showing two ranges

Use the arrow keys to highlight one of the ranges, then select one of the following options.

Edit

Use this option to change the Start and End numbers for the highlighted range.

Insert

Use this option to insert a new range.

Delete

Use this option to delete the highlighted range from the Sequential Number field.



4.1.2 Start

This option is in the **Insert Sequential Number** page. Use this option to enter the first item in the range. The format of the Start number controls the format of the End number.

NOTE: You can enter a maximum of 15 characters in the Start number and the End number fields.

- The Start number and the End number have the same number of characters. To create a range that starts at 1 and ends at 999, enter "001" in the Start number.
- If you need any format characters, insert these characters in the Start number.
- The printer does not change lower case letters to upper case letters (for example "a" to "A"), or upper case to lower case.

4.1.3 End

This option is in the **Insert Sequential Number** page.

The printer uses the Start number to calculate the End number automatically, but you can change the End number if necessary.

If the Start number contains any format characters, the printer always inserts these characters into the same positions in the End number.

4.1.4 Remove Leading Zeros

NOTE: The **Remove Leading Zeros** option is *not* available if any range in the Sequential Number includes a character that is not a number. The **Remove Leading Zeros** option is *not* available if the Sequential Number includes more than one range.

If you set this option to Yes, and the first characters in the number are zeros, the printer does not print these zeros. For example:

- "0008" is changed to "8".
- "0010" is changed to "10" (the third zero is not changed).

NOTE: The zero is *not* removed if the range is 0 to 9.

4.1.5 Interval

The Interval value is the size of the increase (or decrease) in the number at each occurrence of the trigger event. The following examples show how the Interval value changes the count sequence for numbers and letters.

Interval	Numbers	Letters
1	1, 2, 3, 4,...	a, b, c, d,...
2	1, 3, 5, 7,...	a, c, e, g,...
3	1, 4, 7, 10,...	a, d, g, j,...

4.1.6 Repeats

The Repeats value controls how many trigger events occur for each change in the number. The following examples show how the Repeats value changes the count sequence for numbers and letters.



Repeats	Numbers	Letters
1	1, 2, 3,...	a, b, c,...
2	1, 1, 2, 2, 3, 3,...	a, a, b, b, c, c,...
3	1, 1, 1, 2, 2, 2, 3, 3, 3,...	a, a, a, b, b, b, c, c, c,...

NOTE: The maximum number of repeats is 31.

4.1.7 Next Trigger

Use this option to define the trigger signal that the printer uses to update the number. The trigger types that are available are described in 'Trigger types' on page 14.

4.1.8 Reset Trigger

Use this option to define the trigger signal that the printer uses to reset the number. The trigger types that are available are described in 'Trigger types' on page 14.

4.1.9 Add More Ranges

NOTE: This option is not available on the 5900 printer.

Select this option to add another range to the Sequential Number. The existing ranges and the new range must use the same settings—only the Start and End numbers are different.

4.1.10 Options

Select this option to display the **Options** page for the Sequential Number field.

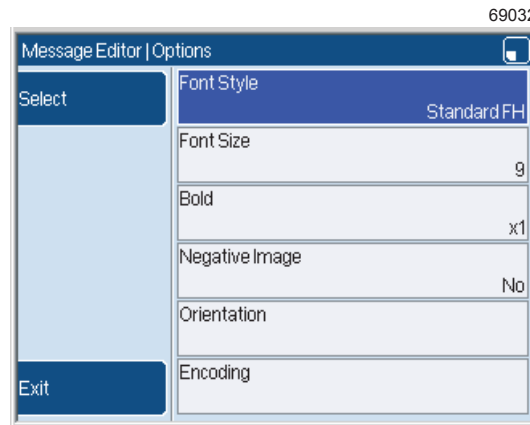


Figure 14. Options page

This page is like the **Options** page for other field types. The **Options** page is described in the *Linx 5900 & 7900 Quick Start Guide*.

4.1.11 Conversion

This option is used in cable printing applications, where a distance measurement is required. You can change the value of a sequential number in one set of measurement units to its equivalent value in another set of measurement units. For example, if the sequential number is '1' and the conversion value is set to 'Metres to Feet', the printed value will be '3.3' (that is, the number of feet in a metre).



The available conversion options are shown in Figure 15.

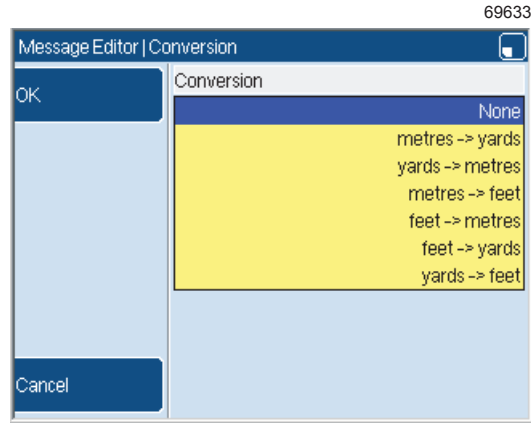


Figure 15. Conversion page

4.2 Trigger types

You can define the trigger event that tells the printer to update the sequential number (**Next Trigger**) or reset the sequence to the start (**Reset Trigger**). The trigger setup is the same for both the **Next Trigger** option and the **Reset Trigger** option.

When you select either the **Next Trigger** option or the **Reset Trigger** option, the printer displays the **Trigger** page.

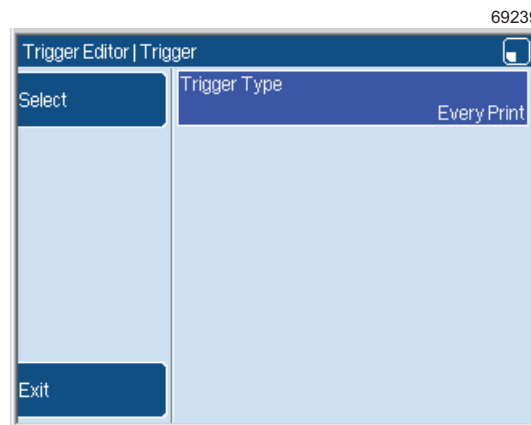


Figure 16. Trigger page: Every Print



Select the **Trigger Type** option to display a list of the trigger types that are available.

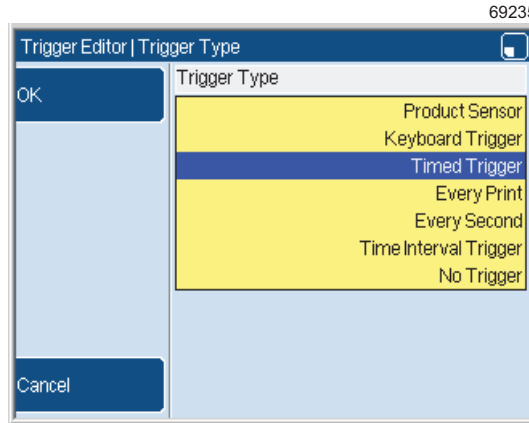


Figure 17. Trigger Type page

The trigger types that are available are as follows.

Product Sensor

The printer updates or resets the number when a signal is received from the product sensor. (For some applications the **Product Sensor** trigger and the **Every Print** trigger give the same result.)

If you use this type of trigger, the printer displays an additional option: **Product Sensor**.

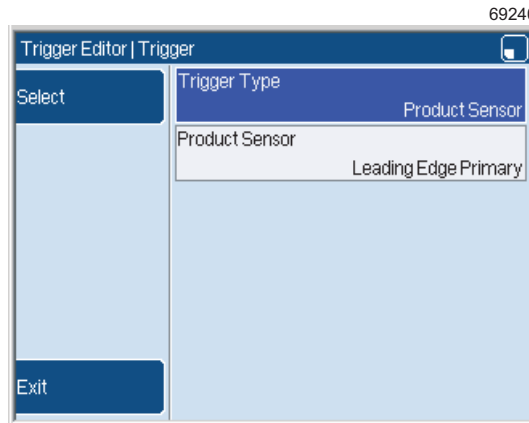


Figure 18. Trigger page: Product Sensor



Use the **Product Sensor** option to define the trigger signal that you use.

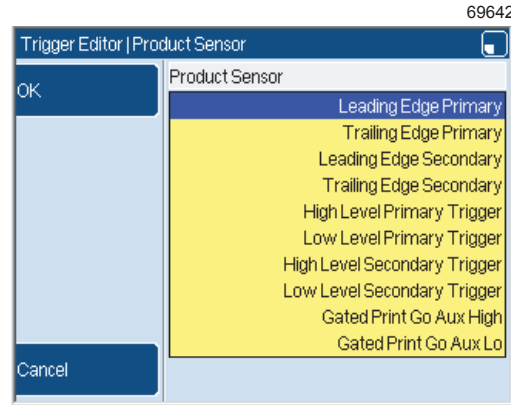


Figure 19. Trigger Editor: Product Sensor page

The trigger signal can be any of the following.

Leading Edge Primary

The rising edge of the signal from the Primary sensor.

Trailing Edge Primary

The falling edge of the signal from the Primary sensor.

Leading Edge Secondary

The rising edge of the signal from the Secondary sensor.

Trailing Edge Secondary

The falling edge of the signal from the Secondary sensor.

High Level Primary or Secondary

The Primary or Secondary sensor detects the presence of a product (the signal is active).

Low Level Primary or Secondary

The Primary or Secondary sensor does *not* detect the presence of a product (the signal is not active).

Gated Print Go Aux High

The 'gated' trigger types are available only for the **Next Trigger** option.



If you select this option, the printer displays an information page.

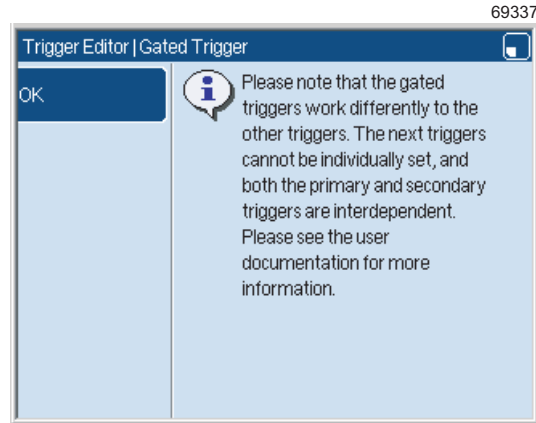


Figure 20. Gated triggers information page

NOTE: You cannot use the 'gated' trigger types unless the trigger type for the **Reset Trigger** option is 'No Trigger'.

In this mode, the field is updated at each print unless the secondary trigger device is in the high-level state.

Gated Print Go Aux Lo

This setting is like the 'Gated Print Go Aux High' setting, but in this mode, the field is updated at each print unless the secondary trigger device is in the low-level state.

Keyboard Trigger

The printer updates or resets the number when you generate a keyboard trigger signal. (To generate a keyboard trigger signal, press the [alt] key and the [T] key together.)

Timed Trigger

The printer updates or resets the number at a fixed time every day, or on the same day of every week, month, or year.

If you use this type of trigger, the printer displays additional options that you must set, as follows:

Timed Trigger

Select Daily, Weekly, Monthly, or Yearly.

Time

Set the time of day at which the trigger occurs.

Day of Week

If you set the **Timed Trigger** option to "Weekly", use this option to set the day of the week for the trigger.



Day of Month

If you set the **Timed Trigger** option to “Monthly”, use this option to set the day of the month for the trigger. The range of allowed values is 1 to 31, or “EndofMonth” (the last day of the month).

Month

If you set the **Timed Trigger** option to “Yearly”, use this option to set the month for the trigger. Select the month from the list that is displayed.

Every Print

The printer updates or resets the number at every print. If the number is reset at every print, the number does not change. The printer prints only the first number in the first range.

Every Second

The printer updates or resets the number every second. If the number is reset every second, the printer cannot print more than the first numbers in the first range.

Time Interval Trigger

The printer updates or resets the number at fixed time intervals. If you use this type of trigger, the printer displays additional options that you must set, as follows:

Start Time

Use this option to set the time at which the first trigger occurs.

Time Interval

Use this option to set the time interval between triggers. The time interval format is “HH:MM:SS”.

No Trigger

If you set the **Next Trigger** option to this trigger type, the number does not change and the printer always prints the same number.

If you set the **Reset Trigger** option to this trigger type, the sequence is not reset and the printer prints the whole sequence.

Linx 5900 & 7900



How To Create a Remote Field

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes the remote fields in the 5900 and 7900 printers.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About remote fields

A remote field in a message reserves an area that you can use for data that is downloaded from a remote computer. A single message can have more than one remote field, and you can use the remote field data in more than one message.

NOTE: You can use a maximum of 32 buffered remote fields.

2.1 Data transmission

The printer cannot receive remote data unless an enabled remote protocol is in use. This protocol can be either of the following:

- Remote Communications Interface (RCI), which is a standard feature on the 5900 and 7900 printers (you do not need a configuration code). Use this protocol for buffered remote fields. Refer to the *Linx Remote Communications Interface Reference Manual (MP65969)* for more information about the RCI protocol.
- QuickSwitch. To use QuickSwitch, you must configure the printer correctly. QuickSwitch is a standard feature on the 7900 printer and an option on the 5900 printer (that is, you need a configuration code).

NOTE: If you use both the Linx 6200 printer and the Linx 5900 or 7900 printer, remember that the remote fields in these printers are different. The *buffered remote* fields in the 5900 and 7900 printers are like the *remote* fields in the 6200 printer. For compatibility, use the RCI protocol with a buffered remote field. If you use only the 5900 or 7900 printer, use QuickSwitch with a remote field. QuickSwitch gives you a simple method for the connection of an external data source like a bar code reader.

2.2 Create a remote field

The following example shows how you create a remote field. You use the same method to create a buffered remote field, but some page titles are different.

- 1 At the **Print Monitor** page, select **Message Store > New** to display the **Message Editor** page with a new, blank message.

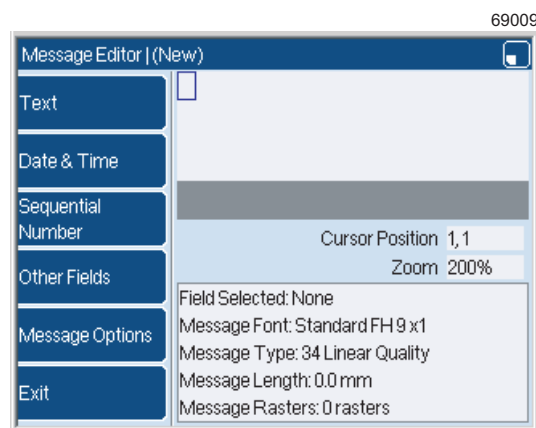


Figure 1. Message Editor page

How To Create a Remote Field



- Press the **Other Fields** key to display the **Insert Other Fields** page.

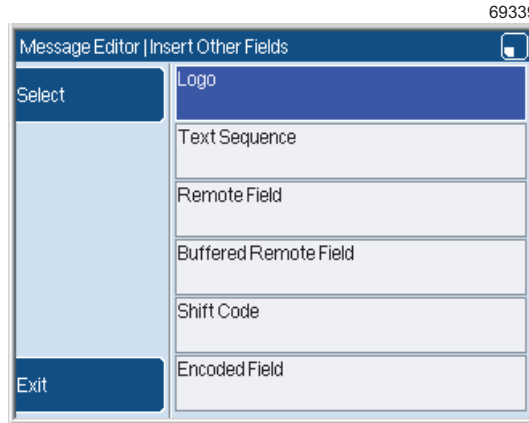


Figure 2. Insert Other Fields page

NOTE: Not all the fields shown in Figure 2 are available on the 5900 printer.

- Select the **Remote Field** option to display the **Insert Remote Field** page.

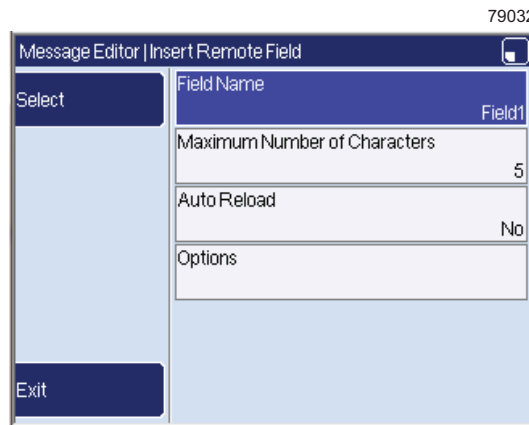


Figure 3. Insert Remote Field page

The options on this page are described in the next section. The default settings are used in this example.

NOTE: You cannot use the default name in Figure 3 for a buffered remote field (see 'Field Name' on page 6).

How To Create a Remote Field



- 4 Press the **Exit** key to accept the default settings and return to the **Message Editor** page.

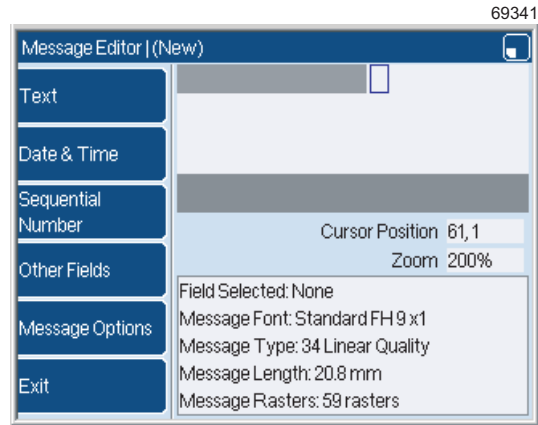


Figure 4. Message Editor page with remote field

NOTE: The **Message Editor** page shows a grey box to indicate the size of the field. The field is blank in the printed message and in the **Print Monitor** page unless the field contains some data. When the field contains some data, the **Print Monitor** page shows the data in the remote field.

The size of the rectangle in Figure 4 depends on the value you entered in the **Maximum Number of Characters** option.



2.3 Edit the field

You use the same method to edit a remote field or a buffered remote field, but some page titles are different.

At the **Message Editor** page, select the field to see the edit options.

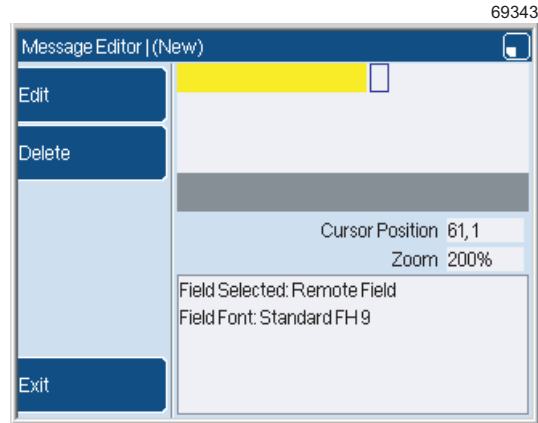


Figure 5. Remote field selected

To delete the field, press the **Delete** key. To remove the highlight, press the **Exit** key.

Select the **Edit** option to display the **Edit Remote Field** page.

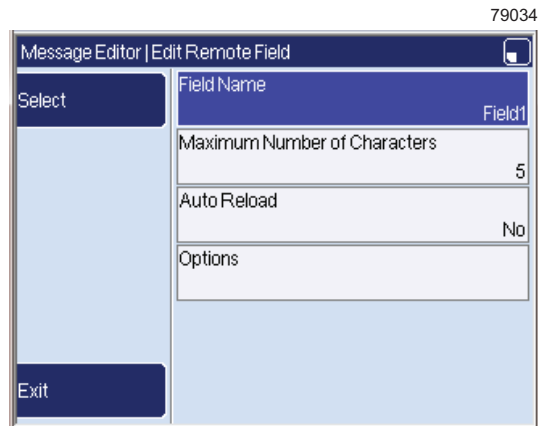


Figure 6. Edit Remote Field page

The **Edit Buffered Remote Field** page has the same options. The options are described below.

2.3.1 Field Name

Use this option to set the name of the field. The remote computer uses this name to identify the destination field for the data.

Buffered remote field

You must use the correct format when you enter the name—use “RCI RemoteField1”, “RCI RemoteField2”, “RCI RemoteField3”,...



2.3.2 Maximum Number of Characters

Use this option to set the maximum number of characters that the remote computer can download into this field. The printer uses this value to calculate the space that is needed in the message.

2.3.3 Auto Reload

If this option is set to **Yes**, when you power down the printer any data entered in the remote field is saved. The data in the field is loaded again when you power up the printer. If this option is set to **No**, data entered in the remote field is not saved when you power down the printer.

2.3.4 Options

Select this option to display the **Options** page for the remote field.

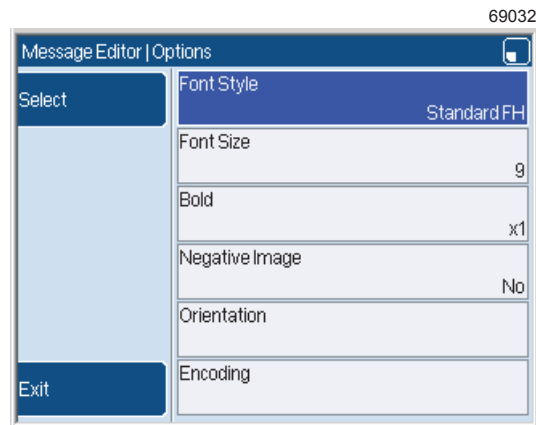


Figure 7. Options page

This page is like the **Options** page for other field types. The **Options** page is described in the *Linx 5900 & 7900 Quick Start Guide*.



3 Remote Fields Editor

The Remote Fields Editor allows you to use the keyboard to edit the contents of any remote fields in the current message. (You *cannot* use this feature with a *buffered* remote field.) This feature is an additional option in the **Print Settings** page.

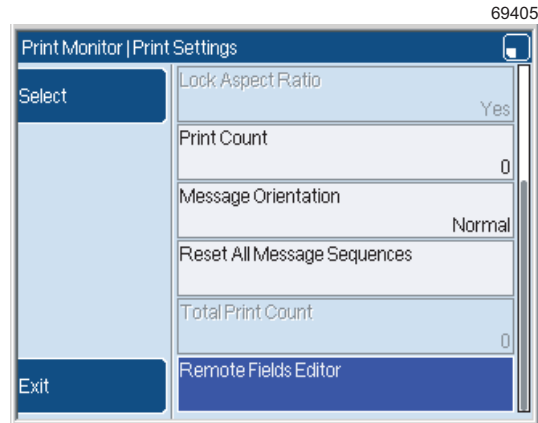


Figure 8. Print Setting page: Remote Fields Editor option

The option is not displayed if the current message does not contain any remote fields.

3.1 Remote Fields Editor page

Figure 9 shows the **Remote Fields Editor** page. The page shows a list of the Remote fields that are in the message and the current contents of each field. In Figure 9 the message contains two remote fields. Field1 contains the three characters 'AAA' and Field2 contains the three characters 'XYZ'.

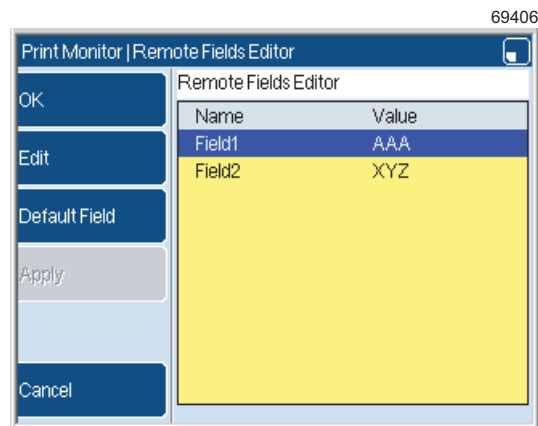


Figure 9. Remote Field Editor page



3.1.1 Edit the field

Highlight a field and press the **Edit** key to edit the field contents. The printer displays the **Remote Field Edit** page with the name of the field at the top.

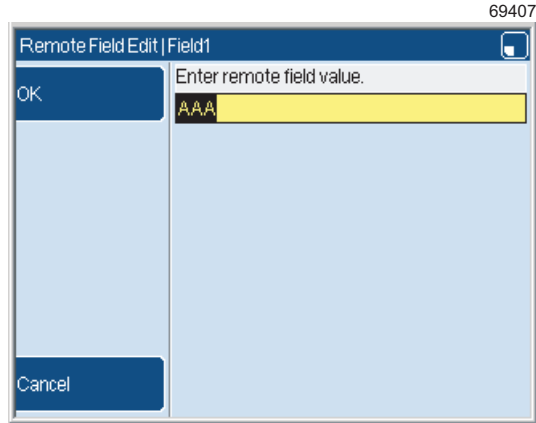


Figure 10. Remote Field Edit page

You can enter some characters in the box to replace the contents of the field. For example, you can enter the text "ABC" as shown below. The number of characters cannot be greater than the field length. (The field length was set when the field was created in the **Message Editor** page.)

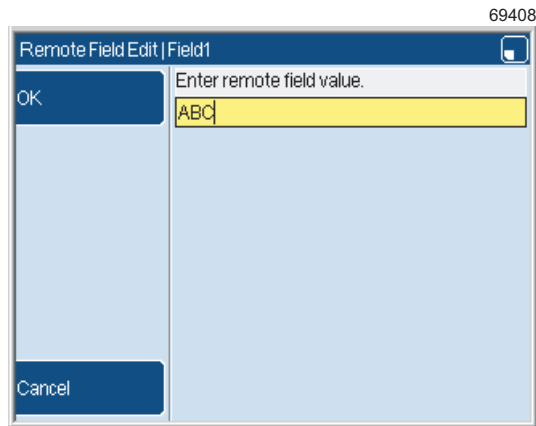


Figure 11. Remote Field Edit page with new data

How To Create a Remote Field



Press the **OK** key to return to the **Remote Fields Editor** page. The **Remote Fields Editor** page shows the new data, but the field is *not* updated at this time.

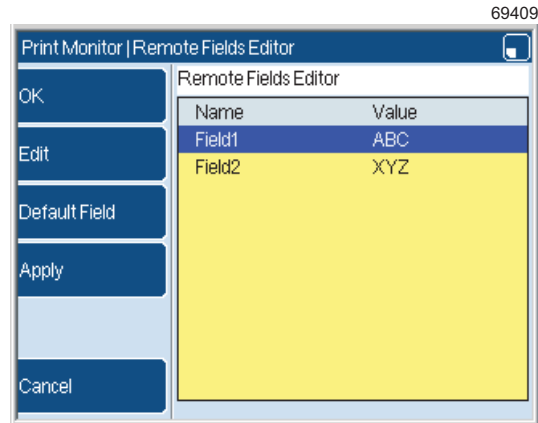


Figure 12. Remote Fields Editor page with new data

Do one of the following:

- Press the **Apply** key. The printer updates the field and disables the **Apply** key as shown below.

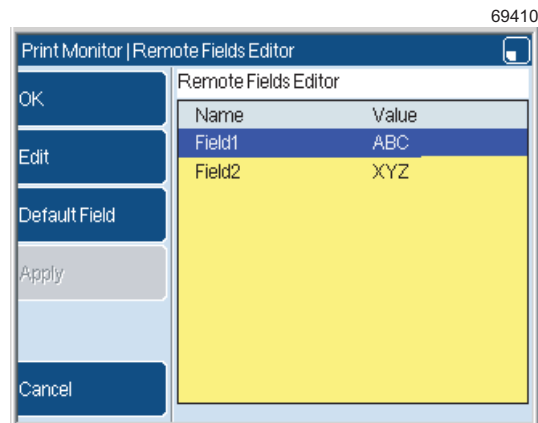


Figure 13. Remote Fields Editor page

- Press the **OK** key. The printer updates the field and returns to the **Print Settings** page.
- Press the **Cancel** key. The printer does not update the field. The new data is discarded and the printer returns to the **Print Settings** page.

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At the **Print Settings** page, press the **Exit** key to return to the **Print Monitor** page. The page shows the updated field data.

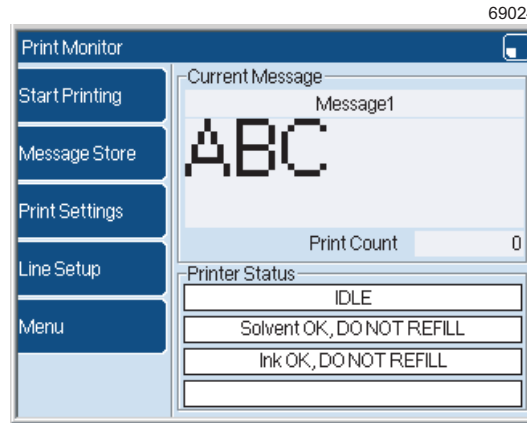


Figure 14. Print Monitor page

3.1.2 Default key

If the current message contains one remote field, you can use a keyboard shortcut to edit this field at the **Print Monitor** page. At the **Print Monitor** page, press the [alt] key and the [R] key together to edit the field.

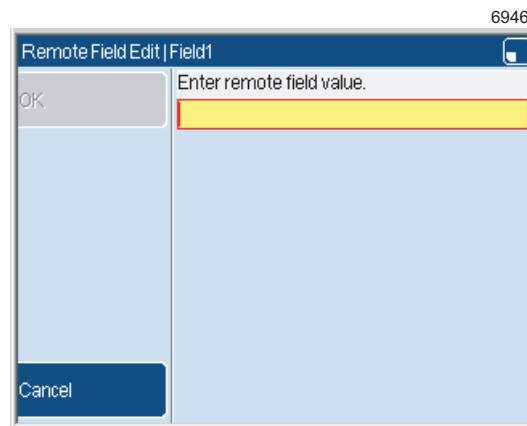


Figure 15. Remote Field Edit page

Enter the required data then press the **OK** key to return to the **Print Monitor** page. The page shows the new data that you entered into the field.

How To Create a Remote Field



If the current message contains more than one remote field, you must tell the printer which field is edited when you use the keyboard shortcut. To set the required field, highlight the field in the **Remote Fields Editor** page and press the **Default** key. The printer puts an asterisk before the field name as shown below.

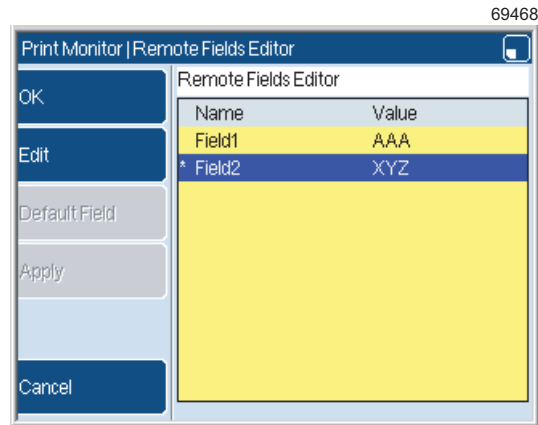


Figure 16. Remote Fields Editor page: default field

The highlighted field becomes the default field. At the **Print Monitor** page, you can use the keyboard shortcut to edit this field.

NOTE: You can use the name of the default field for a remote field in another message. If you select that message as the current message, you can use the keyboard shortcut to edit the field.

The printer can store a number of messages that have remote fields, but you cannot define more than one default field in the printer. When you define a new default field, the printer removes any previous default assignment.

Linx 5900 & 7900



How To Use the Parallel I/O Option

LINX

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1 Introduction

This document tells you how you configure the PIO (Parallel Input/Output) option on the 5900 and 7900 printer.s

You need a User Level C password to perform all the tasks that are described in this document.



IMPORTANT: The PIO option has some configuration links on the PCB. The link settings depend on how you use the PIO option. Read this document carefully and make sure that the link positions are correct for your application before the PCB is installed in the printer.

(Normally, a maintenance technician performs the installation. The installation procedure is not described in this document.)

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About the Parallel I/O option

The Parallel I/O (Parallel Input/Output) option allows a remote host device (PLC or computer) to control the printer or to monitor the printer status. The Parallel I/O unit has eight inputs and eight outputs.

You can assign the inputs to a number of printer functions. For example:

- Start or stop the printer.
- Select a message from a list.

You can connect a number of photocells to the inputs to detect the size of the product. The printer uses the photocells states to select the correct message for each size automatically.

You can use each output to indicate an event that you define. For example:

- A warning or failure condition.
- The status of the ink jet.

2.1 Applications

The following examples are typical applications for the PIO option.

- You can use a Programmable Logic Controller (PLC) to control the printer. The PLC can stop the printer at the end of the day, or pause the print if the machine guards are open.
- You can use a group of photocells to detect the size of the product and select the correct message for the product.

2.2 Components

The Parallel I/O option is supplied as a kit of parts, as shown in the following illustration.

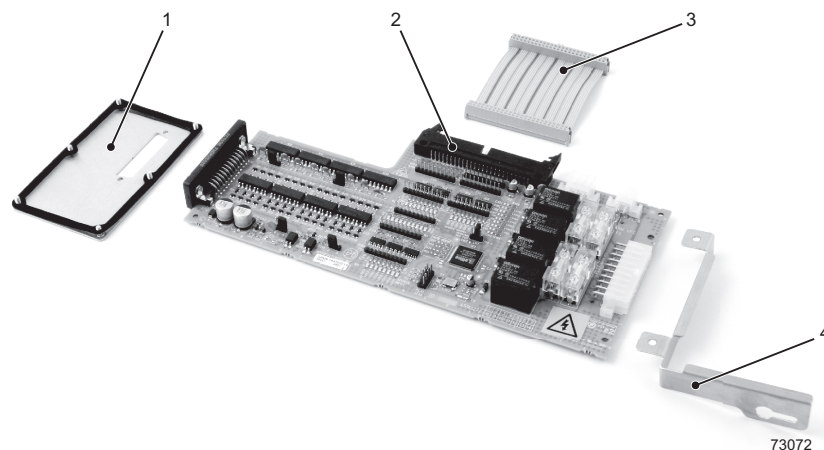


Figure 1. PIO Option

The kit contains the blanking plate (1), the main PCB (2), the IDC connector (3), and the fixing bracket (4).



2.2.1 PCB layout



CAUTION: Static-Sensitive Devices. The PCB contains static-sensitive devices. Take the following antistatic precautions when PCBs are touched. Wear an antistatic wrist strap and connect the lead to a good electrical earth. Always hold PCBs by their edges and do not touch the components, printed circuit tracks or connector pins.

The following illustration shows the layout of the PCB.

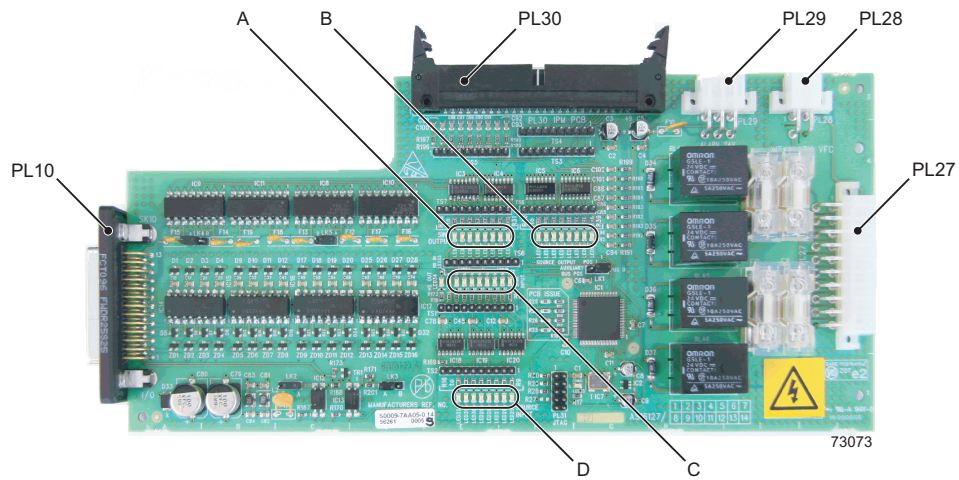


Figure 2. Layout of Parallel I/O PCB

The following items are identified in Figure 2.

Item	Description
PL10	External connector (rear panel)
PL27	Volt-free contact multi-stage alarm
PL28	Internal volt-free contact alarm
PL29	Multi-stage 24V alarm beacon
PL30	IDC connector for data and control signals from the IPM PCB
A	LEDs 1 to 8 (indicators for outputs 1 to 8, sink mode)
B	LEDs 9 to 16 (indicators for outputs 1 to 8, source mode)
C	LEDs 17 to 24 (indicators for inputs 1 to 8, sink mode)
D	LEDs 25 to 32 (indicators for inputs 1 to 8, source mode)

Table 1. Connectors and LEDs on PIO PCB



2.3 Optional accessories

2.3.1 Keypad option

You can fit a keypad to the printer and use the keypad to operate some or all of the inputs manually. You can assign the keypad to some inputs and use a remote host device to operate the other inputs.

2.3.2 Multi-stage alarm option

The standard 5900 and 7900 printers have one alarm output. The Parallel I/O option allows the printer to generate four separate alarm outputs. If the multi-stage alarm option is fitted, you can use the four outputs to indicate four different alarm conditions. The alarm outputs are connected to a special socket at the rear of the printer cabinet. Refer to the section 'Multi-stage alarm connectors' on page 33 for more information about these connections.

2.4 Parallel I/O setup

To configure the Parallel I/O unit from the **Print Monitor** page, press the **Menu** key. Then select **Setup > Parallel I/O** to display the **Parallel I/O** page.

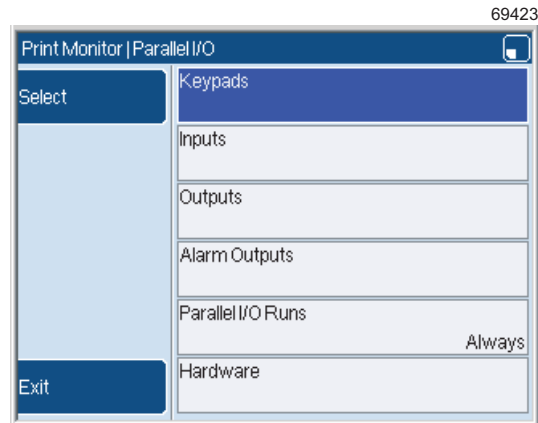


Figure 3. Parallel I/O page



2.4.1 Configure a keypad

You can use the PIO option to connect a keypad. The keypad uses some or all of the inputs and outputs. The following example shows a keypad that is connected to some inputs (A) and some outputs (B). The keypad in this example uses three inputs (1 to 3) and four outputs (1 to 4).

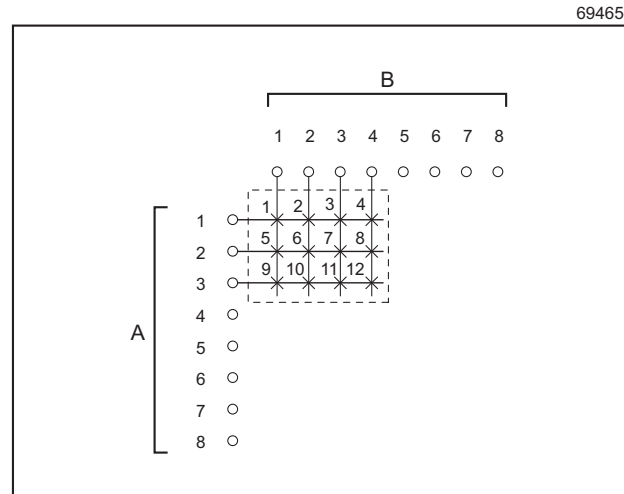


Figure 4. Keypad connections and key numbers

This arrangement provides $3 \times 4 = 12$ keys.

You must assign a continuous range of inputs and a continuous range of outputs (for example, inputs 1 to 4, or outputs 3 to 6). You cannot assign an input or output range that is not continuous (for example, outputs 1 and 3).

NOTE: If you connect a keypad, enter the keypad information before you configure the inputs and outputs.

Refer to 'Link positions' on page 29 and make sure that you set the following links on the PIO PCB before the PCB is installed:

- LK2: Position A (selects the internal 0 volts connection for the inputs)
- LK3: Position A (selects the internal 24 volts connection for the inputs)
- LK4: Position A (selects the internal 24 volts connection for the outputs)
- LK5: Position A (selects the internal 0 volts connection for the outputs)

How To Use the Parallel I/O Option



To configure the software, perform the following steps:

- 1 Select the **Keypads** option to display the **Edit Keypads** page.

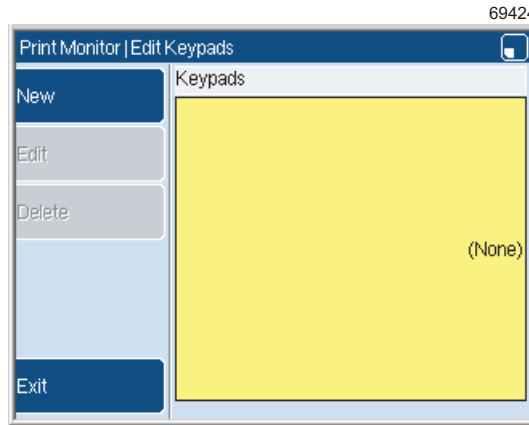


Figure 5. Edit Keypads page

- 2 Press the **New** key and enter the keypad name “LKP07070”, as shown in the example in Figure 6.

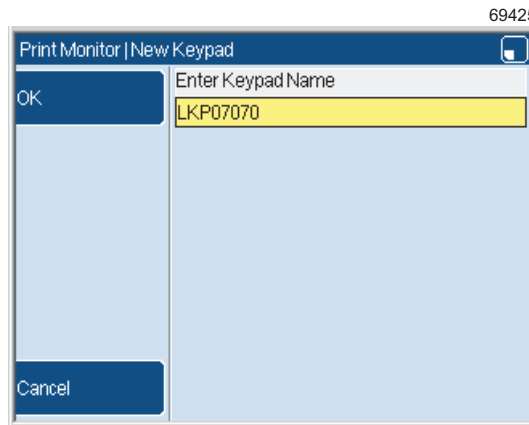


Figure 6. New Keypad page: keypad name

All keypad names use the prefix “LKP”, followed by a five-digit number. The five digits have the following functions:

- Digit 1 refers to the printed circuit board for the printer and must be set to zero.
- Digits 2 and 3 define the range of inputs that the keypad uses. For example if the keypad name is “LKP07364”, the keypad uses the inputs 7, 6, 5, 4, and 3.
- Digits 4 and 5 define the range of outputs that the keypad uses. For example if the keypad name is “LKP07364”, the keypad uses the outputs 6, 5, and 4.

The printer does not accept a name that is not valid.

How To Use the Parallel I/O Option



- Press the **OK** key to return to the **Edit Keypads** page. The page displays the keypad name that you entered.

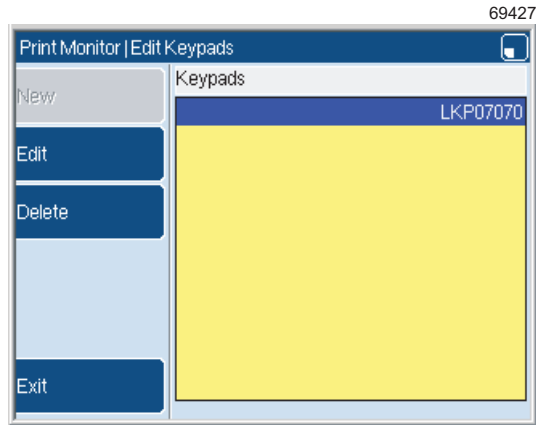


Figure 7. Edit Keypads page

You can use the **New** key to add an additional keypad if some inputs and outputs are available. The **New** key is not available in Figure 7 because the keypad in this example uses all the inputs and outputs.

NOTE: You cannot edit the keypad name on this page. If the name is incorrect, press the **Delete** key to delete the name, and then enter the correct name. (The printer displays a confirmation page before the old name is deleted.)

- Press the **Edit** key to display the function that is assigned to each button (key) on the keypad.

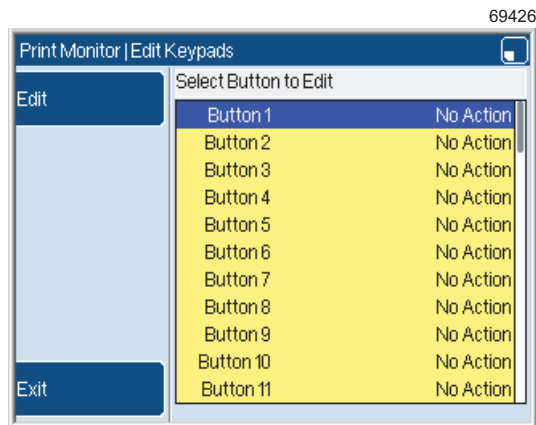


Figure 8. Edit Keypads page: button actions

The number of keypad buttons in this list depends on the keypad type. The default setting for each button is 'No Action'.

How To Use the Parallel I/O Option



- To change the setting, highlight the required button, and then press the **Edit** key to display the **Edit Action** page.

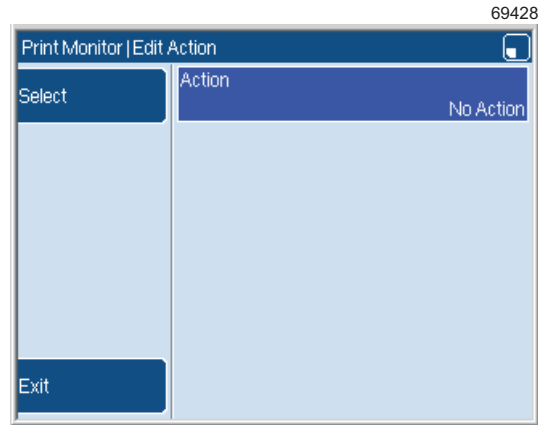


Figure 9. Edit Action page

- Press the **Select** key to display the list of actions.

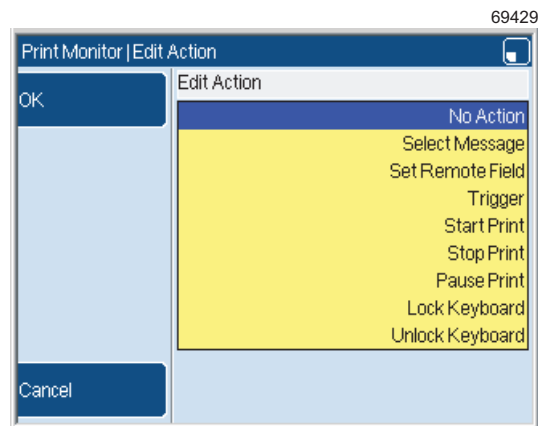


Figure 10. Edit Action page: list of actions

NOTES:

- The 'Start Print' action sets the printer status to "PRINTING", but the current message is not printed until the printer receives a print trigger signal.
- If the printer status is "IDLE", the 'Start Print' action also starts the jet.
- The 'Stop Print' action also stops the jet and starts a shutdown. If a shutdown is not required, use the 'Pause Print' action instead to disable any prints (the printer status becomes "JET RUNNING").
- The 'Select Message' action is not available if the message store is empty.

How To Use the Parallel I/O Option



- 7 Highlight the required action, and then press the **OK** key to assign that action to the keypad button.
- 8 If you use the 'Select Message' action, the printer displays an additional page, as shown below.

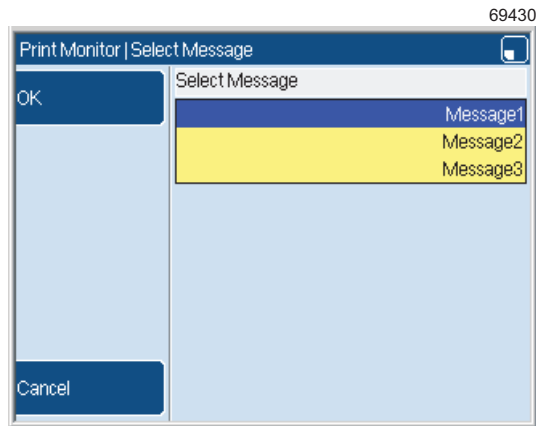


Figure 11. Select Message page

- 9 Highlight the required message and press the **OK** key to return to the **Edit Action** page. The 'Select Message' action has an additional menu option that shows the message that you selected.

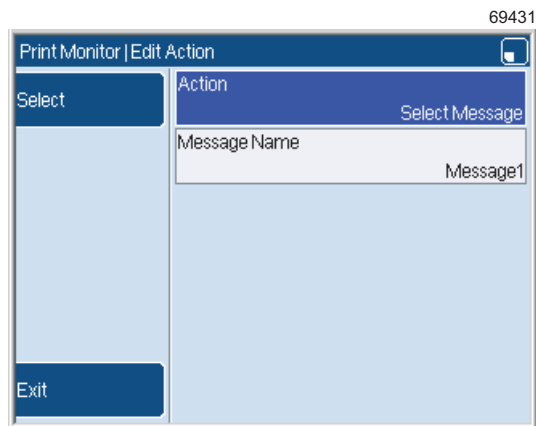


Figure 12. Edit Action page: Select Message

How To Use the Parallel I/O Option



There is an equivalent page for the 'Set Remote Field' action.

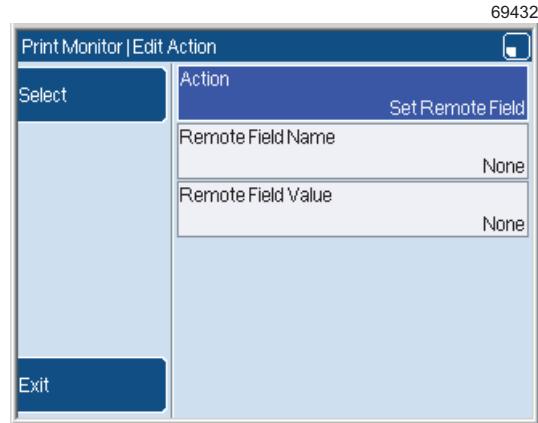


Figure 13. Edit Action page: Select Remote Field

Use this page to set the **Remote Field Name** option to the name of the remote field that you created in the message. Set the **Remote Field Value** option to the required text for the remote field. When the keypad button is pressed, the contents of the remote field are changed to the text that you set.



IMPORTANT: Make sure that the field is a *remote* field and not a *buffered* remote field. To check the type of field, use the Message Editor to open the message, and then highlight the field.

(For more information about remote fields, refer to *How To Create a Remote Field*.)

- 10** Press the **Exit** key to return to the **Edit Keypads** page.

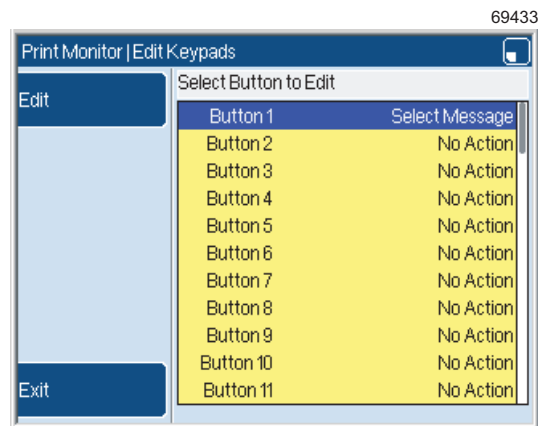


Figure 14. Edit Keypads page

- 11** Do one of the following:
 - To configure another button, highlight the required button, and then repeat steps **5** to **10**.
 - To return to the **Parallel I/O** page, press the **Exit** key two times.



2.4.2 Configure the inputs

Set the links LK2 to LK5 to the default position (A), so that the printer provides the 0 V and 24 V connections. Refer to 'Input connections' on page 29 for information about the input wiring.

To configure the inputs, perform the following steps.

- 1 At the **Parallel I/O** page, select the **Inputs** option to display the **Edit Inputs** page.

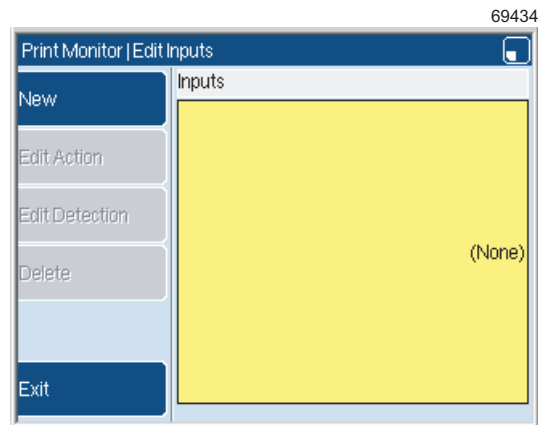


Figure 15. Edit Inputs page

- 2 Press the **New** key to display the **New Input** page.

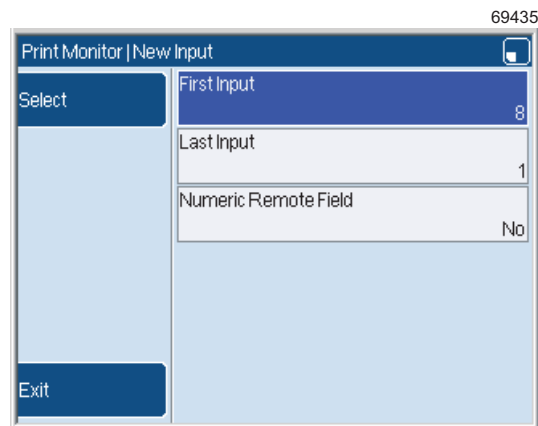


Figure 16. New Input page

This page shows the default values (8 and 1) for the first input and last input of the new range of inputs. In this example, you change these values to 6 and 4, so that the three inputs 6, 5, and 4 are assigned to the new range.

(The **Numeric Remote Field** option is described on page 19.)

How To Use the Parallel I/O Option



- 3 Select the **First Input** option to display the **First Input** page. Highlight the number '6' as shown below.

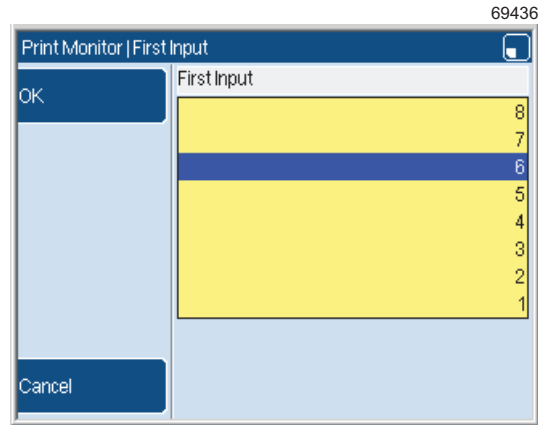


Figure 17. First Input page

- 4 Press the **OK** key to return to the **New Input** page. The **First Input** option is changed to 6.

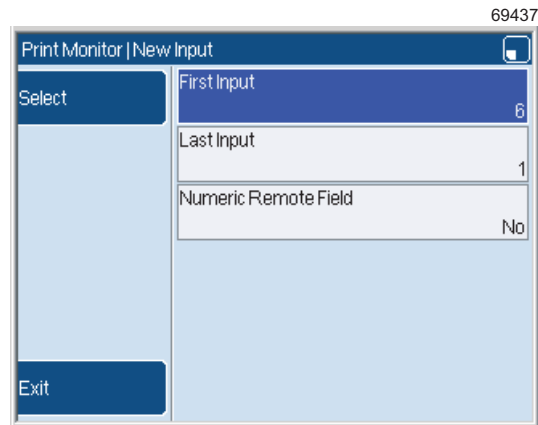


Figure 18. New Input page

- 5 Select the **Last Input** option to display the **Last Input** page. Highlight the number '4' as shown below.

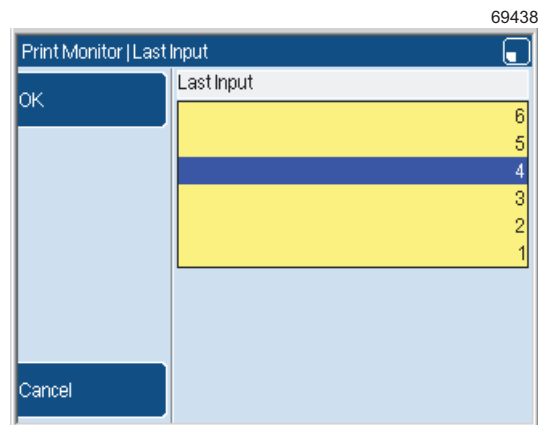


Figure 19. Last Input page

How To Use the Parallel I/O Option



- 6 Press the **OK** key to return to the **New Input** page. The **Last Input** option is changed to 4.

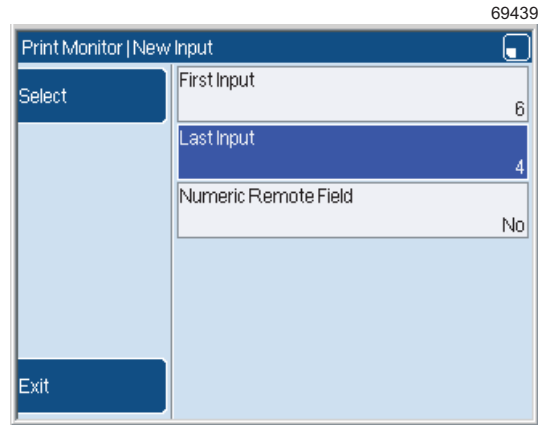


Figure 20. New Input page

- 7 Press the **Exit** key to return to the **Edit Inputs** page. The page shows you the range of inputs that you assigned.

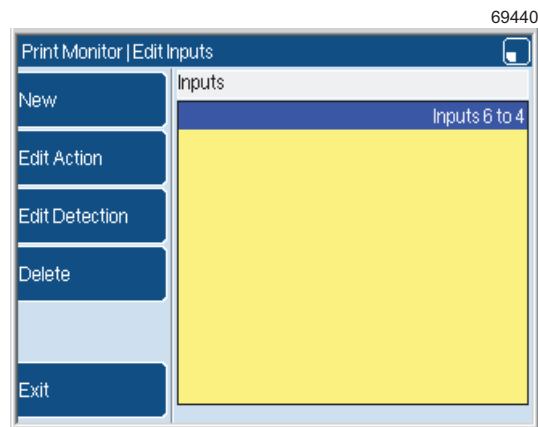


Figure 21. Edit Inputs page

(See 'Define the input actions' on page 15 for a description of the **Edit Action** keys. See 'Define the Detection settings' on page 17 for a description of the **Edit Detection** keys.)

NOTE: You cannot edit the input range on this page. If the range is incorrect, press the **Delete** key to delete the range, and then enter the correct numbers. (The printer displays a confirmation page before the old range is deleted.)

How To Use the Parallel I/O Option



To configure another input or another range of inputs, press the **New** key, and then repeat steps **2** to **7**. If you configure more inputs, the inputs that you assigned earlier (6 to 4) are not available in the **First Input** or **Last Input** pages.

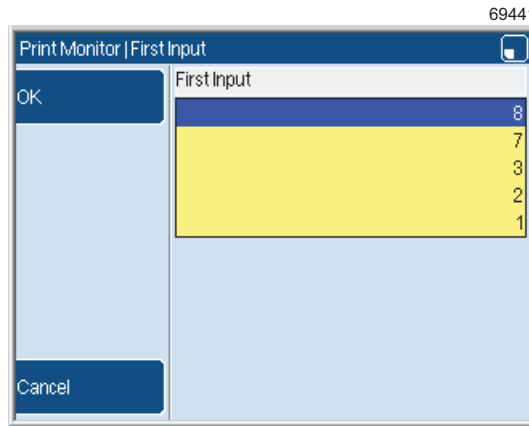


Figure 22. First Input page

Define the input actions

You can assign an action to each combination of input signals. For example:

Inputs 6, 5, 4		
'Source' option	'Sink' option	Selected action
0 0 0	1 1 1	(No action)
0 0 1	1 1 0	Select Message
0 1 0	1 0 1	Start Print
0 1 1	1 0 0	Pause Print

Table 2. Input combinations and selected actions

Three inputs give you eight combinations and allow you to select eight actions (only four combinations are shown here). If you use four inputs, you can select any of the 10 actions that are available.

When the input combination is activated, the printer performs the action that you set.

How To Use the Parallel I/O Option



To configure the inputs, perform the following steps.

- 1 At the **Edit Inputs** page (see Figure 21 on page 14), press the **Edit Action** key to display the following page.

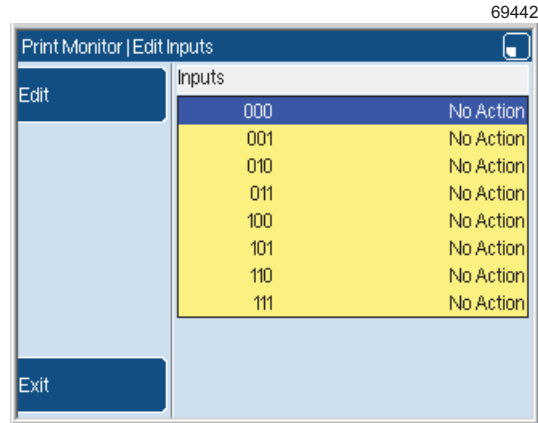


Figure 23. Edit Inputs page: input actions

The number of items in this list depends on the number of inputs that you assigned to this range. The range in this example contains three inputs and each input has two states—On and Off. The list shows all the states that are possible for the three inputs. For example, the first item (“000”) indicates that all the inputs are Off. The last item (“111”) indicates that all the inputs are On.

The second column in the list shows the action that occurs for each combination of input states.

Press the **Edit** key then the **Select** key to display the list of actions.

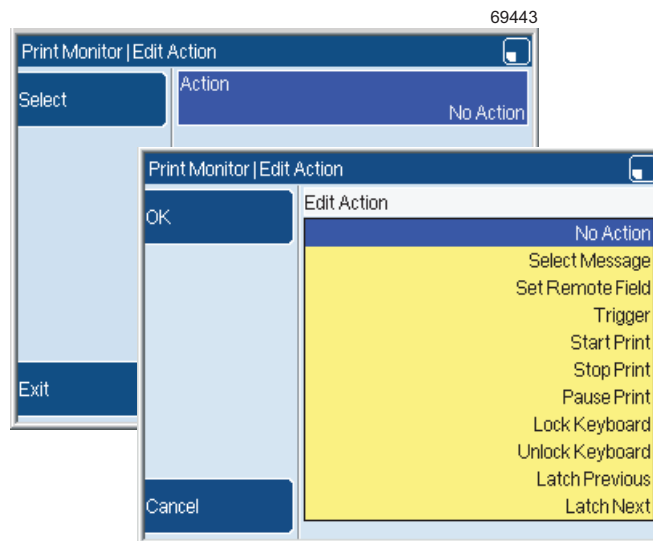


Figure 24. Edit Action page

This page is like the page that you used to define the keypad actions (see Figure 10 on page 9).



- 2 Select the required action (see steps **5 to 10** on page 9 to page 11).

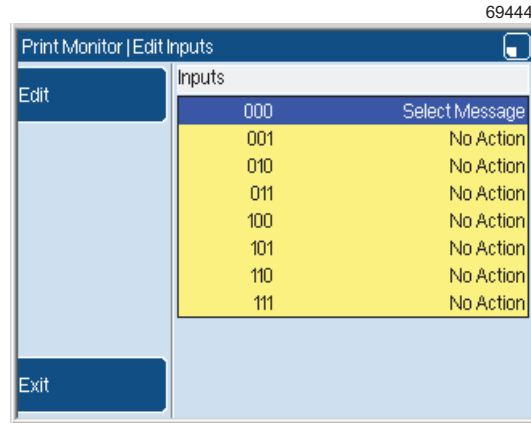


Figure 25. Edit Inputs page: select action

- 3 Do one of the following:
 - Select another combination of input states from the list.
 - Press the **Exit** key to return to the previous page (see Figure 21 on page 14).

Define the Detection settings

You must make sure that the printer can detect the state of the input signal correctly. (Electrical noise or timing problems can cause an error.) You can define the detection method that is used. A reliable detection depends on the combination of the input line state and the change of state of the latch input line (pin 19 in Figure 4 on page 31).

- 1 At the **Edit Inputs** page (see Figure 21 on page 14), press the **Edit Detection** key to display the **Edit Detection** page.

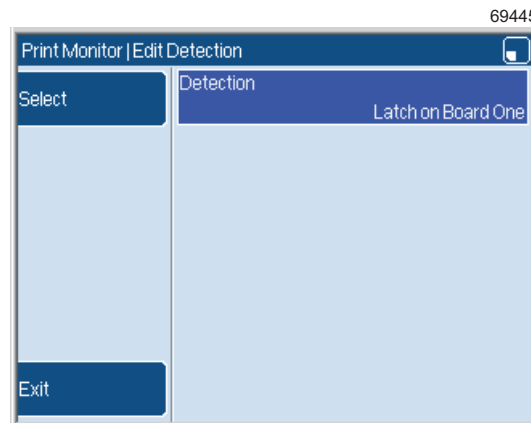


Figure 26. Edit Detection page



- 2 Press the **Select** key to display the **Detection** page.

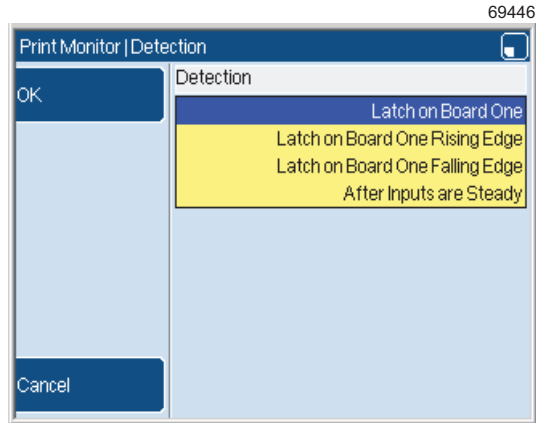


Figure 27. Detection page

The following table shows the detection options that are available. The table also shows the event that makes the printer detect a change in the state of the input line.

Detection option	Detection event
Latch on Board One	The voltage on the latch input line changes from either a high level to a low level, or from a low level to a high level.
Latch on Board One Rising Edge	The voltage on the latch input line changes from a low level to a high level.
Latch on Board One Falling Edge	The voltage on a the latch input line changes from a high level to a low level.
After Inputs are Steady	The input voltage on the selected input is held in the new state for a minimum period. (The After Inputs are Steady option does not use the latch input line.)

Table 3. Detection options for change in input state

(The 'high' level is +24 V and the 'low' level is 0 V.)

- 3 Highlight the detection method that you require and press the **OK** key to return to the **Edit Detection** page.

How To Use the Parallel I/O Option



If you use the **After Inputs are Steady** option, the **Edit Detection** page has an additional option.

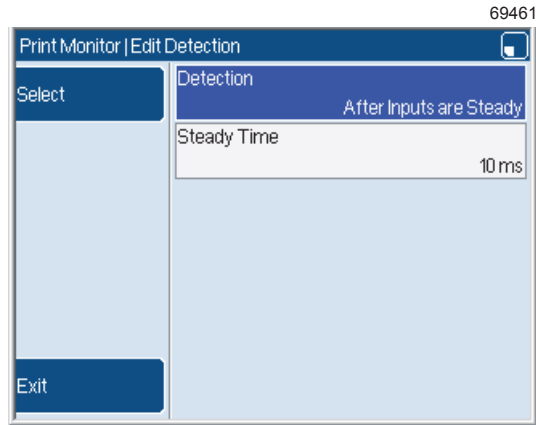


Figure 28. Edit Detection page

- 4 Set the **Steady Time** option as required to define the minimum period. You can set the value to 10, 50, or 100 milliseconds. (If you use a relay, the **Steady Time** option provides a debounce period for the relay contacts.)
- 5 Press the **Exit** key to return to the **Edit Inputs** page.

Numeric Remote Field

You can use a range of inputs to generate a numeric value which is put into a remote field. The value is encoded as a binary number. For example, a range of four inputs can generate any binary number from '0000' to '1111' (decimal 0 to 15).

To use this feature, perform the following steps.

- 1 Set the input range (for example 8 to 1) as shown in 'Configure the inputs' on page 12.

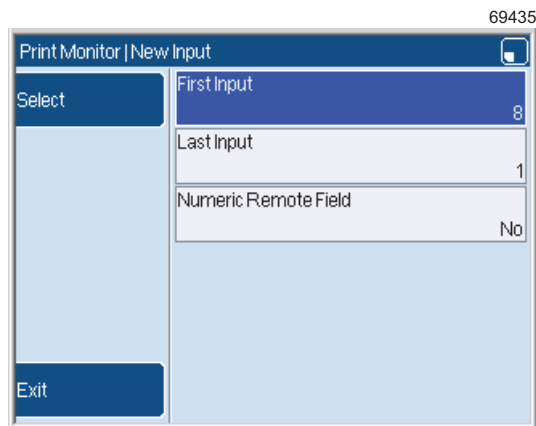


Figure 29. New Input page

- 2 Set the **Numeric Remote Field** option to Yes.



- 3 Press the **Exit** key to return to the **Edit Inputs** page.

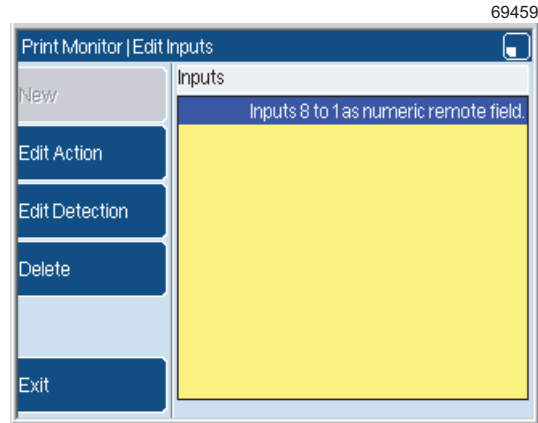


Figure 30. Edit Inputs page

The page shows the range of inputs that you use for the numeric remote field.

- 4 Press the **Edit Action** key to display the **Numeric Remote Field** page.

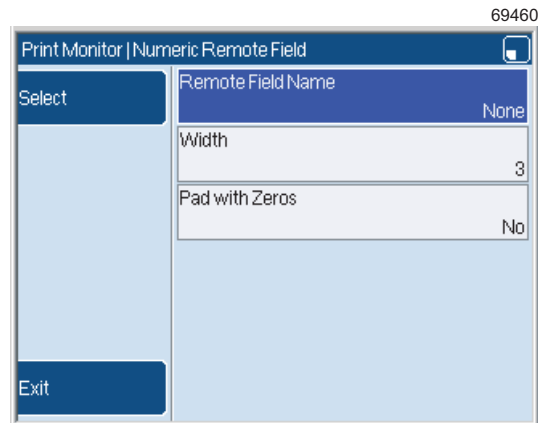


Figure 31. Numeric Remote Field page

- 5 Select the **Remote Field Name** option and enter the field name.
- 6 Select the **Width** option and enter the width of the field (number of characters).
- 7 Select the **Pad with Zeros** option and set the option to either of the following values:
 - Yes** The printer adds some zeros to fill the field if the number is smaller than the width of the field. For example if the field width is nine characters and the number is 15, the field is set to '00000015'.
 - No** The printer does not add zeros to the field.
- 8 Press the **Exit** key to return to the **Edit Inputs** page.



2.4.3 Configure the outputs

You can use any output to indicate an event that you define (if the output is not assigned to a keypad). The outputs are used separately, and are not assigned to any range.

Event

- 1 At the **Parallel I/O** page, select the **Outputs** option to display the **Edit Outputs** page.

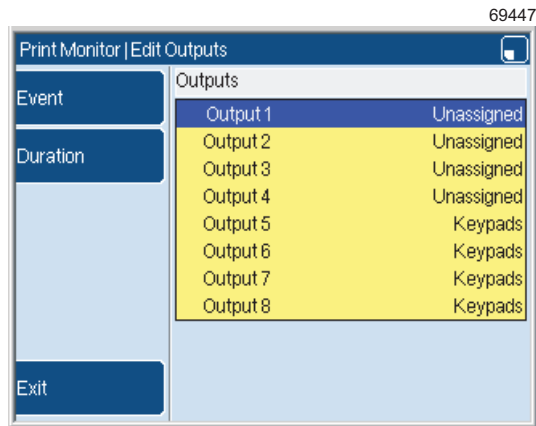


Figure 32. Edit Outputs page

You can assign only the outputs 1 to 4 in this example, because the keypad uses four outputs (outputs 5 to 8). If you highlight any of the other outputs (5 to 8), only the **Exit** key is available—the other keys are disabled.

- 2 To assign an output, highlight the required output and press the **Event** key. The printer displays the **Edit Outputs: Event** page.

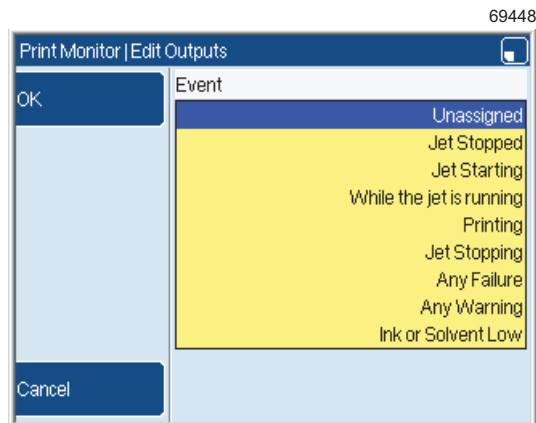


Figure 33. Edit Outputs: Event page



- Highlight one of the events in the list, and then press the **OK** key to select that event and return to the **Event** page.

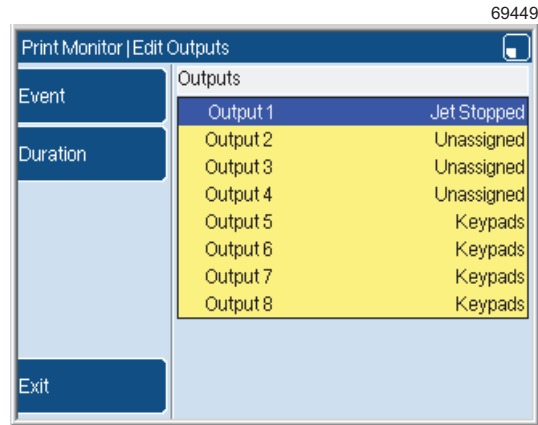


Figure 34. Edit Outputs: Outputs page

In Figure 34, Output 1 is activated if the printer status is "IDLE".

Duration

The output signal can be a single pulse, a series of pulses, or a continuous level. You can use a different type of signal for each output.

- Press the **Duration** key then the **Select** key to see the available signal types.

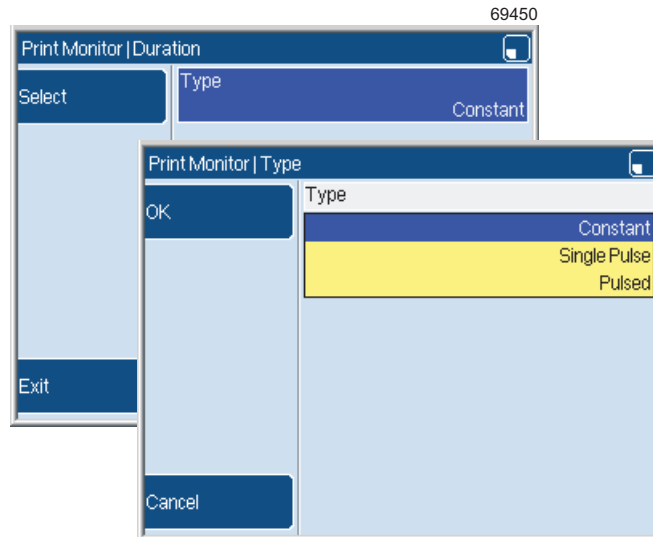


Figure 35. Duration: Type page



- 2 Highlight the required type, and then press the **OK** key to return to the **Duration** page. If you selected the **Pulsed** option, the page shows two more options—**Duration** and **Pulse Count**.

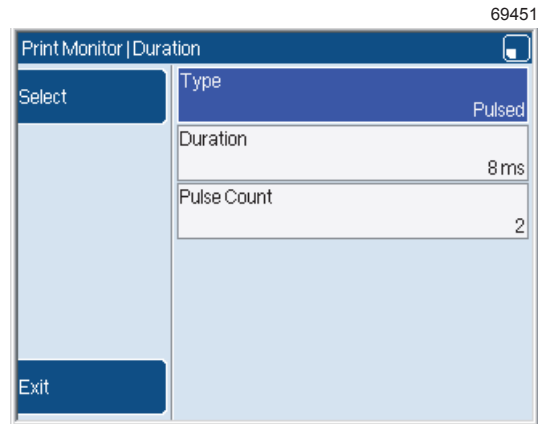


Figure 36. Duration page: Pulsed type

The **Duration** option shows the length of each output pulse (in milliseconds). The **Pulse Count** option shows the number of pulses that are generated when the output is activated.

If the output signal is set to Single Pulse, this page does not show the **Pulse Count** option. If the output signal is set to Constant, only the **Type** option is shown.

- 3 Press the **Exit** key to return to the **Edit Outputs** page.



2.4.4 Configure the multi-stage alarm

(Refer to the *Linx 7900 Maintenance Manual* for information about the hardware connections.)

Perform the following steps to configure the multi-stage alarm.

- 1 At the **Parallel I/O** page, select the **Alarm Outputs** option to display the following page.

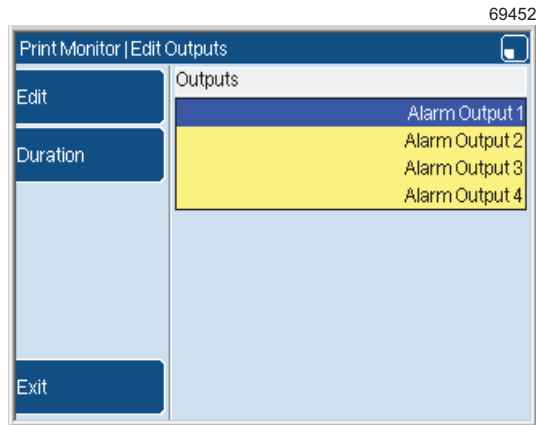


Figure 37. Edit Outputs: Outputs page

- 2 Highlight one of the outputs in the list, and then press the **Edit** key to display the following page.

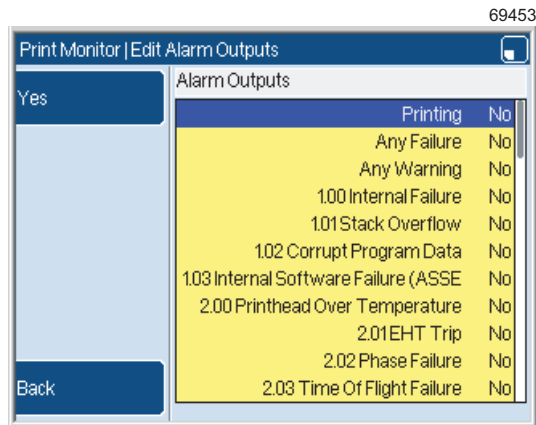


Figure 38. Alarm Outputs page

This page shows the printer states that cause the activation of the alarm output. The default setting is 'No' for each item in the list (as shown on the right side of the page). This setting indicates that no printer state is assigned to the alarm and the alarm output is never activated.

How To Use the Parallel I/O Option



- To change a setting, highlight one of the items in the list and press the **Yes** key:

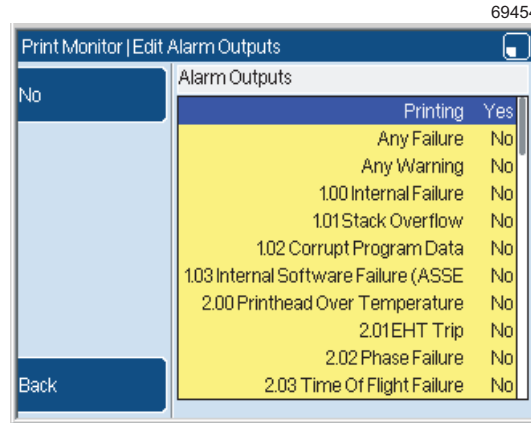


Figure 39. Alarm Outputs page

The key label changes to 'No'. If you press the key again, the setting changes to 'No' and the key label changes to 'Yes'.

In Figure 39 the first item in the list indicates that the 'Printing' state is assigned to this alarm output. The output is activated if the printer status is "PRINTING".

You can use the **Any Failure** item or the **Any Warning** item to assign a class of items to the alarm output. The alarm is activated if any event in that class of events occurs.

- If you set the **Any Failure** item to Yes, all the items that have the prefix "1" or "2" are set to Yes. (For example "1.01 Stack Overflow" or "2.01 EHT Trip".)
 - If you set the **Any Warning** item to Yes, all the items that have the prefix "3" are set to Yes. (For example "3.03 Ink Low".)
- Press the **Back** key to return to the previous page. Then press the **Exit** key to return to the **Parallel I/O** page.



2.4.5 Parallel I/O Runs

This option on the **Parallel I/O** page tells the printer when to enable, or to disable, the Parallel I/O unit.

- 1 Select the **Parallel I/O Runs** option to display the following page.

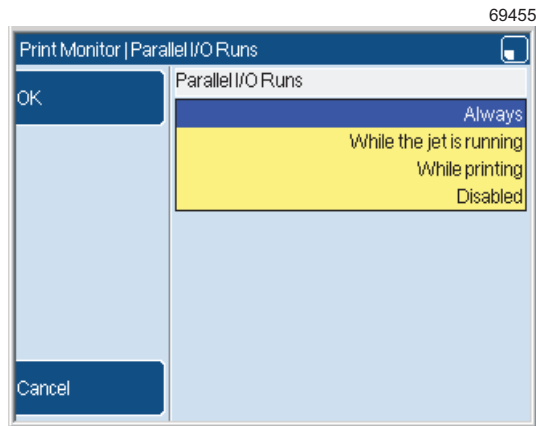


Figure 40. Parallel I/O Runs page

- 2 Highlight the required option, and then press the **OK** key to return to the previous page.



2.4.6 Hardware

Use the **Hardware** page to configure the inputs and outputs to match the electrical characteristics of the external signals.

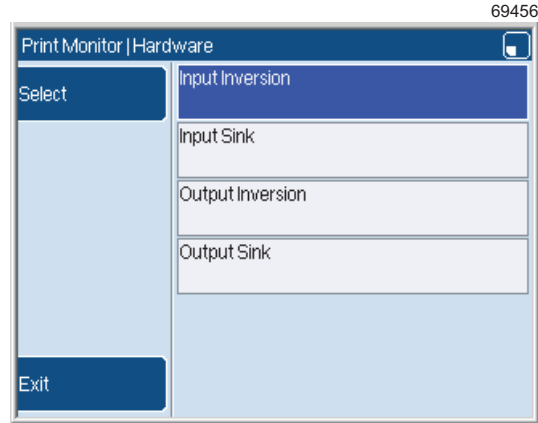


Figure 41. Hardware page

Input Inversion

- 1 Select the **Input Inversion** option to configure the inputs to match the polarity of the input signals.

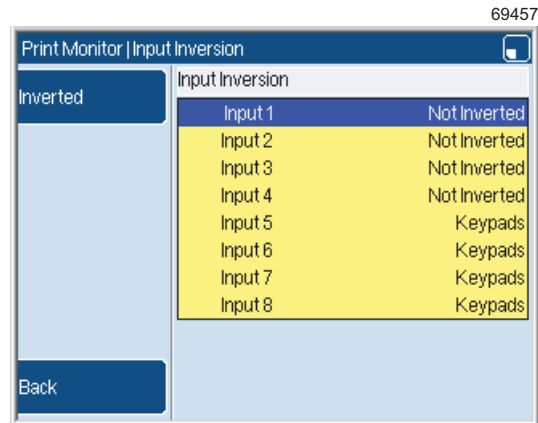


Figure 42. Input Inversion page

- 2 Press the **Inverted** key to change the polarity of the highlighted input to 'Inverted'. The key label changes to 'Not Inverted'. If you press the key again, the setting changes to 'Not Inverted' and the key label changes to 'Inverted'.

The keypad in this example uses four inputs (outputs 5 to 8). You can change only the inputs 1 to 4. If you highlight any of the other inputs (5 to 8), only the **Back** key is available—the **Inverted** (or **Not Inverted**) key is disabled.



Input Sink

You can connect two types of input signal:

Sink Use this setting for an active low input.

Source Use this setting for an active high input.

Refer to 'Input connections' on page 29 for more information.

To configure the **Input Sink** options, perform the following steps.

- 1 At the **Hardware** page, select the **Input Sink** option to configure the electrical characteristics of the inputs.

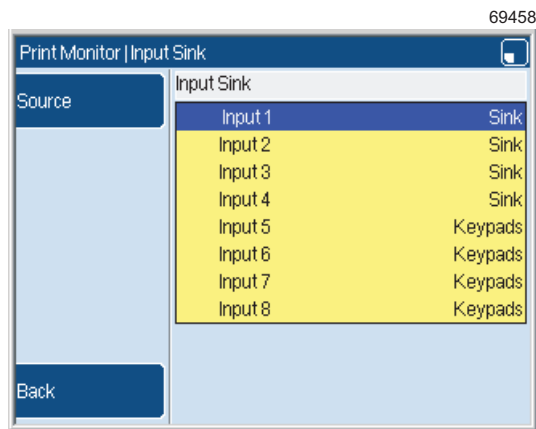


Figure 43. Input Sink page

- 2 Press the **Source** key to change the highlighted input to 'Source'.

The key label changes to 'Sink'. If you press the key again, the setting changes to 'Sink' and the key label changes to 'Source'.

In this example the keypad uses four inputs (outputs 5 to 8). You can change only the inputs 1 to 4. If you highlight any of the other inputs (5 to 8), only the **Back** key is available—the **Source** (or **Sink**) key is disabled.

Output Inversion

Use the **Output Inversion** option to configure the outputs to match the polarity of the external device.

The **Output Inversion** page is like the **Input Inversion** page.

Output Sink

Two types of output signal are available:

Sink If you use this setting, the output operates like a switch. The external device detects the state of the output—a low output is active, a high output is not active.

Source If you use this setting, the output generates a voltage level—a high output is active, a low output is not active.

The **Output Sink** page is like the **Input Sink** page.



3 Links and Connections

3.1 Link positions

The following illustration shows the positions of the links on the PIO option PCB.

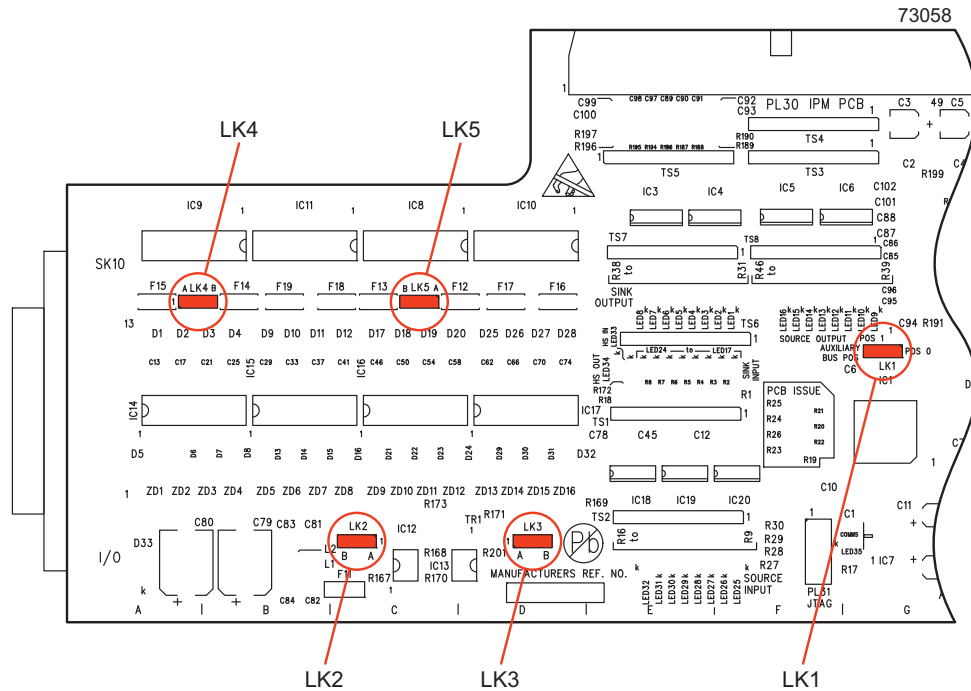


Figure 44. Link Positions

Link LK1 is not described in this document. Make sure that this link is in position 0 before the PCB is fitted into the printer.

3.2 Input connections

If the 'Sink' option is selected (see 'Input Sink' on page 28), connect any inputs that are not active to the 24 V line. To connect an active input, use a pull-up resistor on the input (A) as shown in Figure 45 (a), or use a relay (b).

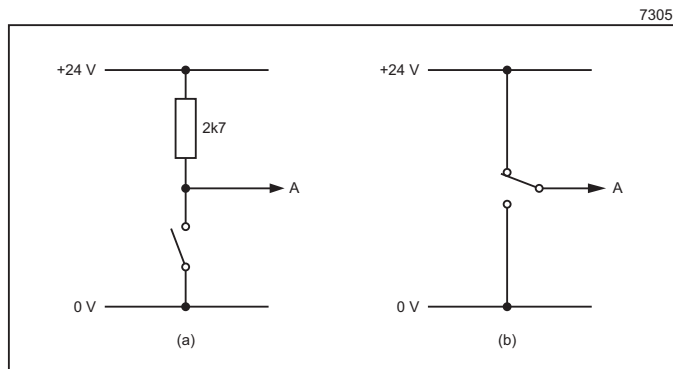


Figure 45. Input connection: 'Sink' option



If the 'Source' option is selected, connect any inputs that are not active to the 0 V line. To connect an active input, use a pull-down resistor on the input (A) as shown in Figure 46 (a), or use a relay (b).

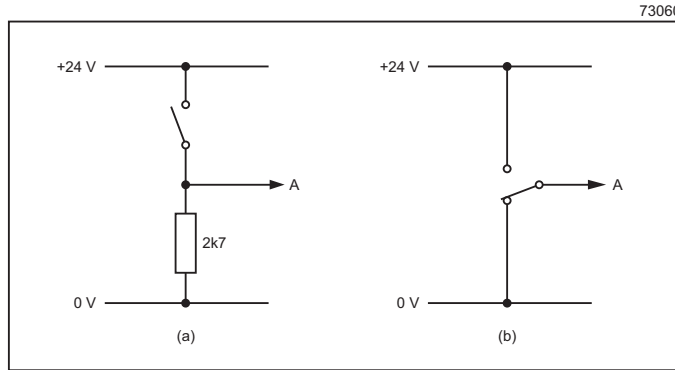


Figure 46. Input connection: 'Source' option

If the inputs are set to 'Inverted' in the **Input Inversion** menu (see page 27), reverse the above settings. (The default settings are 'Sink' and 'Not Inverted'.)

3.3 Output connections

Figure 47 shows how you connect a load (B) to an output (A) that is set to the 'Sink' option (a) or the 'Source' option (b).

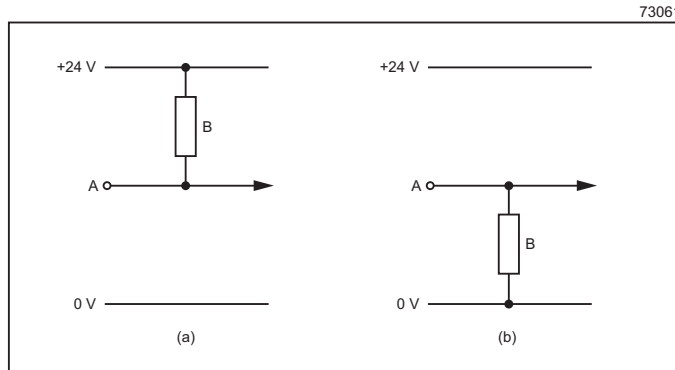


Figure 47. Output connections

The current in the load must not be more than 100 mA.



3.4 Parallel I/O connector

The Parallel I/O connector is a 25-way D-type connector on the rear panel of the printer (see Figure 48 on page 32).

3.4.1 Pin numbers

The function of each connector pin is shown in the following table.

PARALLEL I/O CONNECTIONS	
Pin no.	Function
1	0 V (for inputs)
2	Input 1
3	(No connection)
4	Input 7
5	Input 5
6	Input 3
7	+24 V supply (for inputs)
8	0 V
9	Output 8
10	Output 6
11	Output 4
12	Output 2
13	+24 V supply (for outputs)
14	Input 2
15	(No connection)
16	Input 8
17	Input 6
18	Input 4
19	Latch input
20	(No connection)
21	0 V (for outputs)
22	Output 7
23	Output 5
24	Output 3
25	Output 1

Table 4. Parallel I/O connections

How To Use the Parallel I/O Option



Figure 48 shows the pin numbers for the connector.

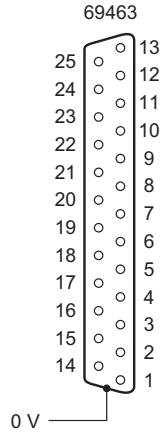


Figure 48. 25-way Parallel I/O connector



3.5 Multi-stage alarm connectors

The multi-stage alarm can use either a six-pin volt-free contact (VFC) connector or seven-pin 24 V connector for outputs.

The function of the connector pins for each connector is shown in the following diagrams.

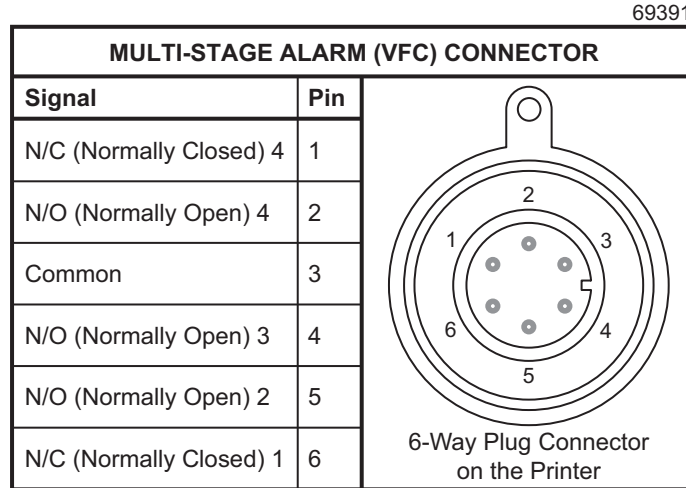


Figure 49. Multi-stage alarm: volt-free contact (VFC) six-pin connector

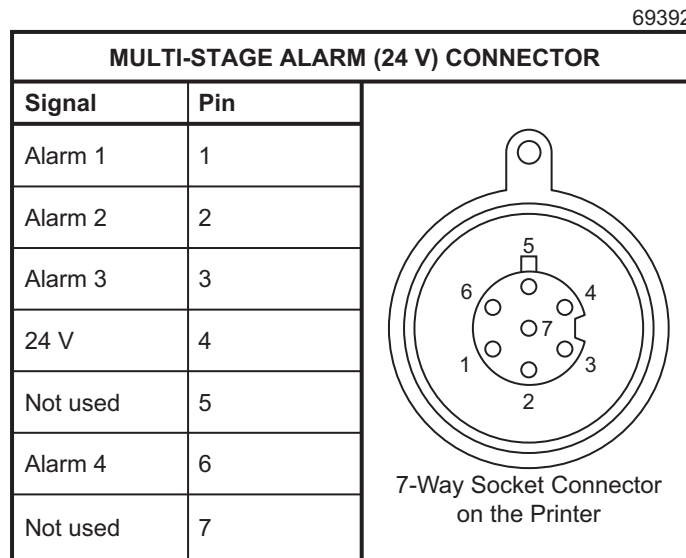


Figure 50. Multi-stage alarm: 24 V seven-pin connector

Linx 5900 & 7900



How To Use the
Communications Options

LINX

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1 Introduction

This document describes how to set up the 5900 and 7900 printers for remote communications.

NOTE: Ethernet and Linx Insight® are configurable options on the 5900 printer and are not fitted as standard.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Remote communications

The 5900 and 7900 printers use protocol to enable communications with remote devices like bar code scanners, programmable logic controllers (PLCs), and PCs.

The protocols used are as follows:

- **Remote Communication Interface (RCI)** protocol—a standard feature on the 5900 and 7900 printers for communication with RS232 compatible devices. This protocol enables communication with remote devices that allow you to control the printer and to download messages and data for printing. For example, you can download data into buffered remote fields. Refer to the *Linx Remote Communications Interface Reference Manual (MP65969)* for more information about the RCI protocol.
- **QuickSwitch**— a simple ASCII protocol for either message selection or to download data into remote fields from RS232 compatible devices. QuickSwitch is a standard feature on the 7900 printer and a configurable option on the 5900 printer.
- **Remote Procedure Calls (RPC)** protocol—a default protocol for the 7900 printer. This protocol enables communication with remote devices that allow you to control the printer and to download messages and data for printing. For example, you can use this protocol with the Message Saver program that allows you to save and restore printer messages.

NOTE: The RPC protocol is not available on the 5900 printer.

You can configure remote communication in a network with the RCI protocol through an Ethernet connection.

NOTE: You cannot download messages that contain unsupported field types to the 5900 printer. Refer to the *Linx 5900 & 7900 Quick Start Guide* for more information about unsupported field types.

2.1 Select communications protocol

The **Communications** page allows you to select available protocols, and configure the RS232 and Ethernet parameters.

- 1 At the **Print Monitor** page, select **Menu > Setup > Communications**. The printer displays the **Communications** page.

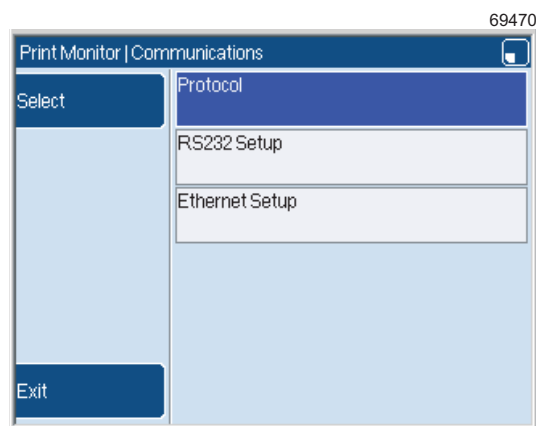


Figure 1. Communications page

How To Use the Communications Options



See page 16 for a description of the **RS232 Setup** option and page 17 for a description of the **Ethernet Setup** option.

- 2 Select the **Protocol** option to display the **Protocol** page.

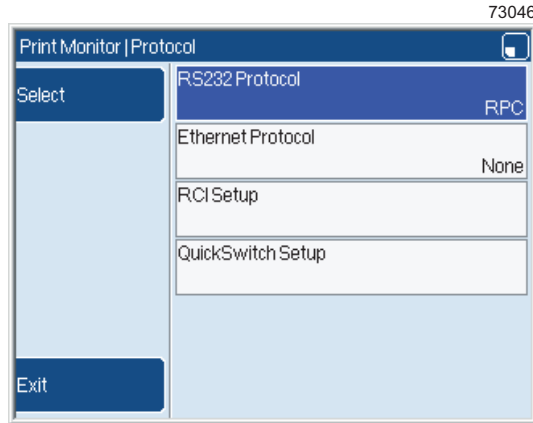


Figure 2. Protocol page

2.1.1 Configure the RS232 Protocol

The **RS232 Protocol** option allows you to select the following protocols. To select the required protocol:

- 1 Select the **RS232 Protocol** option to display the **RS232 Protocol** page.

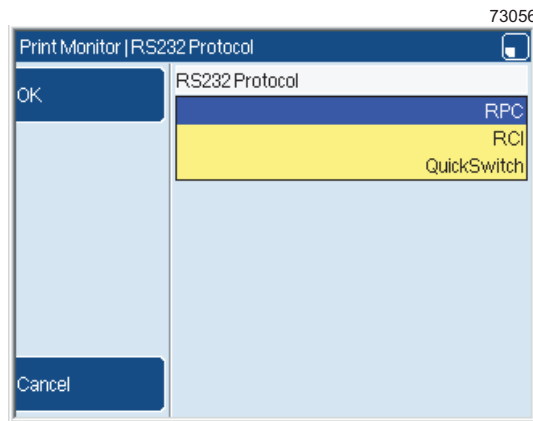


Figure 3. RS232 Protocol page

The three protocol options are as follows. See page 3 for more information about each option:

- RPC (Remote Procedure Calls) (7900 only)
 - RCI (Remote Communications Interface)
 - QuickSwitch
- 2 Highlight the required protocol and press the **OK** key to return to the **Protocol** page.

How To Use the Communications Options



2.1.2 Configure the Ethernet Protocol

NOTE: To use the **Ethernet Protocol** option, the **RS232 Protocol** option must be set to 'RPC'. Only the RCI protocol is available through an Ethernet connection.

To use the Ethernet protocol for remote network communications:

- 1 Select the **Ethernet Protocol** option on the **Protocol** page to display the **Ethernet Protocol** page.

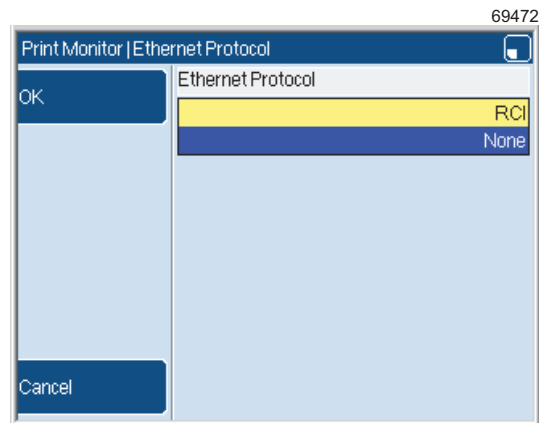


Figure 4. Ethernet Protocol page

- 2 Highlight the required protocol ('RCI' or 'None') and press the **OK** key to return to the **Protocol** page.

For information on how to configure the parameters for communication over an Ethernet connection, see 'Configure the Ethernet setup' on page 17.

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2.1.3 Configure RCI Setup

To configure Remote Communication Interface parameters for remote communications that use buffered remote fields:

- 1 Select the **RCI Setup** option on the **Protocol** page to display the **RCI Setup** page. The **RCI Setup** page contains the following options.

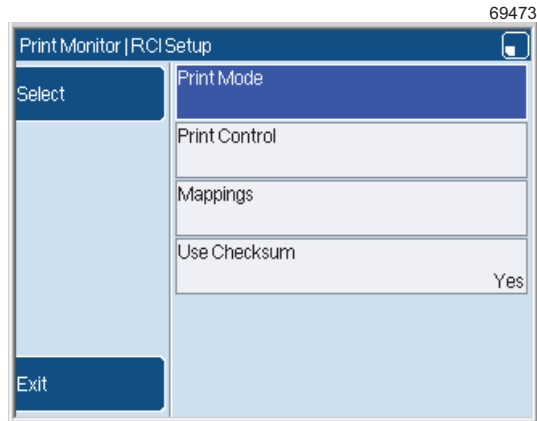


Figure 5. RCI Setup page

- 2 Highlight the required option and press the **Select** key to display the list of options for your selection.

Print Mode option

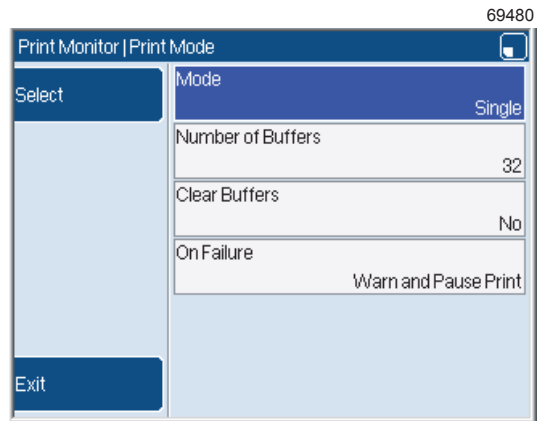


Figure 6. Print Mode page

The **Print Mode** page contains the following parameters:

How To Use the Communications Options



Mode

Select either 'Single' or 'Continuous':

- **Continuous**—printing occurs if any remote data is received or if no remote data is received. If a set of remote data is received, this data is printed until another set of remote data is received.
- **Single**—printing occurs one time for each set of remote data that is received. If there is no more data received, any print triggers that occur are controlled according to the configuration of the **On Failure** option (see below).

If there is no remote data used, set the **Mode** option to Continuous. Use the Single print mode only with messages that use remote data.

Number of Buffers

This parameter sets the number of buffers that are assigned to each remote field in the message (1, 2, 4, 8, 16, or 32).

Clear Buffers

Select 'Yes' or 'No'. If set to 'Yes' when printing stops, the printer clears all remote field buffers in the current message. This option makes sure that the synchronisation of remote fields is maintained.

NOTE: If remote messages are downloaded, configure the number of buffers before the RCI protocol is used. When the number of buffers is changed, you must open and save each message that contains buffered remote fields in the Message Editor. The buffered remote field value is updated to the value that was set at the **Print Mode** page. If all fields in a message are not the same buffer length, a loss of synchronisation between fields can occur when the smallest buffer fills.

A confirmation message is displayed to tell you that the changes do not become active unless the messages are edited and saved in the Message Editor.

On Failure

For Single print mode this parameter sets the correct failure condition if no remote data is received ready for the next print. Select either 'Warn and Ignore' or 'Warn and Pause Print':

- If 'Warn and Ignore' is selected, the error "3.29 Overspeed (No remote data)" is displayed, and the Print Go command (see below) is ignored. No print occurs.
- If 'Warn and Pause Print' is selected, the error "3.29 Overspeed (No remote data)" is displayed. The printer status is set to Jet Running.

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Print Control option

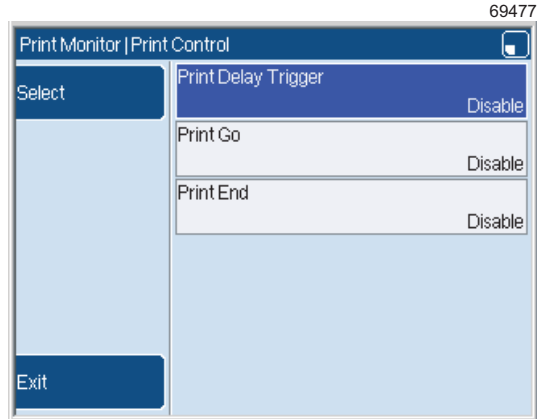


Figure 7. Print Control page

The **Print Control** page allows you to enable and disable the print control characters, and control the values used by these characters.

The **Print Delay Trigger**, **Print Go**, and **Print End** options are set to 'Disable' by default. You can enable the options in any combination as required. Highlight each option and press the **Select** key to set the required value from the list of available values.

Mappings option

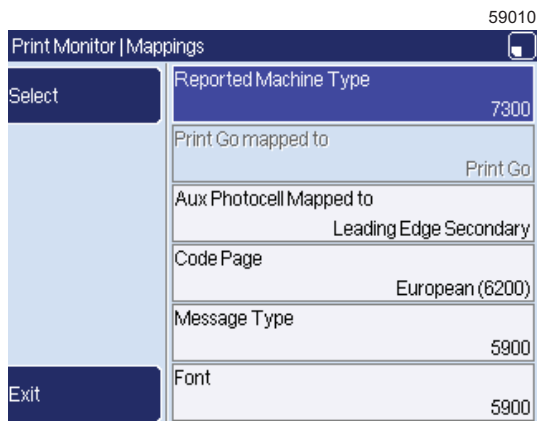


Figure 8. Mappings page

The **Mappings** page allows you to set options that improve the compatibility between the 5900 or 7900 and previous models of Linx printer.

The following options are available:

Reported Machine Type

For printer emulation, this option tells the RCI Request System Configuration command (Command 51) which type of printer is in use. Refer to the *Linx Remote Communications Interface Reference Manual (MP65969)* for more information about Command 51 settings.

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Print Go Mapped To/Aux Photocell Mapped To

This option controls how the standard 5900 or 7900 trigger conditions are linked to the Print Go and Aux Photocell triggers used by the RCI protocol. The default settings for the 5900 and 7900 printers are:

- **Print Go Mapped To:** Print Go
- **Aux Photocell Mapped to:** Leading Edge Secondary (the other options are False, Trailing Edge Secondary, High Level Secondary Trigger, and Low Level Secondary Trigger)

Code Page

The 5900 and 7900 printers use the Unicode character set, but the RCI protocol uses ASCII. The **Code Page** option controls how the printer performs the ASCII to Unicode translation. The available options are:

- European (4900)
- European (6200)
- European
- Japanese
- Greek
- Russian
- Polish

Select the 'European (4900)' option for compatibility with the 4900 printer and the 'European (6200)' option for compatibility with the 6200 printer. This option contains the characters used by the 6200 printer that are not in the standard 'European' option.

Message Type

5900 only. This option maps the message type names used in RCI commands to the message type names used by the printer. Select either 4900 or 5900 for compatibility with the relevant printer.

Font

5900 only. This option maps the font information in RCI commands to the font information used by the printer. Select either 4900 or 5900 for compatibility with the relevant printer.

Use Checksum option

The 5900 and 7900 printers use checksums by default. To disable checksums, set this option to 'No'.

If checksums are disabled, the printer does not look for checksums at the end of received data, and the accuracy of transferred data is not checked. The data can become damaged and can cause problems in the printer and the remote host.

NOTE: The 5900 and 7900 printers do not allow changes to the settings for the start, stop, and parity bits—they are set by default to 8 data bits, 1 start bit, 1 stop bit, and no parity.

How To Use the Communications Options



- Press the **Exit** key to return to the **Protocol** page.

2.1.4 Configure the QuickSwitch setup

The 5900 and 7900 printers use QuickSwitch for message selection or remote field selection.

NOTE: To use the Message Saver program, set the **RS232 Protocol** option (see page 3) to 'RPC' to configure the program settings. Reset the protocol option to 'QuickSwitch' for remote communications.

To configure the QuickSwitch parameters:

Select the **QuickSwitch Setup** option on the **Protocol** page to display the **QuickSwitch Setup** page.

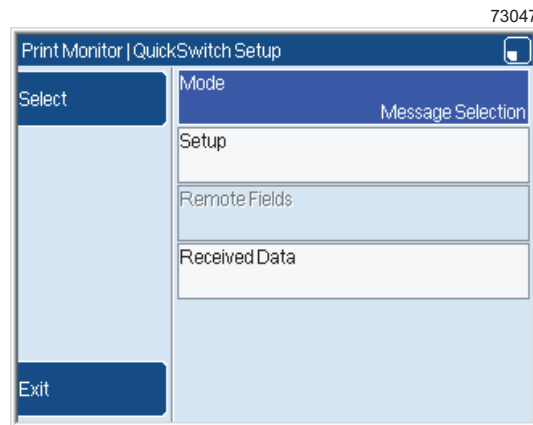


Figure 9. QuickSwitch Setup page

Mode option

- To configure the 5900 and 7900 printers for either message selection or remote field selection, select the **Mode** option to display the **Mode** page. The options are as follows:
 - Message Selection**—the printer uses the incoming data to select a message. For example if the incoming data is 'ABC', the printer selects a message with the name 'ABC'. If there is no message name that matches the incoming data in the Message Store, the data is ignored.
 - Remote Fields**—the printer uses the incoming data to set the remote fields. The incoming data is allocated to remote fields according to the field name and the number of characters in that field. Refer to *How to Create a Remote Field* for more information on how to use remote fields.
- Highlight either 'Message Selection' or 'Remote Fields', then press the **OK** key to return to the **QuickSwitch Setup** page.

The default is 'Message Selection' and the **Remote Fields** option on the **QuickSwitch Setup** page is not available. If 'Remote Fields' is selected the **Remote Fields** option is available.

If 'Message Selection' is selected go to page 12 where the **Setup** option is described.

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Remote Fields option

- 3 To configure the remote fields to which data is downloaded, select the **Remote Fields** option on the **QuickSwitch Setup** page to display the **Remote Fields** page.

NOTE: QuickSwitch does not allow you to use buffered remote fields. To use buffered remote fields use the RCI protocol (see 'Configure RCI Setup' on page 6.)

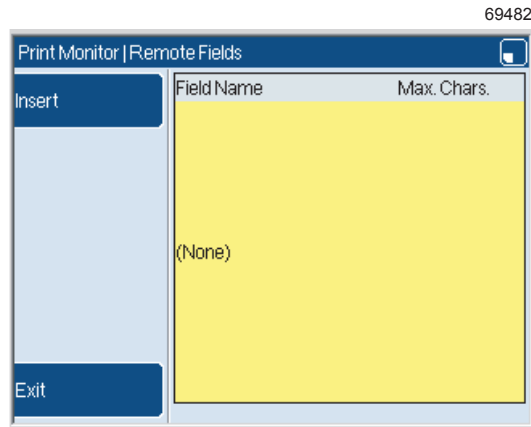


Figure 10. Remote Fields page

- 4 Press the **Insert** key to display the **Insert** page.

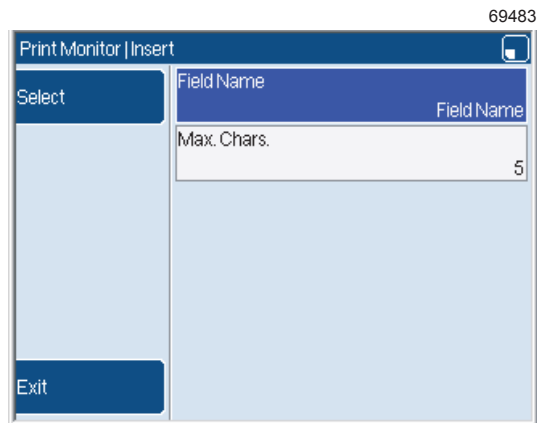


Figure 11. Remote Fields: Insert page

- 5 Select the **Field Name** option to enter the name of the remote field. The remote device uses this name to identify the destination field for the data.
NOTE: The field names must match the names of any remote fields that are created in the Message Editor.
- 6 Select the **Max. Chars.** option to set the maximum number of characters that the remote device can download into this field.

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- Repeat steps 4 to 6 on page 11 to enter the information about all required remote fields and press the **Exit** key to return to the **Remote Fields** page.

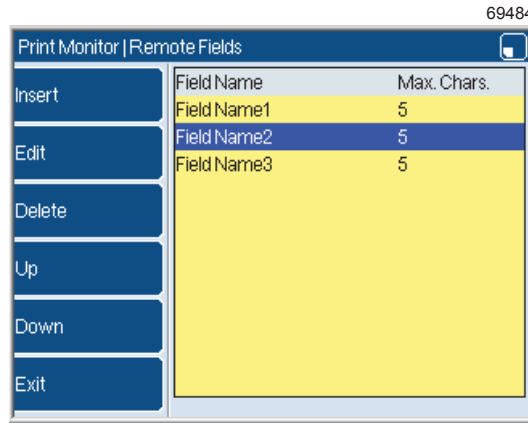


Figure 12. Remote Fields page: populated

- The following options become available on the **Remote Fields** page. Highlight the required field name and press one of the following keys:

Edit—displays the **Insert** page where you can edit the name and maximum number of characters of the selected remote field.

Delete—deletes the selected remote field. There is no confirmation message displayed.

Up—moves the remote field name up the list by one entry.

Down—moves the remote field name down the list by one entry.

- Press the **Exit** key to return to the **QuickSwitch Setup** page.

Setup option

- To configure the **Setup** options for QuickSwitch, select the **Setup** option to display the **Setup** page.

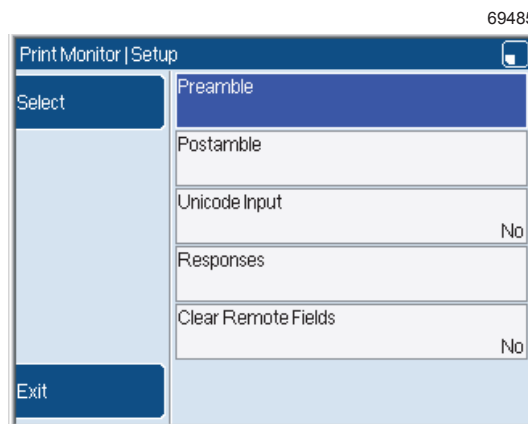


Figure 13. Setup page

How To Use the Communications Options



Preamble and Postamble

The **Preamble** and **Postamble** options configure the format of incoming data that the 5900 and 7900 printers receive from different remote devices. The format of the incoming data is shown below:



Figure 14. Incoming packet data format

Key:

- P1 Preamble1 1 byte (optional)
- P2 Preamble2 1 byte (optional)
- Data Data Up to 256 bytes in a remote field
- P3 Postamble1 1 byte
- P4 Postamble2 1 byte (optional)

The default format of incoming data for QuickSwitch does not contain preamble bytes, and the postamble bytes are a CR/LF pair:



Figure 15. Default 5900/7900 data packet format

Where the printer uses STX/ETX to define a a packet boundary, the printer can be set up to accept data in the following format:

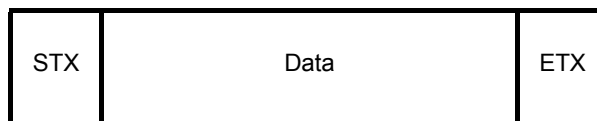


Figure 16. Example data packet format

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- To configure the preamble settings, select the **Preamble** option to display the **Preamble** page.

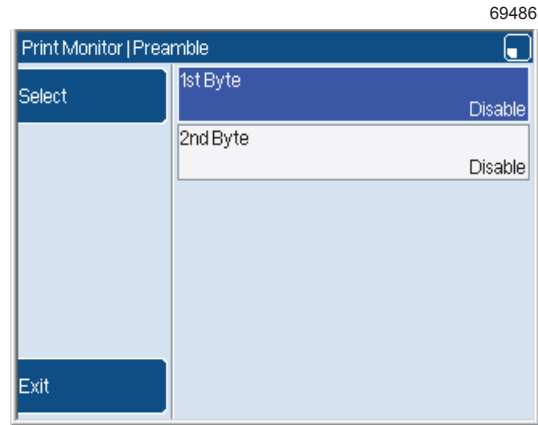


Figure 17. Preamble page

Highlight '1st Byte' or '2nd Byte' and press the **Select** key to see the list of available preamble byte characters. Highlight the required option and press the **OK Key** to return to the **Preamble** page. Press the **Exit** key to return to the **Setup** page.

- To configure the postamble settings, select the **Postamble** option to display the **Postamble** page. This page is like the **Preamble** page and you select the options as shown above in step 2.

NOTE: If you use Unicode transmission (see below) the preamble and postamble values must not match the character set values. If necessary, change the values to prevent any problem.

Unicode Input

- To receive data in Unicode (2-byte) character format, select this option, highlight 'Yes' and press the **OK** key to return to the **Setup** page. This format only contains the data segment of the incoming data packet.

NOTE: Unicode characters must be transmitted in high byte/low byte format.

Responses

The **Responses** option allows you to enable or disable any combination of response types for incoming data and set the values for these responses.

How To Use the Communications Options



- 5 Select the **Responses** option to display the **Responses** page.

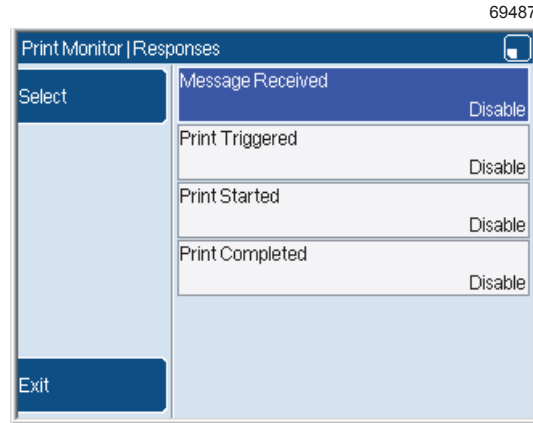


Figure 18. Responses page

The following options are available. Select the required option to see the list of available values:

- **Message Received**—this allows you to select the character that is used to acknowledge that a message is received. The standard setting is 'Disable'.
- **Print Triggered**—this allows you to select the character that is used to acknowledge a print trigger. The standard setting is 'Disable'.
- **Print Started**—this allows you to select the character that is used to acknowledge the start of a print. The standard setting is 'Disable'.
- **Print Completed**—this allows you to select the character that is used to acknowledge the end of a print. The standard setting is 'Disable'.

Clear Remote Fields

- 6 Clears all remote fields entered for QuickSwitch after the next print is completed. To clear all remote fields, select this option, highlight 'Yes' and press the **OK** key to return to the **Setup** page.
- 7 Press the **Exit** key three times to return to the **Communications** page.

How To Use the Communications Options



2.2 Configure the RS232 setup

The **RS232 Setup** page allows you to configure the communication parameters for all protocols. To configure the RS232 settings:

- 1 Select **Menu > Setup > Communications** at the **Print Monitor** page. The printer displays the **Communications** page (see Figure 1 on page 3).
- 2 Select the **RS232 Setup** option to display the **RS232 Setup** page.

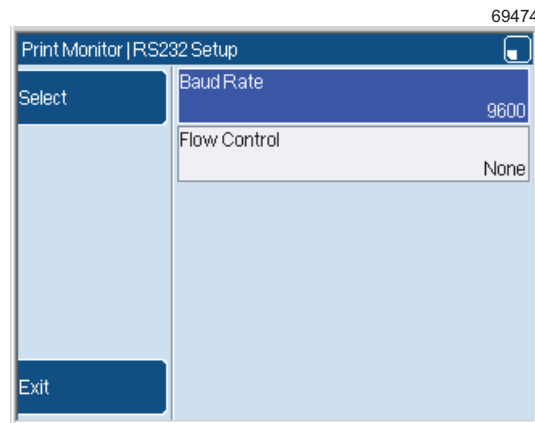


Figure 19. RS232 Setup page

- 3 To set the transmission speed of the data, highlight the **Baud Rate** option and press the **Select** key:

The 5900 and 7900 printers allow data transmission at baud rates of 4800, 9600, 19200, 38400, 57600, or 115200 baud.
- 4 Highlight the required baud rate and press the **OK** key to return to the **RS232 Setup** page.
- 5 To configure how the flow of data is controlled, highlight the **Flow Control** option and press the **Select** key to display the available settings. The three options are:
 - **None**—there is no control of the flow of data between the printer and the remote host.
 - **Software**—the special characters 'Xon' and 'Xoff' control the flow of data between the printer and the remote host. An escape character identifies the special characters in the data stream.
 - **Hardware**—the flow of data is controlled by hardware hand shakes between the printer and remote host.
- 6 Highlight the required option and press the **OK** key to return the **RS232 Setup** page. Press the **Exit** key to return to the **Communications** page.



2.3 Configure the Ethernet setup

The **Ethernet Setup** page allows you to configure the parameters for Ethernet communications. To configure Ethernet settings:

- 1 Select **Menu > Setup > Communications** at the **Print Monitor** page. The printer displays the **Communications** page (see Figure 1 on page 3).
- 2 Select the **Ethernet Setup** option to display the **Ethernet Setup** page.

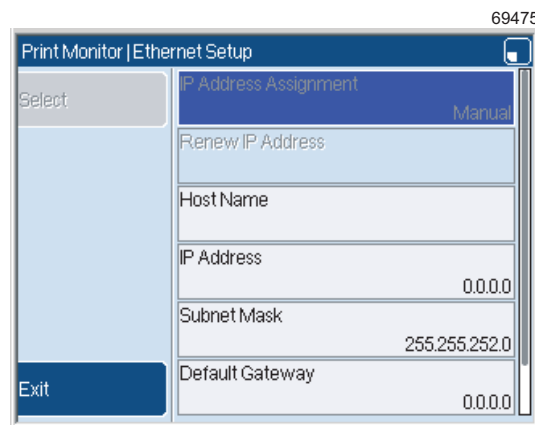


Figure 20. Ethernet Setup page

- 3 Highlight the required option and press the **Select** key to display the configuration options. Use the scroll bar to display the **MAC Address** option.

IP Address Assignment

- **Manual**—this allows you to assign a static IP address for the printer. Your network administrator supplies this IP address.
- **DHCP** (Dynamic Host Configuration Protocol)—the printer requests an IP address from the host device during the printer power-up sequence.

If you select the 'DHCP' option, the **Renew IP Address** option becomes available.

Renew IP Address

This option causes the printer to select a new IP address from the server during the power-up sequence.

NOTE: The 'DHCP' option for **IP Address Assignment** and the **Renew IP Address** options are not in use on the 5900 and 7900 printers.

Host Name

You can assign an optional name to the printer. Enter the name in the field.

IP Address

This option is shown if the **IP Address Assignment** option is set to 'Manual'. Your network administrator assigns the IP address.

How To Use the Communications Options



Subnet Mask

The subnet mask is a mask that assigns an IP address to a given subnet. An IP address has two components—the network address and the host address. The format depends on the type of IP address assigned. Contact your network administrator for more information.

Default Gateway

A default gateway is a node on the network that allows connection to another network. Contact your network administrator for more information.

MAC Address

A Media Access Control (MAC) address is an address that identifies network hardware. The printer software automatically detects the MAC address.

Re-connect

If there are problems with the network connection, this option allows you to reconnect to the network without restarting the printer.

NOTE: When you configure the Ethernet setup, your host application must address TCP/IP port 29043.

2.4 Linx Insight

Linx Insight® is a remote web interface for message download and control that uses the Ethernet connection of the printer. It is a standard feature on the 7900 printer and a configurable option on the 5900 printer.

The functionality allows you to remotely monitor and control the printer through a web browser from a PC or a web-enabled phone.

To set up Linx Insight®:

- 1 Assign a static IP address to the printer (see 'Configure the Ethernet setup' on page 17 for more information). Navigate to the **IP Address** page (**Menu > Setup > Communications > Ethernet Setup > IP Address**) and enter a static IP address. Contact your network administrator if you are unsure of the address to enter.
- 2 Use the Ethernet connection on the rear of the printer to connect the printer to your network.

To use Linx Insight® with a PC:

NOTE: The following PC web browsers are supported: Internet Explorer®, Firefox® FF8 and FF9, Chrome™ 14 and 15, and Safari® 5.¹

- 1 On your PC, enter the printer IP address in the address bar of your web browser.
- 2 When prompted, enter the following information:

Username: linx

1.Linx and Linx Insight are registered trademarks of Linx Printing Technologies Ltd.
Firefox is a registered trademark of Mozilla Foundation.
Chrome is a trademark of Google Inc.
Safari is a registered trademark of Apple Inc.

How To Use the Communications Options



Password: insight

- 3 Follow the on-screen instructions to allow you to remotely control the printer.

To use Linx Insight® with a web-enabled phone:

NOTE: The following mobile web browsers are supported: iPhone® 3GS, 4, and 4S browsers, Android™ browsers for Android 2.2 and 2.3 Gingerbread, and BlackBerry® 6 and 7.¹

- 1 Make sure that your phone is able to access the same network as the printer.
- 2 On your phone, enter the printer IP address in the address bar of your web browser.
- 3 When prompted, enter the following information:

Username: linx

Password: insight

- 4 Follow the on-screen instructions to allow you to remotely view status information about the printer.

1.Linx and Linx Insight are registered trademarks of Linx Printing Technologies Ltd.
iPhone is a registered trademark of Apple Inc.
Android is a trademark of Google Inc.
BlackBerry is a registered trademark of Research in Motion Limited.

Linx 5900 & 7900



How To Use Keyboard Shortcuts

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to use the keyboard shortcuts on the 5900 and 7900 printers. You need a User Level C password to perform most of the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Keyboard shortcuts

The 5900 and 7900 printers can use keyboard shortcuts to access printer pages or common functions. These functions are accessed through the keyboard with a combination of the [alt] or [shift] or [ctrl] keys, plus an alphanumeric or arrow key.

2.1 Shortcuts from any printer page

You can access the following keyboard shortcuts from any printer page:

- **[alt] + [L]**—opens the **Event Log** page that shows a list of events that occur during the operation of the printer. You can use the list of events to check the operation of the printer. Refer to *How to Diagnose Problems* for more information.
- **[alt] + [J]**—opens the **Monitor Jet** page that gives you a summary of important information about the state of the printer. Refer to *How To Diagnose Problems* for more information.
- **[alt] + [K]**—where both primary and secondary keyboards are configured, this shortcut allows you to change between the two keyboards. Refer to *How To Use a Different Keyboard* for more information.
- **[alt] + [T]**—generates a keyboard trigger. For example, to print or update a message. Refer to *How To Change the System Setup* for more information.

2.2 Other shortcuts

If the printer displays the keylock password prompt that shows that the keyboard is locked, you can use the following shortcut:

- **[alt] + [C]**—allows you to open the **Locale** page to change between primary and secondary keyboards.

Refer to *How To Change the System Setup* for more information about the **Keylock** option or **Locale** page or primary and secondary keyboards.



2.2.1 Shortcuts from the Print Monitor page

At the **Print Monitor** page you can access the following keyboard shortcuts:

- **[alt] + [R]**—allows you to edit the default remote field of the current message. The shortcut opens the **Remote Field Edit** page as shown below.

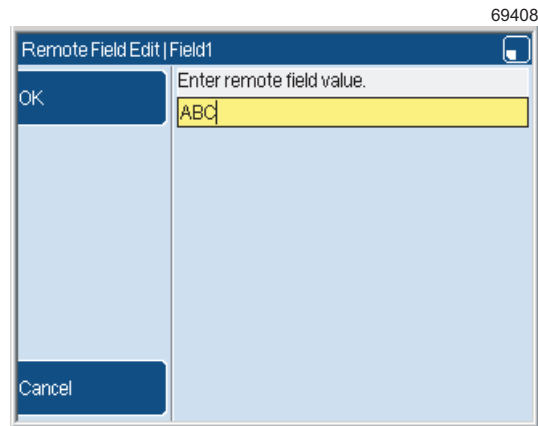


Figure 1. Remote Field Edit page with new data

Enter the required text and press the **OK** key to return to the **Print Monitor** page. The text appears in the default remote field of the current message.

NOTE: To access this page when a message contains more than one remote field, one of those fields must be set as the default field. If the current message contains one remote field, that field becomes the default field.

Refer to *How To Create a Remote Field* for more information on remote fields.

- **[alt] + [Up arrow]**—allows you to increase the magnification of the message preview in steps of 25%, 50%, 100%, 200%, or 400%. The default magnification is 200%.
- **[alt] + [Down arrow]**—allows you to decrease the magnification of the message preview in steps of 25%, 50%, 100%, 200%, or 400%. The default magnification is 200%.



2.2.2 Shortcuts from the Message Editor page

At the **Message Editor** page you can access the following keyboard shortcuts:

- **[alt] + [Up arrow]**—allows you to increase the magnification of the message preview. You can set this magnification to 25%, 50%, 100%, 200%, or 400%. The default magnification is 200%.
- **[alt] + [Down arrow]**—allows you to decrease the magnification of the message preview. You can set this magnification to 25%, 50%, 100%, 200%, or 400%. The default magnification is 200%.
- **[alt] + [A]**—highlights all fields in the message. (Move the cursor outside the field and press the [enter] key or the [exit] key to clear the highlight from a field.)

When a field is highlighted you can use the following shortcuts:

- **[shift] + [Up arrow]**—the highlighted field moves up.
- **[shift] + [Down arrow]**—the highlighted field moves down.
- **[shift] + [Right arrow]**—the highlighted field moves to the right.
- **[shift] + [Left arrow]**—the highlighted field moves to the left.
- **[shift] + [ctrl] + [Up arrow]**—the highlighted field moves up by one pixel.
- **[shift] + [ctrl] + [Down arrow]**—the highlighted field moves down by one pixel.
- **[shift] + [ctrl] + [Right arrow]**—the highlighted field moves by one pixel to the right.
- **[shift] + [ctrl] + [Left arrow]**—the highlighted field moves by one pixel to the left.

2.2.3 Shortcuts from the Message Store or Manage Messages pages

At the **Message Store** or **Manage Messages** pages you can access the following keyboard shortcuts:

- **[alt] + [Up arrow]**—allows you to increase the magnification of the message preview. You can set this magnification to 25%, 50%, 100%, 200%, or 400%. The default magnification is 200%.
- **[alt] + [Down arrow]**—allows you to decrease the magnification of the message preview. You can set this magnification to 25%, 50%, 100%, 200%, or 400%. The default magnification is 200%.



2.2.4 Shortcuts from the Logo Editor page

7900 only. At the **Logo Editor** page you can access the following keyboard shortcuts:

- **[alt] + [Up arrow]**—allows you to increase the magnification of the logo preview to a maximum of 32 rows and 32 columns on the grid.
- **[alt] + [Down arrow]**—allows you to decrease the magnification of the logo preview to a minimum of 1 row and 1 column on the grid.

NOTE: The default magnification displays 32 rows and 32 columns on the grid.

Refer to *How to Create Logos* for more information about magnification.

2.2.5 Shortcuts from the Editor pages

7900 only. At the **Date & Time Editor**, **Text Sequence Editor**, **Orientation Sequence Editor**, and **Production Schedule Editor** pages you can access the following shortcuts.

When a field is highlighted you can use these shortcuts:

- **[alt] + [Up arrow]**—the highlighted item in a list moves up by one entry.
- **[alt] + [Down arrow]**—the highlighted item in a list moves down by one entry.

NOTE: You cannot use these two shortcuts in the **Shift Code Editor** page because the order of entries is set by their time or date.

From any text entry edit box, you can access the following shortcut:

- **[alt] + [X]**—opens the character selector. This page allows you to access additional characters that are not on the standard 5900 and 7900 keyboard.

Refer to *How To Use a Different Keyboard* for more information about the extended character sets on the keyboard and the character selector.

Linx 5900 & 7900



How To Use Advanced Editing

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes some additional options that you can use to edit messages on the 5900 and 7900 printers.

You need a User Level B password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Advanced Editing

The 5900 and 7900 printers allow you to use additional options to edit messages. For example:

- You can select different fields in a message and change options for them
- You can set the position of a message field or characters in the message field.

2.1 Select multiple fields

You can select all or some fields within a message from the **Message Editor** page:

- To select all fields in the message, hold down the [alt] key and press the [A] key. The fields are highlighted.
- To select more than one field in a message, first select all the fields in the message. To remove the highlight from the fields that are not required, move the cursor to each field. Hold down the [shift] key and press the [enter] key to clear the highlight from the field.

You can use keyboard shortcuts to move the selected fields. Refer to *How To Use Keyboard Shortcuts* for more information.

Move the cursor outside the field and press the [enter] or the [exit] keys to clear the highlight from the field.

2.2 Change the options for multiple fields

When you select more than one field, you can change the options for all of those fields. For example to change the font size in all fields. At the **Message Editor** page, select the required fields and press the **Edit** key to open the **Options** page.

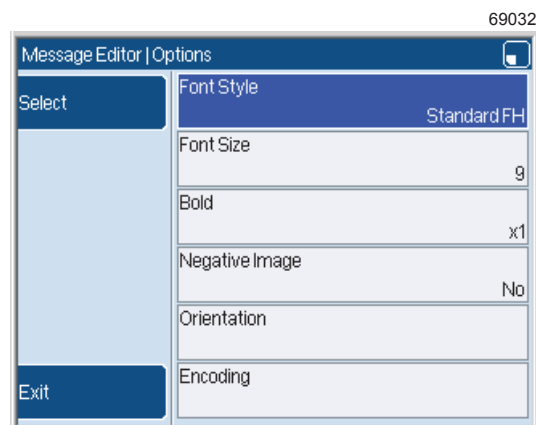


Figure 1. Options page

Set the options as required, then press the **Exit** key to return to the **Message Editor** page. The options are applied to all the fields that you selected.

NOTE: You cannot apply some combinations of orientation options for multiple fields.



2.3 Orientation

You can set the orientation of fields within a message. The printer allows you to print a message field in a different direction with a horizontal or vertical flip. You can rotate the field or rotate the characters within the field in steps of 90 degrees.

You can set the orientation when you create a field in a new message, or edit a field in an existing message.

The following examples show you how to set the orientation of a new text field and an existing text field. You can use the same method to set the orientation for other fields (for example date and time or sequential number fields).

NOTE: 7900 only. Logo orientation is set in the Logo Editor. Refer to *How to Create Logos* for more information about logo orientation.

2.3.1 New text field

To set the orientation when you create a new text field:

- 1 At the **Print Monitor** page, press the **Message Store** key to open the **Message Store** page.
- 2 At the **Message Store** page, press the **New** key to create a new message.
- 3 Move the cursor to where you require the text field to start and press the **Text** key to open the **Insert Text** page.

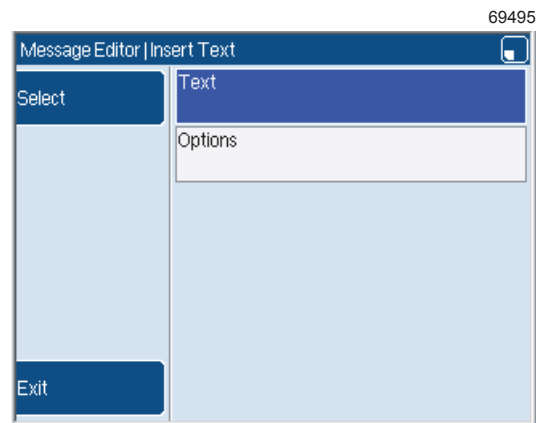


Figure 2. Insert Text page

- 4 Select the **Text** option to open the **Text** page. Enter the text for the new field (for example 'TEST') and press the **OK** key to return to the **Insert Text** page.



- 5 To set the orientation for the text that you entered, select **Options** to display the **Options** page.

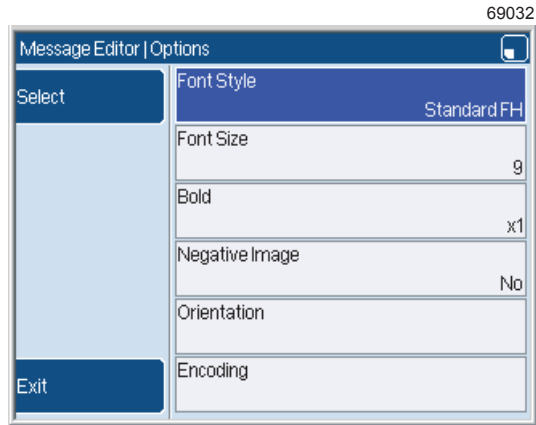


Figure 3. Options page

- 6 Select **Orientation** to display the **Orientation** page.

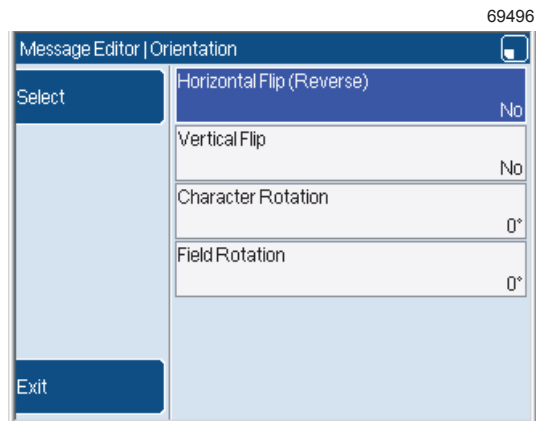


Figure 4. Orientation page



The orientation options are as follows:

- **Horizontal Flip (Reverse)**—select either ‘Yes’ or ‘No’. If set to ‘Yes’ the field orientation is turned horizontally (reversed) as shown below.

⁶¹¹⁰
TEST

- **Vertical Flip**—select either ‘Yes’ or ‘No’. If set to ‘Yes’ the field orientation is turned vertically as shown below.

⁶¹¹¹
TEST

- **Character Rotation**—rotates the characters in the selected field by 0, 90, 180, or 270 degrees to the right. The example below shows all of these rotations.

⁶⁸³⁹⁰
0° TEST
90° T S E T
180° TSET
270° T S E T

- **Field Rotation**—rotates the selected field by 0, 90, 180, or 270 degrees to the right. The example below shows all of these rotations.

⁶⁸³⁸⁹
0° TEST
90° TEST
180° TEST
270° TEST

NOTE: You must make sure that there is enough space to fit a rotated field within the message boundary. If part of a field is outside the message boundary, the printer highlights that part of the field in red, and does not print that part.

You can use the options together, as shown in the following examples.

When the ‘Horizontal Flip (Reversed)’ and ‘Vertical Flip’ options are both set to ‘Yes’, the field orientation is set as shown below.

⁶¹¹³
TEST

When the ‘Vertical Flip’ option is set to ‘Yes’ and a ‘Character Rotation’ of 270 degrees applied, the field orientation is set as shown below.

⁶⁹⁴⁹⁷
T S E T



- 7 Set the required options, then press the **Exit** key three times to return to the **Message Editor** page. The text field appears with the selected orientation options applied.
- 8 Press the **Exit** key to display the **Save As** page. You can enter a name for your message and save the changes or discard the changes.
- 9 Press the **Exit** key to return to the **Print Monitor** page.

2.3.2 Saved text field

To set the orientation of a text field in an existing message:

- 1 At the **Message Store** page, highlight the required message and press the **Edit** key to display the **Message Editor** page.
- 2 Move the cursor over the text field and press the [enter] key to highlight the field.
- 3 Press the **Edit** key to open the **Edit Text** page.
- 4 To set the orientation of the text field, repeat steps **5** to **7** from the 'New text field' section.
- 5 Press the **Exit** key two times to display the **Save As** page. You can change the name of your message, and save or discard the changes.
- 6 Press the **Exit** key to return to the **Print Monitor** page.

Linx 5900 & 7900



How To Use a Different
Keyboard

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to use different keyboards on the 5900 and 7900 printers. It tells you how to access the extended character sets from the keyboard and the additional character set through the character selector for the European keyboard. This document also tells you how to use the Pinyin system for Traditional and Simplified Chinese, and the Korean character selector.

You need a User Level C password to perform all the tasks described in this document.

NOTE: There are variations in the colours of the keys and characters on the 5900 and 7900 keyboards, but their layouts are identical.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 7900 Quick Start Guide*.



2 Use a different keyboard

The keyboard that is fitted to the 5900 and 7900 printers depends on the country where the printer is used. The 5900 and 7900 printers allow you to use the following keyboards:

- European
- Japanese
- Greek
- Russian
- Simplified Chinese
- Traditional Chinese
- Korean
- Hebrew
- Arabic
- Farsi
- Vietnamese
- Thai
- Bulgarian

See 'Keyboard layouts' on page 19 for more information about the layout of the keyboards, and their character sets.

You can set the language defaults that the printer uses, the type of keyboard that is fitted, and change the keyboard options.

2.1 Language and keyboard options

The following language and keyboard options are available:

- **Language**—This option sets the language that the printer software uses in all of the pages that are displayed. For example, menus, dialog boxes, and system messages. See 'Language' on page 4 for more information about this option.
- **Keyboard**—This option tells the printer the type of hardware keyboard that is fitted and controls the characters that appear when you press a key on the keyboard. See 'Keyboard' on page 4 for more information about this option.
- **Secondary Keyboard**—This option allows you to select a secondary keyboard layout that is different from the primary keyboard. For example, you can change between European and Japanese keyboards, which allows you to use a European keyboard to generate Japanese characters. See 'Secondary Keyboard' on page 5 for more information about this option.
- **Extended character set**—You can access an extended set of characters from the keys on the keyboard of the printer. See 'Extended keyboard character sets' on page 6 for more information about how to select these characters from the keyboard.



- **Additional character set**—The European keyboard option includes a software function that allows you to generate additional characters that are not on the keyboard. See ‘Additional character sets’ on page 9 for more information about how to access these characters. To select the language and keyboard options that the printer uses:

At the **Print Monitor** page, select **Menu > Setup > Installation > Locale** to display the **Locale** page.

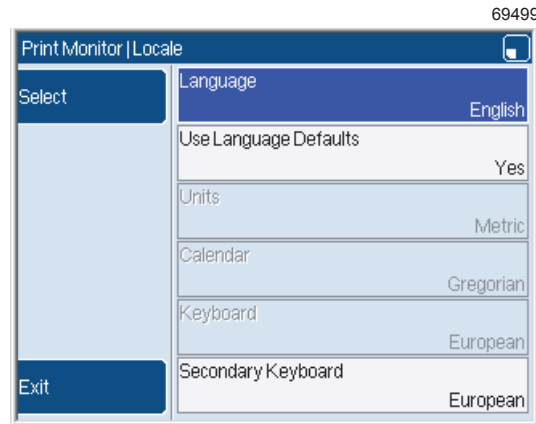


Figure 1. Locale page

2.1.1 Language

To set the **Language** option, first make sure that the printer is not in the 'PRINTING' state. Select the option to display the list of available languages, then press the **OK** key to return to the **Locale** page.

2.1.2 Use Language Defaults

If this option is set to 'Yes' the **Units**, **Calendar**, and **Keyboard** options are not available. The three options are set to default values that are correct for the language selected.

NOTE: The **Units** and **Calendar** options are described in *How To Change the System Setup*.

If the **Use Language Defaults** option is set to 'No', you can change the **Units**, **Calendar**, and **Keyboard** options. You can select a keyboard option that is different from the **Language** option for the printer. If you change the keyboard you can create a message in one language, but display the printer pages in another language.

For example, you can set the **Keyboard** option to Japanese, but set the **Language** option to English. When you use this combination of options, the message is displayed and printed in Japanese, but the printer display is in English.

2.1.3 Keyboard

The installation engineer sets the **Keyboard** option to match the hardware keyboard that is fitted at the factory. Normally you do not change this option, but the printer software allows you to change the keyboard that the printer uses.

For example, you can use this option to select a character that appears on other keyboards. If a European keyboard is fitted, but the **Keyboard** option is set to Japanese, the keyboard generates a Japanese character when you press a key.

How To Use a Different Keyboard



To change the keyboard that the software uses, select the keyboard from the list. Press the **OK** key to return to the **Locale** page.

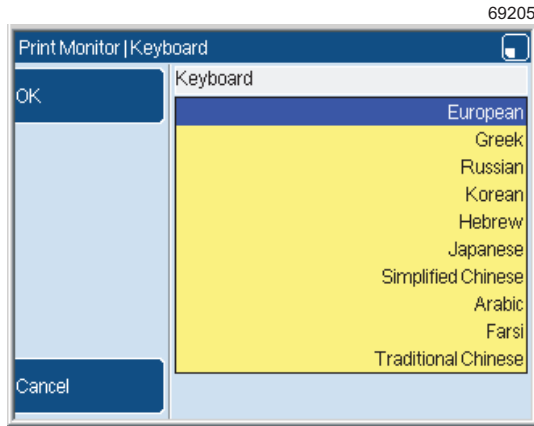


Figure 2. Keyboard page

2.1.4 Secondary Keyboard

To set a secondary keyboard that is different from the primary keyboard, select the secondary keyboard from the list and press the **OK** key to return to the **Locale** page.

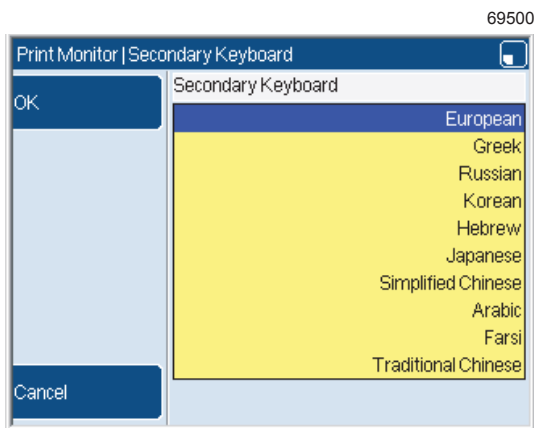


Figure 3. Secondary keyboard page

If a different secondary keyboard is selected, you can use the [alt] + [k] keyboard shortcut to change between the selected primary and secondary keyboards.



3 Extended keyboard character sets

The 5900 and 7900 printers allow you to select characters from extended character sets from the available keyboards. There are a maximum of four characters assigned to a key. Red letters or characters show the extended character keys on a keyboard. The following examples shows how you can access these characters.

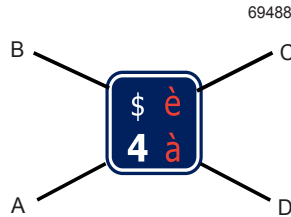


Figure 4. Example character layout on a key

NOTE: The red extended characters are in a different position on the keys on the Japanese keyboard (on the left side of the key and not on the right side of the key), as shown in Figure 5.

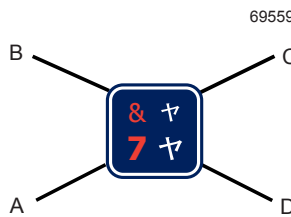


Figure 5. Character layout on a Japanese key



3.1 How to access different characters on a key

To access the characters on a key, refer to the following table.

Character position	Mode	Action
A: Bottom left	Default	Press the key to select the character at the bottom left.
B: Top left	Shift	Hold down the [shift] key and press the key to select the character at the top left. To lock the keyboard in this mode, hold down the [shift] key and press the [lock] key. To unlock the keyboard and return to the default mode, repeat this action.
C: Top right	Control and Shift	Hold down the [shift] and [ctrl] keys, and press the key to select the character at the top right. To lock the keyboard in this mode, hold down the [ctrl] key and [shift] key and press the [lock] key. To unlock the keyboard and return to the default mode, repeat this action.
D: Bottom right	Control	Hold down the [ctrl] key and press the key to select the character at the bottom right. To lock the keyboard in this mode, hold down the [ctrl] key and press the [lock] key. To unlock the keyboard and return to the default mode, repeat this action.

Figure 6. Keyboard character selection

See 'Keyboard layouts' on page 19 for more information about the extended character sets on keyboards.

The keyboard status indicator shows the current keyboard mode and which character is selected when you press the key. The indicator appears on the title bar at the top right of the screen, as shown in the following figures.



Figure 7. Keyboard status indicator: Default



Figure 8. Keyboard status indicator: Shift



Figure 9. Keyboard status indicator: Control and Shift

How To Use a Different Keyboard



Figure 10. Keyboard status indicator: Control

NOTE: When you press the [insert] key to set the printer display to overwrite mode, the background colour of the keyboard status indicator is white, not blue.

If the Japanese keyboard is selected, the keyboard status indicator appears as shown in the following figures:



Figure 11. Japanese keyboard indicator: Default



Figure 12. Japanese keyboard indicator: Shift



Figure 13. Japanese keyboard indicator: Control and Shift



Figure 14. Japanese keyboard indicator: Control



4 Additional character sets

4.1 Character selector

The character selector for the European keyboard allows you to access an additional character set that is not on the keyboard. This character set is shown in the table below

69528

ı	¢	¤	¥	©	ª	«	¬
--	®	—	•	²	³	´	¶
´	°	»	¼	½	¾	À	È
Ê	Â	Ë	Ì	Î	Ï	Ò	×
Ù	Û	Ɔ	÷	Ɔ	Ā	ā	Ą
Ĉ	ĉ	Ċ	ċ	Ď	Ē	ē	Ě
ě	É	è	Ę	Ě	Ĝ	ĝ	Ġ
ğ	Ğ	ğ	Ĥ	ĥ	Ħ	ħ	Í
ī	Ī	ĭ	Ĵ	ĵ	Ķ	ķ	ĳ
Ĺ	ĺ	Ļ	ļ	Ł	ł	Ł	Ń
ń	Ń	ņ	ņ	Ŋ	ŋ	Ō	ō
Ŏ	ö	Œ	œ	Ŕ	ŕ	Ŗ	ŗ
Ś	Ś	ŝ	Ţ	ţ	Ƒ	ƒ	Ū
ū	Ū	ū	Ů	ů	Ų	ų	Ŵ
ŵ	Ŷ	ŷ	Ÿ	Ż	ż		

Figure 15. Extended European character set

How To Use a Different Keyboard



You can use the [alt] + [x] keyboard shortcut from most text entry edit boxes to open the character selector.

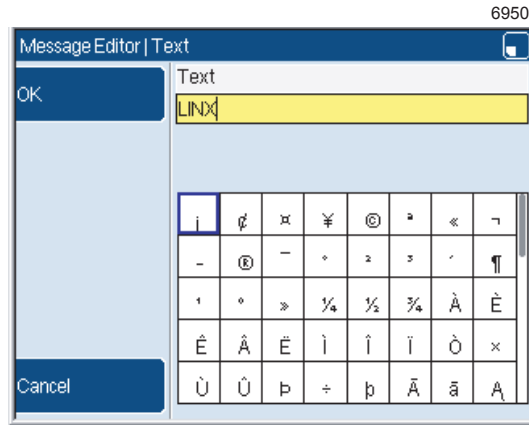


Figure 16. Text page: character selector

NOTE: Any text that you entered at the previous text entry edit box appears in the text box of the character selector.

Any characters that you now select in the character selector are displayed in the text box.

To use the character selector to select characters:

- 1 To move the cursor to the required character, hold down the [alt] key and the Up, Down, Left, or Right arrow key.
- 2 To select the character, press the [enter] key. The selected character is displayed in the text box at the current position of the cursor. You can continue to use the standard keyboard to enter characters in the text box.

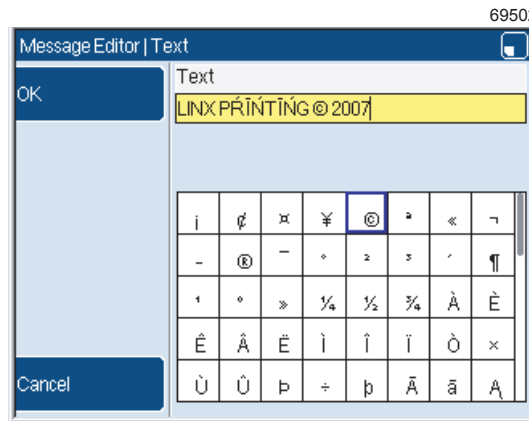


Figure 17. Text page: character selector with text



- To finish with the standard and additional characters, press the **OK** key. The text that you entered is displayed in the text box.

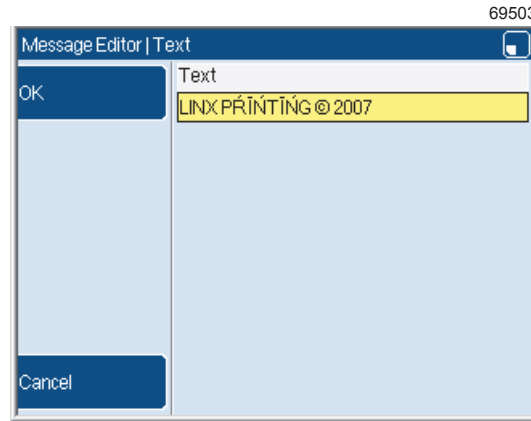


Figure 18. Text page

- Press the **OK** key, then the **Exit** key to return to the **Message Editor** page.

4.2 Pinyin system

The Pinyin system for Simplified and Traditional Chinese allows you to enter combinations of Latin characters that match sounds in the Chinese language. When you enter Latin characters in the system, you can build Chinese characters phonetically.

NOTE: You can use the Pinyin system when you select a Simplified Chinese or Traditional Chinese primary or secondary keyboard.

4.2.1 Simplified Chinese Pinyin

To use the Pinyin system when you select a Simplified Chinese keyboard:

- From a text edit entry box, use the [alt] + [x] keyboard shortcut to open the Pinyin system page. You can use the keyboard in 'Control' mode and 'Control and Shift' mode to enter Latin characters in the Pinyin system. See 'How to access different characters on a key' on page 7 for more information about how to select characters from the extended character sets on keyboards.

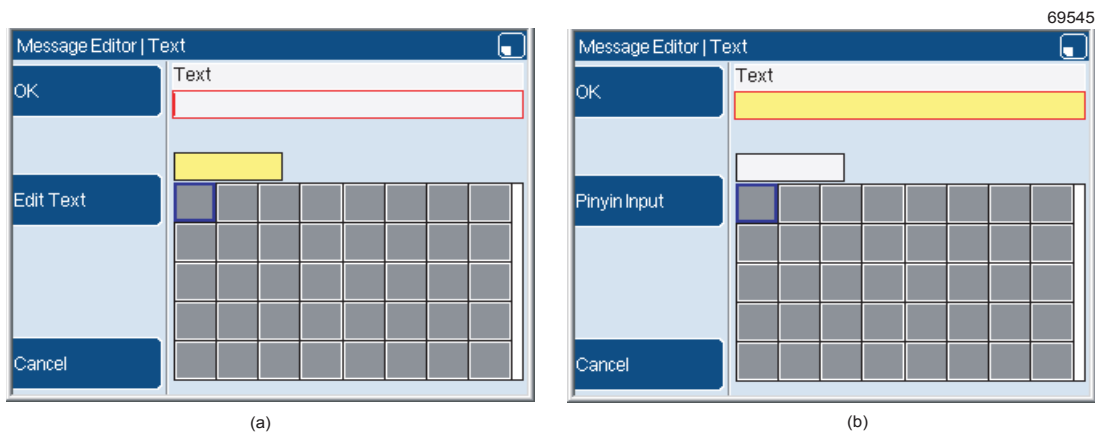


Figure 19. Text page: (a) Pinyin Input mode and (b) Edit Text mode

How To Use a Different Keyboard



2 The Pinyin system page opens in 'Pinyin Input' mode (see Figure 19 (a) on page 11). Press the **Edit Text** key to change to 'Edit Text' mode (see Figure 19 (b) on page 11). Press the key again to return to 'Pinyin Input' mode. The active text box has a yellow highlight. The two modes operate as follows:

- **Edit Text**— This option allows you to enter characters accessed from the selected current keyboard in 'Default' or 'Shift' mode in the upper text box. You can change between the two modes to add characters in 'Pinyin Input' mode. If necessary, use the Right arrow or Left arrow to move the cursor to the required position in the text box.
- **Pinyin Input**— This option allows you to enter Latin characters in the lower text box. When you enter each character in the box, the Simplified Chinese characters that match the entered text are displayed in the grid below.

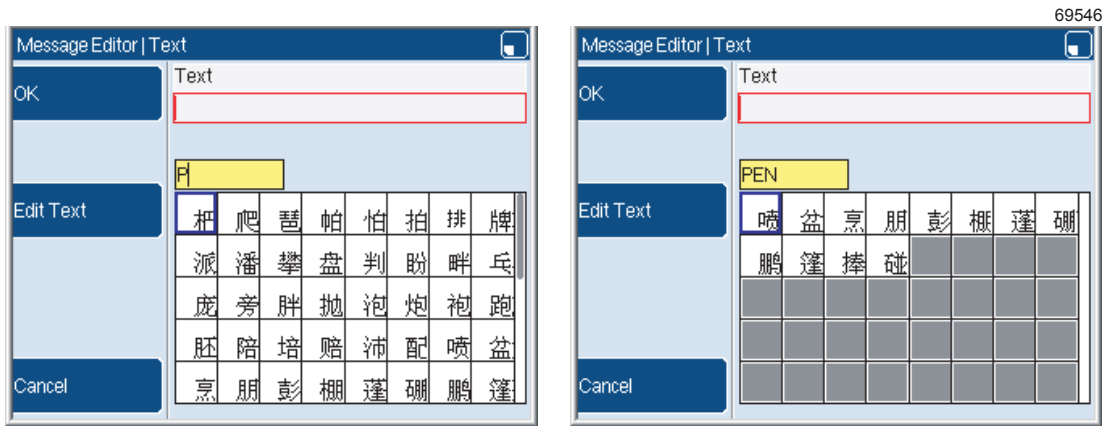


Figure 20. Text page: Pinyin character entry for Simplified Chinese (1)

3 To select the Simplified Chinese character that is highlighted in the grid, press the [enter] key. To move the cursor to highlight another Chinese character, hold down the [alt] key and the Up, Down, Left, or Right arrow key. Press the [enter] key to select the new character. The selected Chinese character is displayed in the upper text box at the current position of the cursor.

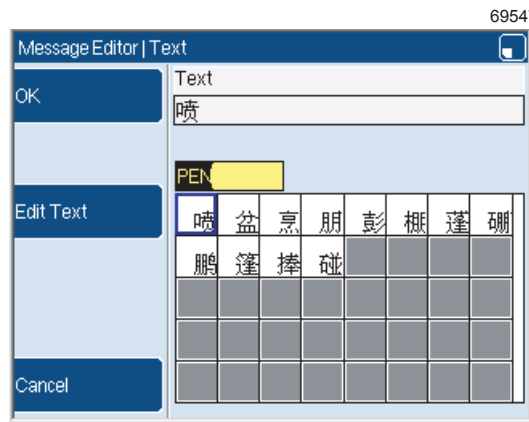


Figure 21. Text page: Pinyin character entry for Simplified Chinese (2)

To clear the highlighted text from the lower text box, press the [backspace] key or the [del] key, or enter another Latin character.



- 4 You can continue to use 'Pinyin Input' mode to build characters, or press the **Edit Text** key to change to 'Edit Text' mode. This option allows you to enter characters direct from the keyboard.
- 5 To finish with the Pinyin system page, press the **OK** key. The text that you entered is displayed in the text box.

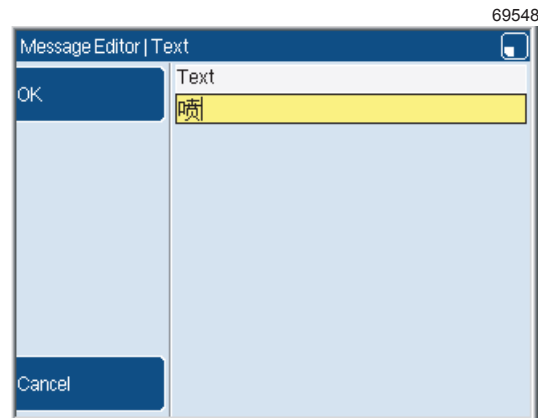


Figure 22. Text page with Simplified Chinese character

- 6 Press the **OK** key, then the **Exit** key to return to the **Message Editor** page.

4.2.2 Traditional Chinese Pinyin

To use the Pinyin system when you select a Traditional Chinese keyboard:

- 1 From a text entry edit box, use the [alt] + [x] keyboard shortcut to open the Pinyin system page. You can use the keyboard in 'Control' mode and 'Control and Shift' mode to enter Latin characters in the Pinyin system. See 'How to access different characters on a key' on page 7 for more information about how to select characters from the extended character sets on keyboards.
- 2 The Pinyin system page opens in 'Pinyin Input' mode (see Figure 19 (a) on page 11). Press the **Edit Text** key to change to 'Edit Text' mode (see Figure 19 (b) on page 11). Press the key again to return to 'Pinyin Input' mode. The active text box has a yellow highlight. The two modes operate as follows:
 - **Edit Text**—This option allows you to enter characters accessed from the selected current keyboard in 'Default' or 'Shift' mode in the upper text box. You can change between the two modes to add characters in 'Pinyin Input' mode. If necessary, use the Right arrow or Left arrow to move the cursor to the required position in the text box.

How To Use a Different Keyboard



- Pinyin Input**—This option allows you to enter Latin characters in the lower text box. When you enter each character in the box, the Traditional Chinese characters that match the entered text are displayed in the grid below.

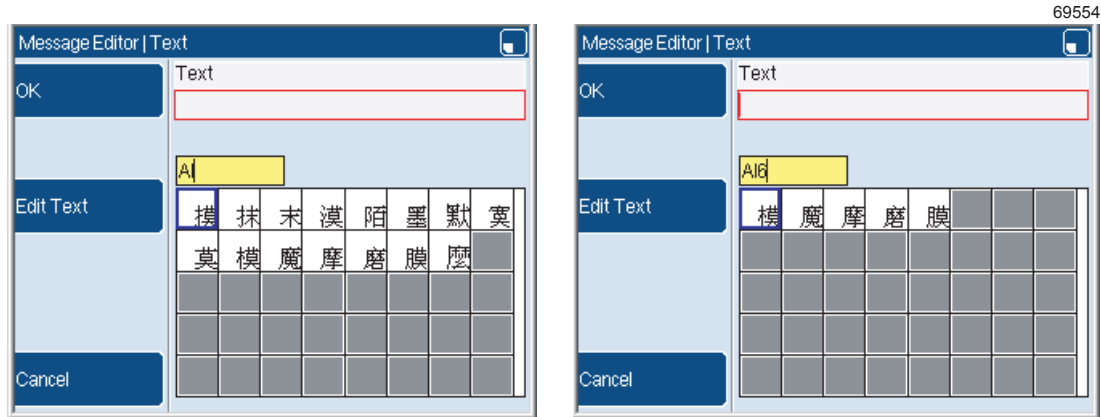


Figure 23. Text page: Pinyin character entry for Traditional Chinese (1)

- To select the Traditional Chinese character that is highlighted in the grid, press the [enter] key. To move the cursor to highlight another Chinese character, hold down the [alt] key and the Up, Down, Left, or Right arrow key. Press the [enter] key to select the new character. The selected Chinese character is displayed in the upper text box at the current position of the cursor.

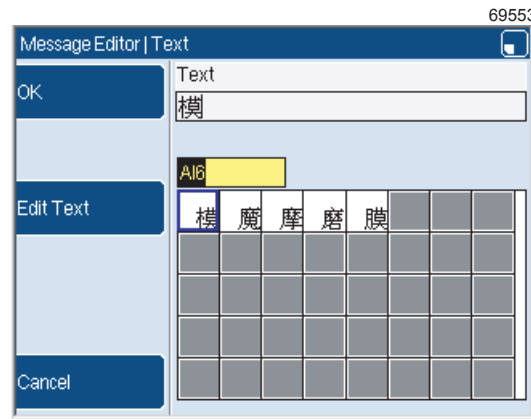


Figure 24. Text page: Pinyin character entry for Traditional Chinese (2)

To clear the highlighted character from the lower text box, press the [backspace] key or the [del] key, or enter another Latin character.

- You can continue to use 'Pinyin Input' mode to build characters, or press the **Edit Text** key to change to 'Edit Text' mode. This option allows you to enter characters direct from the keyboard.



- 5 To finish with the Pinyin system page, press the **OK** key. The text that you entered is displayed in the text box.

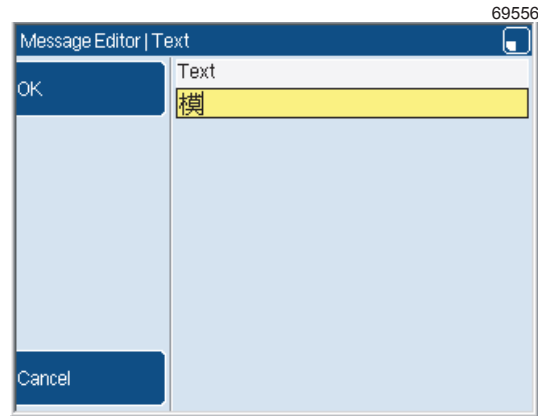


Figure 25. Text page with Traditional Chinese character

- 6 Press the **OK** key, then the **Exit** key to return to the **Message Editor** page.

4.3 Korean character selector

The Korean character selector allows you to create messages in Korean through Hangul syllables, built from characters known as Jamo. The Jamo are assembled from within the Korean character selector, which is like the Pinyin system.

NOTE: The printer only allows you to enter valid combinations of Jamo in the Korean character selector.

Example

You can use the Korean character selector when you select a Korean primary or secondary keyboard. This example uses English as the language option (European keyboard) with a Korean secondary keyboard selected.

How To Use a Different Keyboard



To use the Korean character selector:

- 1 From a text edit entry box use the [alt] + [k] keyboard shortcut to change to the Korean secondary keyboard. Enter any valid Jamo character in the text edit entry box. The Korean character selector automatically opens in 'Jamo Input' mode (see Figure 26). The character that you entered appears in the lower text box.

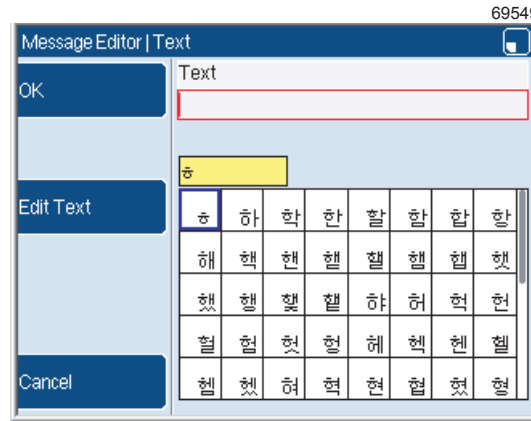


Figure 26. Korean character selector (1)

NOTE: You can press the **Edit Text** key to change to 'Edit Text' mode (see Figure 27(b)), but the Jamo characters that you enter again appear in the lower text box. Press the key again to return to the 'Jamo Input' option. The active text box has a yellow highlight.

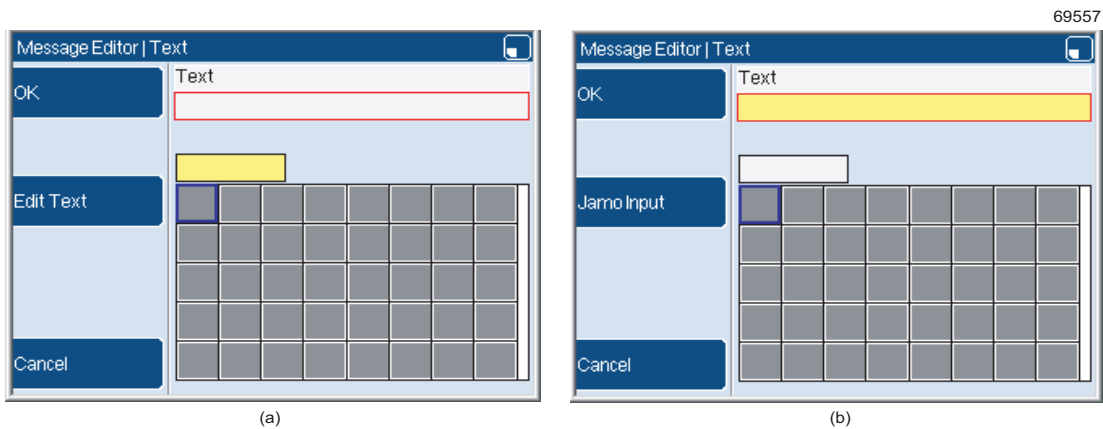


Figure 27. Korean character selector: (a) Jamo Input mode and (b) Edit Text mode

How To Use a Different Keyboard



- Enter another valid Jamo character in the lower text box. When each Jamo character is entered in the box, valid future combinations of Jamo characters that form Hangul syllables are displayed in the grid below. You can select any one of these syllables as shown in step 3 of 'Simplified Chinese Pinyin' on page 12.

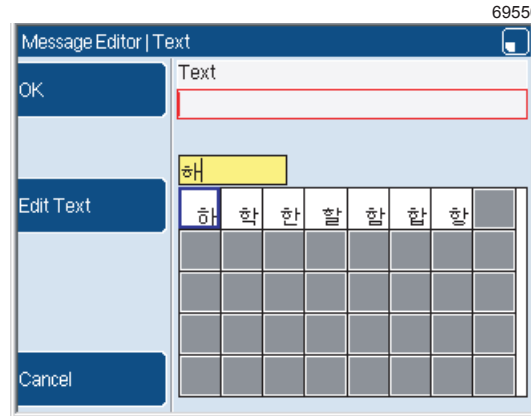


Figure 28. Korean character selector (2)

- When you enter enough Jamo characters to leave one Hangul syllable in the grid, the syllable is moved to the upper text box at the current position of the cursor. The Jamo characters in the lower text box and Hangul syllables in the grid are cleared.

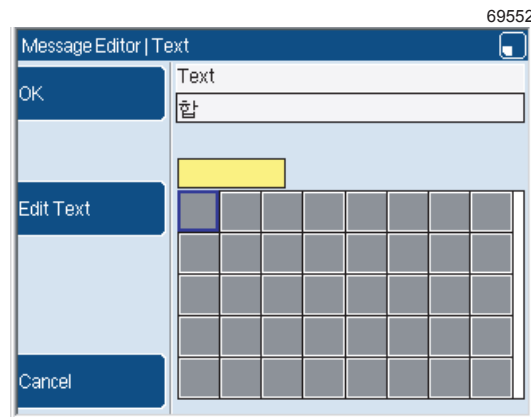


Figure 29. Korean character selector (3)

- You can continue to use the Korean character selector to create Hangul syllables as required.

How To Use a Different Keyboard



- 5 To finish with the Korean character selector, press the **OK** key. The text that you entered is displayed in the text box.

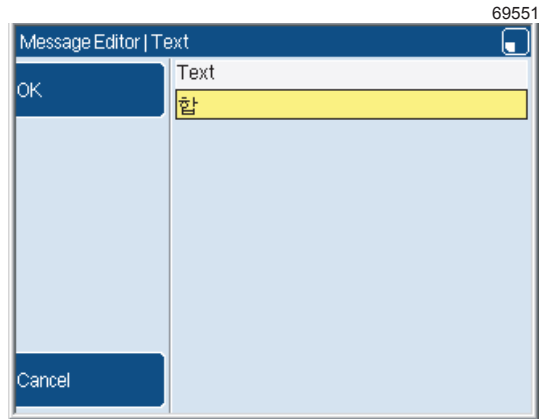


Figure 30. Text page with Korean Hangul syllable

- 6 Press the **OK**, then the **Exit** key to return to the **Message Editor** page.



5 Keyboard layouts

NOTE: Some of the characters that are shown in the figures for keyboard character sets do not appear on the keyboard. For example, lower case and upper case ASCII characters are shown, but only upper case ASCII characters appear on the keyboard.

5.1 European keyboard layout

The layout of the 5900/7900 European keyboard is shown in figure 31

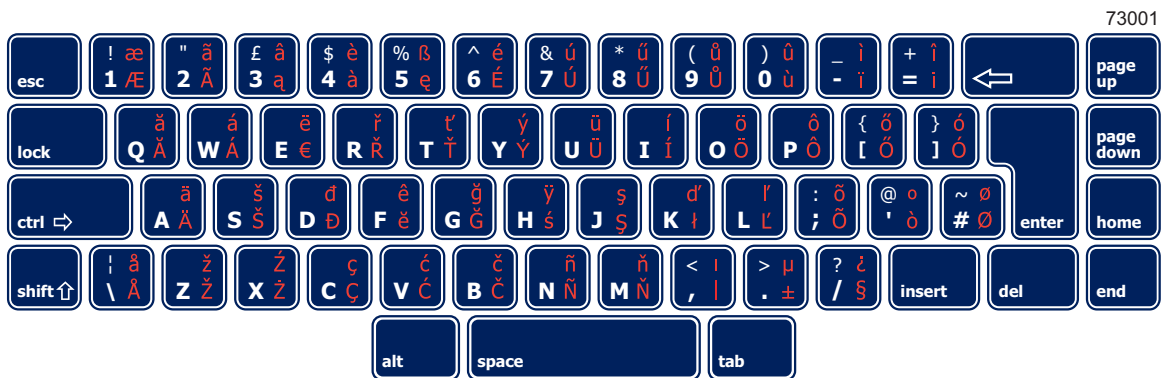


Figure 31. European keyboard layout

5.2 European keyboard character set

The table below shows the extended character set that you can access through the European keyboard as shown in 'How to access different characters on a key' on page 7.

69509

!	æ	"	ä	£	â	\$	è	%	ß	^	é	&	ú	*	ü	(	û	)	ù	-	ì	+	î
1	Æ	2	Ä	3	à	4	à	5	ë	6	É	7	Ú	8	Ü	9	Û	0	ù	-	ï	=	í
q	ä	w	á	e	ë	r	ř	t	t'	y	ý	u	ü	i	í	o	ö	p	ô	{	ö	}	ó
Q	Ä	W	Á	E	€	R	Ř	T	Ť	Y	Ý	U	Ü	I	Í	O	Ö	P	Ô	[	Ó	]	Ó
a	ä	s	š	d	đ	f	ê	g	ğ	h	ÿ	j	ş	k	đ	l	l'	:	ö	@	°	~	ø
A	Ä	S	Š	D	Đ	F	?	G	Ğ	H	Ś	J	Ş	K	†	L	Ł	;	Ö	'	ò	#	Ø
|	å	z	ž	x	ž	c	ç	v	ć	b	č	n	ň	m	ň	<	|	>	µ	?	¿		
|	Å	Z	Ž	X	Ž	C	Ç	V	Ć	B	Č	N	Ň	M	Ň	,	|	.	±	/	§		

Figure 32. European keyboard character set



5.3 Japanese keyboard layout

The layout of the 5900/7900 Japanese keyboard is shown in Figure 33.



Figure 33. Japanese keyboard layout

5.4 Japanese keyboard character set

The table below shows the extended character set that you can access through the Japanese keyboard as shown in 'How to access different characters on a key' on page 7.

個	旬	株	円	ア	時	ウ	%	エ	^	オ	&	ヤ	*	ユ	(	ヨ	)	ヲ	分	包	+	装	
1	ヌ	2	フ	3	ア	4	ウ	5	エ	6	オ	7	ヤ	8	ユ	9	ヨ	0	ワ	-	ホ	=	ハ
q	製	w	造	e	イ	r	賞	t	味	y	使	u	用	i	有	o	効	p	保	消	証	費	持
Q	夕	W	テ	E	イ	R	ス	T	カ	Y	ン	U	ナ	I	ニ	O	ラ	P	セ	[・]	・
a	期	s	限	d	間	f	以	g	内	h	番	j	号	k	出	l	荷	品	庫	名	存	入	質
A	チ	S	ト	D	シ	F	ハ	G	キ	H	ク	J	マ	K	ノ	L	リ	:	レ	~	ケ	#	ム
迄	・	z	ツ	x	上	c	中	v	下	b	年	n	月	m	日	<	産	>	卵	?	口		
¥	ー	Z	ツ	X	サ	C	ソ	V	ヒ	B	コ	N	ミ	M	モ	,	ネ	.	ル	/	メ		

Figure 34. Japanese keyboard character set



5.5 Greek keyboard layout

The layout of the 5900/7900 Greek keyboard is shown in Figure 35.

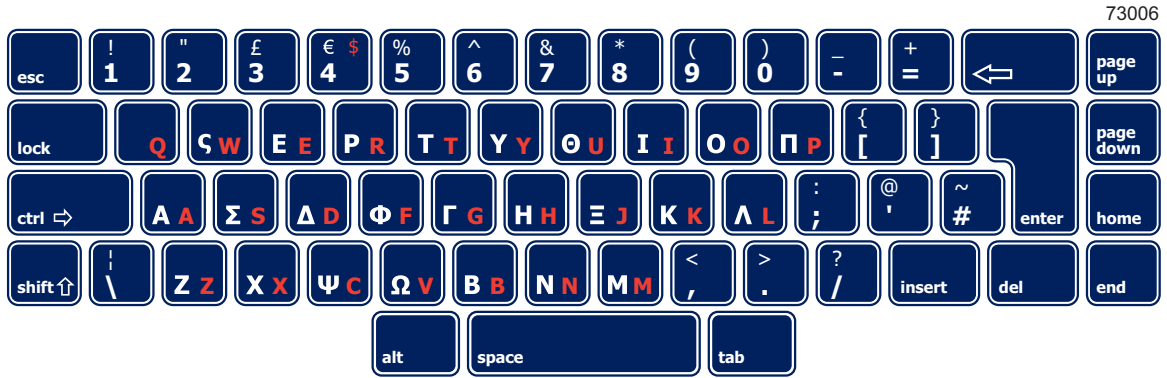


Figure 35. Greek keyboard layout

5.6 Greek keyboard character set

The table below shows the extended character set that you can access through the Greek keyboard as shown in 'How to access different characters on a key' on page 7.

69530																							
!	1	"	3	£	£	€	\$	%	%	^	^	&	&	*	*	(())	-	-	+	+
!	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	0	0	-	-	=	=
	q	ς	w	ε	e	ρ	r	t	t	υ	y	θ	u	i	i	ο	ο	π	p	{	{	}	}
	Q	ς	W	E	E	P	R	T	T	Y	Y	Θ	U	I	I	O	O	Π	P	[[]]
α	a	σ	s	δ	d	φ	f	γ	g	η	h	ξ	j	κ	k	λ	l	:	:	@	@	~	~
A	A	Σ	S	Δ	D	Φ	F	Γ	G	Η	H	Ξ	J	K	K	Λ	L	;	;	'	'	#	#
|	|	ζ	z	χ	x	ψ	c	ω	v	β	b	ν	n	μ	m	<	<	>	>	?	?		
|	|	Z	Z	X	X	Ψ	C	Ω	V	B	B	N	N	M	M	,	,	.	.	/	/		

Figure 36. Greek keyboard character set



5.7 Russian keyboard layout

The layout of the 5900/7900 Russian keyboard is shown in Figure 37.



Figure 37. Russian keyboard layout

5.8 Russian keyboard character set

The table below shows the extended character set that you can access through the Russian keyboard as shown in 'How to access different characters on a key' on page 7.

!	!	"	"	£	£	€	\$	%	%	^	^	&	&	*	*	(	(	)	)	-	-	+	+	73008
1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	0	0	-	-	=	=	
Й	q	ц	w	у	е	к	г	е	т	н	у	г	и	щ	і	щ	о	з	р	х	{	ъ	}	
И	Q	Ц	W	У	Е	К	Г	Е	Т	Н	У	Г	И	Щ	І	Щ	О	З	Р	Х	[	Ъ]	
ф	а	ы	s	в	d	а	f	п	г	р	н	о	ј	д	к	д	л	ж	:	э	@	~	~	
Ф	А	Ы	S	В	D	А	F	П	Г	Р	Н	О	Ј	Д	К	Д	Л	Ж	;	Э	'	#	#	
¥	|	я	z	ч	х	с	с	м	в	и	б	т	п	ь	м	б	<	ю	>	?	?			
¥	|	Я	Z	Ч	Х	С	С	М	В	И	Б	Т	П	Ь	М	Б	,	Ю	.	/	/			

Figure 38. Russian keyboard character set



5.9 Simplified Chinese keyboard layout

The layout of the 5900/7900 Simplified Chinese keyboard is shown in Figure 39.



Figure 39. Simplified Chinese keyboard layout

5.10 Simplified Chinese keyboard character set

The table below shows the extended character set that you can access through the Simplified Chinese keyboard as shown in 'How to access different characters on a key' on page 7.

Ⓜ	!	™	"	¢	€	¥	\$	n/a	%	n/a	^	大	&	小	*	上	(	下	)	千	_	万	+
—	1	二	2	三	3	四	4	五	5	六	6	七	7	八	8	九	9	零	0	十	-	百	=
中	q	国	w	本	e	使	r	用	t	食	y	无	u	已	i	内	o	先	p	售	{	价	}
年	Q	月	W	日	E	时	R	分	T	秒	Y	前	U	后	I	有	O	效	P	期	[	限]
包	a	装	s	尺	d	寸	f	升	g	米	h	斤	j	克	k	毫	l	厘	:	元	@	角	~
生	A	产	S	合	D	格	F	班	G	次	H	批	J	号	K	保	L	质	;	存	'	放	#
消	|	除	z	于	x	高	c	温	v	灭	b	菌	n	毒	m	素	<	罐	>	瓶	?		
此	\	为	Z	最	X	佳	C	制	V	造	B	公	N	司	M	正	,	品	.	货	/		

Figure 40. Simplified Chinese keyboard character set

NOTE: The characters that use the keys 5 and 6 in the 'Shift' mode (marked n/a) are symbols for the Canadian Safety Authority and the Underwriters Laboratory. Unicode characters do not exist for these symbols.



5.11 Traditional Chinese keyboard layout

The layout of the 5900/7900 Traditional Chinese keyboard is shown in Figure 41.



Figure 41. Traditional Chinese keyboard layout

5.12 Traditional Chinese keyboard character set

The table below shows the extended character set that you can access through the Traditional Chinese keyboard as shown in 'How to access different characters on a key' on page 7.

69533

↑	!	μ	°	∅	€	n/a	\$	Ω	%	®	^	™	&	n/a	*	n/a	(	±	)	°	-	°C	+
n/a	1	n/a	2	n/a	3	n/a	4	Ⓢ	5	Ⓣ	6	Ⓡ	7	Ⓢ	8	n/a	9	n/a	0	n/a	-	n/a	=
製	q	造	w	有	e	效	r	期	t	限	y	年	u	月	i	日	o	售	p	價	{	元	}
安	Q	全	W	聯	E	社	R	福	T	則	Y	品	U	禁	I	止	O	轉	P	贈	[	送]
生	a	產	s	最	d	佳	f	合	g	格	h	時	j	間	k	保	l	存	:	使	@	用	~
分	A	秒	S	克	D	斤	F	尺	G	厘	H	班	J	次	K	別	L	特	;	等	'	級	#
序	|	批	z	號	x	為	c	此	v	天	b	前	n	自	m	起	<	至	>	止	?		
建	\	議	Z	不	X	可	C	合	V	稅	B	回	N	收	M	質	,	証	.	單	/		

Figure 42. Traditional Chinese keyboard character set

NOTE: The characters that use the keys marked with n/a are symbols for the Canadian Safety Authority, Underwriters Laboratory, and other bodies. Unicode characters do not exist for these symbols.



5.13 Korean keyboard layout

The layout of the 5900/7900 Korean keyboard is shown in Figure 43.

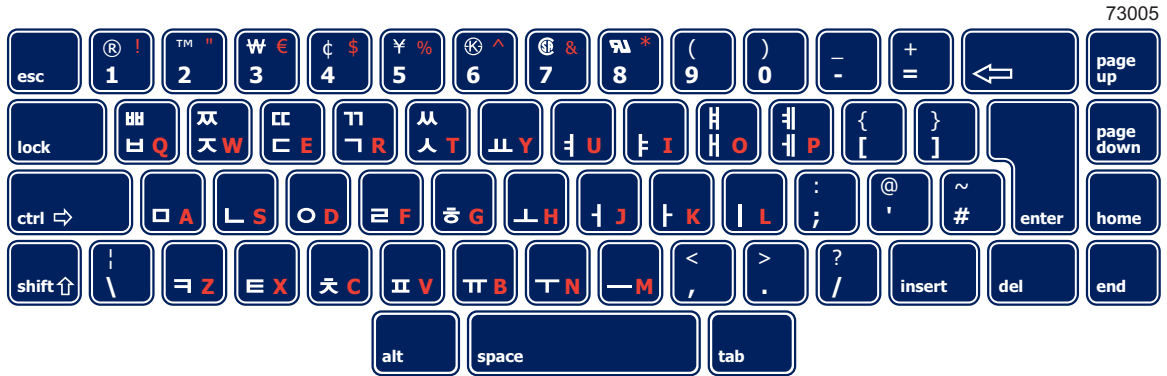


Figure 43. Korean keyboard layout

5.14 Korean keyboard character set

The table below shows the extended character set that you can access through the Korean keyboard as shown in 'How to access different characters on a key' on page 7.

69534

Ⓜ	!	™	“	₩	€	¢	\$	¥	%	Ⓢ	^	n/a	&	n/a	*	(())	_	_	+	+
1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	0	0	-	-	=	=
Ⓜ	q	ㅊ	w	ㅅ	e	ㅓ	r	ㅌ	t		y		u		i	ㅍ	o	ㅊ	p	{	{	}	}
ㅅ	Q	ㅊ	W	ㅅ	E	ㅓ	R	ㅌ	T	ㅍ	Y	ㅊ	U	ㅍ	I	ㅍ	O	ㅊ	P	[[]]
	a		s		d		f		g		h		j		k		l	:	:	@	@	~	~
ㅍ	A	L	S	O	D	ㅓ	F	ㅌ	G	ㅍ	H	ㅊ	J	ㅍ	K	ㅍ	L	;	;	'	'	#	#
|	|		z		x		c		v		b		n		m	<	<	>	>	?	?		
\	\	ㅍ	Z	E	X	ㅌ	C	ㅍ	V	ㅍ	B	ㅌ	N	—	M	,	,	.	.	/	/		

Figure 44. Korean keyboard character set

NOTE: The characters that use the keys 7 and 8 in the 'Shift' mode (marked n/a) are symbols for the Canadian Safety Authority and the Underwriters Laboratory. Unicode characters do not exist for these symbols.



5.15 Hebrew keyboard layout

The layout of the 5900/7900 Hebrew keyboard is shown in Figure 45.

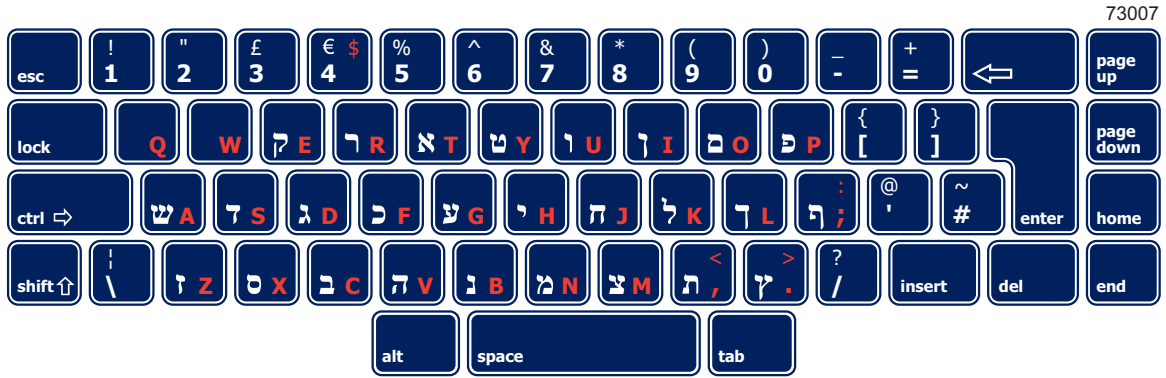


Figure 45. Hebrew keyboard layout

5.16 Hebrew keyboard character set

The table below shows the extended character set that you can access through the Hebrew keyboard as shown in 'How to access different characters on a key' on page 7.

69535

!	!	"	"	£	£	€	\$	%	%	^	^	&	&	*	*	(())	-	-	+	+
1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	0	0	-	-	=	=
	q		w	ק	e	ר	r	א	t	ט	y	ו	u	ן	i	ם	o	פ	p	{	{	}	}
	Q		W	ק	E	ר	R	א	T	ט	Y	ו	U	ן	I	ם	O	פ	P	[[]]
ש	a	ט	s	ג	d	כ	f	ע	g	י	h	ח	j	ל	k	ך	l	ך	:	@	@	~	~
ש	A	ט	S	ג	D	כ	F	ע	G	י	H	ח	J	ל	K	ך	L	ך	;	'	'	#	#
|	|	ז	z	ס	x	ב	c	ה	v	נ	b	מ	n	צ	m	ת	<	ך	>	?	?		
\	\	ז	Z	ס	X	ב	C	ה	V	נ	B	מ	N	צ	M	ת	,	ך	.	/	/		

Figure 46. Hebrew keyboard character set



5.17 Arabic keyboard layout

The layout of the 5900/7900 Arabic keyboard is shown in Figure 47.

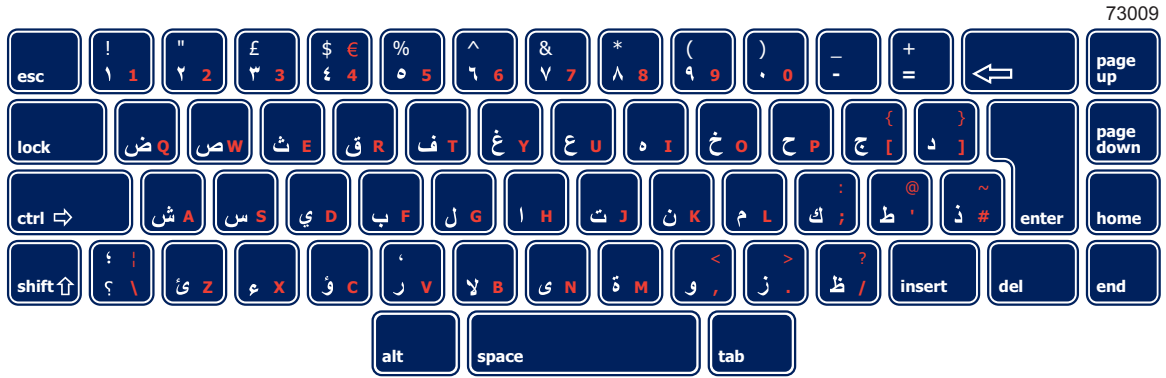


Figure 47. Arabic keyboard layout

5.18 Arabic keyboard character set

The table below shows the extended character set that you can access through the Arabic keyboard as shown in 'How to access different characters on a key' on page 7.

69536

!	!	"	"	£	£	\$	€	%	%	^	^	&	&	*	*	(())	_	_	+	+
١	1	٢	2	٣	3	٤	4	٥	5	٦	6	٧	7	٨	8	٩	9	٠	0	-	-	=	=
ض	q	ص	w	ث	e	ق	r	ف	t	غ	y	ع	u	ه	i	خ	o	ح	p	ج	{	}	
ض	Q	ص	W	ث	E	ق	R	ف	T	غ	Y	ع	U	ه	I	خ	O	ح	P	ج	[]	
ش	a	س	s	ي	d	ب	f	ج	g	ا	h	ت	j	ن	k	م	ل	ك	:	ط	@	ذ	~
ش	A	س	S	ي	D	ب	F	ج	G	ا	H	ت	J	ن	K	م	L	ك	;	ط	'	ذ	#
؛	|	ع	Z	ع	x	ؤ	c	ر	v	ب	ن	م	و	<	ز	>	ظ	?					
؟	\	ع	Z	ع	X	ؤ	C	ر	V	ب	N	م	و	,	ز	.	ظ	/					

Figure 48. Arabic keyboard character set



5.19 Farsi keyboard layout

The layout of the 5900/7900 Farsi keyboard is shown in Figure 51.

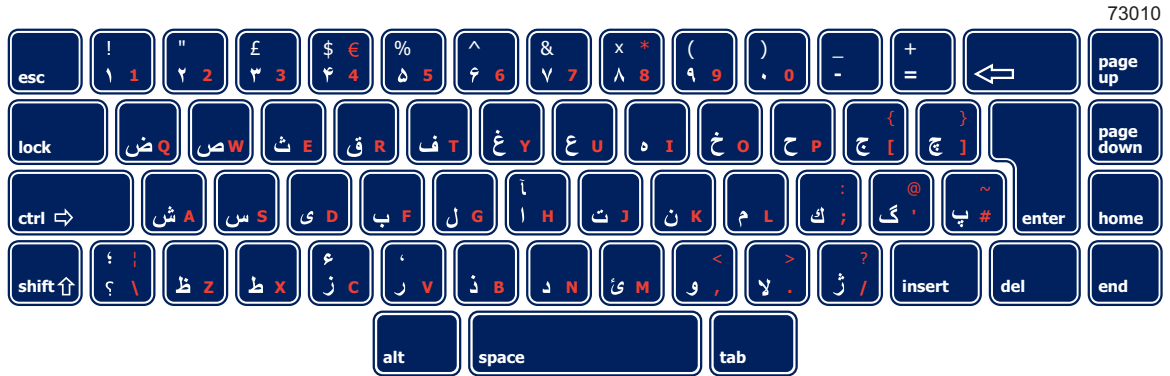


Figure 49. Farsi keyboard layout

5.20 Farsi keyboard character set

The table below shows the extended character set that you can access through the Farsi keyboard as shown in 'How to access different characters on a key' on page 7

69537																							
!	!	"	"	£	£	\$	€	%	%	^	^	&	&	x	*	(())	-	-	+	+
۱	1	۲	2	۳	3	۴	4	۵	5	۶	6	۷	7	۸	8	۹	9	۰	0	-	-	=	=
ض	q	ص	w	ث	e	ق	r	ف	t	غ	y	ع	u	ه	i	خ	o	ح	p	ج	{	ج	}
ض	Q	ص	W	ث	E	ق	R	ف	T	غ	Y	ع	U	ه	I	خ	O	ح	P	ج	[	ج]
ش	a	س	s	ی	d	ب	f	ج	g	آ	h	ت	j	ن	k	م	l	ک	:	گ	@	پ	~
ش	A	س	S	ی	D	ب	F	ج	G	آ	H	ت	J	ن	K	م	L	ک	;	گ	'	پ	#
؛	|	ظ	z	ط	x	ع	c	ر	v	ذ	b	د	n	س	m	و	<	لا	>	ز	?		
؟	\	ظ	Z	ط	X	ع	C	ر	V	ذ	B	د	N	س	M	و	,	لا	.	ز	/		

Figure 50. Farsi keyboard character set



5.21 Vietnamese keyboard layout

The layout of the 5900/7900 Vietnamese keyboard is shown in Figure 51.

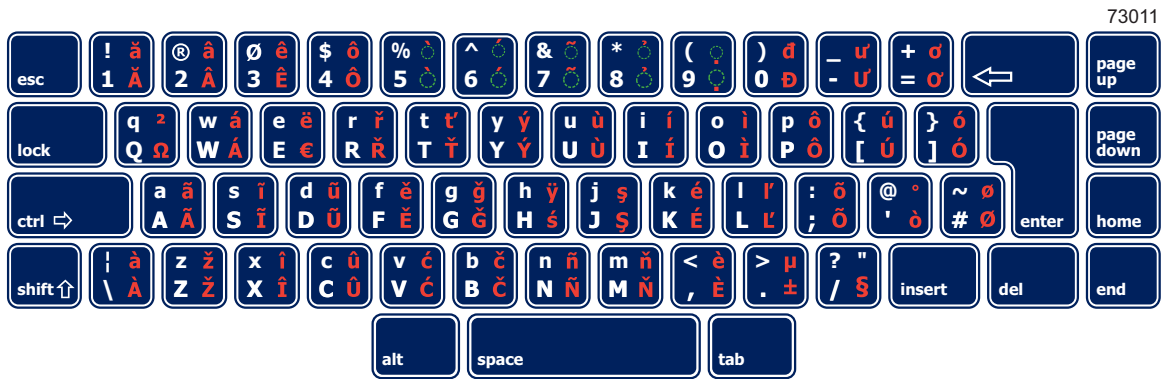


Figure 51. Vietnamese keyboard layout

5.22 Vietnamese keyboard character set

The table below shows the extended character set that you can access through the Vietnamese keyboard as shown in 'How to access different characters on a key' on page 7.

69124

!	ă	@	â	ø	ê	\$	ô	%	ò	^	ó	&	õ	*	ô	(	ø	)	ø	-	ư	+	ơ
1	Ă	2	Â	3	Ê	4	Ô	5	Ò	6	Ó	7	Õ	8	Ö	9	Ø	0	Ð	-	Ư	=	Ơ
q	2	w	á	e	ë	r	ř	t	ť	y	ý	u	ù	i	í	o	ì	p	ô	{	ú	}	ó
Q	Q	W	Á	E	Ë	R	Ř	T	Ť	Y	Ý	U	Ù	I	Í	O	Ì	P	Ô	[	Ú	]	Ó
a	ā	s	ī	d	ū	f	ě	g	ǧ	h	ÿ	j	ş	k	é	l	ł	:	õ	@	°	~	ø
A	Ā	S	Ī	D	Ū	F	Ě	G	Ǧ	H	Ś	J	Ş	K	É	L	Ł	;	Õ	`	ò	#	Ø
|	à	z	ž	x	î	c	û	v	ć	b	č	n	ň	m	ñ	<	è	>	µ	?	"		
\	À	Z	Ž	X	Î	C	Û	V	Ć	B	Č	N	Ň	M	Ñ	,	È	.	±	/	§		

Figure 52. Vietnamese keyboard character set

NOTE: The Vietnamese language can change the meaning of some words through the characters A, E, I, O, U, and Y (upper case and lower case) combined with diacritic marks.

You access these diacritic marks (grave accent, acute accent, hook, tilde, or dot below) on the keyboard through the keys 5 to 9 in 'Control' mode (for upper case characters) and 'Control and Shift' mode (for lower case characters). Enter the character to change, then the diacritic mark you require. The diacritic mark is added to the character.

How To Use a Different Keyboard



Valid combinations of characters and diacritic marks are shown in the following table:

69125

	Modifier Key 5	Modifier Key 6	Modifier Key 8	Modifier Key 7	Modifier Key 9
	`	´	,	~	.
Character					
A/a	À/à	Á/á	Â/â	Ã/ã	Ạ/ạ
Ă/ă	Ă/ă	Â/â	Ã/ã	Ä/ä	Ä/ä
Â/â	Ã/ã	Ä/ä	Å/å	Ă/ă	Ạ/ạ
E/e	É/é	È/è	Ê/ê	Ë/ë	Ẹ/ẹ
Ê/ê	É/é	È/è	Ê/ê	Ë/ë	Ẹ/ẹ
I/i	Í/í	Ì/ì	Î/î	Ï/ï	Ị/ị
O/o	Ó/ó	Ò/ò	Ô/ô	Õ/õ	Ọ/ọ
Ô/ô	Ó/ó	Ò/ò	Ô/ô	Õ/õ	Ọ/ọ
Ơ/ơ	Ó/ó	Ò/ò	Ô/ô	Õ/õ	Ọ/ọ
U/u	Ú/ú	Ù/ù	Û/û	Ü/ü	Ụ/ụ
Ư/ư	Ú/ú	Ù/ù	Û/û	Ü/ü	Ụ/ụ
Y/y	Ý/ý	Ỳ/ỳ	Ỡ/ỡ	Ỡ/ỡ	Ỡ/ỡ

Figure 53. Vietnamese diacritic marks



5.23 Thai keyboard layout

The layout of the 5900/7900 Thai keyboard is shown in Figure 54.

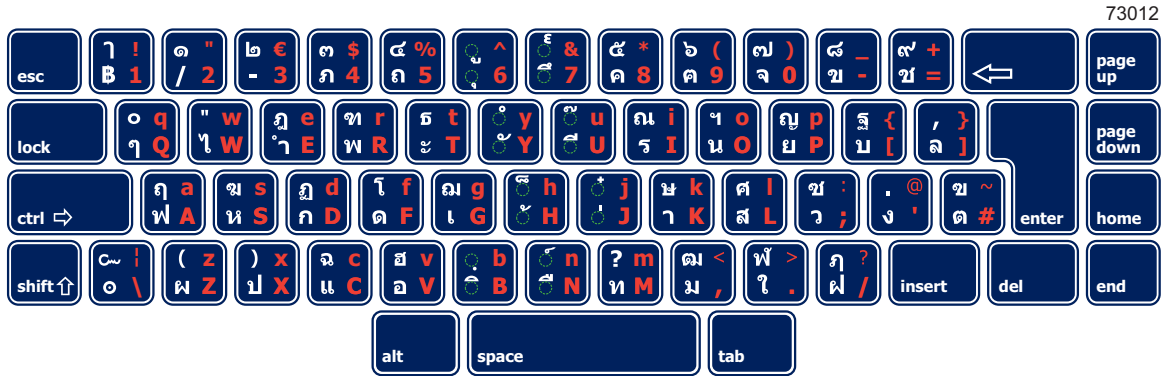


Figure 54. Thai keyboard layout

5.24 Thai keyboard character set

The table below shows the extended character set that you can access through the Thai keyboard as shown in 'How to access different characters on a key' on page 7.

69639																							
๑	!	๑	"	๒	€	๓	\$	๔	%	๕	^	๖	&	๗	*	๘	(	๙	)	๐	-	๑	+
๒	1	/	2	-	3	๔	4	๕	5	๖	๖	๖	๗	๘	๘	๘	๙	๙	๐	๑	-	๑	=
๐	q	"	w	๑	e	๓	r	๕	t	๖	y	๗	u	๙	i	๑	๐	๑	p	๑	{	,	}
๑	Q	๑	W	๑	E	๓	R	๕	T	๖	Y	๗	U	๙	I	๑	๐	๑	P	๑	[	๑]
๑	a	๓	s	๑	d	๑	f	๑	g	๑	h	๑	j	๓	k	๑	l	๑	:	.	@	๑	~
๑	A	๓	S	๑	D	๑	F	๑	G	๑	H	๑	J	๓	K	๑	L	๑	;	'	๑	#	
๑	|	(	z	)	x	๑	c	๑	v	๑	b	๑	n	?	m	๑	<	๑	>	๑	?		
๑	\	๑	Z	๑	X	๑	C	๑	V	๑	B	๑	N	๓	M	๑	,	๑	.	๑	/		

Figure 55. Thai keyboard character set

NOTE: The Thai language uses a combination of characters with diacritic and tone marks to build text. You access these diacritic and tone marks on the keyboard in Default or Shift mode to create characters.



5.25 Bulgarian keyboard layout

The layout of the 5900/7900 Bulgarian keyboard is shown in Figure 54.

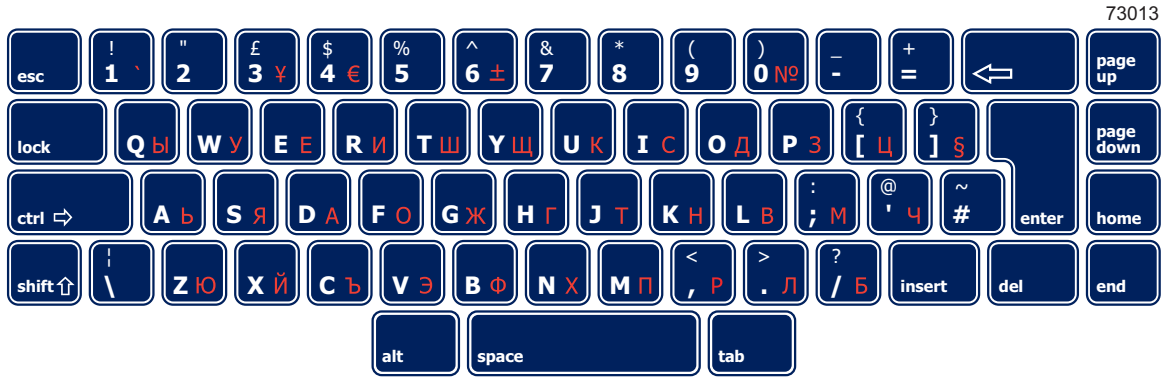


Figure 56. Bulgarian keyboard layout

5.26 Bulgarian keyboard character set

The table below shows the extended character set that you can access through the Bulgarian keyboard as shown in 'How to access different characters on a key' on page 7.

!	"	£	\$	%	^	&	*	()	-	+	
1 `	2 "	3 ¥	4 €	5 %	6 ±	7 &	8 *	9 (	0 №	-	=	
q	w у	e е	г и	t ш	y щ	u к	i с	o д	p з	{	ц	}
Q Ы	W У	E Е	R И	T Ш	Y Щ	U К	I С	O Д	P З	[	Ц]
a ъ	s я	d а	f о	g ж	h г	j т	k н	l в	:	м	@	ч
A Ъ	S Я	D А	F О	G Ж	H Г	J Т	K Н	L В	;	М	'	Ч
|	z ю	x ѝ	v ъ	c э	b ф	n х	m п	<	р	>	л	?
\	Z Ю	X Ъ	C Ъ	V Э	B Ф	N Х	M П	,	Р	.	Л	/

Figure 57. Bulgarian keyboard character set

Linx 5900 & 7900



How To Use the USB Connection

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to use the USB connection of the 5900 and 7900 printers to save messages from the printer to a USB memory stick and transfer messages to the printer from a memory stick. It also describes how to copy logos from a USB memory stick to the 5900 printer (this option is not available on the 7900 printer as the printer has logo creation functionality as standard).

This document also describes how to use the USB connection to make a back-up of the printer settings to a memory stick. You can restore the settings to the same printer, or transfer some settings to another printer.

NOTE: The copy message, copy logo, back-up and restore functions are available in the 'IDLE' state. Copy message and copy logo functions are also available in the 'JET RUNNING' state. These functions are not available in the 'PRINTING' state. You must insert a memory stick into the USB connector at the front of the printer before you can perform any of these functions.

Linx recommends that you use a memory stick of 512 MB to 4 GB capacity to save and copy messages, and back up and restore printer settings. Do not use a memory stick that is near its memory capacity. A memory stick that becomes full during a save and copy message or back-up and restore operation can cause the operation to fail.

You need a User Level B password to copy messages with a memory stick. You need a User Level C password to back up and restore printer settings.

CAUTION: Printer Software Damage. DO NOT remove the memory stick until a save or copy message, or back-up and restore, operation is complete. If you remove the memory stick before an operation is complete, you can cause permanent damage to your printer software.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Copy messages

IMPORTANT: Make sure that you read and understand the information on page 2 before you copy messages.

To copy messages from the printer to a memory stick and from a memory stick to the printer:

- 1 At the **Print Monitor** page, press the **Menu** key to display the **Menu** page.

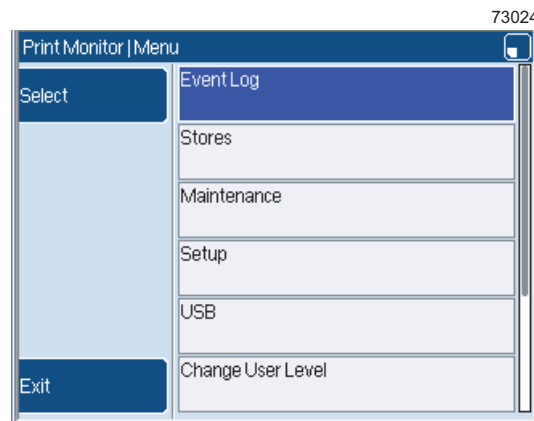


Figure 1. Menu page

- 2 Select the **USB** option to display the **USB** page.

NOTE: The options on the **USB** page are dimmed if a memory stick is not inserted.

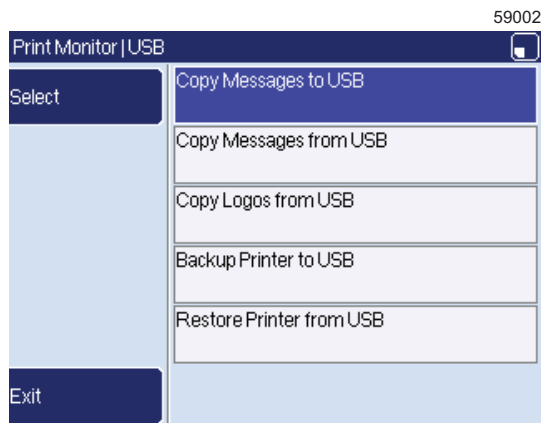


Figure 2. USB page

NOTE: The **Copy Logos from USB** option is not available on the 7900 printer.

If a copy operation fails for any other reason (for example if the operation is cancelled by the operator or if the printer or memory stick becomes full), the printer displays an information message. This message shows the number of correctly copied messages before the copy operation failed (see Figure 7 on page 6).

Press the **Exit** key to return to the selected **USB** menu option.



2.1 Copy messages to a memory stick

To copy messages from the printer to a memory stick:

- 1 Insert a memory stick into the USB connector at the front of the printer (see note on page 2).
- 2 Select the **Copy Messages to USB** option to display the **Copy Message to USB** page. A list of messages that are saved in the printer Message Store is displayed.

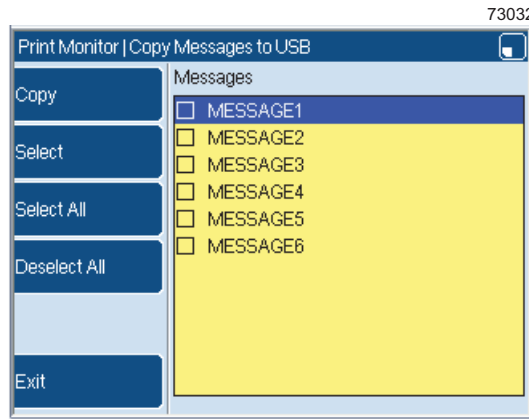


Figure 3. Copy Messages to USB page

NOTE: If there are no messages saved in the printer Message Store, the **Copy**, **Select**, **Select All**, **Deselect**, and **Deselect All** options are not available.

- 3 To select a message to copy to the memory stick, use the Up and Down arrow keys to highlight the name of the required message in the list, and then press the **Select** key. A check mark appears in the box to the left of the message name to show that the message is selected. To select more than one message, highlight each required message, and then press the **Select** key.

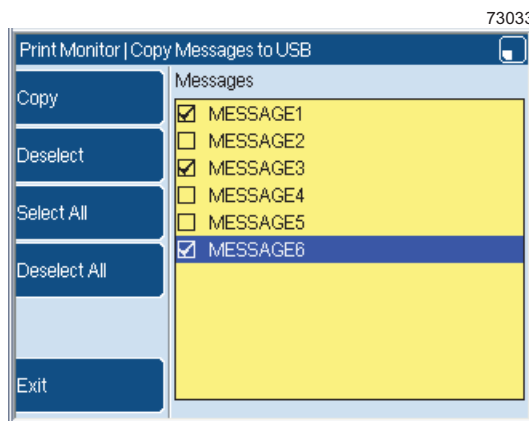


Figure 4. Select messages to copy

To deselect a message, highlight the name of the required message in the list, and then press the **Deselect** key. The check mark in the box to the left of the message name is removed.

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To select all messages, press the **Select All** key. Check marks appear in all the boxes to the left of all the message names. To deselect all messages, press the **Deselect All** key. The check marks in all the boxes to the left of the message names are removed.

The **Copy** key is enabled when any message is selected. The **Copy** key is disabled if there are no messages selected.

- 4 Press the **Copy** key to copy the selected messages to the memory stick. A progress bar shows the progress of the copy operation with the names of the messages as they are copied and a running total of the number of messages copied.

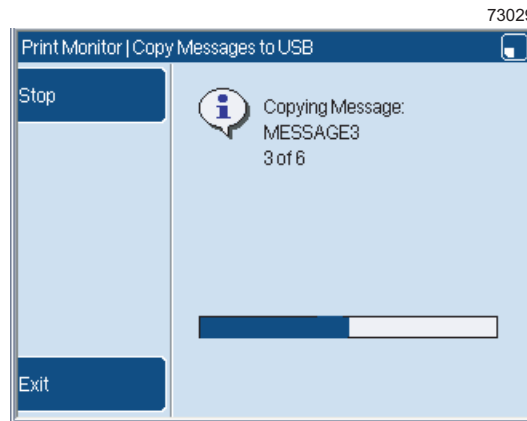


Figure 5. Copy messages progress

If the memory stick contains a file that has the same name, you can do one of the following:

- Overwrite the file on the printer (press the **Overwrite** key).
- Overwrite all files on the printer (press the **Overwrite All** key).
- Cancel the copy operation for all files (press the **Skip All** key).
- Cancel the copy operation for that file (press the **Skip** key).

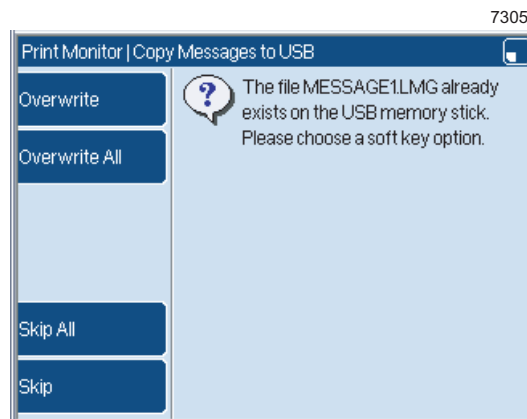


Figure 6. Duplicate file name message



If necessary, press the **Stop** key to cancel the copy operation. An information page confirms that the operation has failed and shows you the number of correctly copied messages.

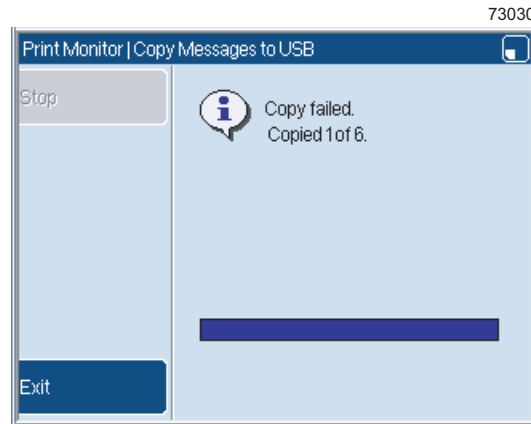


Figure 7. Copy failed message

Press the **Exit** key to return to the **Copy Messages to USB** page.

When the copy operation is complete, a confirmation page is displayed. The number of correctly copied messages is shown.

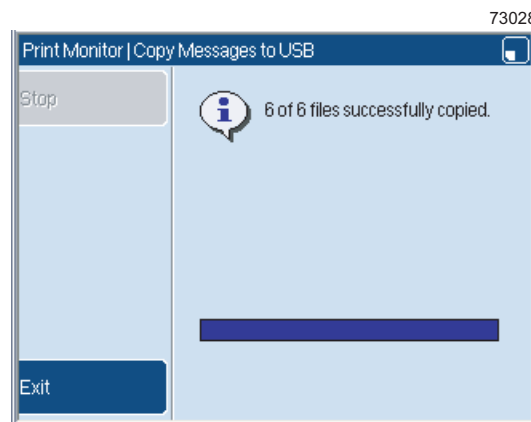


Figure 8. Copy operation complete message

- 5 Press the **Exit** key to return to the **Copy Messages to USB** page.
- 6 Press the **Exit** key to return to the **USB** page.

2.2 Copy messages from a memory stick

NOTE: 5900 only. Messages copied to the printer that contain an unsupported field type (for example, barcode, data matrix, sequential text, or sequential number with multiple ranges in messages copied from a 7900 printer) are invalid. You cannot select, edit, copy, or rename these messages on the **Message Store** page, but they can be deleted.

You use the same method described in the previous section to copy messages from a memory stick to the printer.



To copy messages from a memory stick to the printer:

- 1 Insert a memory stick into the USB connector at the front of the printer (see note on page 2).
- 2 Select the **Copy Messages from USB** option to display the **Copy Messages from USB** page.

NOTE: If there are a large number of messages saved on the memory stick, the printer can take several minutes to display the data.

A list of messages that are saved on the memory stick is displayed.

Messages saved on a memory stick are organised in folders named according to the Linx printer on which they were created. For example, messages created on the 7900 printer are saved in a folder named 'LINX\7900\MESSAGES'. When you select the **Copy Messages from USB** option, the printer displays by default the appropriate message folder for your current printer (in this example, the 7900), as shown in Figure 9.

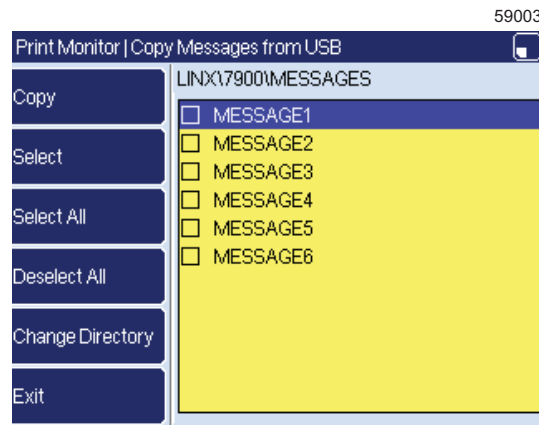


Figure 9. Copy Messages from USB page (7900 printer)

NOTE: If there are no messages saved on the memory stick, the **Copy**, **Select**, **Select All**, **Deselect** and **Deselect All** options are not available.

You can also display the contents of folders on the memory stick that contain messages created on the Linx 5900 and 7300 printers, and then copy messages from them to the printer.



- 3 To display other message folders, select the **Change Directory** option to display the **Change Directory** page.

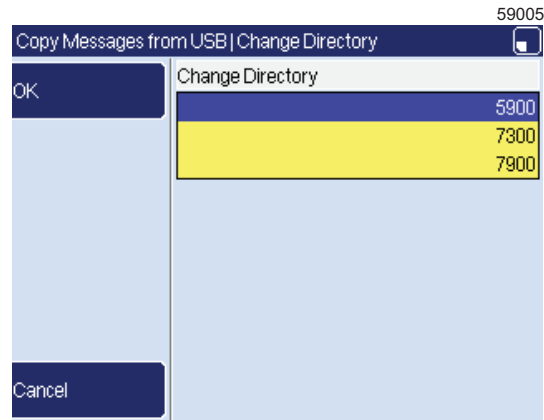


Figure 10. Change Directory page

- 4 Select the printer that you require (for example, the 5900) and press the **OK** key to return to the **Copy Messages from USB** page. The printer displays a list of messages created on the 5900 printer.

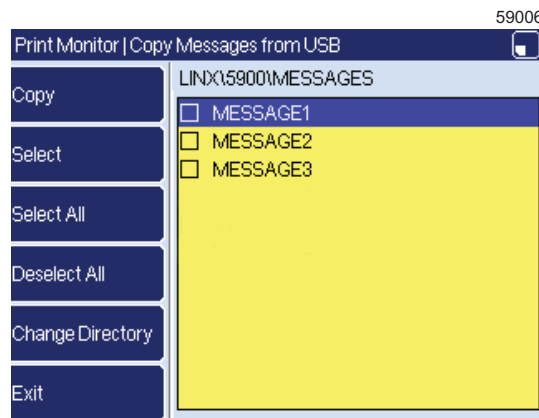


Figure 11. Copy Messages from USB page (5900 printer)

- 5 When you have selected the required folder, select the required messages, as described in 'Copy messages to a memory stick' on page 4.
- 6 Press the **Copy** key to copy the selected messages to the printer. If the printer contains a file that has the same name, you can do one of the following:
- Overwrite the file on the printer (press the **Overwrite** key).
 - Overwrite all files on the printer (press the **Overwrite All** key).
 - Cancel the copy operation for all files (press the **Skip All** key).
 - Cancel the copy operation for that file (press the **Skip** key).

See steps 4, 5 and 6 of 'Copy messages to a memory stick' for more information about the copy operation.



3 Copy logos

3.1 Copy logos from a memory stick

NOTE: 5900 only. You can copy logos in bitmap (.bmp) file format from a USB memory stick to the printer. Logos created on, for example, a PC should be saved to a folder named 'LINX\5900\LOGOS' on a memory stick. Copied logos can then be added to messages created on the printer, and the messages copied to other printers as described in 'Copy messages to a memory stick' on page 4 and 'Copy messages from a memory stick' on page 6.

This option is not available on the 7900 printer as the printer has logo creation functionality as standard.

Only monochrome bitmap files (normal or inverted) can be copied to the printer.

Only logos that are less than or equal in height to the currently selected maximum print height (based on the rasters available) can be selected for transfer to the printer.

The maximum allowed width of a logo is 1000 mm (based on the standard raster pitch of 0.353 mm, which is equivalent to 2832 pixels).

To copy logos from a memory stick to the printer:

- 1 Insert a memory stick into the USB connector at the front of the printer (see note on page 2).
- 2 Select the **Copy Logos from USB** option to display the **Copy Logos from USB** page.

NOTE: If there are a large number of logos saved on the memory stick, the printer can take several minutes to display the data.

A list of logos that are saved on the memory stick is displayed. Only valid files in bitmap format (see note above) are available for selection.

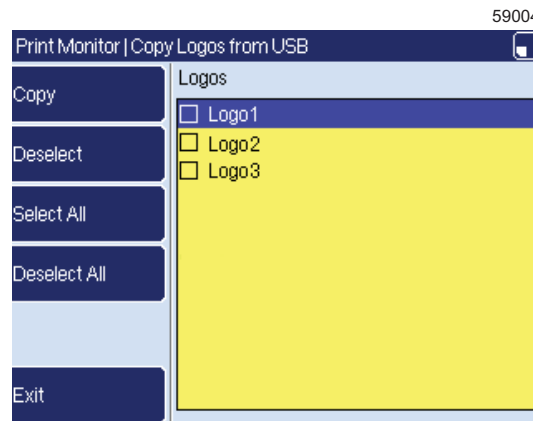


Figure 12. Copy Logos from USB page

NOTE: If there are no logos saved on the memory stick, the **Copy**, **Select**, **Select All**, **Deselect**, and **Deselect All** options are not available.

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- 3 Select the required logos, as described in 'Copy messages to a memory stick' on page 4.
- 4 Press the **Copy** key to copy the selected logos to the printer. If the printer contains a file that has the same name, you can do one of the following:
 - Overwrite the file on the printer (press the **Overwrite** key).
 - Overwrite all files on the printer (press the **Overwrite All** key).
 - Cancel the copy operation for all files (press the **Skip All** key).
 - Cancel the copy operation for that file (press the **Skip** key).

See steps **4**, **5** and **6** of 'Copy messages to a memory stick' for more information about the copy operation. Logo files copied to the printer are saved in the Logo Store.



4 Back up and restore printer settings

IMPORTANT: Make sure that you read and understand the information on page 2 before you back up or restore printer settings.

NOTE: You need a User Level C password to back up and restore printer settings.

You can use a memory stick to make a back-up of the printer settings. You can restore the printer settings to the same printer, or transfer some printer settings to another printer.

You can back up printer settings from more than one printer to the same memory stick. A back-up is saved to the memory stick and identified by a name that shows the date and time of the back-up in the format YYYY\MM\DD HH.MM. Back-ups from other printers are identified with the date and time and a 5-character code for the serial number of the printer used. For example, "2009\07\29 10.29 (AB123)". See Figure 17 on page 14.

You can back up the following printer settings:

- All messages and fields
- System parameters, including shaft encoder configuration, print count, and used SureFill codes
- Logos
- Date formats
- Shift codes
- Bar codes
- Trigger events
- Production schedules
- Orientation sequences
- Printhead parameters (for each supported printhead)
- Message orientations
- Text sequences
- Sequential number fields
- User interface configuration
- Printer configuration code
- Security level passwords, security configuration and current security level
- Communication (RS232 and Ethernet) and protocol settings

You can restore the full range of printer settings shown in the preceding list to a printer with the same serial number code as the back-up.

If the printer has a different serial number code than the back-up, you cannot restore the following printer settings to that printer from the back-up:

- Print count and used SureFill codes
- Printhead parameters (for each supported printhead)
- Printer configuration code
- Security level passwords, security configuration and current security level



- Communication (RS232 and Ethernet) and protocol settings

See 'Restore a printer from a memory stick' on page 14 for more information.

To back up and restore printer settings with a memory stick:

- 1 At the **Print Monitor** page, press the **Menu** key to display the **Menu** page (see Figure 1 on page 3).
- 2 Select the **USB** option to display the **USB** page (see Figure 2 on page 3).

4.1 Back up a printer to a memory stick

To back up printer settings from a printer to a memory stick:

- 1 Insert a memory stick into the USB connector at the front of the printer (see note on page 2).
- 2 Select the **Backup Printer to USB** option to begin the back-up. The back-up operation can take up to 5 minutes. A progress bar shows the progress of the operation.

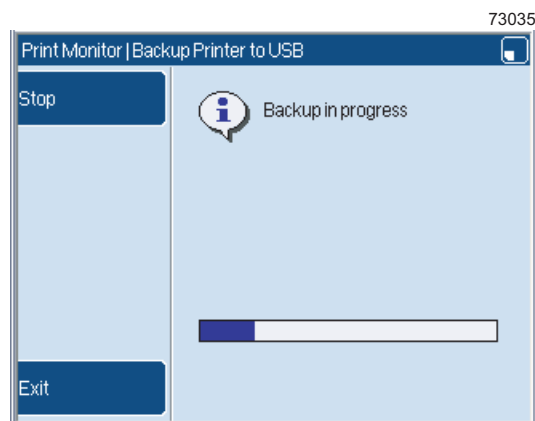


Figure 13. Backup printer progress



If necessary, you can press the **Stop** key to cancel the back-up operation. An information page confirms that the operation has failed.

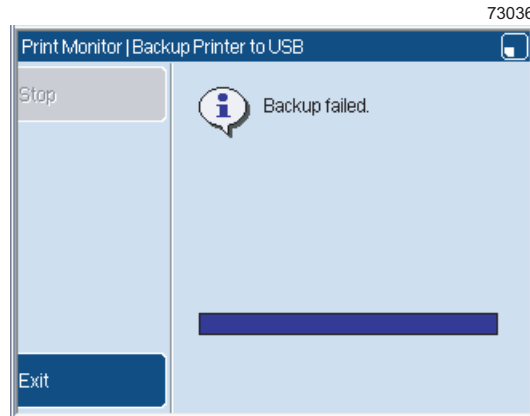


Figure 14. Printer backup failed message

Press the **Exit** key to return to the **USB** page.

When the back-up operation is complete, a confirmation page is displayed.

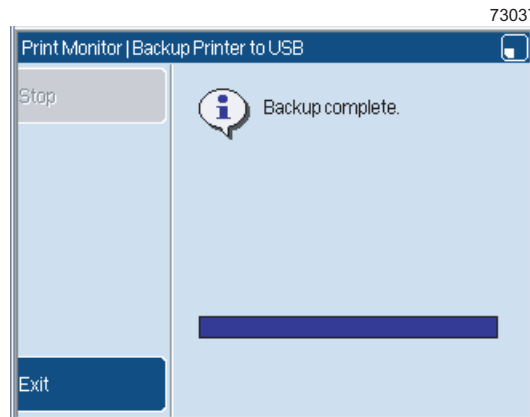


Figure 15. Printer backup complete message

- 3 Press the **Exit** key to return to the **USB** page.
- 4 Press the **Restore Printer from USB** key to show a list of current back-ups from printers (see Figure 16 on page 14.).

If a back-up operation fails for any other reason (for example if the operation is cancelled by the operator or if the memory stick becomes full), the printer displays an information message (see Figure 14). The back-up is identified on the memory stick as not complete and you cannot restore that back-up to the printer.



4.2 Restore a printer from a memory stick

See page 11 for more information about which printer settings you can restore from back-ups.

To restore printer settings from a memory stick to a printer:

NOTE: The printer automatically restarts after a restore operation to apply any changes.

- 1 Insert a memory stick into the USB connector at the front of the printer (see note on page 2).
- 2 At the **USB** page (see Figure 1 and Figure 2 on page 3), select the **Restore Printer from USB** option to display the **Restore Printer from USB** page.

NOTE: If there are a large number of back-ups saved on the memory stick, the printer can take several minutes to display the data.

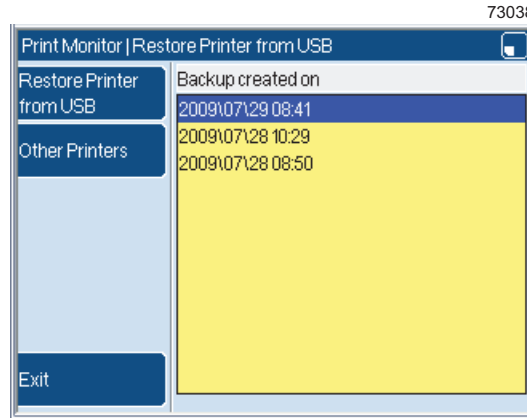


Figure 16. Restore Printer from USB page

The page shows a list of the back-ups that are saved from the current printer. The back-ups are shown in order of date and time (oldest back-up first). Press the **Other Printers** key to show any back-ups that are saved from other printers.

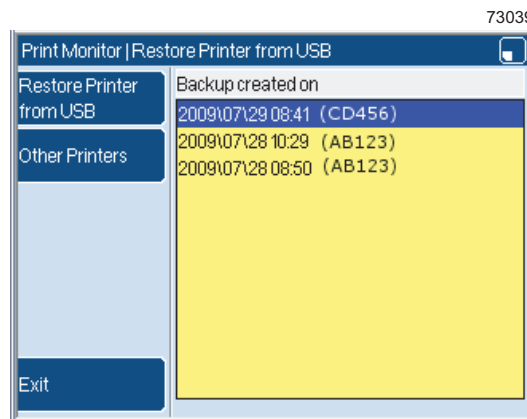


Figure 17. Restore Printer from USB: Other Printers page

Again, the back-ups are shown in order of date and time (oldest back-up first) with the serial number code to identify the printer.



Press the **This Printer** key to return to the the list of back-ups from the current printer.

- 3 Use the Up and Down arrow keys to highlight the name of the required back-up, and then press the **Restore Printer from USB** key.

You are asked to confirm that you want to restore the printer.

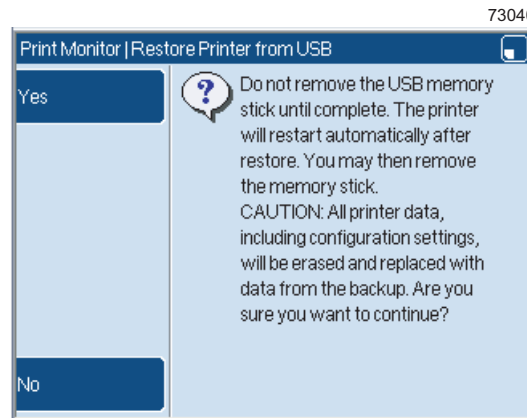


Figure 18. Restore printer confirmation page

IMPORTANT: You cannot stop the restore operation after you press the **Yes** key. The operation can take up to 7 minutes and replaces all current printer settings with the settings saved in the back-up.

- 4 Press the **No** key to cancel the restore operation and return to the **Restore Printer from USB** page. Press the **Yes** key to begin the operation.

A progress bar shows the progress of the operation.

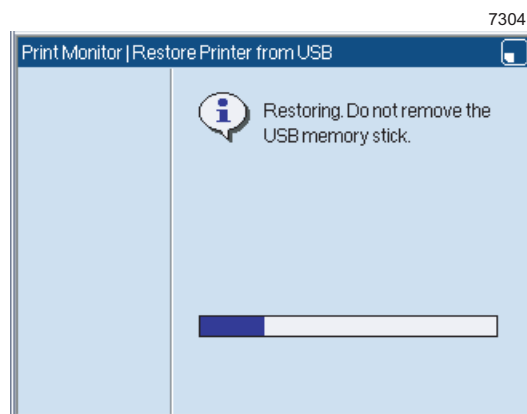


Figure 19. Restore printer progress

When the restore operation is complete, the printer restarts automatically to apply any changes.

Linx 5900 & 7900



How To Use a Prompted Field

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to create and use a prompted field for the Linx 5900 and 7900 printers.

You need a User Level C password to perform all the tasks that are described in this document. Any user with a User Level A password can select a message that contains a prompted field.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About prompted fields

A prompted field in a message is a text field that, when you select the message, prompts you to enter the text for the field before the message is printed. This reduces the need to edit a message by reusing common message content, and makes sure that all the message data is entered before the message is printed.

A single message can have more than one prompted field.

When you select a message that contains one or more prompted fields, the printer displays a sequence of one or more operator-entry pages. These pages prompt you to enter text, or select an entry from a list, or accept the most recent entry. You must respond to each of the prompts before you can print the message. To follow an example sequence, see page 16.

The 5900 and 7900 printers have two types of prompts—User Prompt and Prompt List. The type that you use controls how you input the text for the field when the message is selected.

- For a User Prompt, you must enter some text, up to a maximum number of characters.
- For a Prompt List, you must select existing text from a predefined list, which you create.

When a remote host device selects a message that contains a prompted field, the printer automatically uses the most recent entry to update the field, and does not display any prompt page.

NOTE: You can use a keyboard shortcut to update a prompted field in the current message (you do not need to stop the print). At the **Print Monitor** page, press the [Alt] key and the [P] key together. The printer displays each prompt in sequence.



3 Create a prompted field

This section shows you how to create a prompted field. The following examples describe the two types of prompts.

3.1 User Prompt

This example shows you how to create a prompted field with a User Prompt. The example uses the default values for the field, and the prompt text is “ENTER FLAVOUR”.

To create a prompted field with a User Prompt, perform the following steps:

- 1 Go to the **Print Monitor** page and select **Message Store > New** to display the **Message Editor** page with a new, blank message.

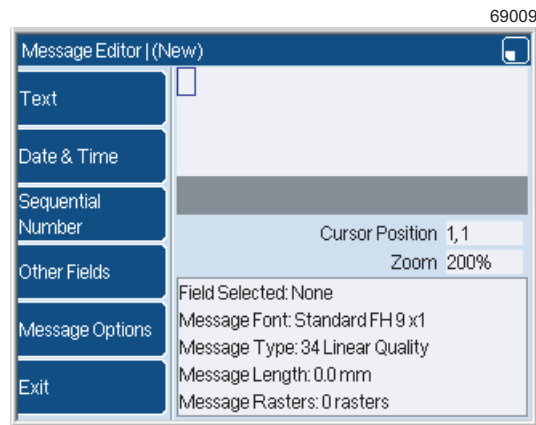


Figure 1. Message Editor page

- 2 Press the **Other Fields** key to display the **Insert Other Fields** page.

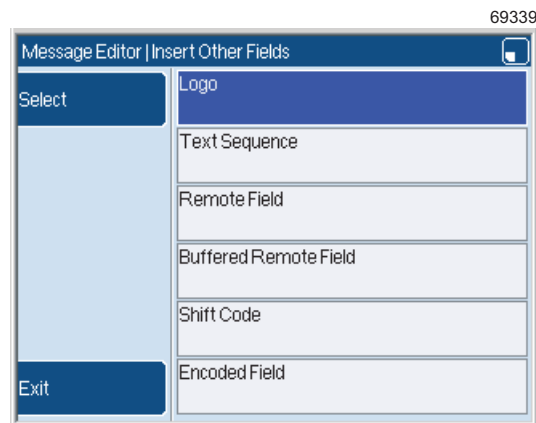


Figure 2. Insert Other Fields page

How To Use a Prompted Field



- Press the Down arrow key until the **Prompted Field** option is highlighted.

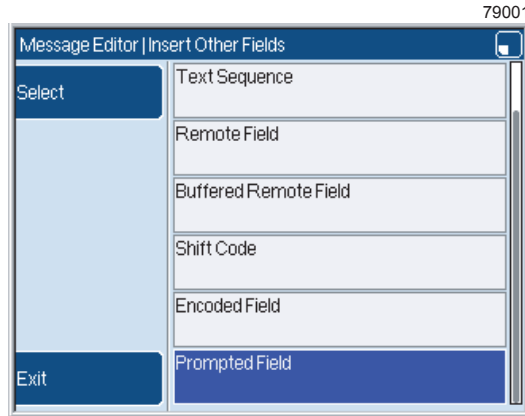


Figure 3. Insert Other Fields page: Prompted Field option

- Select the **Prompted Field** option to display the **Insert Prompted Field** page.

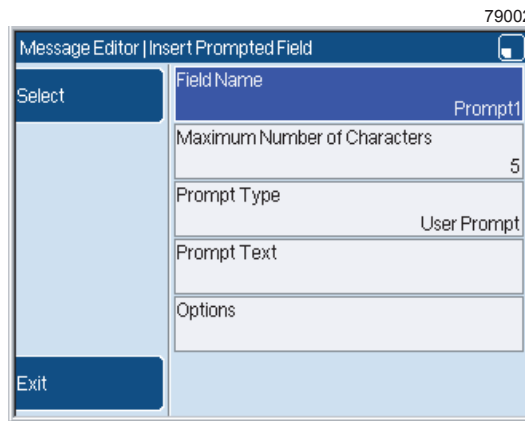


Figure 4. Insert Prompted Field page

This page shows the default values for the new field (the name of the field is “Prompt1”, the field has a maximum of 5 characters, and the prompt type is “User Prompt”).

NOTE: Only the **Prompt Text** option is used in this example. (See the example ‘Prompt List’ on page 8 for a description of the **Field Name** option and the **Prompt Type** option. See ‘Edit a prompted field’ on page 13 for a description of the other options on this page.)

How To Use a Prompted Field



- 5 Select the **Prompt Text** option and enter the prompt text "ENTER FLAVOUR", as shown in Figure 5.

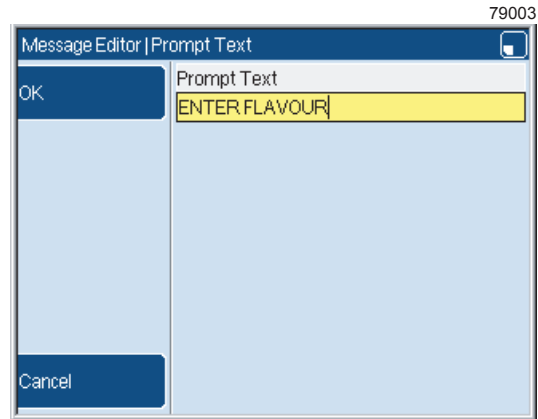


Figure 5. Prompt Text page

When you select a message, the printer displays the text that you enter here as a prompt 'reminder'.

NOTE: The prompt text can contain a mixture of lowercase letters, uppercase letters, numbers, and punctuation symbols.

- 6 Press the **OK** key to return to the **Insert Prompted Field** page.

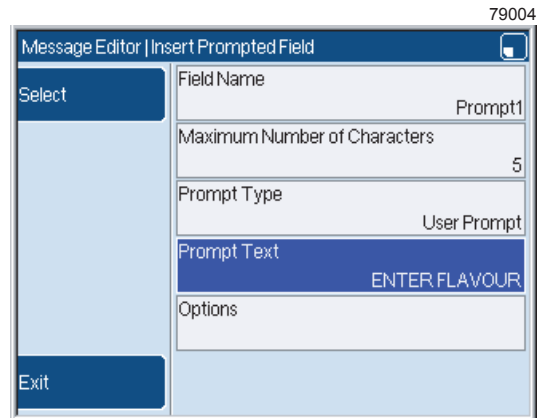


Figure 6. Insert Prompted Field page

The **Prompt Text** option shows the new text that you entered.



- 7 Press the **Exit** key to accept the settings and return to the **Message Editor** page.

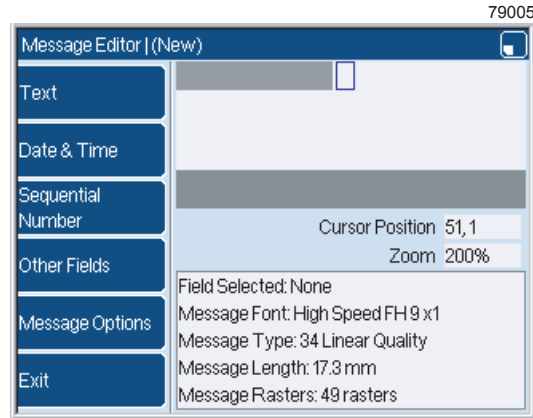


Figure 7. Message Editor page: prompted field

NOTE: The **Message Editor** page shows a grey box to indicate the size and position of the field. The field remains blank until the user enters the text when the message is selected.

The size of the grey box in Figure 7 depends on the value that you entered in the **Maximum Number of Characters** option.

Now you can exit from the **Message Editor** page and save your message, as shown in the *Linx 5900 & 7900 Quick Start Guide*.



3.2 Prompt List

This example shows how to create a prompted field with a Prompt List prompt type. The field has a prompt list that contain three items.

To create a prompted field with a Prompt List, perform the following steps:

- 1 Refer to page 4 and perform steps **2**, **3**, and **4** to display the **Insert Prompted Field** page.

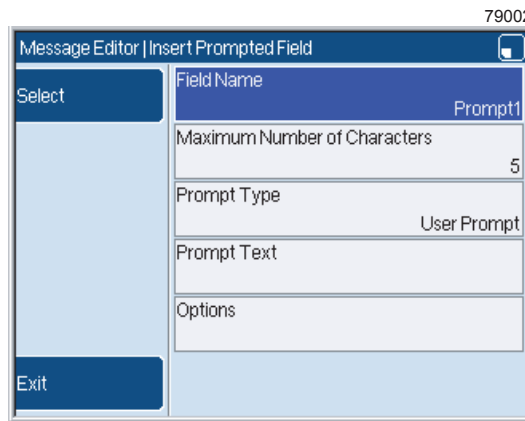


Figure 8. Insert Prompted Field page

NOTE: This example uses the **Field Name**, **Prompt Type**, **Edit Prompt List**, and **Prompt Text** options. (See 'Edit a prompted field' on page 13 for a description of the other options on this page.)

- 2 Select the **Field Name** option and enter the name "PACK SIZE", as shown in Figure 9.

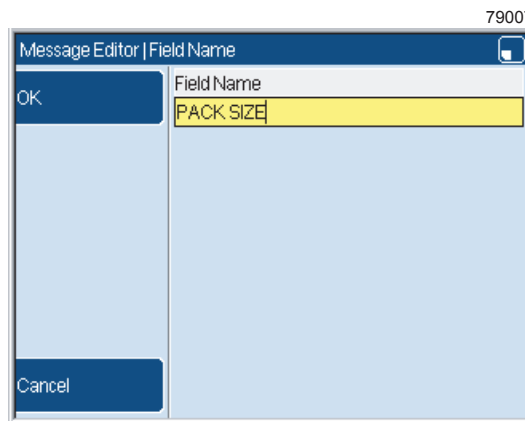


Figure 9. Field Name page

How To Use a Prompted Field



- Press the **OK** key to return to the **Insert Prompted Field** page.

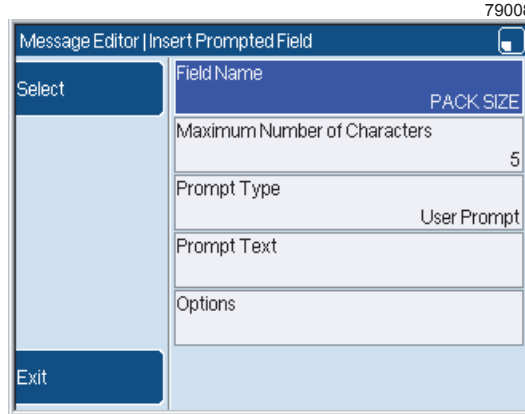


Figure 10. Insert Prompted Field page

The **Field Name** option displays the name that you entered.

- Select the **Prompt Type** option to display the **Prompt Type** page, and then highlight the **Prompt List** type, as shown in Figure 9.

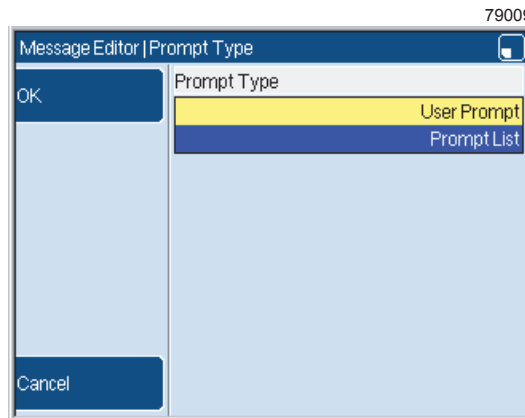


Figure 11. Prompt Type page

- Press the **OK** key to confirm the setting. The **Prompt List** page is displayed.

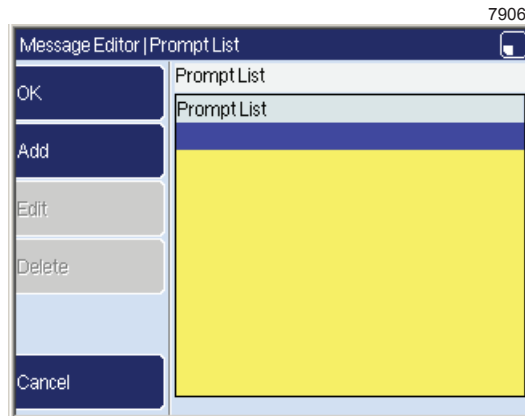


Figure 12. Prompt List page

How To Use a Prompted Field



- 6 Create a prompted list, as follows:
 - (a) Press the **Add** key and enter the item name "6 X PACK", as shown in Figure 13.

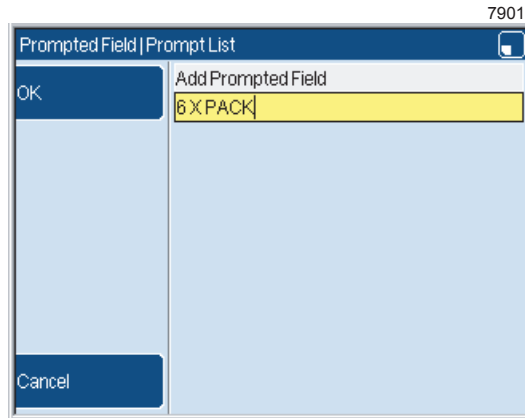


Figure 13. Prompt List page

- (b) Press the **OK** key.
 - (c) Repeat steps **6 (a)** and **(b)** twice, to add the items "12 X PACK" and "24 X PACK", as shown in Figure 14.

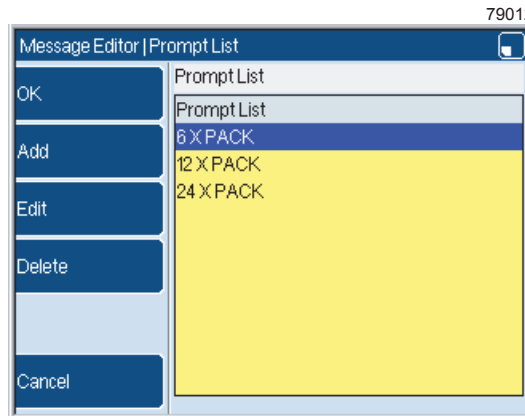


Figure 14. Prompt List

You can press the **Delete** key to remove an item from the list, or press the **Edit** key to change the highlighted item.

How To Use a Prompted Field



- Press the **OK** key to save the prompt list and return to the **Insert Prompted Field** page.

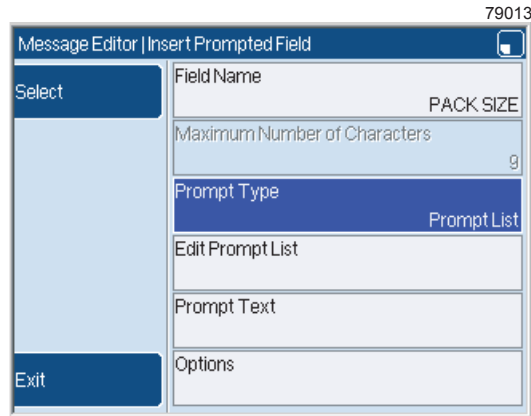


Figure 15. Insert Prompted Field page

The **Prompt Type** option displays the prompt type that you selected, and the **Edit Prompt List** option is now displayed.

NOTE: The printer calculates the **Maximum Number of Characters** value automatically, as shown in Figure 15. This value is the length of the prompt list item that has the largest number of characters. The longest item in this example is "24 X PACK", which has 9 characters.

- Select the **Prompt Text** option and enter the letters "SELECT PACK SIZE", as shown in Figure 16.

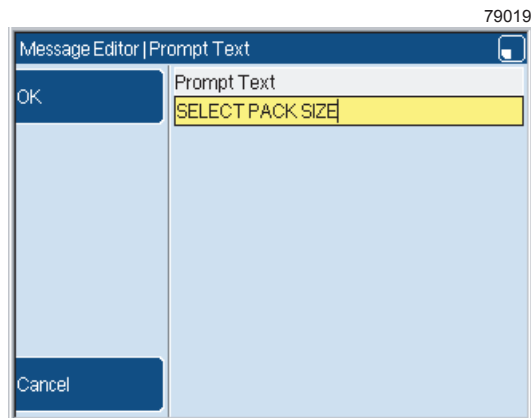


Figure 16. Prompt Text page

When you select a message, the printer displays the text that you enter here as a prompt 'reminder'.

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- Press the **OK** key to return to the **Insert Prompted Field** page.

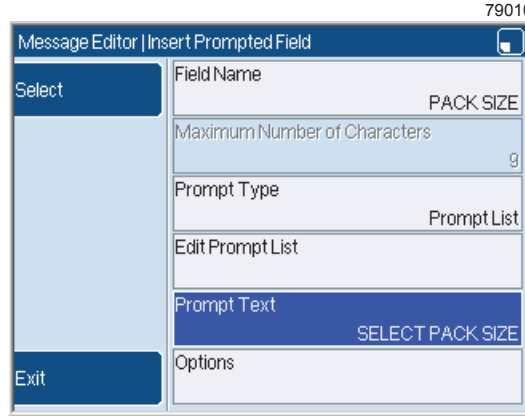


Figure 17. Insert Prompted Field page

The **Prompt Text** option displays the new text that you entered.

- Press the **Exit** key to accept the settings and return to the **Message Editor** page.

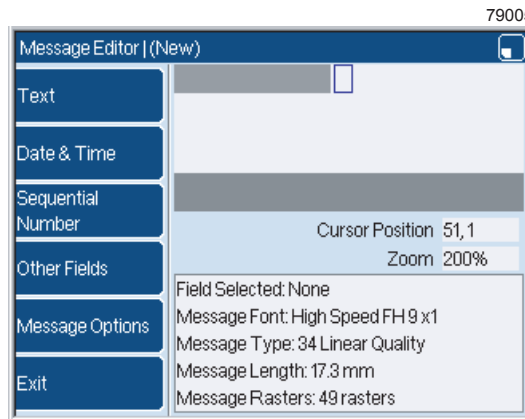


Figure 18. Message Editor page: prompted field

NOTE: The **Message Editor** page shows a grey box to indicate the size and position of the field. The field remains blank until the user enters the text when the message is selected.

The size of the grey box in Figure 18 depends on the number of characters in the longest prompt list item that you created.

Now you can exit from the **Message Editor** page and save your message, as shown in the *Linx 5900 & 7900 Quick Start Guide*.



4 Edit a prompted field

To edit a prompted field, perform the following steps:

- 1 At the **Message Store** page, highlight the required message in the list, and then press the **Edit** key.
- 2 Move the cursor over the prompted field, and then press the [enter] key. The field that you select becomes highlighted, and you can see the edit options (as shown in Figure 19).

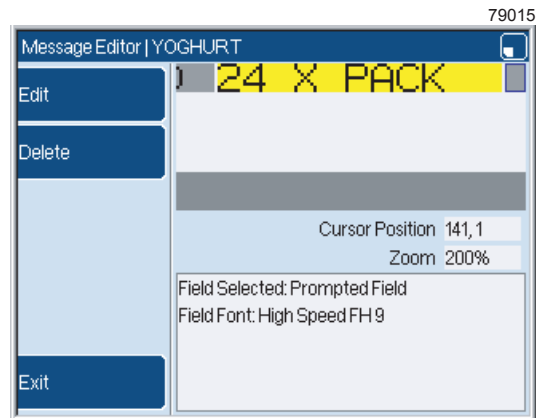


Figure 19. Prompted field selected

To delete the field, press the **Delete** key. To remove the highlight, press the **Exit** key.

- 3 Press the **Edit** key to display the **Edit Prompted Field** page.

Some of the options on the **Edit Prompted Field** page do not apply to both prompt types. Figure 20 shows an example of each type. Figure 20 (a) shows the 'User Prompt' version and Figure 20 (b) shows the 'Prompt List' version.

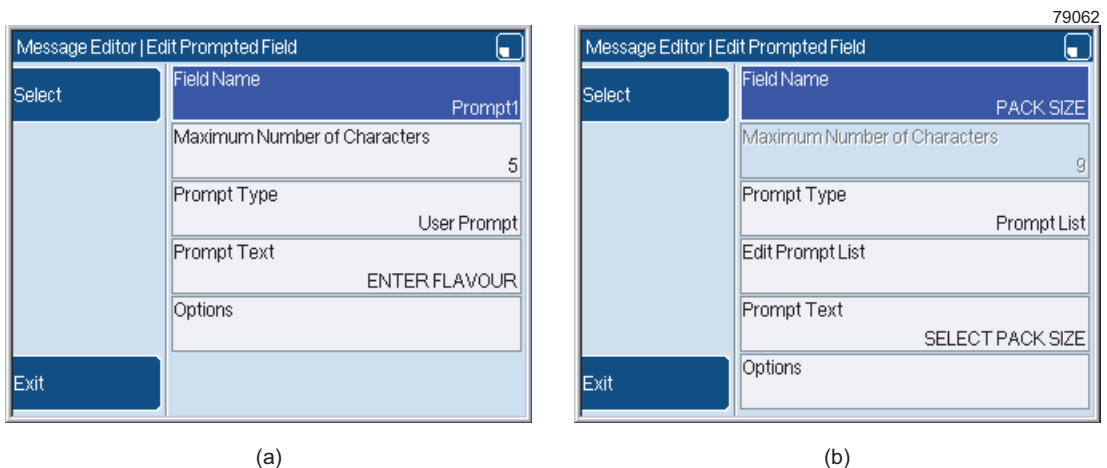


Figure 20. Edit Prompted Field page

The **Edit Prompt List** option is not shown for a field with a User Prompt. The **Maximum Number of Characters** option is not available for a field with a Prompt List.

The following sections describe all the options on the **Edit Prompted Field** page.



4.1 Field Name

Use this option to set the name of the field. You can enter a maximum of 28 characters.

4.2 Maximum Number of Characters

The printer uses the **Maximum Number of Characters** value to calculate the space that is needed in the message. The default value is 5 characters, as shown in Figure 21.

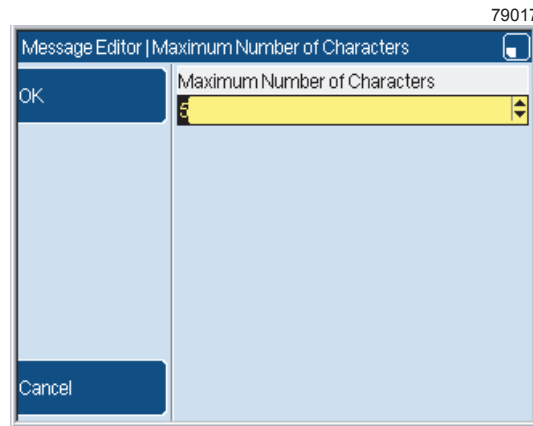


Figure 21. Maximum Number of Characters: default value

For a User Prompt, use this option to set the maximum number of characters that you can enter in the field. The minimum value is 1 character.

You can use the keyboard or the arrow keys to enter a new value.

NOTE: For a Prompt List, the printer automatically calculates and sets the value for the field when you create the prompt list. The value is based on the prompt list item that has the largest number of characters.

4.3 Prompt Type

Use this option to select the type of text entry that the user makes in response to a prompt, either User Prompt or Prompt List.

- Select the User Prompt type to make the user enter text with the keyboard, up to a maximum number of characters (which is set by the **Maximum Number of Characters** option).
- Select the Prompt List type to make the user select text from a predefined list.



4.4 Edit Prompt List

NOTE: The **Edit Prompt List** option is *not* available for a User Prompt.

For a Prompt List, use this option to create and manage a list of text items to use for the prompted field. You can create a maximum of 10 items.

4.5 Prompt Text

Use this option to set the text description that is displayed as a prompt when you select the message. For example, "SELECT PACK SIZE". The default text is 'User Prompt' for a User Prompt, and 'Prompt List' for a Prompt List. You can enter a maximum of 31 characters.

4.6 Options

Select this option to display the **Options** page for the prompted field.

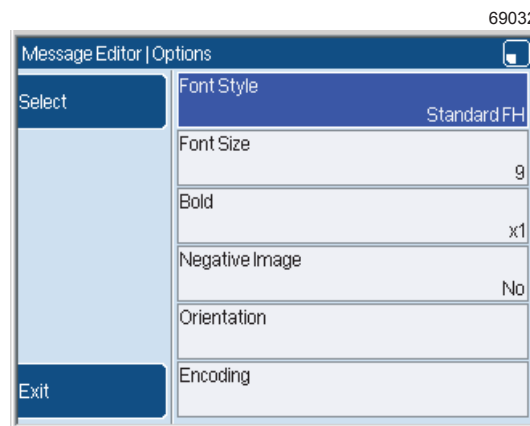


Figure 22. Options page

This page is like the **Options** page for other field types. The **Options** page is described in the *Linx 5900 & 7900 Quick Start Guide*.



5 Use a prompted field

When you have created a message that contains one or more prompted fields, you can select that message for printing, as described in the *Linx 5900 & 7900 Quick Start Guide*.

When you select the message for printing, the printer displays a sequence of one or more prompt pages. At each page, you must enter some text, select a text item from a prompt list, or accept the default text (which is the most recent text entry).

NOTES:

1. When the printer displays a prompt page, you can press the **Cancel** key to cancel the message selection and return to the **Print Monitor** page. (The current message reverts to the message that was selected previously.)
2. If you turn off the printer, and then turn on the printer, and the current message contains a prompted field, the printer prompts you to enter the field information when you press the **Start** key. If you then press the **Cancel** key, the printer does not print the current message. The printer returns to the **Print Monitor** page and the printer status becomes "JET RUNNING".
3. You can change the **Prompted Fields** setting to switch the prompts off, so that the printer does not display any prompt pages when you select the message. The printer automatically loads the most recent data into the prompted fields. See 'Disable the prompts' on page 20.

5.1 Prompted fields: example sequence

This example uses a message (with the message name "YOGHURT") that contains two prompted fields. One field has a User Prompt and the other field has a Prompt List.

- 1 At the **Message Store** page, highlight the message name to preview the message on the **Message Store** page.

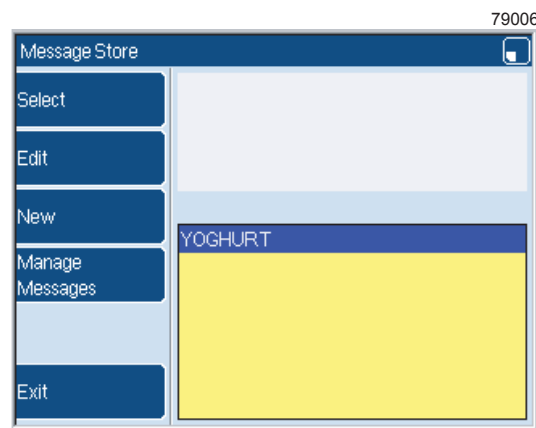


Figure 23. Message Store page: "YOGHURT" message preview

NOTE: The prompted field remains blank until the message is selected and the user enters the text. After the text is entered for the first time, the field information is shown on the **Message Store** page when you preview the message.

How To Use a Prompted Field



- 2 Press the **Select** key. The printer displays the **Prompted Field Edit** page for the User Prompt field. The title bar shows the field name (“Prompt1”) and the prompt description (“ENTER FLAVOUR”) is shown above the text entry box.

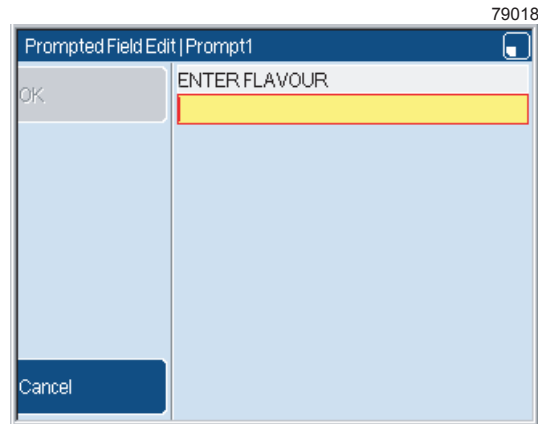


Figure 24. Prompted Field Edit page: text entry required

In this example, you enter the text for the field for the first time, and you must enter the characters into the box before you can continue.

- 3 Enter the text “MANGO”, as shown below.

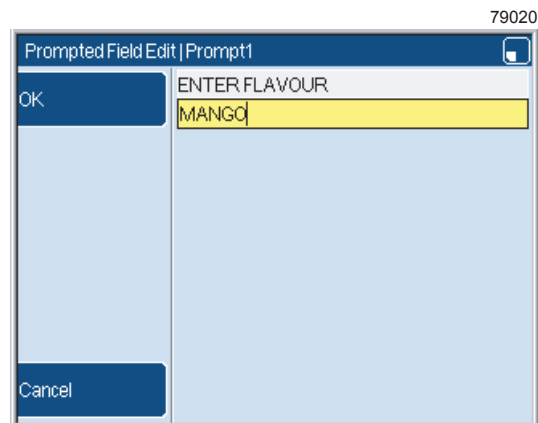


Figure 25. Prompted Field Edit page: entered text

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If any text was previously entered for the prompted field, the printer displays the most recent entry as the default text, as shown in Figure 26.

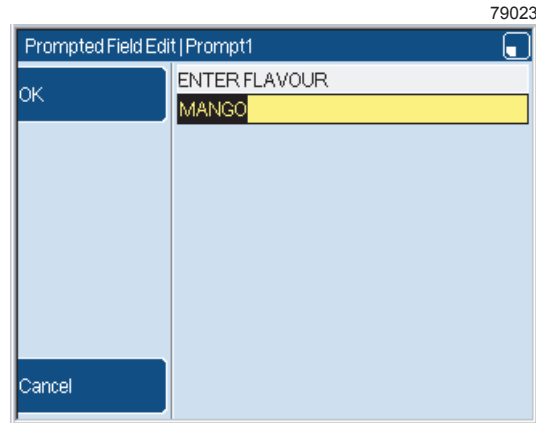


Figure 26. Prompted Field Edit page: default text

You can do one of the following:

- Press the **OK** key to accept the default text.
- Enter some characters to change the default text.

NOTE: The number of characters that you enter cannot be greater than the field length. The field length depends on the **Maximum Number of Characters** option (see page 14).

- Press the **Cancel** key to cancel any text that you entered. The message selection is cancelled, and the printer displays the **Print Monitor** page. (The current message reverts to the message that was selected previously.)
- 4 Press the **OK** key. The printer displays the **Prompted Field Edit** page for the Prompt List field. The title bar shows the field name (“PACK SIZE”) and the prompt description (“SELECT PACK SIZE”) is shown above the list of items.

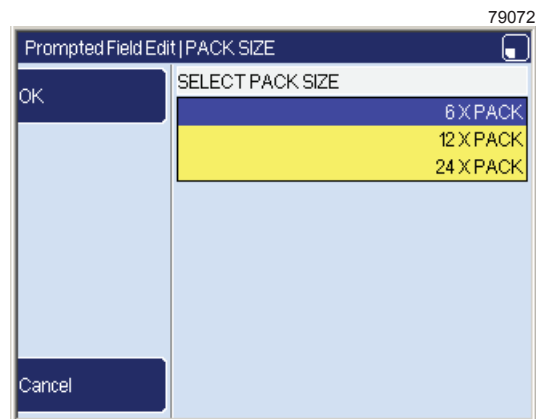


Figure 27. Prompted Field Edit page: prompt list

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Use the Down arrow key to highlight the item “24 X PACK” as shown in Figure 28.

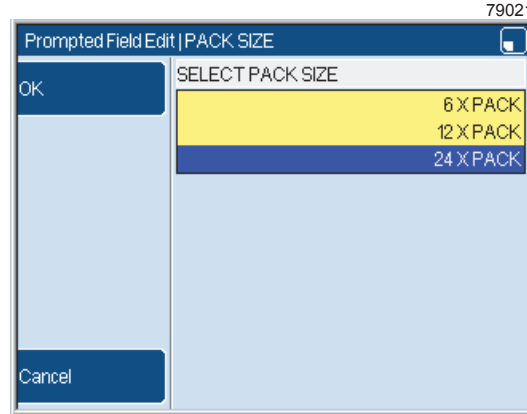


Figure 28. Prompted Field Edit page: highlight list item

If an item was previously entered for the prompted field, the printer displays the most recent selection as the default item, as shown in Figure 28.

You can do one of the following:

- Press the **OK** key to accept the default item.
- Use the Up arrow or Down arrow key to highlight a different item.
- Press the **Cancel** key to cancel any text that you entered. The message selection is cancelled, and the printer displays the Print Monitor page. (The current message reverts to the message that was selected previously.)

5 Press the **OK** key to accept the entry.

6 Press the **OK** key to confirm your selection. The **Printer Monitor** page displays the message that you selected, as shown in Figure 29.

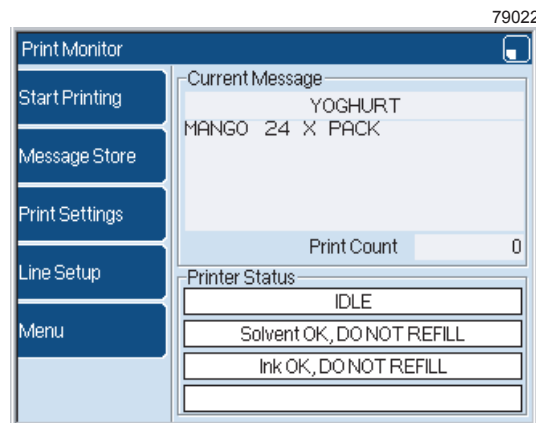


Figure 29. Print Monitor page: “YOGHURT” message ready for printing

The two prompted fields show the items that you entered.



5.2 Update a prompted field

If the current message contains a prompted field, or a message that contains a prompted field is printing, you can update the prompted field.

To update the prompted field, at the **Print Monitor** page, do one of the following:

- Press the [Alt] key and the [P] key together.
- Press the **Print Settings** key to display the **Print Settings** page. Then select the **Prompt Fields** option (see Figure 30) to display the **Prompted Field Edit** page.

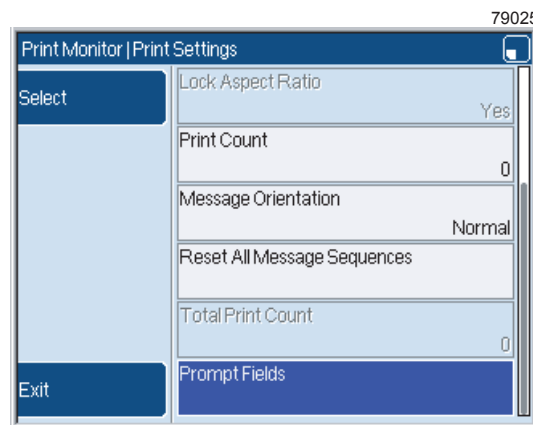


Figure 30. Print Settings page: Prompt Fields option

NOTE: The **Prompt Fields** option is not available on the **Print Settings** page if the current message does not contain a prompted field.

The printer displays each prompt page in sequence, as shown in 'Prompted fields: example sequence' on page 16.

When all the prompted fields are completed, the fields are loaded into the current message and the message is printed at the next print trigger. (See *How to Change the System Setup* for more information about how to change the Trigger setup.)

NOTE: When you select the **Print Settings > Prompt Fields** option, the printer automatically exits the **Print Settings** page and returns to the **Print Monitor** page when all prompted fields are completed.

5.3 Disable the prompts

You can disable the prompts so that when you press the **Select** key, the printer does not display any prompts, and you do not need to enter the field information. Instead, the printer automatically updates each prompted field with the most recent entry.

How To Use a Prompted Field



To change how the prompted fields operate, perform the following steps:

- 1 At the **Print Monitor** page, select **Menu > Setup**.

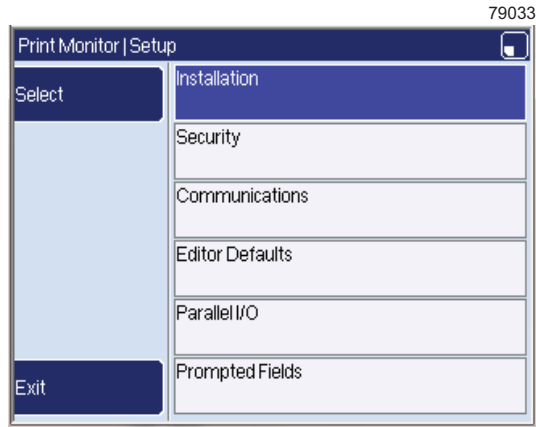


Figure 31. Setup page

- 2 Select the **Prompted Fields** option to display the **Prompted Fields** page, as shown in Figure 32.

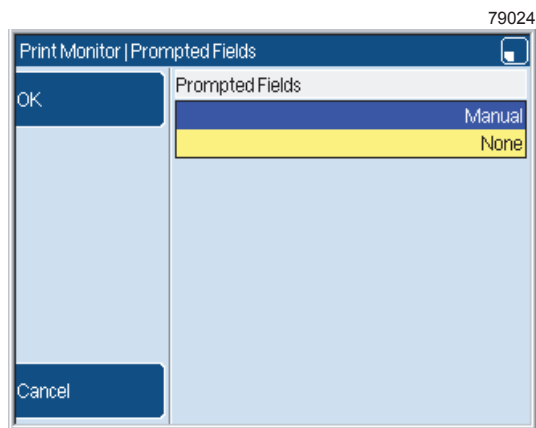


Figure 32. Prompted Fields page: default setting

Use the arrow keys to highlight one of the following settings, as required:

- Manual** This is the default setting. The prompts are enabled, and the printer prompts you to enter the prompted field information manually.
- None** Select this setting to disable the prompts. The printer automatically loads the most recent entry into the prompted field when the message is selected to print.

Press the **OK** key to confirm your selection and return to the **Setup** page.

How to set up Linx Insight



Linx Insight® is a built-in remote web interface for message download and control. Linx Insight® enables you to remotely monitor and control your Linx 5900* or 7900 printer through a web browser from a PC or a web-enabled phone.

- 1** Assign a static IP address to the printer. If you are unsure, contact your network administrator. On the printer, navigate to the **IP Address** screen (Menu > Setup > Communications > Ethernet Setup > IP Address) and enter the static IP address.
- 2** Use the ethernet connection on the rear of the printer to connect the printer to your network.

PC

- 3** On your PC, type the printer IP address into a web browser.
- 4** When prompted, enter the following:
Username: linx
Password: insight
- 5** You can now control the printer remotely.

Web-enabled phone

- 3** Make sure your phone is able to access the same network as the printer. On your phone, type the printer IP address into a web browser.
- 4** When prompted, enter the following:
Username: linx
Password: insight
- 5** You can now view status information about the printer.

* Linx Insight® is not included as standard on the Linx 5900 printer but is available as a configuration option. Contact your local Linx Distributor for more information.

Supported web browsers: Internet Explorer® 8 and 9. Firefox® FF8 and FF9. Chrome™ 14 and 15. Safari® 5.

Supported mobile browsers: iPhone® 3GS, 4, 4S browsers. Android™ browsers for Android 2.2 and 2.3 Gingerbread. BlackBerry® 6 and 7.

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Linx 5900 & 7900



Quick Start Guide

LINX

THINKING ALONG YOUR LINES

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Safety recommendation

Before attempting to use either the printer or its accessories, you should read the information contained in the Safety section. It is essential that you follow safe operating procedures at all times, and that the equipment is maintained according to the directions contained herein and as recommended by Linx or its authorized Distributors. It is strongly recommended that any maintenance tasks, other than those described in this guide and the *How To* guides for the printers, are performed only by Linx maintenance technicians or Linx-trained personnel.

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Safety

Before you use the printer described in this guide or perform any maintenance tasks on it, you must read, understand and follow *all* the safety information in this section. You must pay particular attention to all Warnings and Cautions given in this section and throughout the guide.

If there is any part of this Safety section that you do not understand, DO NOT USE THE PRINTER.

This section gives essential information about the safe use and handling of the printer, inks and solvents. First Aid information is also included.

For optimum safety the printer should be operated with Linx approved spares and consumables at all times. It is strongly recommend that any maintenance tasks, other than those described in this guide and the *How To* guides for the printers, are performed only by Linx maintenance technicians or Linx-trained personnel. The use of unapproved spares and consumables, and the performance of maintenance tasks by untrained personnel could make the printer unsafe to use.

Warnings and cautions

Warning and Caution statements are given at relevant points in the text of this guide. These draw your attention to information about how to avoid hazards and how to safely use a product. Symbols accompany Warning statements.

The different types of safety statements and associated symbols are described below, along with the conventions used in this guide.

Warnings

A Warning alerts you to a hazard that may cause loss of life, physical injury or illness. It is printed in bold upper-case type and is accompanied by a warning symbol that identifies the type of hazard.



The general Warning symbol (shown to the left) accompanies a Warning that has no specific symbol to indicate the hazard. The Warning alerts you to other harmful or potentially lethal activities.



The mandatory Eye Protection Warning symbol (shown to the left) means that you must wear safety eyeglasses when you perform any tasks that involve inks or solvents. The safety eyeglasses must conform to European and international safety standards.



The mandatory Hand Protection Warning symbol (shown to the left) means that you must wear solvent-resistant protective gloves when you perform any tasks that involve inks or solvents.



The Irritant Warning symbol (shown to the left) means that a particular substance may irritate the eyes and the respiratory system if the correct safety precautions are not taken.



The Highly Flammable Warning symbol (shown to the left) means that there is a risk of fire due to the highly flammable nature of a substance if the correct safety precautions are not taken.



The Lethal Voltage Warning symbol (shown to the left) means that there is a risk of electric shock from contact with potentially lethal voltages if the correct safety precautions are not taken.

Cautions

A Caution alerts you to actions that may damage equipment or the environment, but are not a direct danger to personnel. It is printed in bold lower-case type and is not accompanied by a symbol.

Printer cover security



WARNING: LETHAL VOLTAGE HAZARD. DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT WHEN IT IS CONNECTED TO THE ELECTRICITY SUPPLY.

NEVER TRY TO OPEN THE PRINTER COVER, OR TRY TO REMOVE OR ADJUST ANY COMPONENTS FITTED INSIDE THE PRINTER. THERE IS A DANGER OF INJURY OR DEATH FROM ELECTRIC SHOCK IF YOU IGNORE THIS SAFETY WARNING.

The printer has a lock fitted to the printer cover. This stops operators from opening the cover and touching potentially lethal electrical hazards inside the printer.

It is essential that operators do not try to open the printer cover, for any reason. Not only is there a danger of serious or fatal injury, but it may also void your Linx warranty. It is strongly recommended that the printer cover is opened only by Linx maintenance technicians or Linx-trained personnel.

Always make sure that the printer and printhead covers are correctly fitted before you use the printer. If you are not sure how to do this, ask your supervisor for guidance. Covers act as safety barriers and also make sure that the printer keeps its electromagnetic compatibility (EMC).

Operating the printer

Linx ink jet printers have been designed to be as safe and easy to use as possible. However, you could cause harm to yourself or damage to the printer if you do not use it correctly.

Training

Linx believes that to use the printer with maximum safety and effectiveness, you need good training. Linx or your local Linx Distributor can provide a range of training courses to suit all operators.

If you are in any doubt about your ability to operate the printer safely, **DO NOT USE IT**.

Appendix B, 'Training' lists the topics that, as a minimum, should be included in operator training.

Safety precautions

Everybody who uses the printer must make sure that they know that ink jet printers can be dangerous if not used correctly. The following safety information must be made available to all personnel. The information is essential to anybody who works with, or near, the printer.

For your comfort, Linx recommends that the printer is situated at least 600 mm above the floor level.

The following precautions are essential:

- Take great care when you unpack or move the printer as it is very heavy. **ALWAYS** follow the standard guidelines for the safe manual handling of heavy objects when lifting the printer.
- Always place the printer on its feet and on a level surface. Do not turn the printer onto its side at any time.

NOTE: Make sure that the electricity supply cable for the printer is correctly connected to the supply and is well maintained. 5900 and 7900 printers supplied to India are fitted with a mains electrical supply cable with free wires of 50 mm in length. These wires must be connected by a suitably qualified person to an IS1293 3-pin plug with a minimum 6 A rating. The mains electrical supply cable must be connected to a power supply of 230 V AC 1 A. The printer must be earthed.

- **ALWAYS** make sure that the printer is disconnected from the electricity supply before you clean it or perform any maintenance tasks on it. When the electricity supply is connected lethal voltages are present in the printer cabinet and printhead, which can cause serious injury or death if the correct electrical safety precautions are not taken.
- **ALWAYS** disconnect the external alarm (if fitted) from the alarm output of the printer before any maintenance tasks are done.

Inks and solvents



WARNING: HAZARDOUS SUBSTANCES. MANY OF THE INKS USED WITH THIS PRINTER ARE SOLVENT-BASED AND CAN BE HAZARDOUS. THEY ARE HIGHLY FLAMMABLE, AND THE VAPOUR OR SPRAY CAN BE IRRITATING TO THE EYES AND RESPIRATORY SYSTEM.

YOU MUST WEAR SAFETY GLASSES AND SOLVENT-RESISTANT PROTECTIVE GLOVES WHEN YOU HANDLE INKS AND SOLVENTS, WHEN YOU WORK ON THE PRINTER, AND WHEN YOU CLEAN IT. IF YOU IGNORE THIS SAFETY WARNING, YOU COULD EXPERIENCE SEVERE IRRITATION AND TEMPORARY (REVERSIBLE) DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS.

Solvents and inks are potentially harmful. Whenever inks and solvents are used, the following essential precautions must be taken:

- BEFORE YOU START, read the relevant ink and solvent Material Safety Data Sheets. If you do not fully understand the information, or are unsure, contact your supervisor for guidance.
- If the Material Safety Data Sheets have not been supplied or are not available, please contact your local Linx distributor. ALWAYS refer to the Material Safety Data Sheets before working with inks and solvents.
- DO NOT smoke or use naked flames near the printer as it contains flammable inks and solvents.
- Make sure that the printing area is adequately ventilated when the printer is in operation and when you work on the printer, or use inks or solvents.
- Wear safety eyeglasses when you use inks and solvents. The safety eyeglasses must comply with the appropriate European and International Directives. The Eye Protection Warning symbol is shown in this guide, where appropriate, to remind you of the mandatory requirement to WEAR SAFETY GLASSES.
- Wear solvent-resistant gloves when handling inks and solvents, or at any time when your hands may come into contact with inks or solvents. The Hand Protection Warning symbol is shown in this guide, where appropriate, to remind you of the mandatory requirement to WEAR SAFETY GLOVES.

Barrier creams may help to protect areas of exposed skin but they do not give as much protection as safety gloves. Barrier creams should not be applied once exposure to ink or solvent has occurred.

- Never look into the end of the printhead or point the printhead at anyone while the printer is switched on.
- Remove all spilt ink and solvent, or build-up of ink deposits immediately, using the correct solvent type for the ink being used.
- Store all inks and solvents in their original containers, which must be tightly closed. Store the containers in a well ventilated cabinet or in a recommended flameproof storage container. They must be kept away from any source of heat.

First aid

Ideally, all operators should be trained in First Aid and should be aware of the possible effects of working with flammable and toxic substances.

All operators must have access to the ink and solvent Material Safety Data Sheets, which explain the hazards and the actions to be taken if First Aid is necessary.

You must ensure that the First Aid information is readily available in the event of ink and solvent contact with the eyes or skin, ingestion or inhalation.

Procedures

The following paragraphs are the First Aid procedures for inks and solvents taken from the Material Safety Data Sheets. For more detailed information you should refer to the Material Safety Data Sheet for the relevant ink or solvent.

Eye contact with inks or solvents

Remove contact lenses, if necessary, before flushing the eyes. Flush the eyes with clean running water and continue to do so for at least 10 minutes, holding the eyelids apart. Obtain medical attention.

Skin contact with inks or solvents

Remove any contaminated clothing. Wash the affected area thoroughly with soap and water, or use a proprietary skin cleaner. Do NOT use solvents or thinners to remove ink from skin. Obtain medical attention if irritation occurs or persists after washing.

Ingestion of inks or solvents

If accidentally swallowed, DO NOT INDUCE VOMITING. Obtain immediate medical attention. Rinse the mouth thoroughly with water and give large amounts of water to drink if the person is conscious. Keep at rest, and provide warmth and fresh air.

Inhalation of solvent fumes

Remove the affected person to fresh air immediately. If breathing stops, administer artificial respiration and obtain immediate medical attention. Keep the affected person warm and at rest.

Emergency shutdown procedure

If the printer needs to be stopped quickly due to an emergency, set the Mains Power Supply Switch on the rear panel of the printer to the '0' (off) position.



Figure 1. Mains Power On/Off Switch on the rear panel

If there is a hazard that prevents safe access to the Mains Power Supply Switch, operate the local electrical isolator switch for the printer.

Noise emissions

The noise emission level from this printer does not exceed 70 dBA. This means that there is no hazard to hearing from long-term exposure to noise from the printer, and therefore no requirement for ear protection to be worn.

About this guide

The Linx 5900 and 7900 Ink Jet Printers are specialist printer systems for use in production line environments for printing onto a wide range of substrates.

This guide is intended to help you operate the Linx 5900 or 7900 Ink Jet Printers safely and effectively.

The information contained in this edition of the *Linx 5900 & 7900 Quick Start Guide* is applicable to Version 1.0 System Software or later (5900 printer) or Version 5.0 System Software or later (7900 printer), until it is superseded by a new edition of the guide.

Linx will be pleased to receive any correspondence relating to this guide and the information contained herein; please write to us at the address below.

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1 Before you start

NOTE: Unless otherwise stated, all the information in this guide applies to both the 5900 and 7900 printers. The 5900 printer includes a sub-set of the features of the 7900. For example, some field types are only available on the 7900—these are noted in this guide. Other differences in functionality between the printers are noted in this guide and in the relevant *How To* guides for the printers.

By now we hope that you have read the safety information at the start of this guide. Do not begin to use the printer yet though.

This chapter describes how to navigate and use the printer display. If you take some time now to read these pages, you can save a lot of time later.

1.1 Overview

This document helps you do the most common jobs on the Printer. It describes the layout of the printer, the controls, and the displays. It shows you how to do the following tasks:

- Switch on the printer.
- Create a message to print.
- Select a font style and a font size for your message.
- Create a Date field or a Time field and edit the field.
- Edit a message.
- Print a message on a product.
- Pause printing.
- Change the print position on a product.
- Stop the printer and turn it off.

To perform other tasks on your Printer, refer to the *How To* guides for the printers for information. The tasks that are described in the *How To* guides include the following:

- Install and prepare the production line.
- Change the Message Type and the orientation.
- Change print settings.
- Change the system setup.
- Find the cause of a problem.
- Use the USB connection.
- Configure the parallel I/O and the multi-stage alarm outputs.
- Use the special characters and the extended keyboard.
- Use the keyboard short cuts and hints.

- Create more field types. For example, Shift Codes, Remote fields, Prompted fields, Logos (7900 only), Text sequences (7900 only), Orientation sequences (7900 only), Production Schedules (7900 only), Bar Codes (7900 only).
- Create a Date format or a Time format (7900 only).
- Use the Food Grade printer (7900 only).

1.2 User levels

There is a password system that protects the printer functions. There are three levels of access, which are called User Levels, protected by different passwords. These levels are as follows:

- Level A This level provides access to basic functions. For example, select a message to print, start, pause and stop the printer. There is no password for Level A.
- Level B This level provides access to a number of additional printer functions. For example, you can create and edit a message, but you cannot delete a message.
- Level C This level provides access to more printer functions. For example, you can delete a message or change the Line setup.

To perform some of the activities described in this guide and in the *How To* guides for the printers, you need a User Level C password.

If you do not have a password to use with the printer, ask your supervisor or line manager to provide one.

1.3 User interface

The printer user interface includes:

- A keyboard that has standard alphanumeric keys and a number of special keys. For example:



Figure 1-1. Special keys on the keyboard

The names of these keys are shown in brackets in this guide. For example:

- The [ctrl] key
- The [shift] key
- The [enter] key

(Before you begin to use the printer, look at the keyboard and learn where to find all these special keys.)

Special keyboards are available for some countries that do not use the standard European keyboard.

- A display with six ‘soft keys’ on the left side:

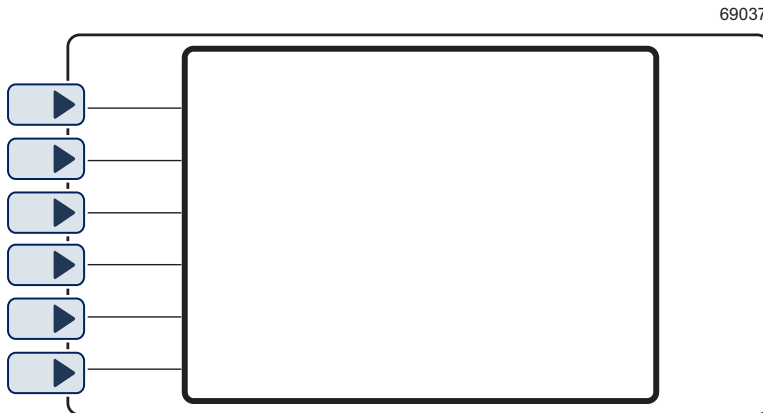


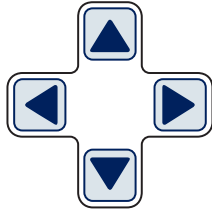
Figure 1-2. Printer Soft keys and display

The soft keys are keys that perform more than one function. The printer provides a label on the display next to each soft key that shows its function. The printer changes the label when the function changes.

The names of these keys are shown in **bold** characters in this guide. For example:

- The **Select** key
- The **Cancel** key

- Four arrow keys—Up, Down, Left, Right:



- A green [start] key:



- A red [stop] key:



- Four LED indicators:



The LED indicators give you useful information about the state of the printer.

LED	Colour	If the LED illuminates, it means:
Fail	Red	A serious printer failure. The Printer Status area of the Print Monitor page tells you what caused the failure. You may need to contact your local Linx distributor.
Warning	Red	Printer warning. The Printer Status area of the Print Monitor page tells you what caused the warning.
Ready	Green	The jet runs and the printer is ready to print. The LED is turned off when printing stops, but the jet may continue to run.
Power	Green	The printer is turned on.

Figure 1-3. LED indicators

1.3.1 Printer display

When you turn on the printer, the display is blank until the printer completes its internal tests. Then the printer displays a *splash screen*. This screen shows you a progress bar for the power-up process.

The splash screen shows a number that tells you which software version is installed in the printer (for example, 'v1.1.1.1678' or 'v5.1.0.1469'). The number changes if new software is installed.

When the power-up is complete, the printer displays the **Print Monitor** page:

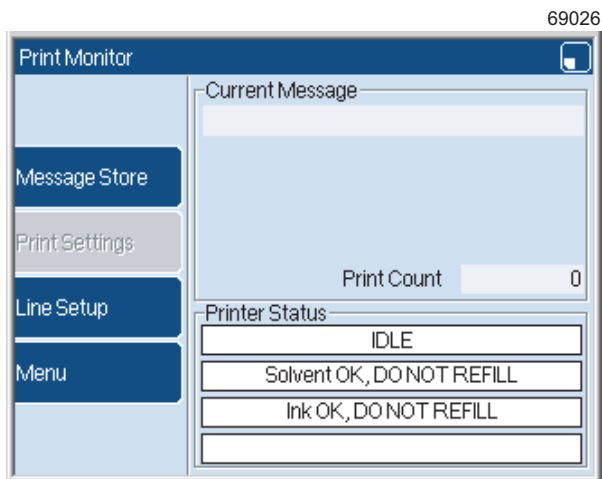


Figure 1-4. Print Monitor

NOTE: The printer is simple to use and most of the instructions in this guide start and finish at the **Print Monitor** page. When you finish each task, you finish in the right area to start your next task. The display shown on your printer may be different to the display shown in Figure 1-4. The display depends on your User Level.

There are four basic types of page on the printer user interface:

- Menu pages
- Operator-entry pages
- Task pages
- Information pages

Menu pages

Some of these pages are gateways to other pages. These pages also give information about the printer, or about the instructions that it has been given. For example, in the **Print Settings** page in Figure 1-5, you can see information about the current message.

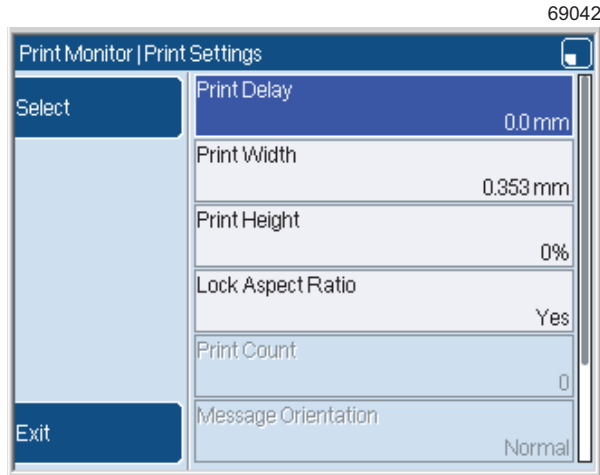


Figure 1-5. Print Settings page

To select an option in a page:

1. Press the Up arrow key or the Down arrow key until the item is highlighted—the text is white and the background is blue. For example, in Figure 1-5 the **Print Delay** option is highlighted.

2. Press the **Select** key to select the option. When you select the **Print Delay** option in Figure 1-6, the **Print Delay** page is displayed:

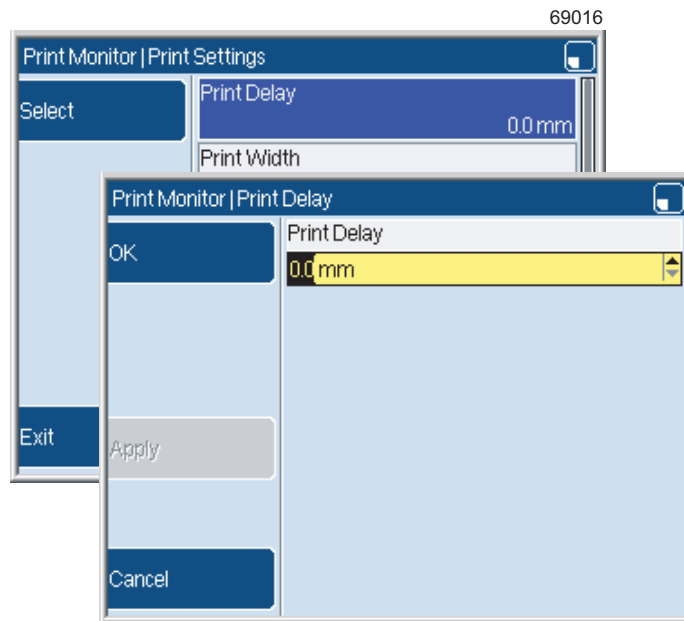


Figure 1-6. Select a page item

Operator-entry pages

To enter or change information for the printer, you use the operator-entry pages. For example, the **Print Delay** page shown in Figure 1-6.

To provide information in an operator-entry page, you perform one of the following actions:

- You enter the information into a box:

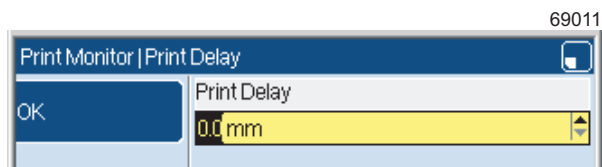


Figure 1-7. Text and cursor

To change the information that is highlighted in black, use the keyboard keys to enter the new information. The highlighted text is overwritten when you begin to enter the new information.

To remove the black highlight, press the Left arrow key or the Right arrow key:

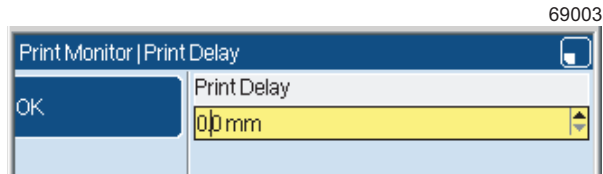


Figure 1-8. Remove the highlight

The vertical line in Figure 1-8 is the cursor. The cursor shows your current position in the box. Press the Left arrow key or the Right arrow key to move the cursor. Then you can add or insert some characters, or use the backspace key to delete a single character.

- You can also use the Up and Down arrow keys to increase or decrease the value in some text boxes. The arrow indicators at the far right of the box identifies this type of box (see Figure 1-8).

If the printer knows that the information that you entered is incorrect (for example, an invalid number), the information is shown in red. Some soft keys or options become unavailable. For example, the name of the **OK** soft key in Figure 1-9 is dimmed to show that the key is not available:

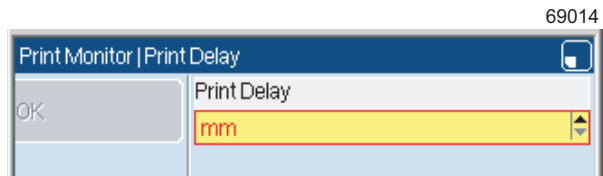


Figure 1-9. Incorrect value entered

Task pages

You can use the task pages to create, edit or print a message, or to perform other tasks. For example, at the **Print Monitor** page, you can start and pause a print job. You can use the **Message Store** page to create a message, and use the **Message Editor** page to edit the message:

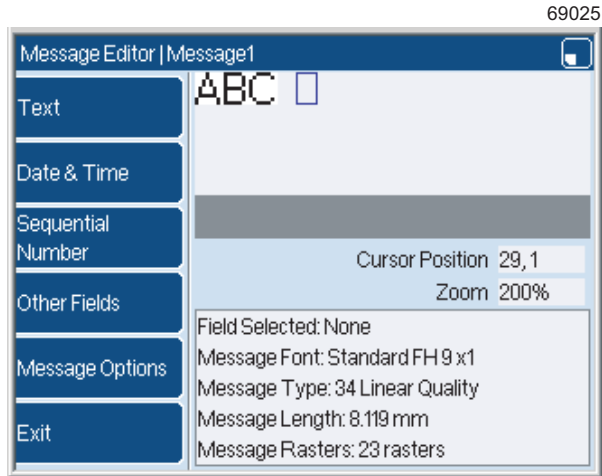


Figure 1-10. Message Editor

Information pages

If the printer needs attention (for example, because the ink or solvent levels are too low), it displays an information page:

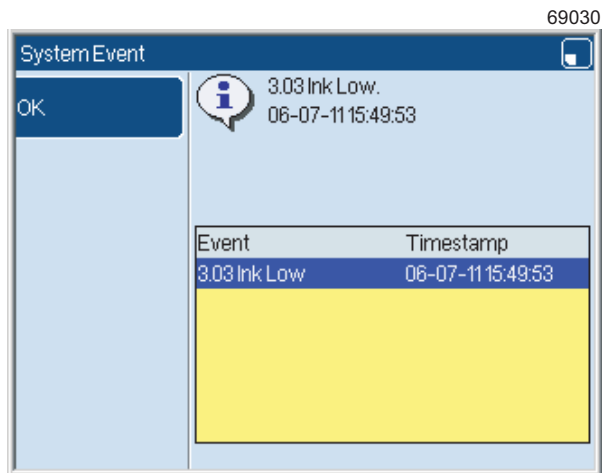


Figure 1-11. An information page

The information page contains a message about a system event. A system event can be a Warning, or a System Failure, or a Print Failure, or an Information event. These events are described in the *How To* guides for the printers.

To close an information page, press the **OK** key.

Most Warnings refer to an event that does not prevent normal operation—you can read the information page, then continue to use the printer. You should correct the problem as soon as you can. Press the **OK** key to close the information page, then correct the problem. For example, refill with ink or solvent. If you cannot correct the problem, speak to your supervisor, or contact your local distributor.

If the event is a Print Failure, you must correct the problem immediately—you cannot continue to use the printer.

You can check the Printer Status area on the **Print Monitor** page to make sure that there are no problems. The Printer Status area (labelled “A” in Figure 1-12) tells you about any events that need your attention:

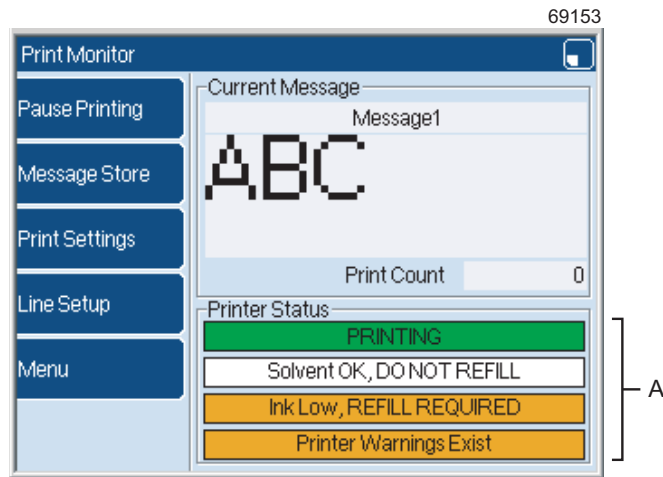


Figure 1-12. Printer Status area

1.3.2 Stores

The printer has several stores:

- Message store
- Date and Time store
- Shift Code store
- Logo store
- Text Sequence store (7900 only)
- Orientation Sequence store (7900 only)
- Production Schedule store (7900 only)

In this guide we tell you how to use the **Message Store**:

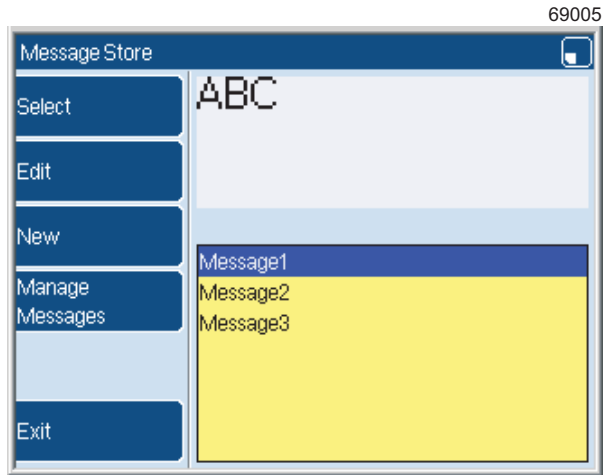


Figure 1-13. Message Store page

The other stores are described in the *How To* guides for the printers.

The printer stores are like cupboards. When the printer is first installed, the stores are empty. You can create items to put into the stores. For example, you can create a message and then put the message into the **Message Store**. You can take the message from the store later, then print or edit or copy the message, and even change its name. When you do not need the message, you can delete the message from the store (if you use the correct User Level for these tasks).

2 Get started

Have you read all the details in ‘Before you start’? Are you confident that you understand all the Safety information? If so, you can now begin to use the printer, with the help of the instructions in this chapter.

By following the instructions you learn how to turn on the printer, and how to create and print a message. Also, you learn how to pause the print, stop the jet, and turn off the printer.

The printer system should already be unpacked, installed and set up by a Linx approved Service Engineer. The mains power supply should already be connected.



WARNING: IF THE PRINTER IS NOT ALREADY CONNECTED AND YOU ARE IN ANY DOUBT AS TO YOUR ABILITY TO CONNECT POWER TO THE PRINTER, CONTACT YOUR SUPERVISOR FOR GUIDANCE.

2.1 Turn on

To turn on the printer:

1. Set the mains power supply switch at the rear of the printer to the on (I) position, as shown in Figure 2-1:



Figure 2-1. Mains Power Supply Switch on the rear panel

2. Press and hold the button on the front of the printer until the green **power** LED on the control panel illuminates. This LED shows that the printer is turned on.
3. Wait until the printer power-up is complete. The splash screen (see page 6) shows the progress of the power-up process.

- When the printer completes the power-up sequence, the **Print Monitor** page is displayed, as shown in Figure 2-2.

NOTE: If you have a Linx 7900 Spectrum printer, the printer starts a mixing sequence. The printer mixes the ink to make sure that the pigment does not remain at the bottom of the ink tank. The **Printer Status** area on the **Print Monitor** page shows the message “MIX”. When the sequence is complete, the message changes to “IDLE”.

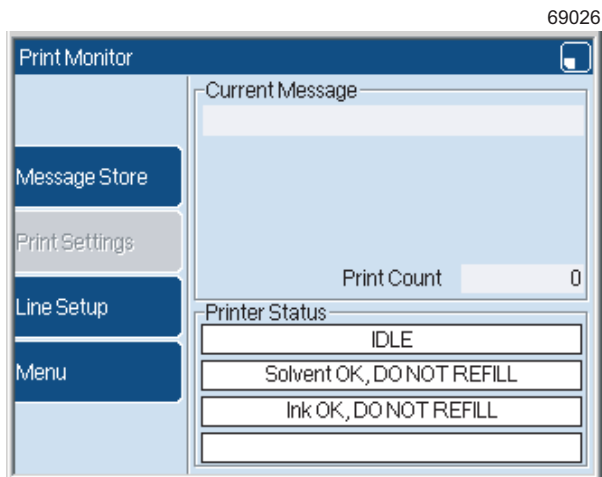


Figure 2-2. Print Monitor page

The soft key names on the **Print Monitor** page are dimmed for options that are not available. For example, you cannot use the **Print Settings** key if there is no Current Message, as shown in Figure 2-2.

Most of the instructions in this guide begin and end at the **Print Monitor** page. When you are more familiar with the printer, you may find that you do not need to go back to the **Print Monitor** page between tasks.

2.2 Create a message

In this section you learn how to create and save a new message.

2.2.1 Message fields

A message can contain several parts. Each part is called a *field*. You can put several different types of field into your message. For example:

- Text—a simple field that contains characters that do not change.
- Date and Time—used to print a Date field or a Time field.
- Sequential Number—prints a value that increases or decreases with each printed message.
- Remote—a field that contains data that the printer receives from a remote device. For example, a computer.
- Shift Code—a code that indicates different periods of the day or the week.
- Prompted—a field that requires the user to enter or select message text before a message is printed.
- Logo—used to print an image or pattern.

NOTE: 5900 only. You cannot create logo images on the printer, but you can copy logo images in bitmap (.bmp) file format to the printer from a USB memory stick (see *How To Use the USB Connection* for more information).

- Text Sequence—a series of text strings that can change for each message printed (7900 only).

This chapter shows you how to create a simple message that contains a Text field. If you need a Date field or a Time field in your message, first create the message by following the steps in this chapter. Then you can add the Date field or Time field (see Chapter 4, ‘Insert a Date or Time’).

For information on how to add other types of field to your message, refer to the *How To* guides for the printers.

2.2.2 Create your message

You use the **Message Editor** to create a message, then save your message in the **Message Store**.

To create a new message:

1. At the **Print Monitor** page, press the **Message Store** key.
2. At the **Message Store** page, press the **New** key. The **Message Editor** page is displayed:

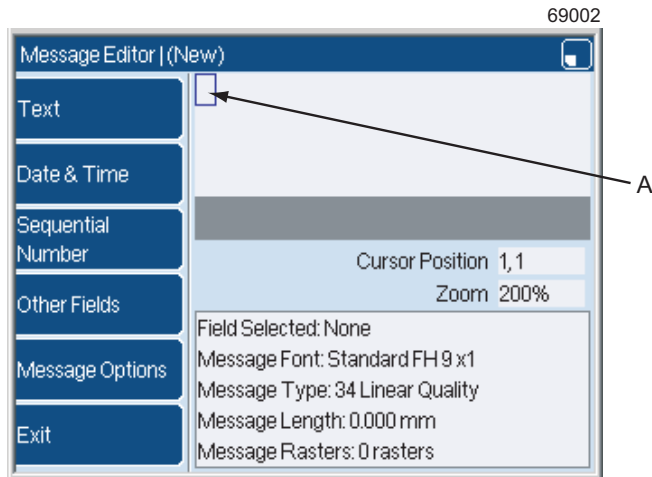


Figure 2-3. Message Editor page

The blue rectangle (labelled “A” in Figure 2-3) is the cursor.

There are two methods that you can use to insert a text field.

- You can enter the characters straight into the message. This method is the easiest method to create a text field.
- You can use the **Text** key to set the parameters of the text (for example, the font size) when you create the field. This method is described in Chapter 3, ‘Edit a message’.

This section describes how to enter the characters directly.

1. Use the arrow keys to move the cursor to the correct position for the new field. Make sure that the cursor is outside the boundaries of other fields that exist in the message.

NOTE: To move the cursor in small steps, hold the [ctrl] key down, then press the arrow keys.

- Use the keyboard to enter the characters for the Text field. The printer displays the characters in the message as you enter the text:

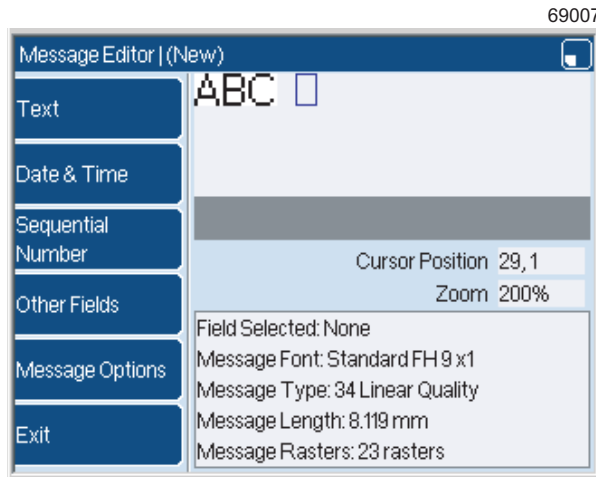


Figure 2-4. Entering text

- When the text is completed, press the [enter] key.

2.2.3 Save your message

To save your message, press the **Exit** key. The printer asks you if you want to save or discard the message, and asks you for a name for the message:

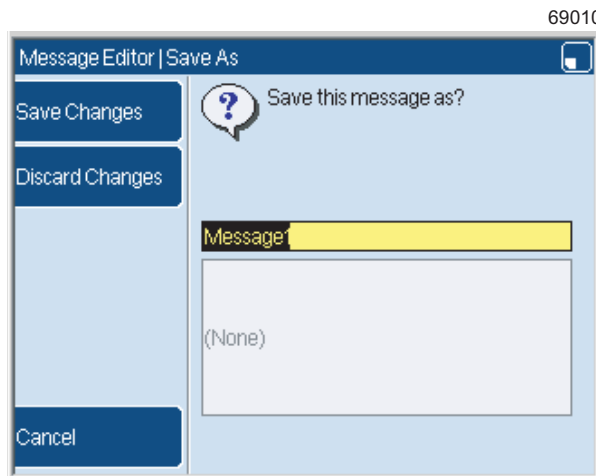


Figure 2-5. Save or discard the message

Do one of the following:

- To overwrite the old message, make sure that the correct name is displayed in the yellow box. Then press the **Save Changes** key to return to the **Message Store** page.
- To keep the old message and save the edited message under a different name, enter the new name. Then press the **Save Changes** key to return to the **Message Store** page.

To return to the **Print Monitor** page, press the **Exit** key.

You can see in this example that it is easy to make a new message!

Now that your message is in the Message Store, you can leave the message there to use at some future date. However, now you probably want to print it. To print your message, see ‘Print a message’ on page 22. If you want to change your message first, follow the instructions in Chapter 3, ‘Edit a message’.

2.3 Automatic and manual raster selection

NOTE: This functionality is only available on the 7900 printer.

The Linx7900 printer features new rasters and automatic raster selection for messages to optimize print quality at higher line speeds.

2.3.1 Automatic raster selection

When you create a message on the 7900 printer (see ‘Create your message’ on page 16), the printer selects the highest quality raster available based on the new message height (in this case, ‘5 Linear Quality’). The following criteria are used (in descending order of importance).

- **Print Drops**—this is the minimum number of drops required to include all fields.
- **Maximum Line Speed**—this is the maximum line speed for the current line and message settings. If a shaft encoder is used on the line, the best quality raster is selected, irrespective of the line speed. If the fixed speed option is used, the raster with the highest maximum line speed is selected.
- **Print Width**—the lowest print width value is used to maintain print quality.
- **Throw Distance**—the minimum throw distance is used to maintain print quality.

You can place fields wherever you like in a message. When you save the message the printer, where possible, moves the field(s) to the top of the message editor. This is to optimize the size of the message and the print quality for the selected line speed.

When the message is first saved, the printer automatically selects the raster that gives the best print quality, based on the message height calculated from the optimization process.

In the following example, a message of 34 drops high and 125 rasters in length is created (see Figure 2-6). The default raster is the 34 Linear Quality raster. The coordinates of the field on the left-hand side are (7,12).

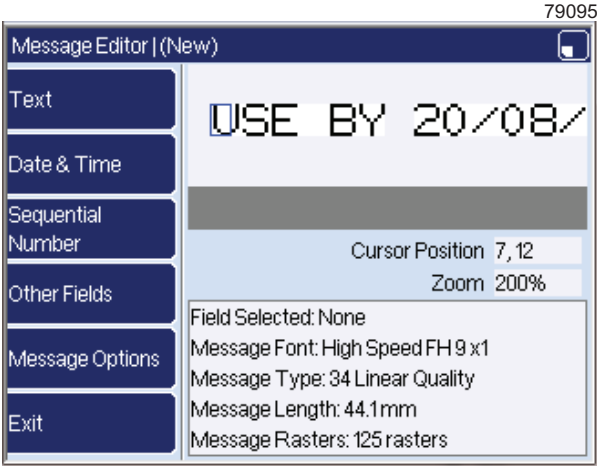


Figure 2-6. Message Editor page: new message

When you save the message, both fields are moved to the top of the message editor (the coordinates of the field on the left become (1, 1)). The message is transformed into one of 9 drops in height and 125 rasters in length.

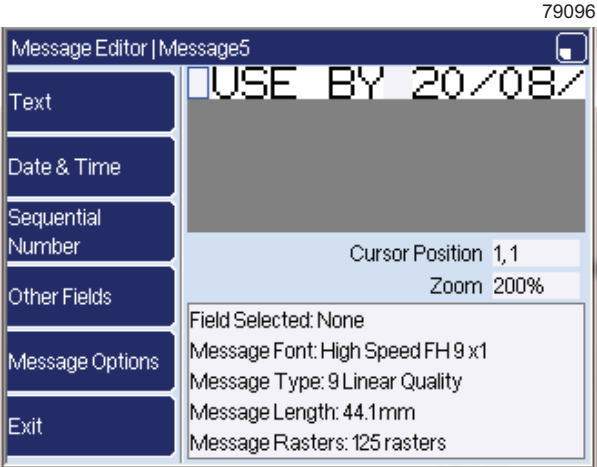


Figure 2-7. Message Editor page: message optimized

2.3.2 Manual raster selection

After you save a message you still have the option to manually select a raster for that message. The **Message Type** page is displayed. This shows a list with the currently selected raster highlighted and any associated rasters.

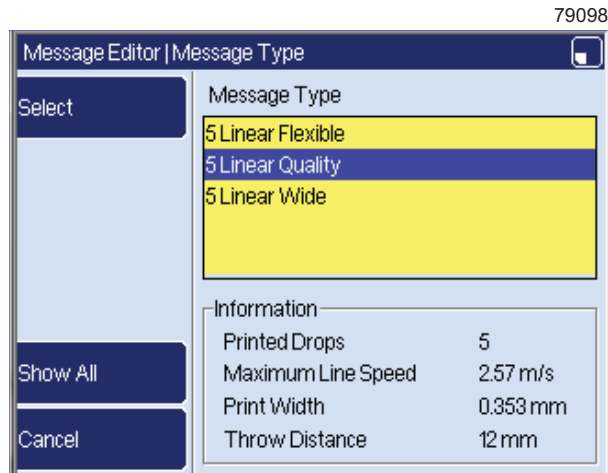


Figure 2-8. Message Type page: Message Type (short raster list)

The **Information** box contains information about each raster to help you select the most suitable one for your application.

If the message is new and has not been saved, or has had a raster specifically selected, the full list of available rasters is displayed.

If the short list of rasters is displayed, press the **Show All** key to view the full list of available rasters. The name of the key changes to **Show Less**. Press the key again to display the short list of rasters.

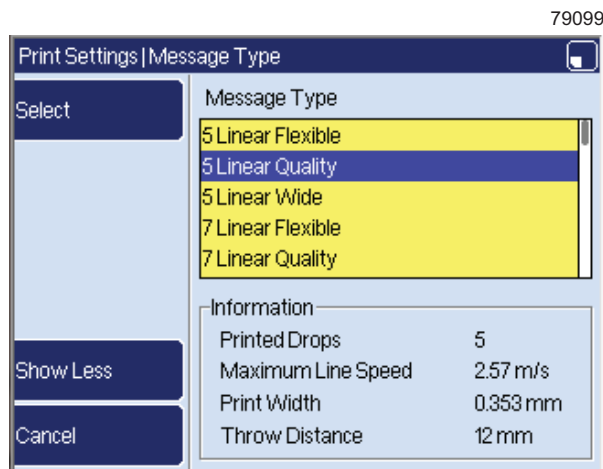


Figure 2-9. Message Type page: Message Type (full raster list)

2.3.3 Message Type option

The **Message Type** option on the **Print Settings** page (accessed from the **Print Settings** key on the **Print Monitor** page) allows you to change the current raster for a selected message.

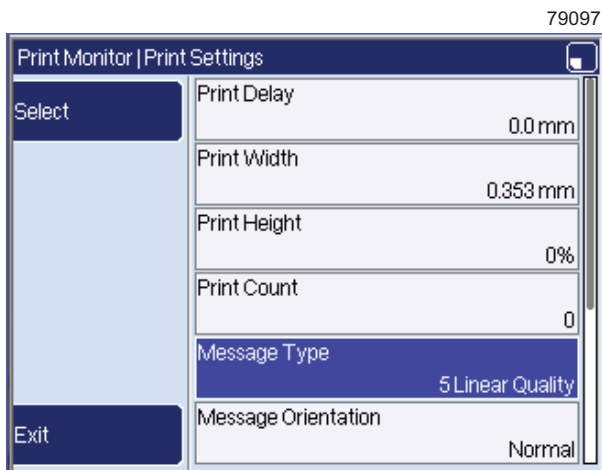


Figure 2-10. Print Settings page: Message Type option

Select the **Message Type** option to display the **Message Type** page.

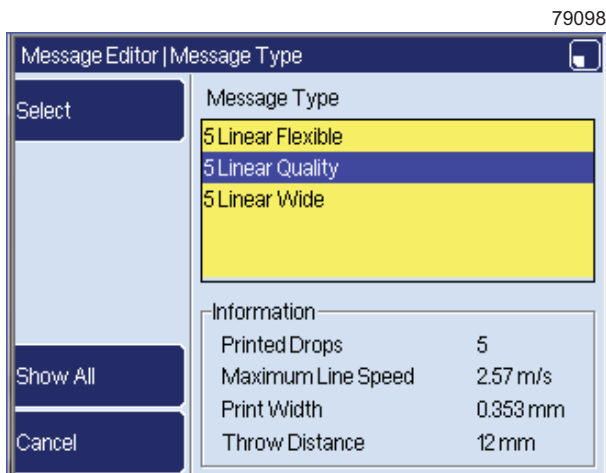


Figure 2-11. Message Type page

Because the selected message has previously been saved, the short list of rasters is displayed. Press the **Show All** key to expand the list.

Highlight the required raster, press the **Select** key, and then the **Exit** key to return to the **Print Monitor** page.

NOTE: This option is not available in the 'Printing' state.

2.4 Print a message

In this section you learn how to select and print a message from the **Message Store**, and pause or stop printing the message. This section also tells you how to change the print position.

NOTE: 5900 printer only. Imported messages that contain an unsupported field type (for example, barcode, data matrix, sequential text, or sequential number with multiple ranges in messages copied from a 7900 printer) are invalid. You cannot select, edit, copy or rename these messages on the **Message Store** page, but they can be deleted. Any invalid messages appear on the **Message Store** page preview as shown in Figure 2-12.

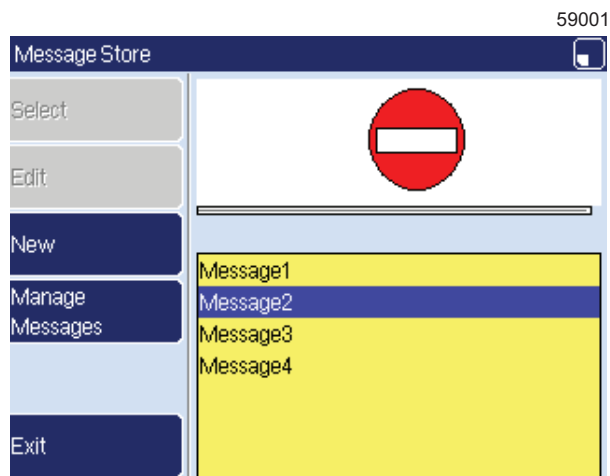


Figure 2-12. Message Store: invalid message (5900 only)

2.4.1 Print trigger

You can use a product sensor or other device to trigger a print, or you can set the printer to print continuously. The **Trigger** option in the **Line Setup** menu controls the action of the printer. The **Line Setup** menu is described in the *How To* guides for the printers.

In its default configuration the printer waits for a trigger signal before each message is printed.

NOTE: If you have a Linx 7900 Spectrum printer, you must wait until any mixing sequence is complete before you print a message. To see if the printer is performing a mixing sequence, look at the **Printer Status** area on the **Print Monitor** page. If the **Printer Status** area shows the message “MIX”, wait until the message changes to “IDLE”.

1. If a Current Message is selected, the **Print Monitor** page displays the message and its contents. Make sure that the **Print Monitor** page displays the correct message:

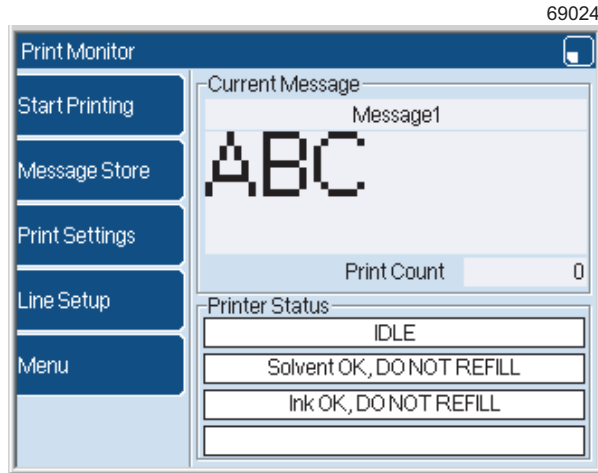


Figure 2-13. Print Monitor and Current Message

- If the correct message is displayed, go to step 2.
- If the correct message is not displayed, press the **Message Store** key to go to the **Message Store** page:

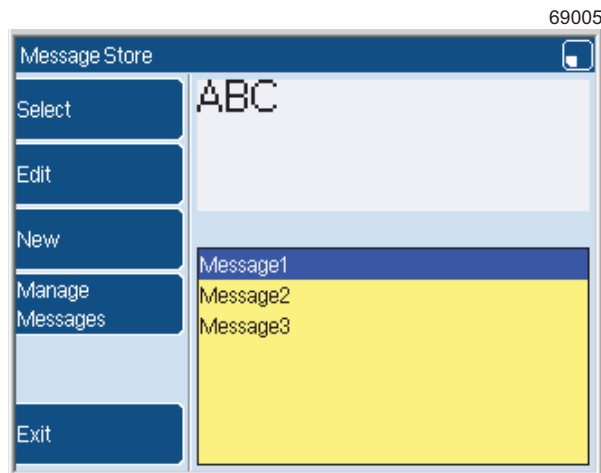


Figure 2-14. Message store page

Use the Up and Down arrow keys to highlight the required message in the list. Then press the **Select** key to return to the **Print Monitor** page.

2. Press the **Start Printing** key to start the jet. The Printer Status area displays the message “JET STARTING”. The jet does not start immediately. When the jet startup is complete and a trigger signal is received, the printer starts printing the message. The Printer Status area displays the message “PRINTING”.

2.4.2 Pause the print

To pause printing:

- At the **Print Monitor** page, press the **Pause Printing** key

Printing stops but the jet is not stopped. The Printer Status area displays the message “JET RUNNING”. You can press the **Start Printing** key to quickly restart the print, or you can select a different message to print.

Use the **Pause Printing** key to stop the print for a short time, or to change the Current Message. The **Pause Printing** key is only available when the printer is printing.

If the print job is completed and you want to turn off the printer, refer to ‘Stop and turn off the printer’ on page 27.

NOTE: When you pause the print, the printer saves any changes to the message. For example, if you use a sequential field, the print restarts at the correct position in the sequence. (The sequential field types are described in the *How To* guides for the printers.)

2.4.3 Adjust the print position

This section shows you how to make sure that the printed message appears in the right position on the product.

Figure 2-15 helps you understand the print position. The large arrow shows the direction of the movement of the product. In this example, there is a fixed distance (C) between the printhead (A) and the sensor (B) that detects the edge of the product. This distance is the same for all products and all messages. The distance is zero for some installations. The installation engineer enters this measurement into the printer during the installation, but you can change the value. Refer to the *How To* guides for the printers for more information.

In Figure 2-15, the trigger signal from the sensor occurs at the edge of the product, but the label (E) is not at the edge of the product. The distance between the sensor position and the print position (E) is the Print Delay (D).

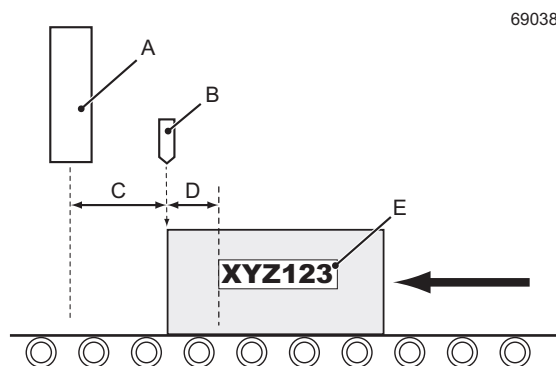


Figure 2-15. Print position

To change the Print Delay, do the following:

- 1. At the **Print Monitor** page, press the **Print Settings** key to display the **Print Settings** page:

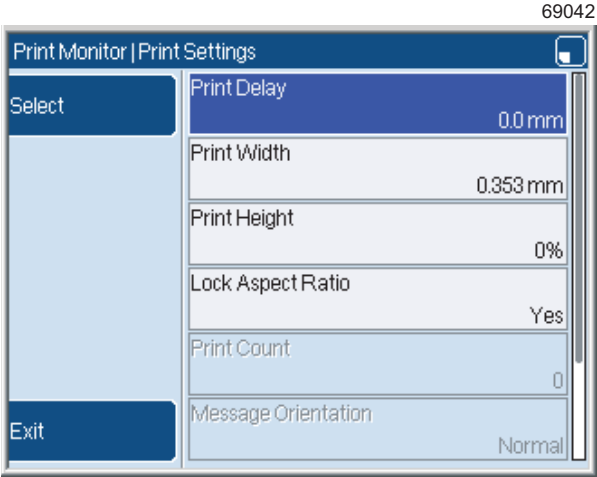


Figure 2-16. Print Settings page

NOTE: The **Lock Aspect Ratio** option is not displayed for all messages.

- 2. Select the **Print Delay** option:

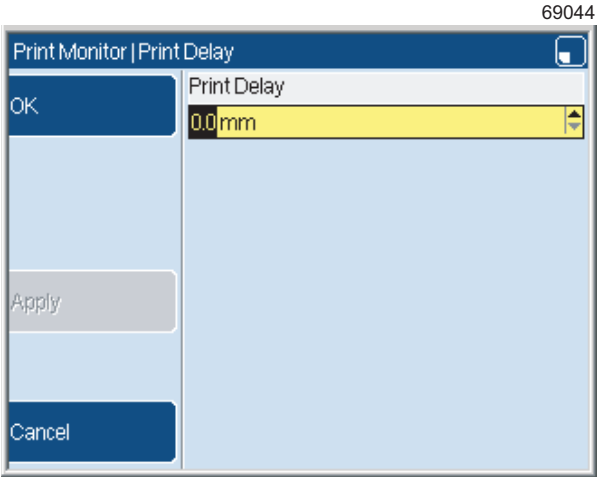


Figure 2-17. Print Delay

- 3. Use the keyboard or the arrow keys to enter a new value, then press the **OK** key.
- 4. At the **Print Settings** page, press the **Exit** key to return to the **Print Monitor** page.

2.4.4 Print Count

The Print Count tells you how many prints were done with this message. You can see the current Print Count on the **Print Monitor** page:

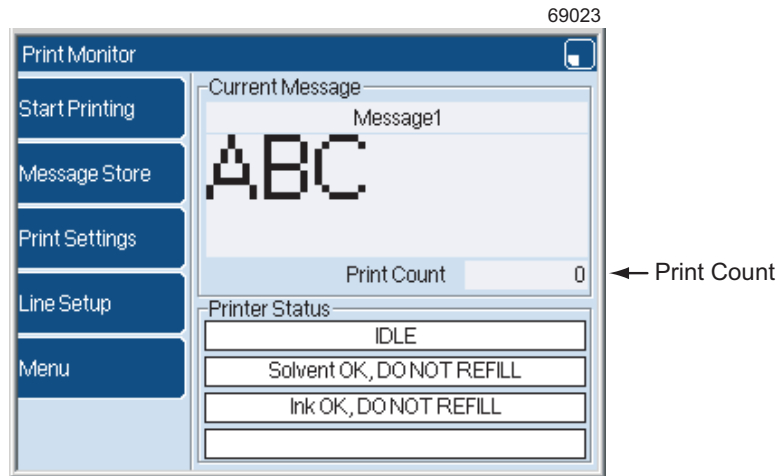


Figure 2-18. Print Monitor and Print Count

You can see this value increase as a message is printed.

Change the Print Count

Sometimes you need to change the Print Count. To change the **Print Settings** for the Current Message, do the following:

1. At the **Print Monitor** page, press the **Pause Printing** key to pause the print, then press the **Print Settings** key.

NOTE: The **Pause Printing** key is not available unless a Current Message is selected. The **Print Monitor** page shows the name of the Current Message.

2. Select **Print Count** to display the **Print Count** page.
To change the count, use the keyboard to enter a new value, or press the arrow keys to increase or decrease the value by one for each key-press.
3. Press the **OK** key to store the new value and return to the **Print Settings** page.
4. To return to the **Print Monitor** page, press the **Exit** key.

2.5 Stop and turn off the printer

This section tells you how to safely stop the printer and turn off the electrical supply.

Use the red [stop] key to stop printing and turn off the printer. For example, if you do not need the printer until the next day. Do not use the red [stop] key to stop printing for a short time, because this key stops the jet.

CAUTION: Always use the correct procedure (described below) to shut down and turn off the printer. Do NOT use the mains power supply switch to stop the printer, except in an emergency.

Use the correct procedure to make sure that any changes are saved and the printhead is cleaned. If you use the mains power supply switch to stop the printer, you can lose any changes and cause printhead problems. Thorough cleaning of the printhead will be necessary.

2.5.1 Power-Down configuration

The printer can turn off automatically when the jet is stopped, or if the printer is idle for some time. The supervisor or maintenance engineer can configure the power-down options, and can disable the function if necessary. The default setting is that power-down is enabled.

2.5.2 To turn off

To stop print and turn off the printer, do the following:

If the jet is stopped (idle):

Press the red [stop] key. The printer displays a prompt message:

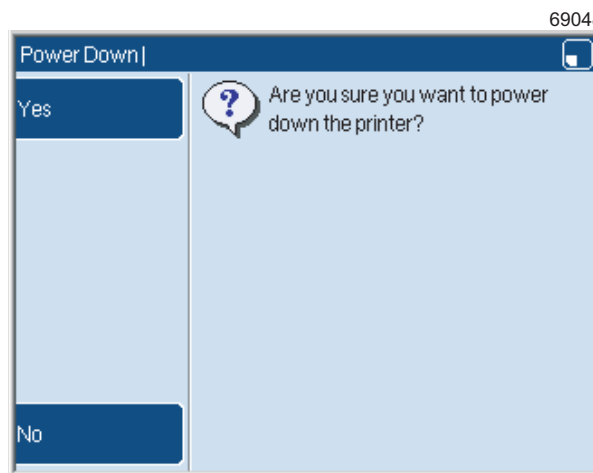


Figure 2-19. Power-Down prompt screen

Press the **Yes** key to turn off the printer.

If the jet is running:

Press the red [stop] key. The printer displays a prompt message similar to that shown in Figure 2-19 on page 27 that asks you to confirm that you want to stop the jet.

Press the **Yes** key to stop the jet. The Printer Status area displays the message “JET STOPPING”.

After approximately 4 minutes, the jet is stopped. The Printer Status area indicates that the jet is “IDLE”.

If the power-down functions are not enabled:

The printer remains in the “IDLE” state.

To turn off the printer, press the red [stop] key. The printer displays a prompt message (see Figure 2-19).

Press the **Yes** key to turn off the printer.

If the power-down function is enabled:

The printer displays the message:

“You have 10 secs to cancel the power down.”

The displayed number changes every second (9, 8, 7...) until it reaches 1.

- If you do not press a key, the printer turns off when the displayed number reaches 1.
- If you press any key before the displayed number reaches 1, the power-down sequence is cancelled and the printer does not turn off.

NOTE: You can leave the mains power supply switch at the rear of the printer in the on (**I**) position.

3 Edit a message

This chapter tells you how to use the Message Editor to change an existing message, and describes:

- How to insert a new text field into a message.
- How to edit or move a field.
- How to delete a field from a message.

3.1 Add a new field

This section describes how to add a new Text field. To add a Date field or a Time field, see Chapter 4, 'Insert a Date or Time'. To learn how you can add other types of field to your message, refer to the *How To* guides for the printers.

1. Go to the **Print Monitor** page and press the **Message Store** key.
2. Highlight the name of the required message and press the **Edit** key.

The printer displays the **Message Editor** page, which shows the content of your selected message. Use the arrow keys to move the cursor (the blue rectangle) into position to insert the new field. Make sure that the cursor is outside the boundaries of other fields in the message.

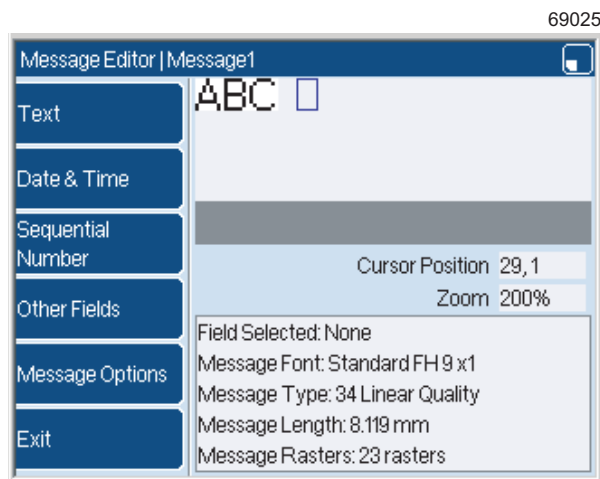


Figure 3-1. Cursor Shown in the Message Editor

3. Use the keyboard to enter the characters for the new Text field. The printer displays the characters in the message as you enter the text.

If the new field touches an existing field, the printer highlights the overlap ('A' in Figure 3-2) in red.

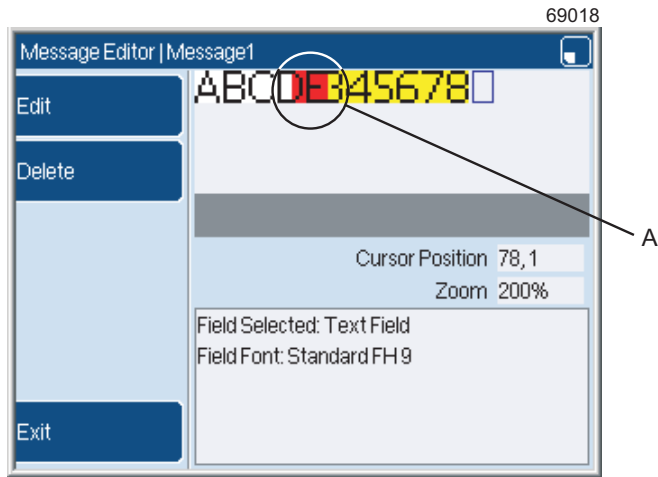


Figure 3-2. Overlapped fields

To correct the problem, you must move the new field (see 'Move a field' on page 37), or delete the field (see 'Delete a field' on page 37).

Make sure that the new field is within the message boundary. In Figure 3-3, the arrows indicate the message boundary (the white area). The grey area (A) is outside the boundary:

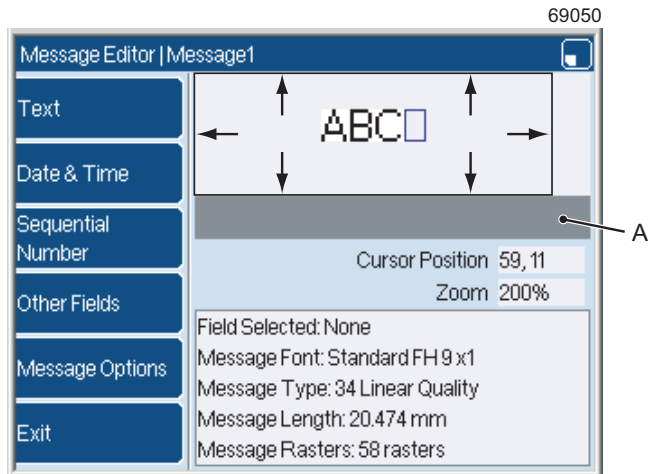


Figure 3-3. Message boundary

If a part of the field is outside the message boundary, that part of the field is not printed.

4. When your changes are completed, press the **Exit** key at the **Message Editor** page.
5. Now you can save your message or discard the changes (see ‘Save your message’ on page 17).
6. To return to the **Print Monitor** page, press the **Exit** key.

3.2 Edit a field

This section tells you how to change a field that exists in a message.

1. At the **Print Monitor** page, press the **Message Store** key.
2. At the **Message Store** page, highlight the required message and then press the **Edit** key. The **Message Editor** page is displayed, and shows the content of your message. The cursor shows your current position within the message.
3. Use the arrow keys to move the cursor over the required field, and then press the [enter] key. The field that you selected becomes highlighted.

If the field is a Text field, you can edit the Text field directly:

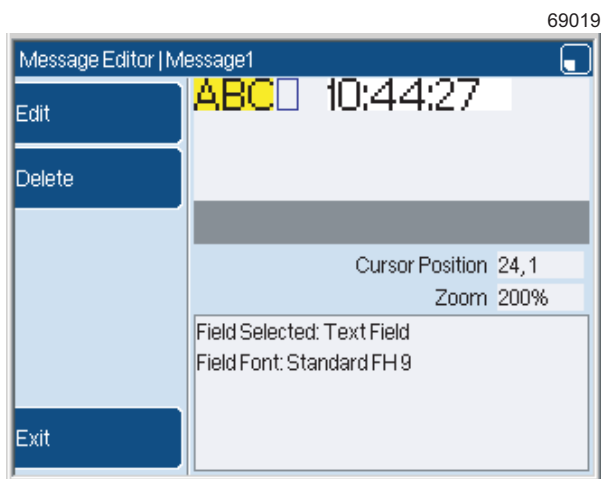


Figure 3-4. Edit a Text field

To change the text, use the Left arrow key or the Right arrow key to move the cursor.

Use the keyboard to insert a character, or press the backspace key to delete a character:



NOTE: The backspace key deletes a character, the **Delete** key deletes the whole field.

To complete your changes, press the [enter] key. The field highlight is removed.

If the field is not a Text field, you use a different method to edit the field—for example, a Date & Time field. Press the [enter] key to select the field:

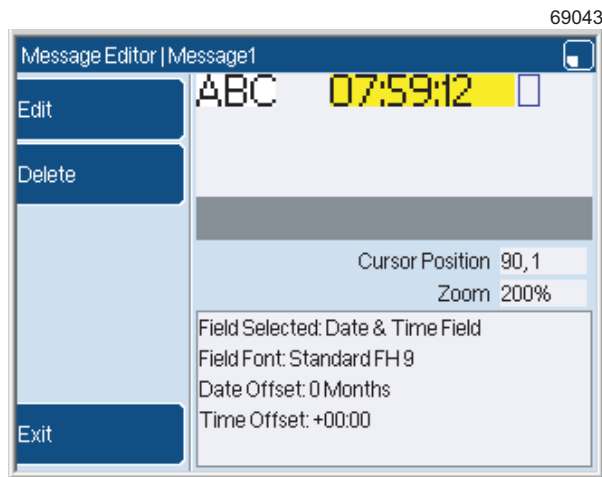


Figure 3-5. Select a Date & Time field

Press the **Edit** key to edit the field. The printer displays the correct page that you need when you edit this type of field. For example, if the field is a Date field or a Time field, the printer displays the **Edit Date & Time** page:

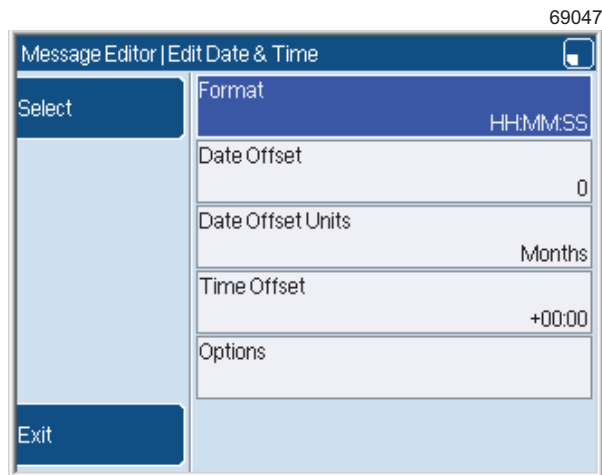


Figure 3-6. Edit Date & Time page

To learn about the **Edit Date & Time** page see Chapter 4, 'Insert a Date or Time'.

3.2.1 Options page

There is an **Options** page for each field type. You can use this page to control the appearance of the field. For example, you can change the font size. Use the arrow keys to highlight the **Options** item and then press the **Select** key to display the **Options** page:

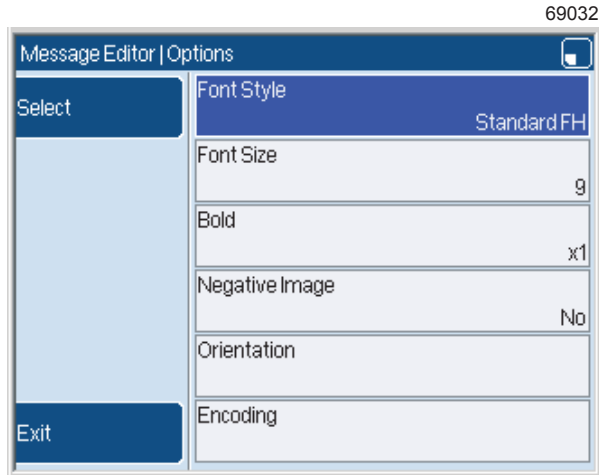


Figure 3-7. Options page

You can use the **Options** page to set:

- **Font Style**—select a font style from a list. If you change the font style, you must also select a font size.
- **Font Size**—select a font size from a list. The available font sizes depend on the font style that you use.
- **Bold**—select a Bold value from x1 to x10.
- **Negative Image**—select **Yes** to print the field as a negative image. Figure 3-8 shows how a negative image is printed. The first field (a) is printed normally, the second field (b) is a negative image:



Figure 3-8. Negative image

- **Orientation**—you can set the orientation for each field in a message. Refer to the *How To* guides for the printers for information about this option.
- **Encoding**—this option is only available on the 7900 printer. Press the **Select** key to display the bar code **Encoding** page. You can use this option to encode the field into a bar code. Refer to the *How To* guides for the printers for information about this option.

- **Field Justification**—you can set the justification of any text in a field to either right justified or left justified. The default justification is **Left**. Refer to the *How To* guides for the printers for information about this option.

Save the Options

When your changes to the **Options** page are complete, press the **Exit** key.

3.2.2 Save or discard your changes

1. When your changes to the message are completed, press the **Exit** key until the printer displays the **Message Editor** page. The display shows you the updated message.
2. Press the **Exit** key. Now you can save your message or discard the changes (see ‘Save your message’ on page 17).
3. To return to the **Print Monitor** page, press the **Exit** key.

3.3 Overlapping fields

Sometimes when you create or change a message, a part of the message is shown in red (like the area 'A' in Figure 3-9). The red area indicates that one field overlaps another field:

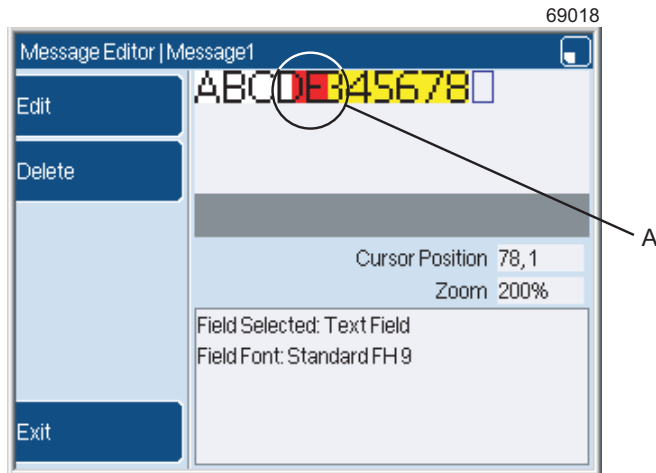


Figure 3-9. Field overlap

Overlapped fields are caused when you insert a field within the boundary of another field. If fields overlap, the overlapped areas do not print correctly so you must move one of the fields (see 'Move a field' on page 37).

To prevent overlapped fields, you must move the cursor outside the boundary of the existing field before you insert the new field.

To make sure that the cursor is in an empty area, press the [enter] key. If the printer highlights a field, the cursor is within that field. The yellow highlight shows you the field boundaries:



Figure 3-10. Cursor in a field

Press the [enter] key again so that the field is not selected. Then move the cursor outside the field boundaries. When you press the [enter] key, the field is not highlighted:

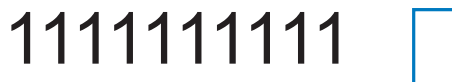


Figure 3-11. Cursor outside a field

3.4 Move a field

Sometimes you must move a field within a message. For example, if you add a new field that overlaps an existing field, you must move the new field to correct the problem.

To move a field:

1. At the **Print Monitor** page, press the **Message Store** key.
2. At the **Message Store** page, highlight the name of the required message and then press the **Edit** key. The **Message Editor** page is displayed, and shows the content of your selected message.
3. Use the arrow keys to move the cursor (the blue rectangle) into the field, and then press the [enter] key to select the field. The field becomes highlighted in yellow.
4. Move the field in the required direction.
 - To move the field by approximately the width of one character, press and hold the [shift] key while you press an arrow key.
 - To move the field by the width of one ink drop, press and hold both the [ctrl] key and the [shift] key. Then press an arrow key.
5. When your changes are complete, press the **Exit** key.
6. Save your message or discard the changes (see ‘Save your message’ on page 17).

NOTE: You can move several fields in one action. The method is described in the *How To* guides for the printers.

3.5 Delete a field

This section tells you how to delete a field from an existing message.

To delete a field:

1. At the **Print Monitor** page, press the **Message Store** key.
2. At the **Message Store** page, highlight the name of the message and then press the **Edit** key. The **Message Editor** page is displayed, and shows the content of your selected message.
3. Use the arrow keys to move the cursor over the field you want to delete.
4. Press the [enter] key—the field becomes highlighted in yellow.
5. Press the **Delete** key. The printer asks you to confirm that you want to delete the field. To delete the field, press the **Yes** key. To cancel the operation and keep the field, press the **No** key.
6. Save your message or discard the changes (see ‘Save your message’ on page 17).

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4 Insert a Date or Time

In this chapter you learn how to use a Date field or a Time field in your message. These field types use the current date and time, which is stored in the internal clock in the printer. You can use an offset to change the printed date or time (see page 41).

4.1 Create the field

To insert a Date and Time field in a message, perform the following steps.

4.1.1 Edit the message

1. At the **Print Monitor** page, press the **Message Store** key.
2. At the **Message Store** page, use the arrow keys to highlight the required message, then press the Edit key. The **Message Editor** page is displayed, and shows the content of the message that you selected. The cursor (see Figure 2-3 on page 16) shows your current position within that message.
3. Use the arrow keys to move the cursor to the position where you wish to insert the field. Make sure that the cursor is beyond the boundaries of any existing field:

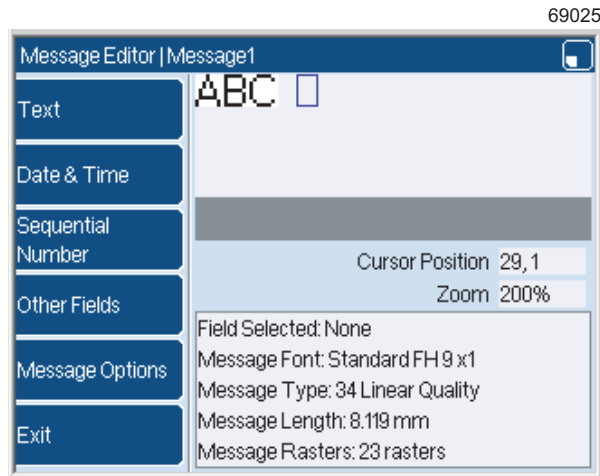


Figure 4-1. Message Editor and Cursor

4. Press the **Date & Time** key to display the **Insert Date & Time** page:

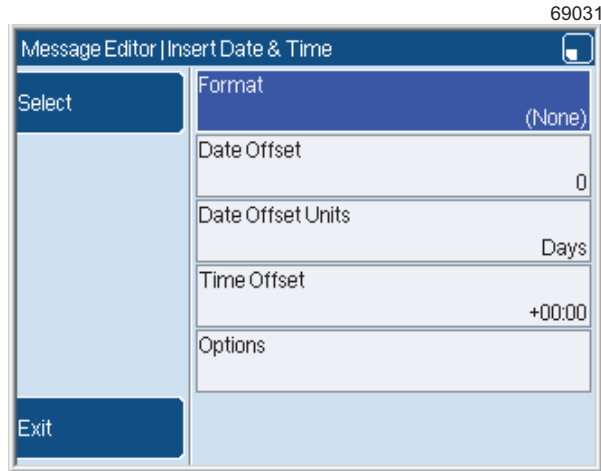


Figure 4-2. Insert Date & Time page

4.1.2 Select a format

Select the **Format** option to display the **Date & Time Store** page. This page shows you a list of formats that you can use to create the field. The list that is displayed depends on the language that is selected for this field (see 'Change Language' below). The language is displayed at the top of the page. If you use the Down arrow key to scroll through the list, you can see that the list contains both Date formats and Time formats:

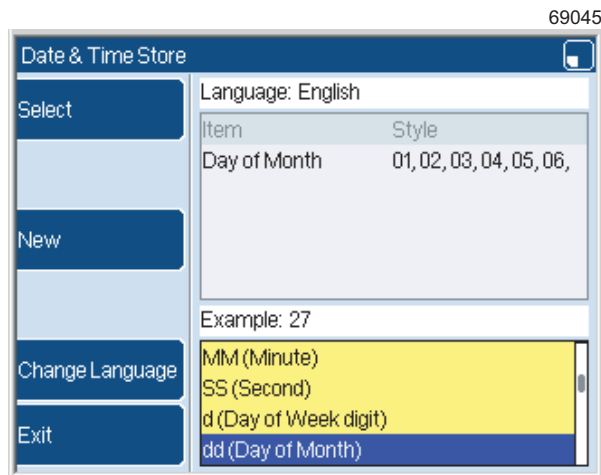


Figure 4-3. Date and Time formats

Use the arrow keys to highlight the required format, then press the **Select** key to return to the **Insert Date & Time** page.

Change Language

You can use this option to print a message that contains the text in one language, and the date in another language. The **Change Language** option changes the formats that are available in the list of formats.

The **Change Language** option is not needed for formats that contain only numbers—these formats do not depend on the language. For example “HH:MM:SS”.

To select a language, press the **Change Language** key to display a list of available languages. Use the arrow keys to select the language you require for the field. Then press the **OK** key to return to the **Date & Time Store** page.

4.1.3 Set the Date Offset

You can use this option to add or subtract a fixed number of days (or weeks, or months, or years) from the correct date. You can use this method to print a ‘Sell-by’ date. If the correct date is December 29 and the date offset is +2 days, the date that is printed in the message is December 31.

To set the date difference, select **Date Offset**, then press the **Select** key to display the **Date Offset** page.

Enter the required value from the keyboard, or use the arrow keys. Then press the **OK** key to return to the **Insert Date & Time** page.

4.1.4 Set the Date Offset Units

If you use a Date Offset, you can use any of the following units:

- Days
- Weeks
- Months
- Years

To set the units, use the arrow keys to highlight the **Date Offset Units** option. Then press the **Select** key to display the **Date Offset Units** page.

Use the arrow keys to select the required units from the list. Then press the **OK** key to return to the **Insert Date & Time** page.

4.1.5 Set the Time Offset

You can use the **Time Offset** option to add or subtract a fixed time difference from the correct time. If the correct time is 16:00 and the time offset is –2 hours, the time that is printed in the message is 14:00.

To set the time difference, select **Time Offset**, then press the **Select** key to display the **Time Offset** page.

Use the keyboard to enter the required value, then press the **OK** key to return to the **Insert Date & Time** page.

4.1.6 Set the Print Style of the field

Set the Options

At the **Insert Date & Time** page, use the arrow keys to select **Options**, then press the **Select** key to display the **Options** page.

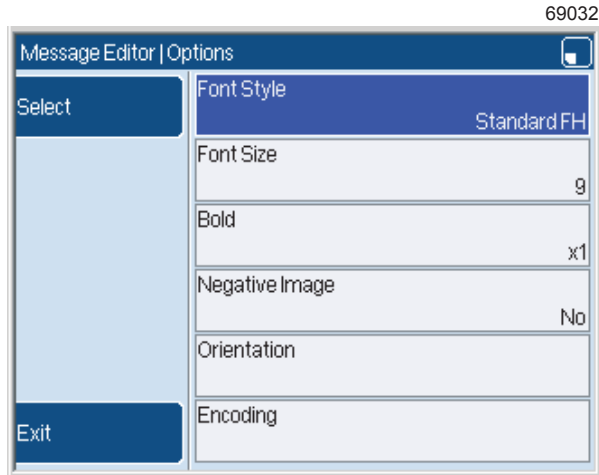


Figure 4-4. Options page

The options on this page are described in ‘Options page’ on page 34.

4.1.7 Save or discard your message

At the **Insert Date & Time** page, press the **Exit** key to return to the **Message Editor** page.

To leave the **Message Editor** page, press the **Exit** key to display the **Save As** page. Then save your message or discard the changes (see ‘Save your message’ on page 17).

5 Manage your messages

This section describes how to manage the messages that are stored in the printer. You can make a copy of a message and use the copy as a base for a new message. You can change the name of a message or delete a message that is not needed.

NOTE: You can use the USB connection of the printer to save messages from the printer to a USB memory stick and transfer messages to the printer from a memory stick. At the **Print Monitor** page, press the **Menu** key and select the **USB** option. See *How To Use the USB Connection* for more information.

If any of the following options are not available, you do not have the necessary User Level. Refer to your supervisor or line manager.

5.1 Copy a message or change the name

To copy an existing message or to change the name of an existing message, do the following:

1. At the **Print Monitor** page, press the **Message Store** key.
2. At the **Message Store**, press the **Manage Messages** key.
3. Highlight the name of the required message in the list.
 - To copy the message, press the **Copy** key. The printer asks you for a name for the new message.
 - To change the name of the message, press the **Rename** key. The printer asks you for the new name for the message.
4. Enter a name, then press the **OK** key.

You cannot use the name of an existing message or the name of a different type of field that exists in the printer. For example, the name of an existing logo or a sequential number.

If you try to use a name that exists, the printer displays an information page:

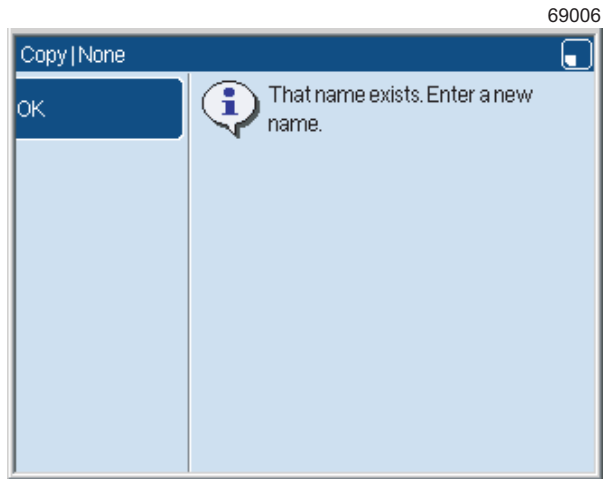


Figure 5-1. Information page for an existing name

Press the **OK** key to close the information page, then enter a different name.

The printer returns you to the **Manage Messages** page.

5. To return to the **Print Monitor** page, press the **Exit** key twice.

5.2 Delete a message

To delete a message from the **Message Store**:

1. At the **Print Monitor** page, press the **Message Store** key.
2. At the **Message Store**, press the **Manage Messages** key.
3. Highlight the name of the required message in the list, then press the **Delete** key.
4. The printer asks you to confirm that you want to delete the message.
 - To confirm and delete the message, press the **Yes** key.
 - To cancel the operation, press the **No** key.

The printer returns you to the **Manage Messages** page.

5. To return to the **Print Monitor** page, press the **Exit** key twice.

6 Look after your printer

The printer is a durable and reliable machine. However, you can help to keep it working at peak efficiency by performing some routine tasks. This chapter describes how you can help to keep your printer in good condition.



WARNING: SAFETY. DO NOT ATTEMPT TO OPERATE THIS PRINTER UNLESS YOU HAVE READ AND UNDERSTOOD ALL THE INFORMATION IN THE 'SAFETY' SECTION OF THIS QUICK START GUIDE, AND YOU ARE SURE OF YOUR ABILITY TO OPERATE THIS PRINTER SAFELY.

DO NOT ATTEMPT TO OPERATE THIS PRINTER UNLESS YOU KNOW HOW TO STOP IT IN AN EMERGENCY, AS DESCRIBED IN 'EMERGENCY SHUTDOWN PROCEDURE' IN THE 'SAFETY' SECTION OF THIS QUICK START GUIDE.

The printer needs minimal maintenance to operate without problems.

The maintenance requirement is shown in the table.

Part		Examine	Clean	Replace or Refill
Printer cover		Daily or each time used, for general cleanliness.	Weekly or as necessary.	Not applicable.
Printhead		Daily or each time used, for ink build-up.	Weekly or as necessary.	Not applicable.
Ink and solvent		At startup and during use: Check the ink and solvent level. (Use Print Monitor page).	Not applicable.	Add ink or solvent when the printer displays the SureFill page. Add only <i>one</i> bottle.
Air filter	5900/7900	Weekly for build-up of dust or debris, but daily in dusty or contaminated conditions.	Weekly or as necessary.	As necessary.
	7900 IP65	Weekly for build-up of dust or debris, but daily in dusty or contaminated conditions.	The filter cannot be cleaned, it must be replaced when necessary.	As necessary.

Figure 6-1. Printer Maintenance

6.1 Clean the printer



WARNING: HAZARDOUS SUBSTANCES. MANY OF THE INKS USED WITH THIS PRINTER ARE SOLVENT-BASED AND CAN BE HAZARDOUS. THEY ARE HIGHLY FLAMMABLE, AND THE VAPOUR OR SPRAY CAN BE IRRITATING TO THE EYES AND RESPIRATORY SYSTEM.

YOU MUST WEAR SAFETY GLASSES AND SOLVENT-RESISTANT PROTECTIVE GLOVES WHEN YOU HANDLE INKS AND SOLVENTS, WHEN YOU WORK ON THE PRINTER, AND WHEN YOU CLEAN IT.

IF YOU IGNORE THIS SAFETY WARNING, YOU COULD EXPERIENCE SEVERE IRRITATION AND TEMPORARY (REVERSIBLE) DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS..



WARNING: FLAMMABLE LIQUIDS. THE INKS AND SOLVENTS USED WITH THIS PRINTER ARE HIGHLY FLAMMABLE.

KEEP INKS AND SOLVENTS AWAY FROM SOURCES OF IGNITION. DO NOT SMOKE OR USE OPEN FLAMES NEAR THE PRINTER, OR INK AND SOLVENT STORAGE CONTAINERS. USE INKS AND SOLVENTS, AND OPERATE THE PRINTER, IN AN AREA WITH GOOD VENTILATION.

THERE IS A RISK OF FIRE OR EXPLOSION IF THIS SAFETY WARNING IS IGNORED.

6.1.1 Printer cover

Use a clean, soft, lint-free cloth and the same solvent type that is used in the printer to clean ink spills from the printer cover.

Use the minimum of solvent. Observe the safety precautions when you handle the solvent.

Do not use abrasive materials, which damage the equipment.

Use a lint-free cloth to prevent any contamination of the printhead.

6.1.2 Printhead

To clean the printhead

1. Stop and turn off the printer (see page 27).
2. Loosen the securing screw of the printhead cover tube, then slide the cover off.
3. Hold the printhead as shown in Figure 6-2, or attach it to a wash station if you have one. Make sure that the cleaning solvent is the same type that is used in the printer.

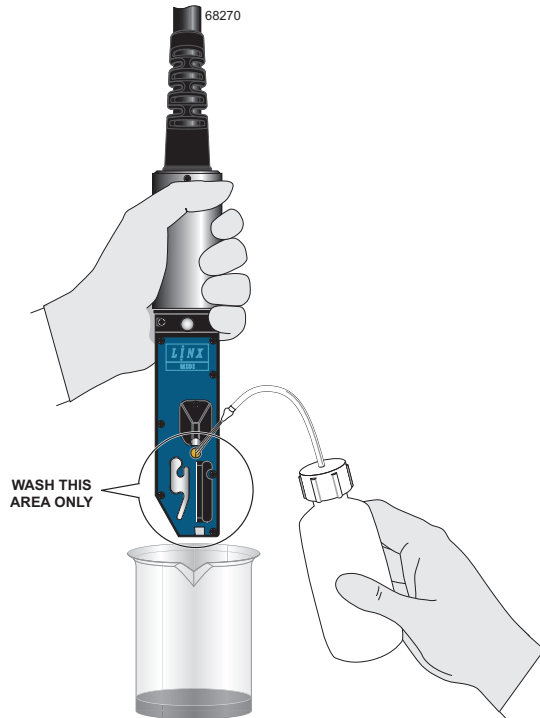


Figure 6-2. Wash the printhead with the solvent

4. Put a container under the printhead and gently wash only the circled area with the solvent, as shown in Figure 6-2. Pause after every rinse to allow the ink to dissolve.

Collect the solvent in the container.

Dispose of the used solvent, according to local regulations.

5. **If you use a pigmented ink in the printer, perform this step. If you do not use a pigmented ink, go to step 6.**

Use the brush supplied with the printer to carefully remove any ink deposits that do not wash off from the circled area only in Figure 6-3.

Brush the deflector plates carefully.

Do not use the brush to clean the nozzle.

CAUTION: Use ONLY the non-abrasive, solvent-resistant brush supplied with the printer (part number FA940053) to clean the printhead.

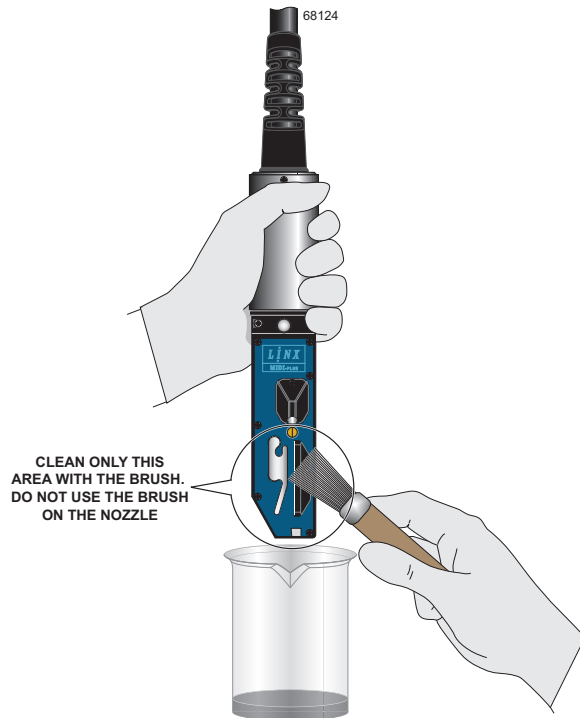


Figure 6-3. Clean the printhead with the brush

6. Allow the printhead to dry completely. Do not use a cloth to dry the printhead.
You must make sure that the space between the nozzle and the charge electrode is free of solvent.
7. Refit the printhead into the cover tube and tighten the securing screw.

6.2 Refill the ink or solvent



WARNING: HAZARDOUS SUBSTANCES. MANY OF THE INKS USED WITH THIS PRINTER ARE SOLVENT-BASED AND CAN BE HAZARDOUS. THEY ARE HIGHLY FLAMMABLE, AND THE VAPOUR OR SPRAY CAN BE IRRITATING TO THE EYES AND RESPIRATORY SYSTEM.

YOU MUST WEAR SAFETY GLASSES AND SOLVENT-RESISTANT PROTECTIVE GLOVES WHEN YOU HANDLE INKS AND SOLVENTS, WHEN YOU WORK ON THE PRINTER, AND WHEN YOU CLEAN IT.

IF YOU IGNORE THIS SAFETY WARNING, YOU COULD EXPERIENCE SEVERE IRRITATION AND TEMPORARY (REVERSIBLE) DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS.



WARNING: FLAMMABLE LIQUIDS. THE INKS AND SOLVENTS USED WITH THIS PRINTER ARE HIGHLY FLAMMABLE.

KEEP INKS AND SOLVENTS AWAY FROM SOURCES OF IGNITION. DO NOT SMOKE OR USE OPEN FLAMES NEAR THE PRINTER, OR INK AND SOLVENT STORAGE CONTAINERS. USE INKS AND SOLVENTS, AND OPERATE THE PRINTER, IN AN AREA WITH GOOD VENTILATION.

THERE IS A RISK OF FIRE OR EXPLOSION IF THIS SAFETY WARNING IS IGNORED.

CAUTION: Use only Linx ink and solvent. Do not add ink or solvent until indicated by the printer.

Every bottle of Linx ink or solvent has a nine-character SureFill® code printed on the label. You must enter this SureFill® code before you refill the ink and solvent.

The SureFill® code helps you to make sure that the ink or solvent used is the correct type for the printer and has not expired. If you use ink or solvent that has an expired use-by-date, you can lower the print quality.

See the instructions on page 50 for more information.

DO NOT add more than one bottle of ink or solvent. If you add more than one bottle of ink or solvent, you can damage the printer.

If the ink is a pigmented ink, shake the bottle before use. Use the Linx Ink Shaker for Brilliant White inks 1305 and 1306 and High-opacity Grey inks 1310 and 1311 (these inks are for 7900 Spectrum printers only). Refer to the *Linx Ink Shaker User Guide* (FA65479) for instructions.

Always read the instructions on the ink container before use.

1. When the printer ink level or solvent level becomes low, the printer displays the **SureFill** page to show that you must refill the ink or solvent. The printer asks you to enter the SureFill® code that is on the label of the ink or solvent bottle.

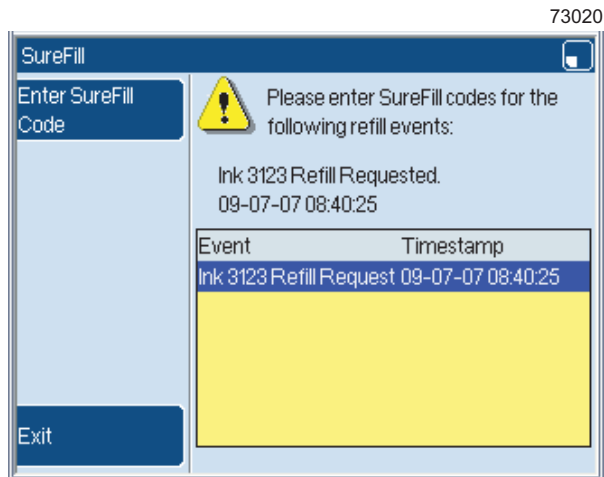


Figure 6-4. SureFill page (Ink Refill Requested)

To cancel the ink or solvent refill, press the **Exit** key to return the **Print Monitor** page. The **Printer Status** area shows any ink or solvent low or refill event messages (for example, REFILL REQUIRED). The **SureFill** soft key on the left of the screen is enabled.

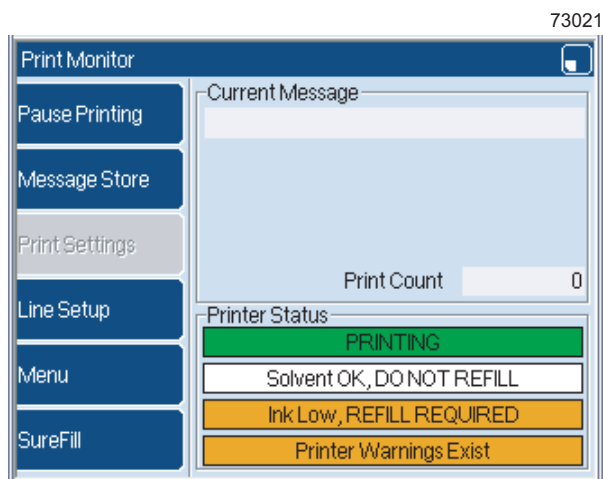


Figure 6-5. Print Monitor page: Ink Low

To now refill the ink or solvent, press the **SureFill** key to display the **SureFill** page and continue to step **2** on page 51.

2. Press the **Enter SureFill Code** key and enter the nine-character label code for the selected ink or solvent type.

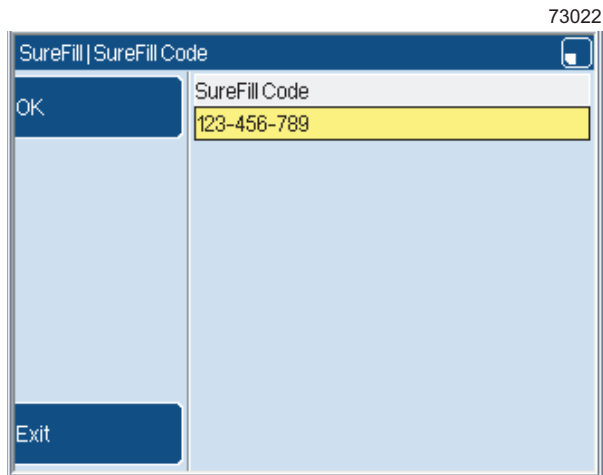


Figure 6-6. SureFill Code page

3. Press the **OK** key. A code that is valid identifies the configured ink type and solvent type for the printer, and refers to an ink or solvent with a shelf life that has not expired.

If you enter a valid code, the **Ink Refill** page is displayed. Follow the instructions on the screen (or in steps **4** to **7** below) to refill the ink or solvent.

4. Remove the solvent or ink filler cap, as required:
 - The white filler cap, marked “S”, for solvent.
 - The black filler cap, marked with an ink-drop icon, for ink.
5. Remove the cap from the bottle and then invert the bottle into the correct filler point, as shown in Figure 6-7.

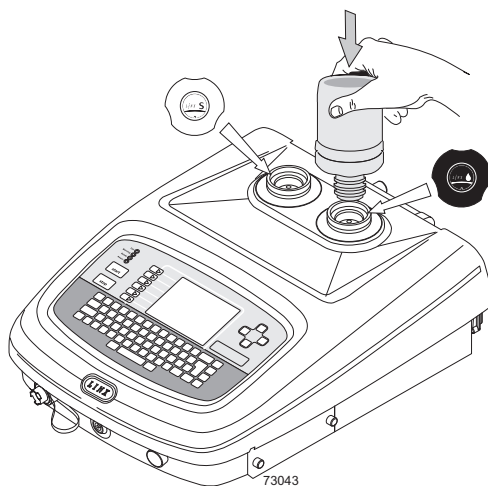


Figure 6-7. Refill with ink and solvent

6. Press the bottle to break the foil seal. Leave the bottle in position for a minimum of 15 seconds to drain into the system.
7. Make sure that the bottle is empty and then remove the bottle. Refit the filler cap to the printer.

NOTE: **7900 Spectrum printers only:** a mixing sequence can start when the ink is refilled. Wait until the mixing sequence has finished and the status changes to “IDLE” before you try to print.

8. When the ink or solvent tank is full, the printer displays a confirmation message.

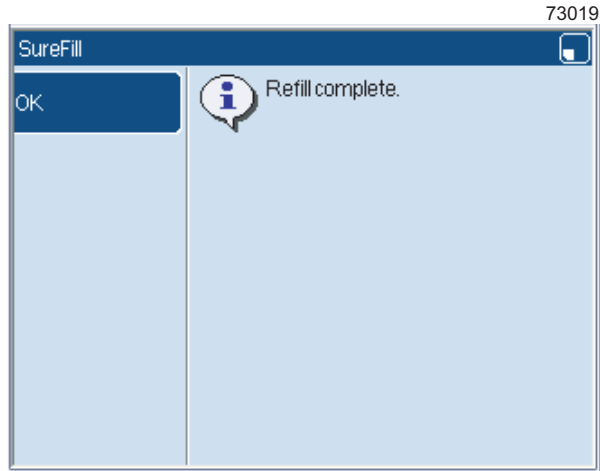


Figure 6-8. Refill complete confirmation message

See ‘SureFill code messages’ on page 53 for more information about SureFill® code messages.

Press the **OK** key to return to the **SureFill** page.

9. The **SureFill** page confirms that there are no current refill events.

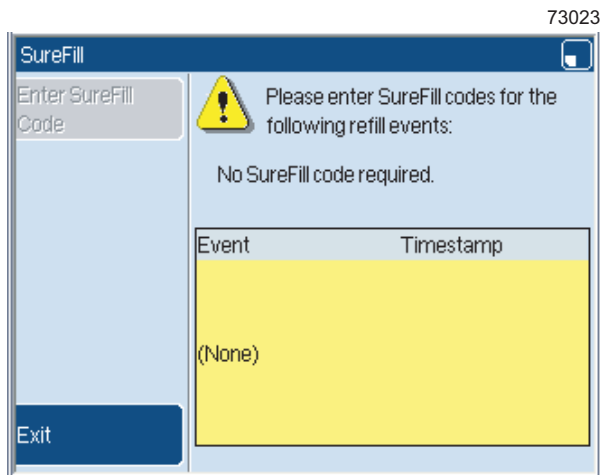


Figure 6-9. SureFill page (No SureFill code required)

Press the **Exit** key to return to the **Print Monitor** page. The Ink Low or Solvent Low warnings and refill event messages disappear from the **Printer Status** area.

If there are current fluid events that require you to enter SureFill® codes, highlight the required refill event message at the **SureFill** page (see Figure 6-4 on page 50) and press the **Enter SureFill Code** key. Follow steps **2** to **9** above.

SureFill code messages

The printer displays an information message:

- If you enter an incorrect SureFill® code.
- If you enter a SureFill® code that refers to an ink or solvent that is out of date (that is the ink or solvent shelf life has expired).
- If you enter a SureFill® code that is not correct for the ink or solvent types that the printer uses.
- If you enter a SureFill® code that was used previously.

Follow the instructions on the screen to continue to refill the ink or solvent.

6.3 Clean or replace the air filter

The method you use to clean or replace the air filter depends on:

- The type of printer—*5900* and *7900* or *7900 (IP65 version)*.
- The operating conditions.

NOTE: The *7900 (IP65 version)* includes the *7900 Spectrum* printer.

Make sure that you use the correct replacement filter:

- For the *5900* and *7900*, the filter part number is FA13178.
- For the *7900 IP65 version*, the filter part number is FA13179.

5900 and 7900 printer

Clean the air filter every week. If the printer operates in dirty conditions, you must clean the filter every day.

To clean or replace the filter:

1. Use the nylon tab to remove the filter element. (Pressure can be necessary to release the filter from the housing.) Refer to the illustration below:

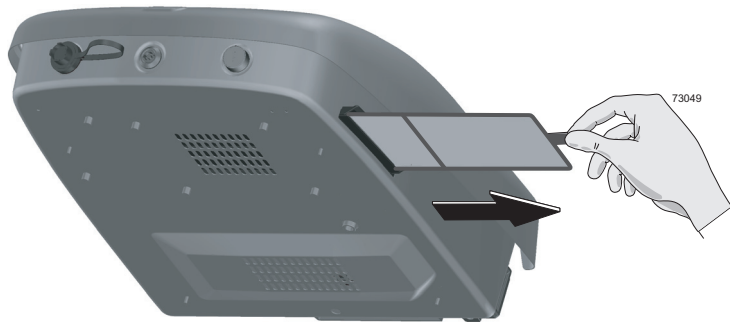


Figure 6-10. Remove the air filter (5900 and 7900)

2. Gently hit the filter to remove dirt, or use an air line to blow air through the filter in the opposite direction to the normal flow.
3. Check that the filter is clean and no dirt is visible in the filter housing. Replace the filter if you cannot clean it.
4. Fit the clean filter or new filter into the filter housing. Make sure that you correctly fit the filter:
 - The direction of the soft surface of the filter must be towards the top of the printer.
 - The direction of the wire mesh surface must be towards the base of the printer.
 - The direction of the tab must be away from the printer.

7900 (IP65 version) printer

The air filters in the *7900 (IP65 version)* and the *5900/7900* are in the same position. The *7900 (IP65 version)* has an access panel to make it resistant to water and dust.

You cannot clean the air filter of the *7900 (IP65 version)* printer. You must replace the air filter.

To replace the air filter:

1. Loosen the screw and release the filter access panel.
2. Pull the filter handle until the filter is removed from the filter housing. The filter fits tightly into the housing. Refer to the illustration below:

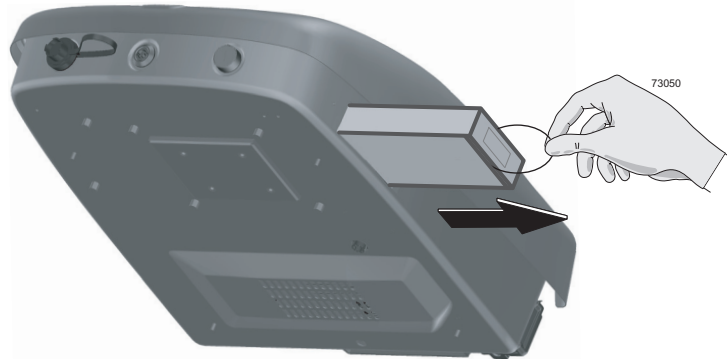


Figure 6-11. Remove the air filter (7900 IP65 version)

3. Make sure that the new filter is clean and the type of filter is correct. Make sure that there is no dirt in the filter housing.
4. Fit the new, Linx-approved, replacement filter into the filter housing. Make sure that you correctly fit the filter—the direction of the handle must be away from the printer, as shown in Figure 6-11.
5. Close and fasten the access panel.

6.4 Flush the nozzle

You can use the **Nozzle Flush** sequence to clear the nozzle of dirt that can cause the ink jet to distort.

A **Nozzle Flush** uses the pump pressure to create a flow of solvent through the nozzle. The solvent returns to the ink system through the gutter.

To flush the nozzle:

1. Make sure that the printer status is “IDLE”.
2. Put a container under the printhead to collect solvent.
3. At the **Print Monitor** page, press the **Menu** key.
4. Select **Nozzle Flush** to display the **Nozzle Flush** page:

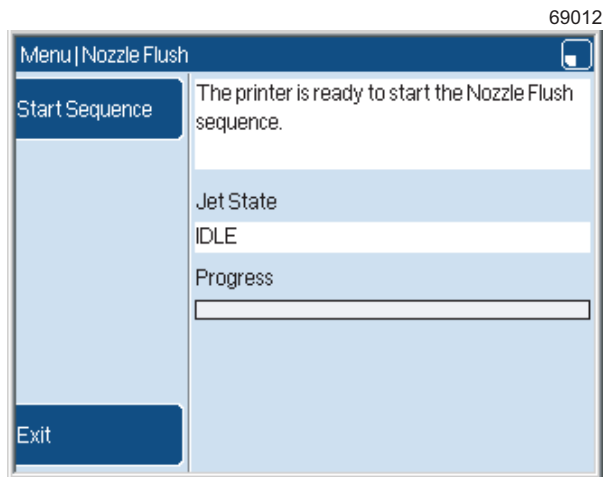


Figure 6-12. Nozzle Flush page

NOTE: The **Nozzle Flush** option is not available unless the jet is stopped. Press the red [stop] key to stop the jet.

5. Press the **Start Sequence** key. A progress bar shows the progress of the flush sequence, which takes approximately 2 minutes 20 seconds. During the sequence, the soft keys are not available.

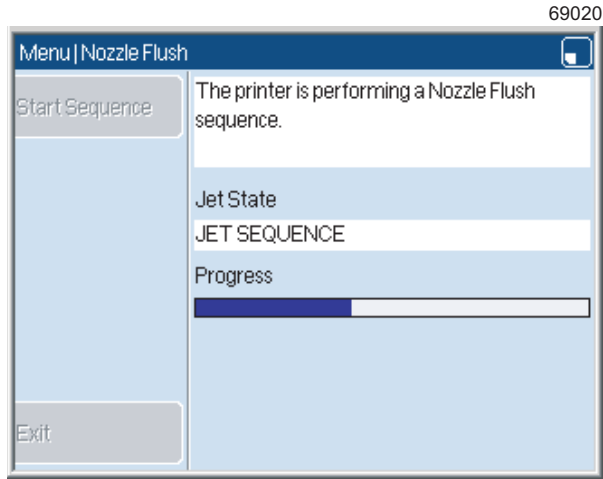


Figure 6-13. Nozzle Flush sequence

When the sequence stops, the printer displays the information page shown in Figure 6-12.

6. You can perform more flush sequences or return to the **Print Monitor** page.
 - To perform more flush sequences, repeat step 5.
 - To return to the **Print Monitor** page, press the **Exit** key twice.

NOTE: The Nozzle Flush sequence can correct an incorrect nozzle alignment. If the procedure is not successful, use the **Nozzle Clear** option to correct the problem.

6.5 Clear the nozzle



WARNING: HAZARDOUS INKS AND SOLVENTS. SAFETY GLASSES AND SOLVENT-RESISTANT PROTECTIVE GLOVES MUST BE WORN THROUGHOUT THE FOLLOWING PROCEDURE. IGNORING THIS SAFETY WARNING COULD RESULT IN SEVERE EYE IRRITATION AND TEMPORARY (REVERSIBLE) EYE DAMAGE, AND NON-ALLERGIC CONTACT DERMATITIS.

WARNING: SOLVENT JET HAZARD. THE USE OF THE NOZZLE FLUSH FUNCTION MUST NOT BE CONFUSED WITH THE NOZZLE CLEAR FUNCTION. WHEN THE NOZZLE FLUSH SEQUENCE IS IN OPERATION, THE PRINTHEAD MUST BE DIRECTED DOWN INTO A SUITABLE RECEPTACLE IN ORDER TO CONTAIN THE SOLVENT.

The Nozzle Clear sequence uses the pump to create a vacuum in the nozzle while you apply solvent to the nozzle (see Figure 6-16). The vacuum pulls the solvent into the nozzle. The reversed solvent flow can clear a blockage behind the nozzle. The Nozzle Clear sequence takes approximately 20 seconds.

The printer can perform a series of eight Nozzle Clear sequences automatically. You can stop the Nozzle Clear before all eight sequences are performed, or repeat the sequence to make sure that the nozzle is clean.

To clear the nozzle

1. Make sure that the printer status is “IDLE”.
2. Remove the printhead cover tube.
3. At the **Print Monitor** page, press the **Menu** key.
4. Select **Nozzle Clear** to display the **Nozzle Clear** page:

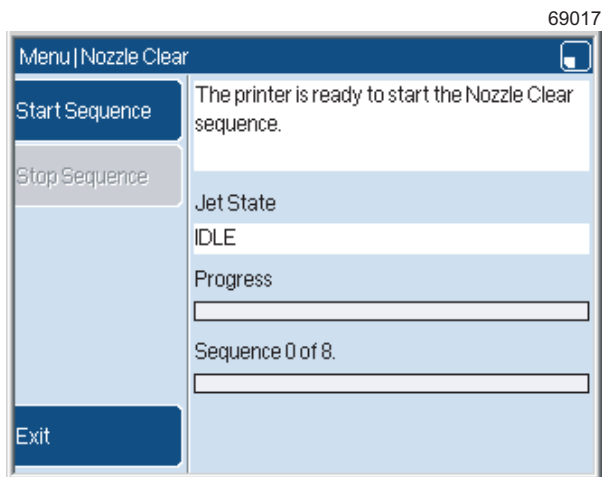


Figure 6-14. Nozzle Clear page

NOTE: The **Nozzle Clear** option is not available unless the jet is stopped. Press the red [stop] key to stop the jet.

- Press the **Start Sequence** key. The first Nozzle Clear sequence starts.

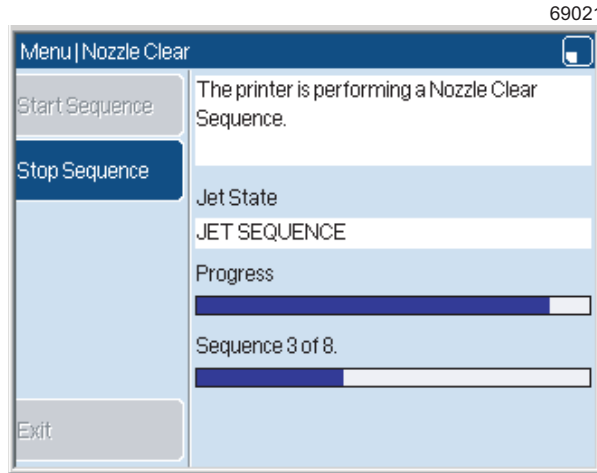


Figure 6-15. Nozzle Clear sequence

There are two progress bars:

- The upper bar shows the progress of each sequence.
 - The lower bar shows the number of Nozzle Clear sequences that have completed.
- When the first sequence starts, turn the printhead upside down and apply the solvent to the nozzle face (see Figure 6-16). The solvent enters the nozzle:

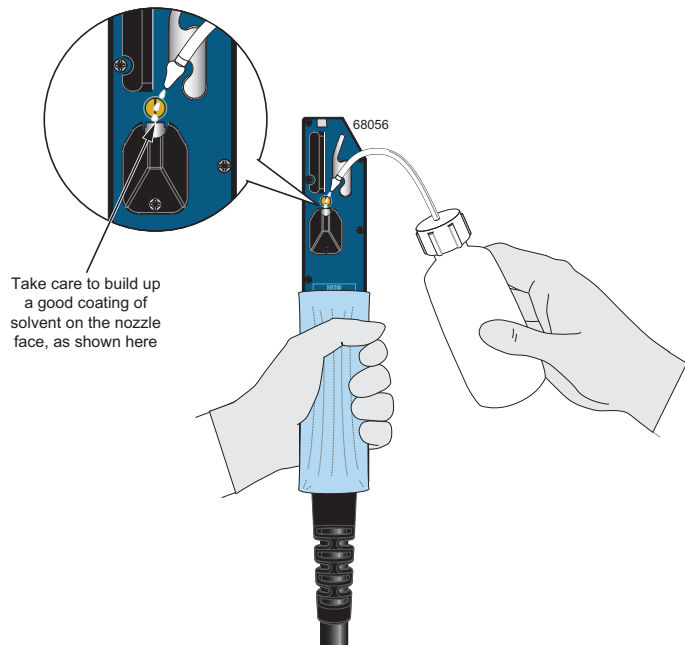


Figure 6-16. Apply the solvent to the nozzle

7. To perform all eight sequences, continue to apply the solvent until both the progress bars are complete.

To stop the sequence, press the **Stop Sequence** key.

8. To return to the **Print Monitor** page, press the **Exit** key twice.

NOTE: To make sure that the nozzle is clear, start the jet. Make sure that the jet flows from the nozzle into the gutter. If the jet is not aligned correctly, contact your local Linx distributor.

Appendix A: If the printer complains

This chapter describes some of the System Event messages and what to do if the printer displays a Warning or a Print Failure message. The printer displays these messages in the Printer Status area of the **Print Monitor** page if a problem occurs. Refer to the *How To* guides for the printers for more information on System Event messages.

If the printer displays an event message that is not described in this appendix, you should inform your supervisor or contact your local Linx distributor.

Event messages

These event messages indicate problems that you can often easily correct. However, if any of the problems are not cleared after you perform the recommended action, contact your local Linx distributor.


Event Message	Action
1.00 Internal failure	Contact your local Linx distributor.
1.01 Stack Overflow	Contact your local Linx distributor.
1.02 Corrupt Program Data	Contact your local Linx distributor.
1.03 Internal Software Failure (ASSERT)	Contact your local Linx distributor.
2.00 Printhead Over Temperature	<p>The temperature of the printhead is greater than approximately 60°C.</p>  <p>WARNING: HIGH TEMPERATURE. WHEN THIS FAULT IS REPORTED, THE PRINthead AND COVER TUBE CAN BE VERY HOT. EXTREME CARE MUST BE TAKEN TO PREVENT SKIN BURNS AND TO REDUCE THE RISK OF A FIRE. DO NOT TOUCH THE PRINthead, OR TRY TO REMOVE THE PRINthead COVER TUBE UNTIL THEY HAVE BECOME COOL NATURALLY. THERE IS A DANGER OF SEVERE BURNS TO THE HANDS IF THE PRINthead COVER TUBE IS REMOVED BEFORE IT HAS BECOME SUFFICIENTLY COOL. THERE IS ALSO AN INCREASED RISK OF FIRE CAUSED BY THE SUDDEN INCREASE OF AIR AROUND THE PRINthead. Do not touch the printhead.</p> <p>If it is safe to do so, power down the printer, or switch off the printer at the mains supply. Without touching the printhead itself, move the printhead assembly away from any source of heat. Contact your local Linx distributor.</p>
2.01 EHT Trip	Clean the printhead and perform a Nozzle Flush . Make sure that the distance between the printhead and the substrate is 12 mm. If the failure persists, contact your local Linx distributor.
2.02 Phase Failure	Clean the printhead. Perform a Nozzle Flush and/or Nozzle Clear . If the failure persists, contact your local Linx distributor.
2.03 Time of Flight Failure	Clean the printhead. Perform a Nozzle Flush and/or Nozzle Clear . If the failure persists, contact your local Linx distributor.
2.04 300V Power Supply	Contact your local Linx distributor.
2.05 Ink Tank Empty	Follow the SureFill® instructions.
2.06 Solvent Tank Empty	Follow the SureFill® instructions.
2.07 Internal Spillage	Turn off the printer. Contact your local Linx distributor.

Figure A-1. System Events

Event Message	Action
2.08 Printer Over Temperature	Clean or replace the air filter. If the failure persists, contact your local Linx distributor.
2.09 Misaligned Ink Jet	Clean the printhead. Perform a Nozzle Flush and Nozzle Clear . If the failure persists, contact your local Linx distributor.
2.11 Pressure Limit Reached	Perform a Nozzle Clear . If the failure persists, contact your local Linx distributor.
2.12 Viscosity	Contact your local Linx distributor.
2.13 Hardware Safety Trip	Contact your local Linx distributor.
2.14 Pressure Override Circuit Tripped	Contact your local Linx distributor.
2.15 Scheduled Maintenance is Overdue by 3 months	The printer is overdue for a service. Contact your local Linx distributor to arrange for a scheduled maintenance visit.
3.00 Shutdown Incomplete	<ol style="list-style-type: none"> 1. Clean the printhead. 2. Press the green [start] key to start the jet. 3. Press the red [stop] key to stop the jet. 4. Power down the printer. 5. Power up the printer.
3.01 Shutdown Incomplete (Failure)	<ol style="list-style-type: none"> 1. Clean the printhead. 2. Press the green [start] key to start the jet. 3. Press the red [stop] key to stop the jet. 4. Power down the printer. 5. Power up the printer.
3.02 Memory Corrupt	Contact your local Linx distributor.
3.03 Ink Low	Follow the SureFill® instructions.
3.04 Solvent Low	Follow the SureFill® instructions.
3.05 Over Speed (Print Trigger)	Contact your local Linx distributor.
3.06 Over Speed (Synchronous Data)	Contact your local Linx distributor.
3.07 Over Speed (Asynchronous Data)	Contact your local Linx distributor.
3.08 Over Speed (Line Speed)	If the failure persists, contact your local Linx distributor.
3.09 Over Speed (Compensation)	If the failure persists, contact your local Linx distributor.
3.10 Under Speed (Line Speed)	Contact your local Linx distributor.
3.11 Printer Requires Scheduled Maintenance	The printer is due for a service. Contact your local Linx distributor to arrange for a scheduled maintenance visit.
3.12 Printhead Cover Off	Refit the cover tube correctly. If the failure persists, contact your local Linx distributor.

Figure A-1. System Events (Continued)

Event Message	Action
3.13 Cover Override Link Fitted	Contact your local Linx distributor.
3.14 Power Off Override Active	Contact your local Linx distributor.
3.15 Safety Override Active	Contact your local Linx distributor.
3.16 Gutter Override Active	Contact your local Linx distributor.
3.17 Gate Array Test Mode Active	Contact your local Linx distributor.
3.18 Low Pressure	Contact your local Linx distributor.
3.19 Valid UNIC Chip Not Found	Contact your local Linx distributor.
3.20 No Time of Flight	Clean the printhead. Perform a Nozzle Flush and/or Nozzle Clear . If the failure persists, contact your local Linx distributor.
3.21 Ink Low Prevented Mix	Refill the ink tank with ink.
3.22 Fault Prevented Mix	7900 Spectrum printers only. This will be accompanied by another event message, describing the fault. If the fault is listed in this section, perform the necessary action. If the fault is not listed here, consult your supervisor or local Linx distributor.
3.23 Power Off Occurred During Mix	7900 Spectrum printers only. Wait until the printer finishes the mix sequence before you power off the printer. (During a mix sequence, the printer status is shown as "MIX".)
3.24 Restart In Progress	Press the OK key to acknowledge the event message. The printer should operate normally.
3.25 Ink Unmixed for 4 Weeks	7900 Spectrum printers only. Wait until the printer finishes the mix sequence before you start to print. (During a mix sequence, the printer status is shown as "MIX".)
3.26 User Data Corrupt	Contact your local Linx distributor.
3.27 Mix Disabled	Contact your local Linx distributor.
3.28 Printhead requires cleaning at shutdown	Clean the printhead after the next shutdown. If the failure persists, contact your local Linx distributor.
3.29 Over Speed (No Remote Data)	Contact your local Linx distributor.
3.30 Remote Error	Contact your local Linx distributor.
3.31 Restarted Print Delay	Contact your local Linx distributor.
3.35 Printer Requires Scheduled Maintenance Within One Month	The printer is due for a service within the next month. Contact your local Linx distributor to arrange for a scheduled maintenance visit.
3.36 Invalid Product Key	Check that the product selection product key is correct.
3.37 Incomplete Data for Product Selection	Check that the fields in the product selection are correct.

Figure A-1. System Events (Continued)

Appendix B: Training

Before operators are allowed to use the printer, or any of its accessories, they should be trained to a level of competency that allows them to perform their tasks safely and effectively. It is recommended that, as a minimum, the training should include the following topics.

Basic operations

Safety

Warnings and cautions

Safety issues (hazard prevention and accident management) for:

- Ink and solvent flammability
- Eye and skin contact
- Inhalation
- Ingestion

Importance of keeping the printer cover fitted

Use the emergency stop

Getting started

Switch on and start up

The keyboard and display

Use of soft keys

Use of passwords

Navigate the user interface

Printing

Printer Status area and event messages

Select a message

Print a message

Pause the print

Stop print and shut down

Use the **Stop** soft key and the red [stop] key, (to stop print, stop the jet, and power down)

What happens during the power-down sequence

Use the power switch to power down (only in an emergency)

Look after the printer

- Warning and Failure messages and appropriate actions
- Ink and solvent level warnings
- Ink and solvent dos and don'ts
- Ink and solvent addition and SureFill® codes.

Intermediate operations

Depending upon the tasks that operators may be asked to perform, they may need additional training in the following areas.

Create a message

- Find the parameters
- Use the **Message Editor**
- Use the arrow keys to put the fields in the correct position
- Save and print a new message
- Print position

Routine maintenance

- How and when to clean the printhead
- How and when to clean or replace the air filter
- Use the **Nozzle Flush** and **Nozzle Clear** functions

Appendix C: Glossary

The glossary explains some of the terms that are used in this guide. If the explanation contains a term that is also described in the glossary, that term is shown in *italics*.

Auto Power Down	A function that turns off the printer automatically when the correct conditions are met.
Current Message	The message that is selected for printing.
Cursor	The marker that shows your current position in a field or a message (for example, the Message Editor). You can use the arrow keys to move the cursor to another position.
Field	A section of a message that you can create and edit separately from other sections. You use one or more fields to build a message. The field types include Text, counters, and Date and Time fields.
Message	The information that is printed.
Print Count	The number of times that a message was printed after the Print Count was reset.
Print Delay	The distance between the product sensor and the position at which the printer starts printing the message.
Print Height	The height of the characters that are printed. You can adjust the height of the printed characters.
Printer Status	The current state of the printer. The Printer Status area gives information about the jet state, and the levels of the ink and the solvent.
Soft key	A key that changes its name and its function according to which page in the software is displayed.
SureFill® code	A code you enter before you can refill the ink or solvent. The code confirms that the ink or solvent has not expired and is the correct type for the printer.
Text box	A box that accepts text that you enter from the keyboard.

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Online documentation

For documentation about automatic and manual raster selection, and QuickSwitch Plus product selection for the Linx 7900 printer, refer to the Linx Global website at:

Linx 5900



How To Use Dynamic Message Orientation

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to configure dynamic message orientation for the 5900 Dairy Coder printer for a traversing application. Dynamic orientation means that the orientation of the message changes automatically in response to a trigger event. The following topics are included:

- How to configure the software for the 5900 Dairy Coder printer.
- How to configure the primary trigger and secondary trigger.
- How to install the printer and printhead correctly, including:
 - Printer position
 - Printhead type selection (straight or right-angled)
 - Conduit routing

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About traversing applications

In a traversing application, the printhead makes repeated movements across the substrate. Normally, the printer marks the product during these printhead movements. In some applications, the printhead prints in both directions (that is, from left to right, and from right to left).

The following illustration shows a simple view of a traversing application.

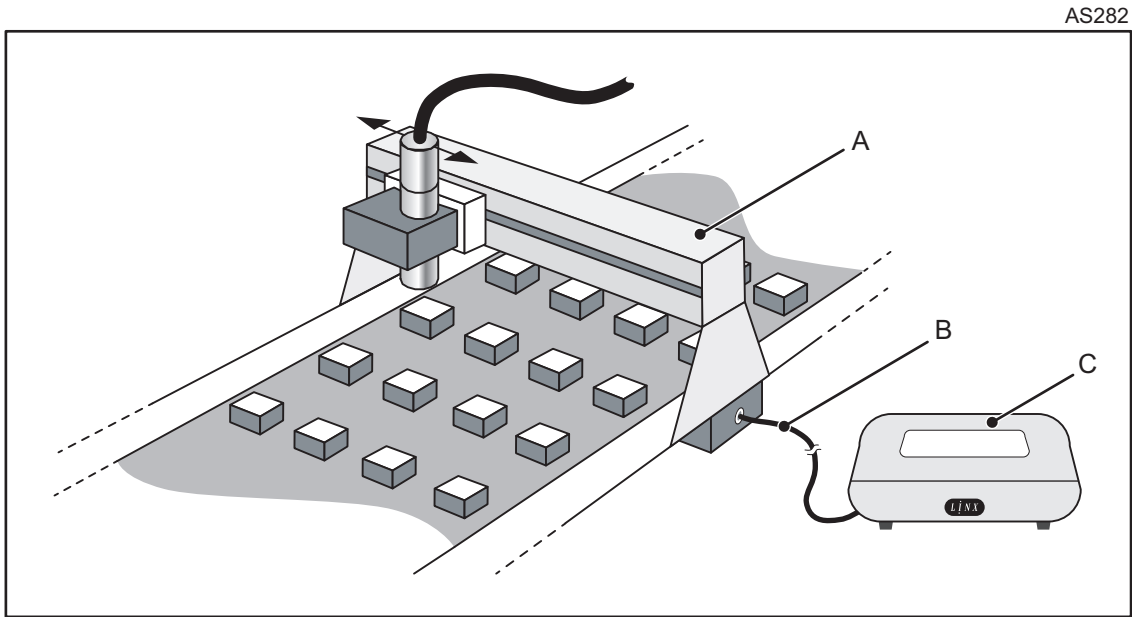


Figure 1. Traversing application

The printhead is mounted on the traversing arm (A), and moves across the conveyor, as indicated by the arrows. The control system provides an output signal (B) to the printer (C) to indicate the direction of the printhead movement. This direction signal is connected to the secondary trigger input of the printer. The direction signal has two states: one state indicates the forward direction, and the other state indicates the reverse direction.

To print correctly in the reverse direction, the printer must change the horizontal orientation of the message. The printer uses the print direction signal to control the print orientation.

2.1 Application design

A traversing application requires some care in the physical layout and the configuration of the printer software.

2.1.1 Physical layout

The movement of the printhead can cause a failure of the conduit unless the mechanical setup is planned carefully.

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2.1.2 Software configuration

If the printer marks the products during the printhead movement, you must adjust the printer settings as required to print the message correctly. If the printhead marks the products in both the forward direction and the reverse direction, you must configure some additional settings.

2.1.3 Software requirements

The 5900 Dairy Coder printer has a **Variable Message Orientation** option on the **Print Settings** page which allows you to configure dynamic message orientation for traversing applications (see 'Set up dynamic message orientation' on page 10.)

2.1.4 Inputs

A typical traversing application uses three input signals

Primary trigger

The primary trigger signal is normally a photocell. The photocell detects the presence of the product on the production line as it approaches the printhead, and provides a 'next object' signal to the printer. The 'next object' signal starts a print delay, and the message is printed after this delay. The position of the message on the product (print registration) depends on the photocell position and delay. To get the correct print registration, these factors must be carefully planned.

Secondary trigger

The secondary trigger signal provides the print 'direction' signal when the traversing arm is at the end of its travel. The print 'direction' signal can set any sequential fields in the message to their required values.

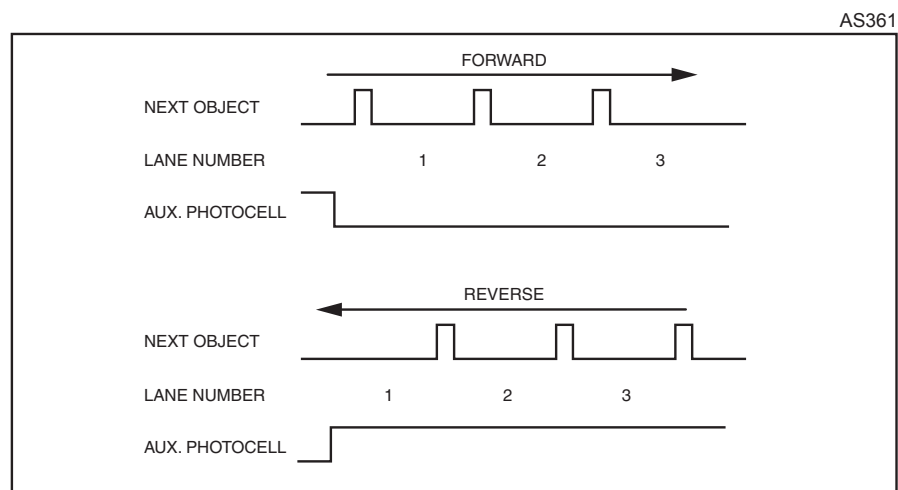


Figure 2. Print direction signal

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Shaft encoder

A shaft encoder is required for most applications because the printhead does not move at a constant speed along the traversing arm. A shaft encoder maintains the width of the printed message when the speed changes.

2.2 Installation

2.2.1 Printer position

To minimize any strain in the conduit, the rear panel of the printer cabinet must not be less than 150 mm from any wall or other obstruction.

In Figure 3 (a), there is only a small distance (A) between the wall and the printer. The bend radius of the conduit is less than the minimum allowed (75 mm). In Figure 3 (b), the distance (B) is larger and the conduit has a larger bend radius, as shown.

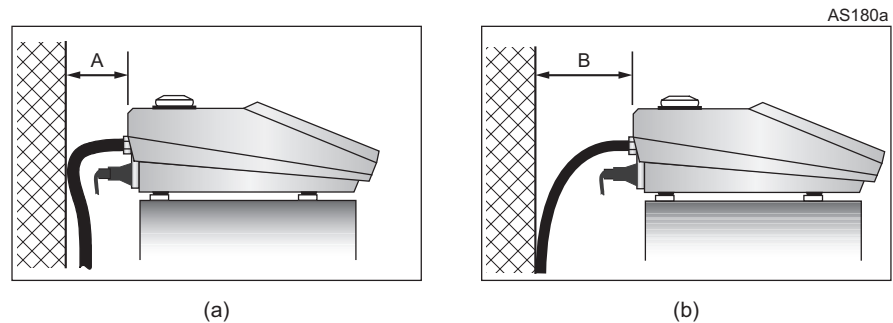


Figure 3. Printer cabinet installation

2.2.2 Printhead mounting

A printhead mounting that is not planned carefully can cause a failure of the conduit.

Printhead type

Two versions of the Linx Mk7 Printhead are available: straight and right-angled.

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Select the printhead type that minimizes the tension in the conduit. For example, the right angle printhead in Figure 4 (a) creates a tension in the conduit when the printer moves to the left side. The straight connector in Figure 4 (b) prevents this problem.

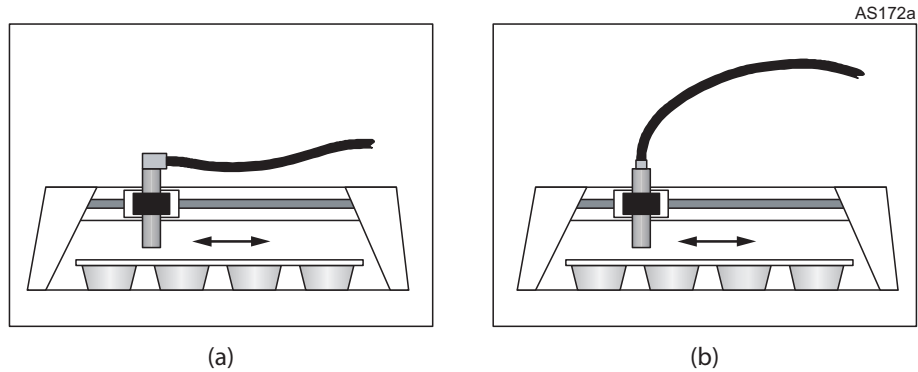


Figure 4. Conduit tension example

The bend radius of the conduit is the most important factor that decreases the life of the conduit. You must install the printhead to maximize any bend radius.

2.2.3 Conduit routing

Design the conduit route to minimize the bends in the conduit, because any bend can cause a strain the conduit. Never allow the bend radius of the conduit to be less than the minimum allowed. The minimum bend radius for a traversing application is 150 mm (measured to the inside of the bend).

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The following diagrams show some suggestions to improve the layout:

- To decrease the strain when the conduit bends as shown in Figure 5 (a), make a loop in the conduit as shown in Figure 5 (b). Consider the use of a 4-metre conduit to make a wider loop if the traversing arm is long.

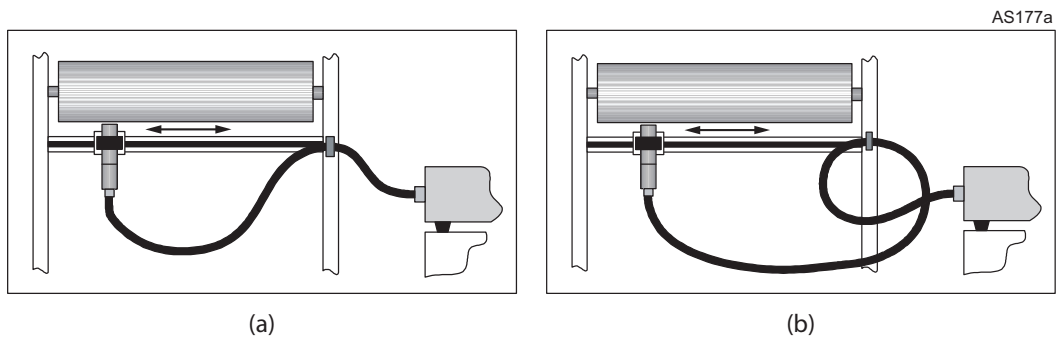


Figure 5. Conduit loop

- Make sure that the conduit does not touch any other objects when the printhead moves. Some applications need a special support for the conduit, to prevent any abrasion and allow the conduit to move and bend correctly. For example, Figure 6 (a) shows a conduit without any support. A set of rollers is added in Figure 6 (b). the rollers support the conduit, but do not prevent the free movement of the conduit.

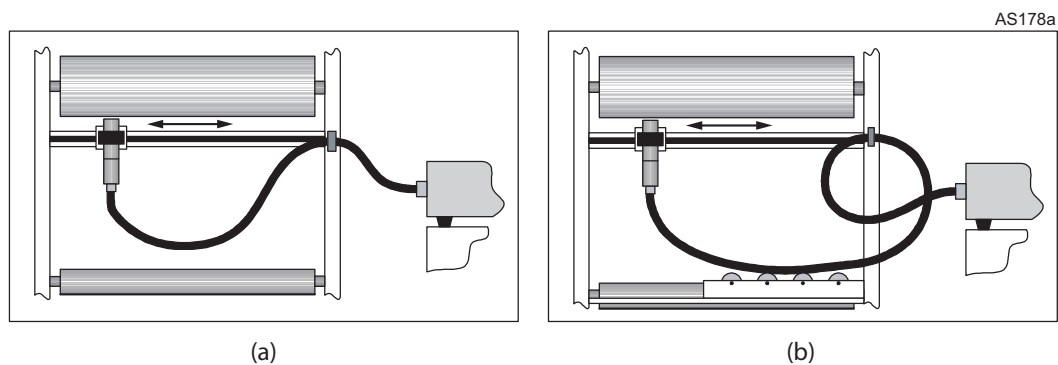


Figure 6. Conduit support rollers

- Make sure that the guards cannot damage the conduit when the operator opens or closes the guards. If necessary, provide some gaps in the guard.

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- Make sure that the printhead movement does not apply a rotation force (torsion) to the conduit clamp at the printhead end of the conduit. Figure 7 (a) shows an incorrect design that causes this problem. The rotation force is reversed when the printhead direction is reversed. These repeated reversals can cause a failure of the conduit at the printhead end. Figure 7 (b) shows a better design that causes only a bend in the conduit, but does not cause any torsion.

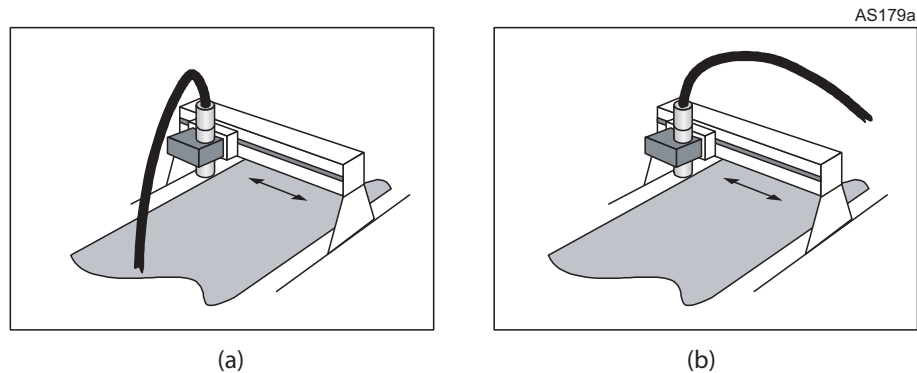


Figure 7. Conduit tension

NOTE: Remember to allow access to clean the printhead.

2.2.4 Printhead vibration

Make sure that the printhead mounting minimizes any vibration from the traversing arm. If there is any vibration, the path of the ink drops can change. Any high-frequency vibrations (including very small vibrations), cause a larger effect than a low-frequency vibration. The effect is proportional to the square of the frequency.

A vibration can cause the following problems:

- The print quality decreases.
- A gutter failure occurs.

Print quality

The print quality decreases because the vibration changes the ink drop positions on the substrate. This problem is likely to occur before a gutter failure occurs. (the effect depends on many factors, so no numerical limits can be defined.)

Gutter failure

A stronger vibration can cause a gutter failure. This problem occurs if a large number of ink drops hit the edge of the gutter, and are not collected by the gutter.

A vibration, or a sudden start or stop, is a sudden increase or decrease in the speed of the printhead movement (that is, an *acceleration*). To prevent a gutter failure, you must make sure that the acceleration of the printhead is not too high.



3 Example

The printer in this example is on a production line that has three lanes (Figure 8). The printhead is on a traversing arm, and moves across the three lanes to mark the products.

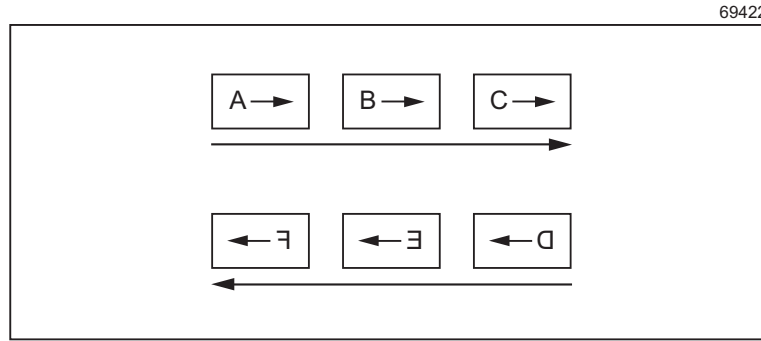


Figure 8. Printing a message with reverse text

NOTE: The printer prints the same message on all of the products.

The printer marks the first three items (A, B, and C) with normal orientation. then the conveyor moves to put the next row of products under the traversing arm.

The printhead direction reverses, and the printer marks the next three items (D, E, and F) with reversed (Horizontal Flip) orientation.

The direction signal from the traversing arm has two levels: High and Low. The signal level indicates the current direction of the traversing arm, as follows:

High level: Forward direction

Low level: Reverse direction

The printer uses the level to set the orientation of the printed messages. The following orientations are used:

- Normal:

TEST⁶¹⁰⁹

- Horizontal Flip:

TEST⁶¹¹⁰

(Two other orientations are also available: Vertical Flip and Horizontal + Vertical Flip. This example does not use these orientations.)

How To Use Dynamic Message Orientation



3.1 Set up dynamic message orientation

Refer to Figure 9 and correct the direction signal from the traversing arm to the SECONDARY TRIGGER/SHAFT ENCODER input (B) on the rear panel of the printer.

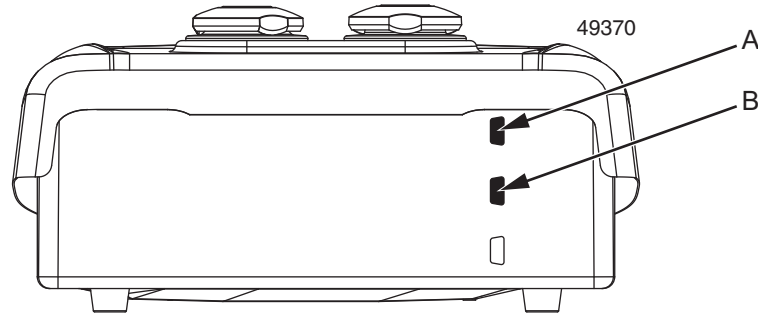


Figure 9. Secondary trigger/shaft encoder input

NOTE: Normally, the input A is needed for the primary trigger device. If a shaft encoder is used, the secondary trigger and shaft encoder must share the input B.

To use dynamic message orientation, you must define the event that is to trigger the change in orientation. This can be a High Level or Low Level trigger. Refer to *How To Change the System Setup* for more information about print triggers.

Navigate to the **Print Settings** page (**Print Monitor** page > **Print Settings**).

Select the **Message Orientation Mode** option to display the **Message Orientation Mode** page.

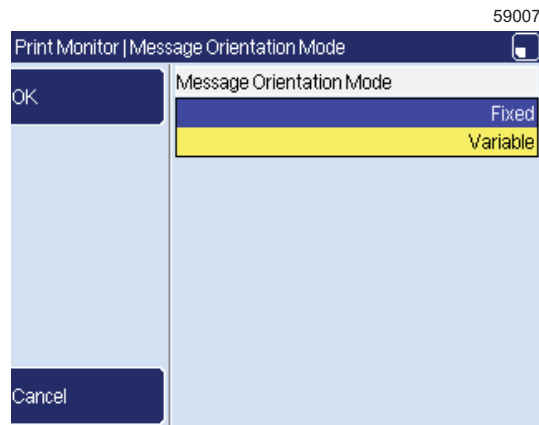


Figure 10. Message Orientation Mode page

You can set the message orientation mode to either Fixed or Variable. Variable mode enables you to configure the 5900 Dairy Coder printer software for traversing operations.

How To Use Dynamic Message Orientation



If you select Fixed mode, the four standard 5900 message orientations (Horizontal + Vertical Flip, Horizontal Flip, Vertical Flip, and Normal) are available on the **Message Orientation** page, as shown in Figure 11. Refer to *How To Change Print Settings* for more information.

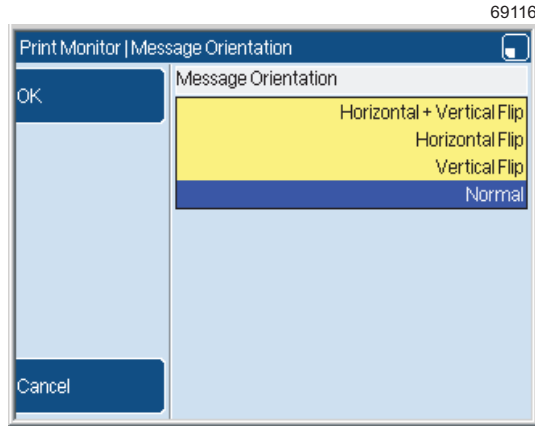


Figure 11. Message Orientation page (Fixed mode)

If you select Variable mode, the **Variable Message Orientation** page is displayed.

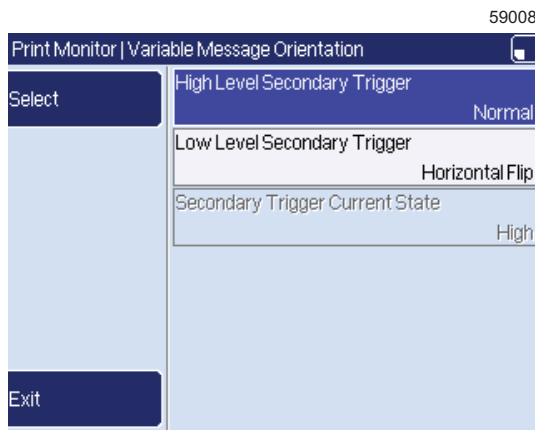


Figure 12. Variable Message Orientation page

How To Use Dynamic Message Orientation



The following options are available:

- **High Level Secondary Trigger**—this option sets the message orientation when a High Level trigger signal is received (that is, when the trigger is in the inactive state). You can select one of the four standard message orientations (Horizontal + Vertical Flip, Horizontal Flip, Vertical Flip, and Normal). In the example on page 9, this is set to Normal.
- **Low Level Secondary Trigger**—this option sets the message orientation when a Low Level trigger signal is received (that is, when the trigger is in the active state). You can select one of the four standard message orientations (Horizontal + Vertical Flip, Horizontal Flip, Vertical Flip, and Normal). In the example on page 9, this is set to Horizontal Flip.
- **Secondary Trigger Current State**—this option is for display purposes only and shows which of the two orientation states is active. This depends on the current state of the secondary trigger signal. The trigger can be either High Level (inactive) state or Low Level (active) state. For example, in Figure 12, the secondary trigger is in the High Level (inactive) state, so the message orientation is currently Normal.

NOTE: None of the above options are available in the 'Printing' state.

Any orientation sequence that you create is saved in the Orientation Sequence Store with the name 'DairyCoderOrientationSeq'. There can only be one such sequence saved in the store at any time.

Linx 7900



How To Create a Logo



THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to create and use logos for the 7900 printer.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About the Logo Editor

A logo is an image that is made from a grid of square picture elements ('pixels'). You can use the Logo Editor to set each pixel colour to make a complete image, as shown in the following example.

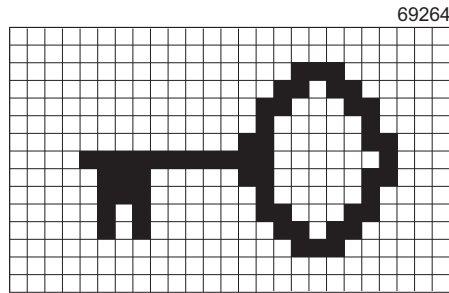


Figure 1. Example logo

To print a logo, you must insert the logo into a message. When you print the logo, the printer uses a single drop of ink for each pixel in the printed logo.

You can save a logo in the Logo Store. You can also save a logo in a message if this option is allowed in the printer settings.

If you change a logo in the Logo Store, your changes appear in every message that uses that logo. If you change a logo that is stored in a message, your changes appear only in the message where the logo is stored.

2.1 Create a new logo

At the **Print Monitor** page, select **Menu > Stores > Logo Store**. The printer displays the **Logo Store** page.

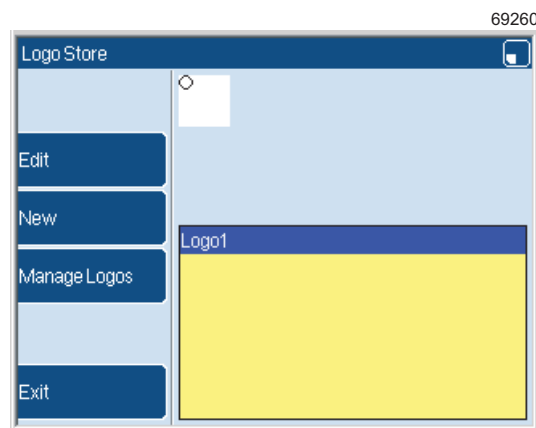


Figure 2. Logo Store page

If there are logos in the store, this page shows a list of the logo names. In Figure 2 there is one logo in the store. The top of the page shows the contents of the first logo in the list.

If there are no logos in the store the **Edit** key and the **Manage Logos** key are not available.

To create a new logo, press the **New** key to display the **Logo Editor** page.



2.2 Logo Editor page

When you create a new logo, the **Logo Editor** page displays a blank grid of squares. The default grid has 32 squares on each side. You can change the default size of the grid. See *How To Configure the Message Editor and Logo Editor*.

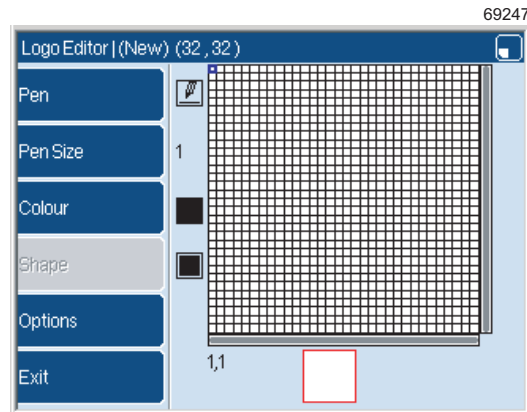


Figure 3. Logo Editor page

The blue square at the top left of the grid is the 'cursor'. The cursor operates like a pen that you use to draw a picture on the grid. You can use the arrow keys to move the cursor in any direction.

The title at the top of the **Logo Editor** page shows you that the default width is 32 pixels and the height is 32 pixels.

2.2.1 Magnification

The default magnification displays 32 rows and 32 columns of pixels on the grid. To change the magnification, do the following:

- Press the [alt] key and the Down arrow key together to decrease the magnification and see one more row and column.
- Press the [alt] key and the Up arrow key together to increase the magnification.



The result is shown below.

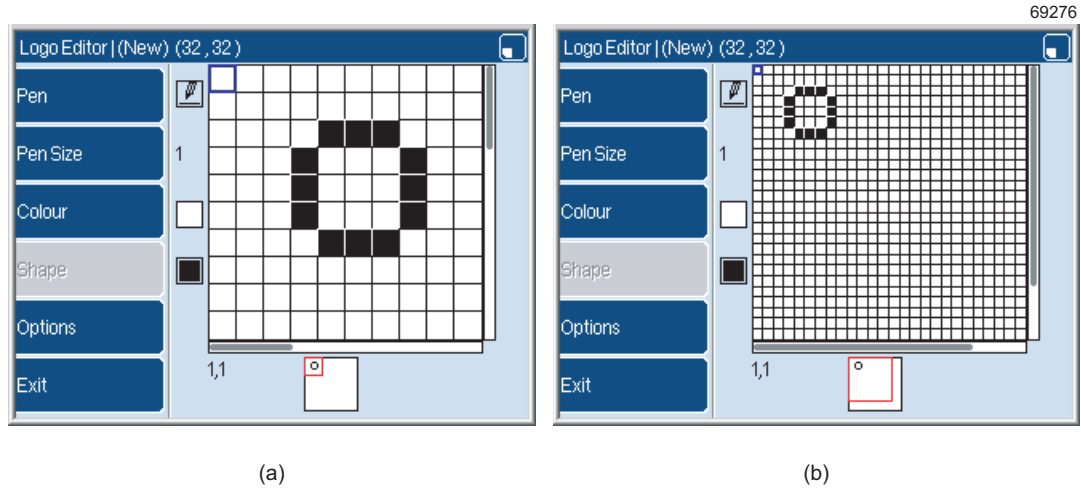


Figure 4. Magnification

In Figure 4 (a) you can see 10 rows and 10 columns. In Figure 4 (b) the magnification was decreased in 16 steps, so that 26 rows and columns are visible. The **Logo Editor** page has scroll bars and a preview box, (described below), that show you which part of the logo you can see. When you change the magnification, the scroll bars and the preview box change.

Two numbers below the grid show you the cursor location. The numbers show the column number and the row number for the cursor location in the grid. The top left square is 1,1. The bottom right square in the grid shown in Figure 4 is 32,32.

2.2.2 Scroll bars

In Figure 5, the scroll bars (A) show you which part of the logo you can see.

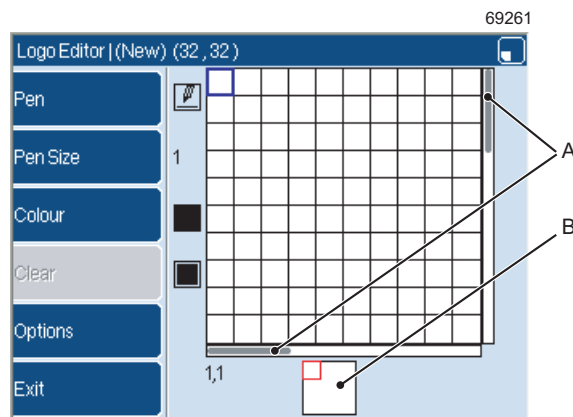


Figure 5. Scroll bars and preview box

2.2.3 Preview box

In Figure 5, the preview box (B) shows you a picture of the whole logo. The small, red square in this box indicates which part of the logo you can see.



Figure 6 shows a logo that contains a circle at the top of the logo. The scroll bars and the red box indicate that you can see the bottom corner of the logo. The circle is not visible because the cursor is moved to row 32 and column 32, but you can see the circle in the preview box.

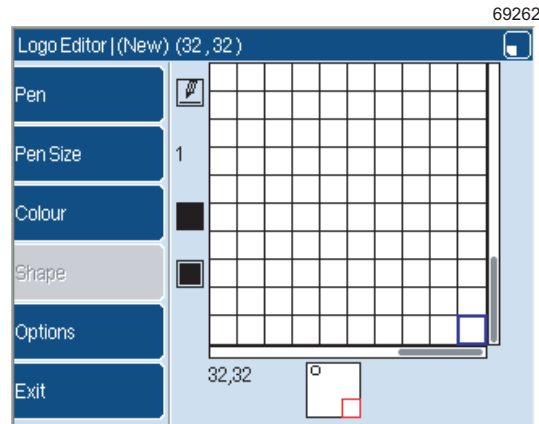


Figure 6. View window and scroll bars

The shape of the preview box changes if you change the height or the width of the logo (see 'Resize' on page 10).

2.3 Logo Editor keys

The following keys are available in the **Logo Editor** page.

2.3.1 Pen

The **Pen** key controls the action of the cursor. Figure 7 shows the icon that is next to the **Pen** key.

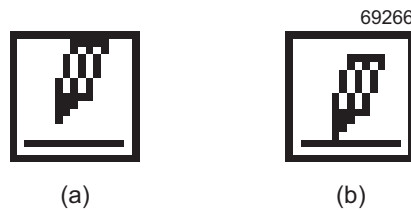


Figure 7. Pen icon

Figure 7 (a) shows a pen above a surface and Figure 7 (b) shows a pen that touches a surface. The icon indicates the action of the cursor, as follows.

- (a) When the printer displays this icon and you move the cursor, the cursor does not change the colour of any squares.
- (b) When the printer displays this icon and you move the cursor, the cursor draws a line.

To select the required action and change the icon, press the **Pen** key or press the space bar on the keyboard.

NOTE: When you make any changes to your logo, remember that the Logo Editor does not have an 'Undo' function. If you make an error, you must change the pen colour and overwrite your changes, or discard the logo and restart the process.



2.3.2 Pen Size

Press this key to change the size of the pen (cursor). The number that is next to this key shows the size of the pen. Figure 8 (a) shows how you draw a narrow line with the pen size set to 1. Figure 8 (b) shows how you draw a thick line with the pen size set to 2. (The pen movements are the same.)

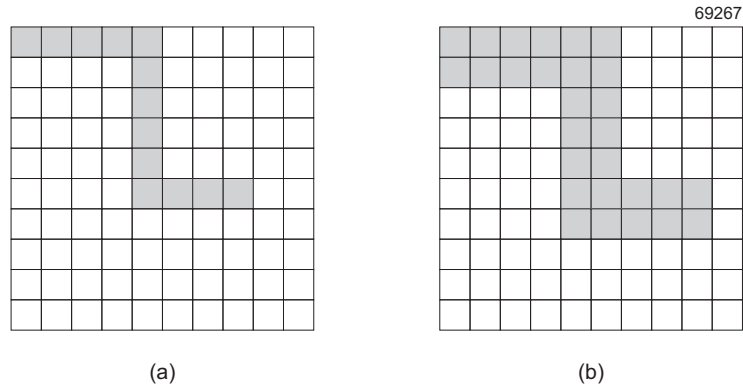


Figure 8. Pen Size

The maximum value of the pen size is 6. When you press the **Pen Size** key, the pen size changes as follows: 2, 3, 4, 5, 6, 1, 2, 3,

2.3.3 Colour

Press this key to change the colour of the pen. You can use a black pen or a white pen. The white pen changes the black squares to white and you can use this method to correct an error. A black or white square next to this key shows the current setting.

2.3.4 Shape

You can change the shape of the pen. There are three options:

- Square
- Square, with round corners
- Triangle

NOTE: If the pen size is 1 or 2, only the square pen shape is available and the **Shape** key is not available.



The pen shape that is shown in Figure 9 is the square with round corners. The icon that is next to the **Shape** key shows the current setting.

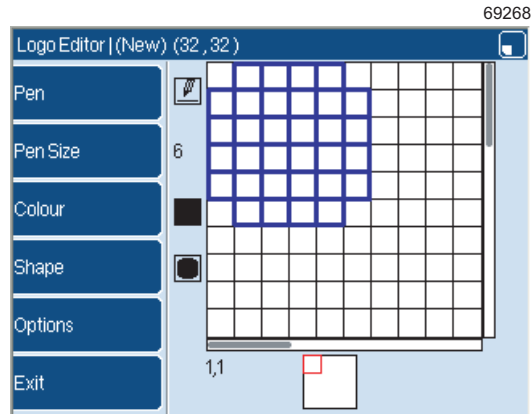


Figure 9. Shape: square with round corners

If you select the triangle pen, the shape depends on the size. Figure 10 shows the shape of the triangle when the pen size is 3, 4, 5, and 6.

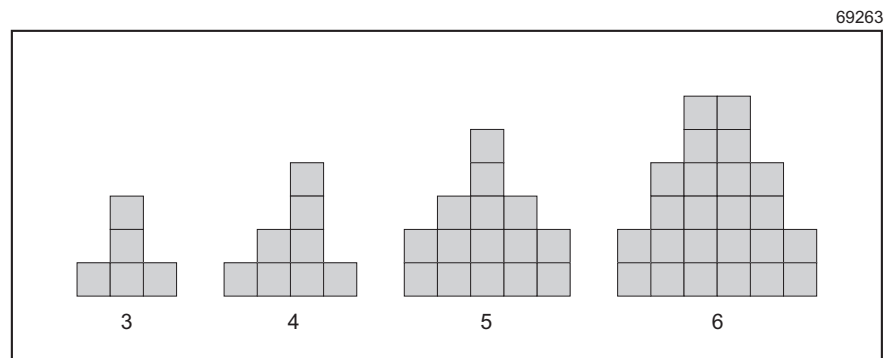


Figure 10. Triangle pen

2.3.5 Options

Press this key to see more menu options (see 'Options page' on page 9).

2.3.6 Exit

Press this key to leave the **Logo Editor** page and display the **Save As** page. (The *Linx 5900 & 7900 Quick Start Guide* describes how you use the **Save As** page.)



2.4 Options page

When you press the **Options** key in the **Logo Editor** page, the printer displays the following page.

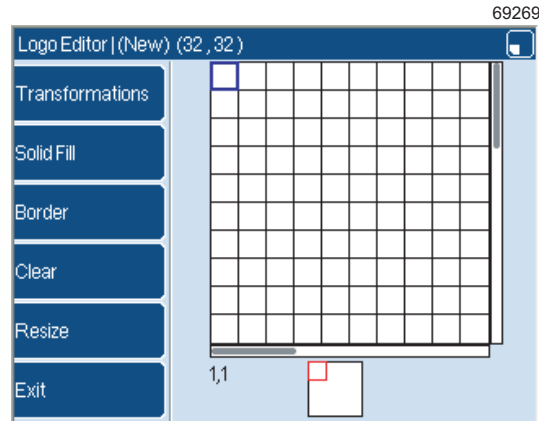


Figure 11. Options page

The keys in this page are as follows:

2.4.1 Transformations

Press this key to see more menu options (see 'Transformation options' on page 10).

2.4.2 Solid Fill

The function of this key is shown in Figure 12. The logo (a) contains a large box and a small box. To change one of the boxes into a solid block of black squares, first move the cursor into the box as shown. When you press the Solid Fill key, the box is filled (b). The small box is not filled because the cursor was not in that box.

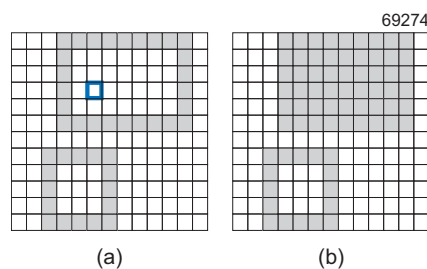


Figure 12. Solid Fill

NOTE: If the cursor is not in any box, the boxes do not change but the printer fills the remaining squares in the logo.

2.4.3 Border

This key creates a line of black squares along all four edges of the logo.

2.4.4 Clear

This key resets the logo to a blank grid of white squares.



2.4.5 Resize

Press this key to see more menu options (see 'Resize options' on page 12).

2.4.6 Exit

Press the **Exit** key to leave the **Options** page and return to the **Logo Editor** page.

2.5 Transformation options

When you press the **Transformations** key, the printer displays a new set of options:

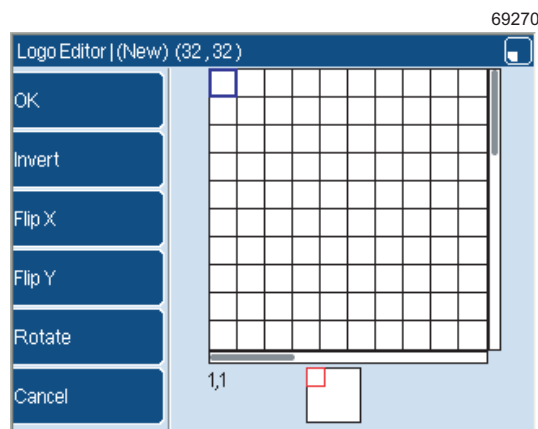


Figure 13. Transformations page

The new options are described below.

NOTE: The squares that you changed can move outside the visible area when you use some of these options. Remember to use the preview box to find the position of these squares (see page 5).

2.5.1 OK

When you leave this page, press this key to save any changes that you made. (To discard the changes, press the **Cancel** key.)

2.5.2 Invert

Press this key to change the black squares to white and change the white squares to black as shown below.

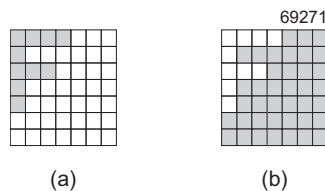


Figure 14. Invert



2.5.3 Flip X

Press this key to reverse the logo along the X-axis horizontally (see Figure 15).

2.5.4 Flip Y

Press this key to reverse the logo along the Y-axis vertically.

Figure 15 shows the operation of the **Flip X** key and the **Flip Y** key. The logo (A) is reversed horizontally (B) if you press the **Flip X** key. The same logo (A) is reversed vertically (C) if you press the **Flip Y** key.

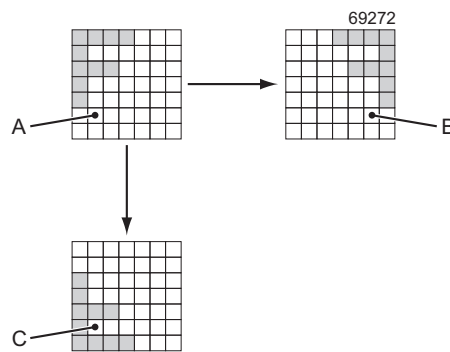


Figure 15. Flip X and Flip Y

2.5.5 Rotate

This key rotates the logo through 90 degrees. Press the key four times to get to the original position as shown in Figure 16.

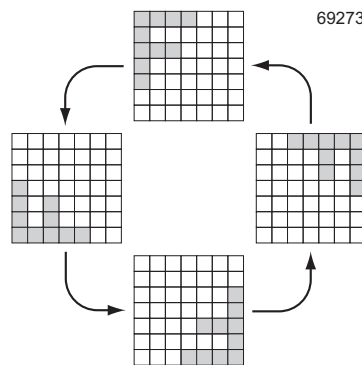


Figure 16. Logo rotation

2.5.6 Cancel

When you leave the page, press this key to discard any changes that you made. (To save the changes, press the **OK** key.)



2.6 Resize options

You can change the height and width of your logo. The maximum height is 34 and the maximum width is 256. The minimum height or width is 1. To change the logo dimensions, press the **Resize** key to display the following page.

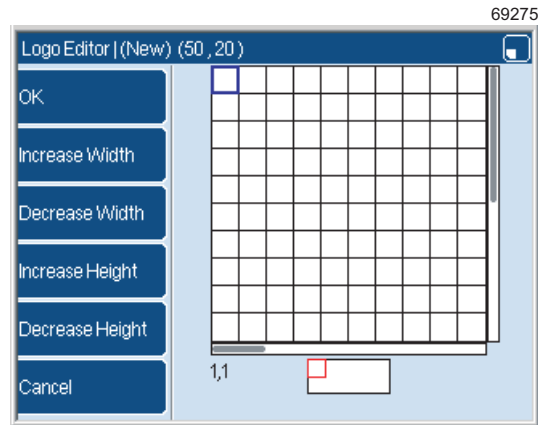


Figure 17. Resize page

The total width of the logo in Figure 17 is 50 pixels and the height is 20 pixels. You can see that when the size changes, the preview box changes and the scroll bar lengths change.

The options on this page are as follows.

2.6.1 OK

When you leave this page, press this key to save any changes that you made. (To discard the changes, press the **Cancel** key.)

2.6.2 Increase Width

When you press this key, the total width of the logo increases by 1.

NOTE: If you need a large change, remember that you can also change the default width before you begin to use the Logo Editor.)

2.6.3 Decrease Width

When you press this key, the total width of the logo decreases by 1. (See also the note above.)

2.6.4 Increase Height

When you press this key, the total height of the logo increases by 1.

2.6.5 Decrease Height

When you press this key, the total height of the logo decreases by 1.



2.6.6 Cancel

When you leave the page, press this key to discard any changes that you made. (To save the changes, press the **OK** key.)

2.7 Manage logos

At the **Logo Store** page (see Figure 2 on page 3), press the **Manage Logos** key to display the **Manage Logos** page.

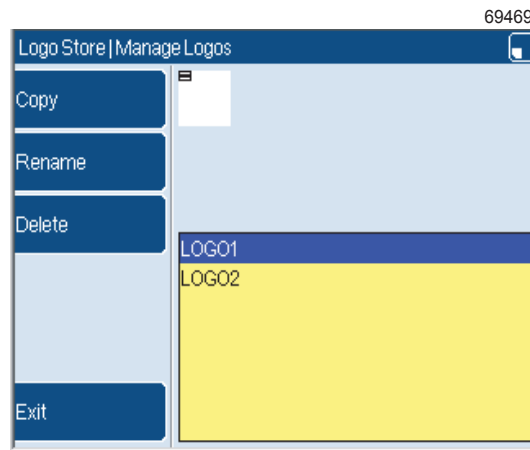


Figure 18. Manage Logos page

You can use the **Manage Logos** page to make a copy of a logo and use the copy as a base for a new logo, change the name of a logo, or delete a logo. The **Copy** option, the **Rename** option, and the **Delete** option are not described in this document. These options are like the options in the **Message Store > Manage Messages** page, which is described in the *Linx 5900 & 7900 Quick Start Guide*.

LinX 7900



How To Create Bar Codes

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how you create and edit a bar code. The 7900 printer can generate the following bar code formats:

Format	Description
CODE 25	There is no character limit. Numeric only (0–9).
ITF	(Interleaved 2 of 5). Numeric only (0–9). The data can contain any even number of characters (which includes the checksum).
CODE 39	There is no character limit. The data must contain only upper case alphanumeric characters.
CODE 128	Full 128 ASCII character set. There is no character limit.
EAN-13	13 digits (12 + checksum). Numeric only (0–9).
EAN-8	8 digits (7 + checksum). Numeric only (0–9).
UPCA	12 digits (11 + checksum). Numeric only (0–9).
Data Matrix (ECC200)	A two-dimensional code of alphanumeric characters and punctuation symbols.
CODE 27	There is no character limit. Numeric (0-9) with additional stop/start characters.
Pharmacode	Numeric only (0-9). The data represents a single integer from 3 to 131070 in binary format, read from right to left.
Data Matrix (GS1-128)	A two-dimensional code of alphanumeric characters which contains additional information used to identify animal health products.

Figure 1. Bar code formats

You need a User Level C password to perform all the tasks described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 Create a bar code

There are two methods that you can use to create a bar code:

- Edit an existing field and encode the field.
- Create a bar code field, then enter the source data or link the bar code to an existing field. See 'Encode several fields' on page 5.

Some of the steps that you perform are the same for both methods.

NOTE: You use the same method to create a bar code field or a Data Matrix field, but some of the menu options are different. You can find more information about Data Matrix fields on page 19.

2.1 Encode an existing field

For this example, a bar code is generated that uses the text field "ABC" in the following message.

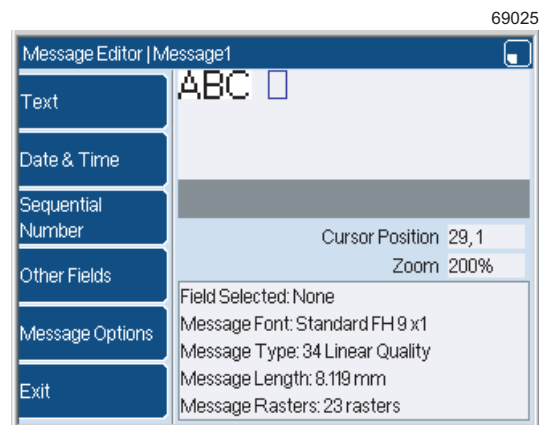


Figure 2. Example message

The *Linx 5900 & 7900 Quick Start Guide* describes how you create a message like Figure 2, then select and edit a field. Perform the following steps to create the bar code for this field.

NOTE: You cannot use this method to combine more than one source field into a single bar code.

How To Create Bar Codes



- 1 At the **Message Editor** page (Figure 2 on page 3), select the text field “ABC”. Then select **Edit > Options** to display the **Options** page for this field.

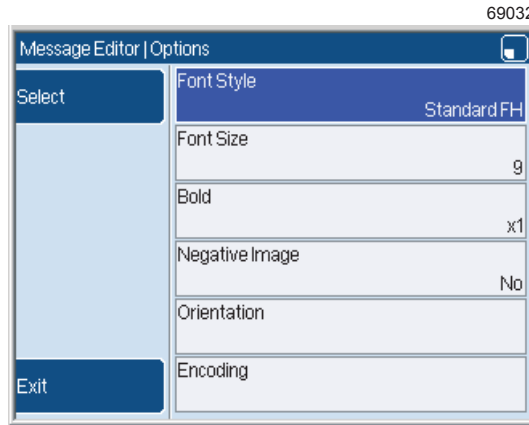


Figure 3. Options page

- 2 Select the **Encoding** option. The printer displays the **Encoding** page.

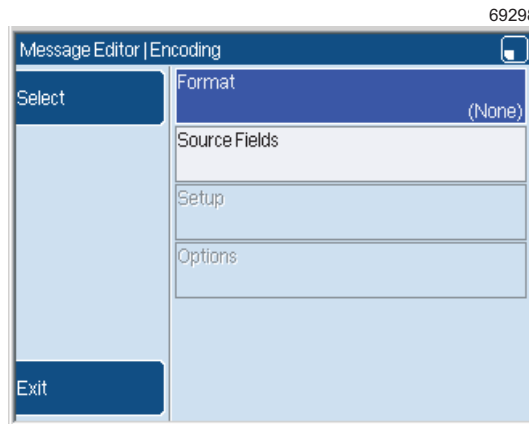


Figure 4. Encoding page

- 3 Select the **Format** option. The printer displays a list of bar the code formats that are available.

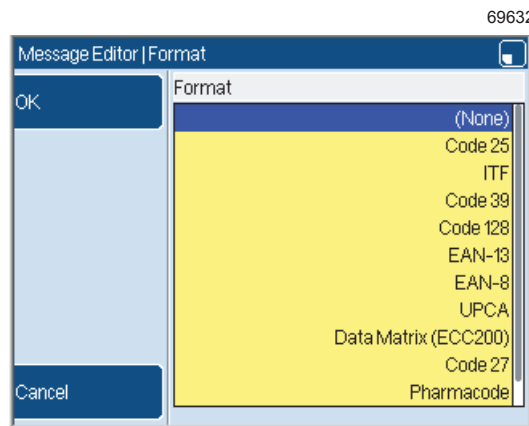


Figure 5. Format page

How To Create Bar Codes



- Use the Down arrow key to highlight the required format (for this example, select the Code 39 format). Press the **OK** key to return to the **Encoding** page.

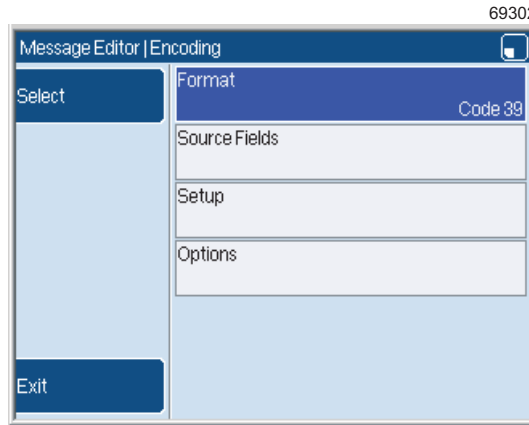


Figure 6. Encoding page

The other items in this page (**Source Fields**, **Setup**, and **Options**) are described in the next sections.

- Press the **Exit** key three times to display the text field and the bar code.

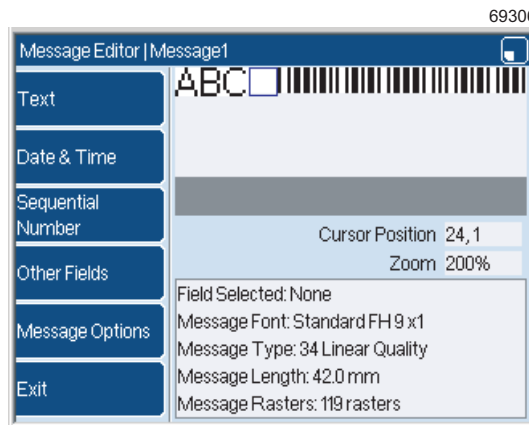


Figure 7. Source field with bar code

2.2 Encode several fields

When you use this method, you select the source data after you create the encoded field.

How To Create Bar Codes



- 1 Create a new message in the Message Editor, or edit an existing message and put the cursor in an empty space. Make sure that no fields are selected.
- 2 At the **Message Editor** page, press the **Other Fields** key to display the **Insert Other Fields** page.

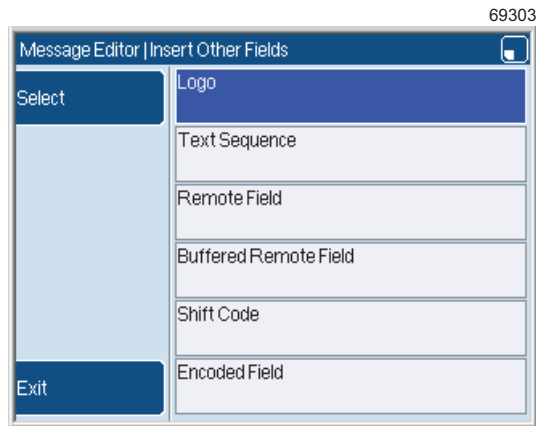


Figure 8. Insert Other Fields page

- 3 Select **Encoded Field** to display the **Options** page.

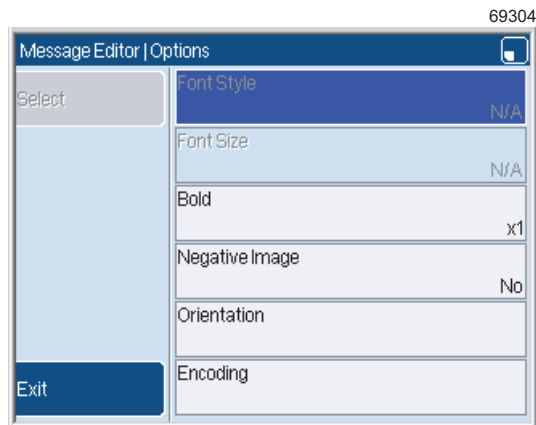


Figure 9. Options page

This page is like Figure 3 on page 4, but the **Font Style** and **Font Size** options are not available.



- 4 Select the **Encoding** option to display the **Encoding** page.

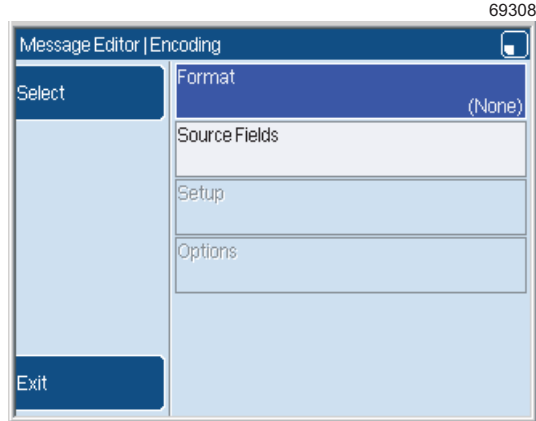


Figure 10. Encoding page: no format selected

This page is like Figure 6 on page 5, but only the **Format** and **Source Fields** options are available.

- 5 Select the **Format** option to display the format list.

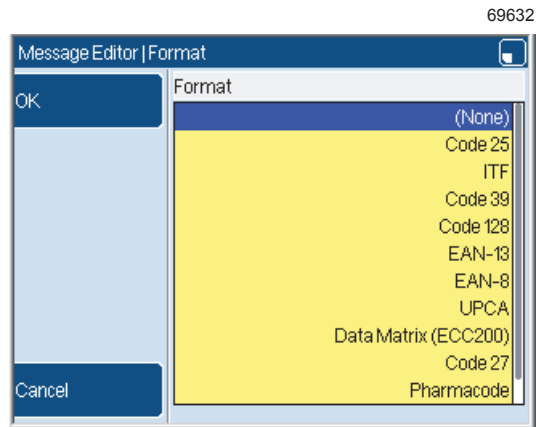


Figure 11. Format page

- 6 Select the Code 39 format then press the **OK** key to return to the **Encoding** page.

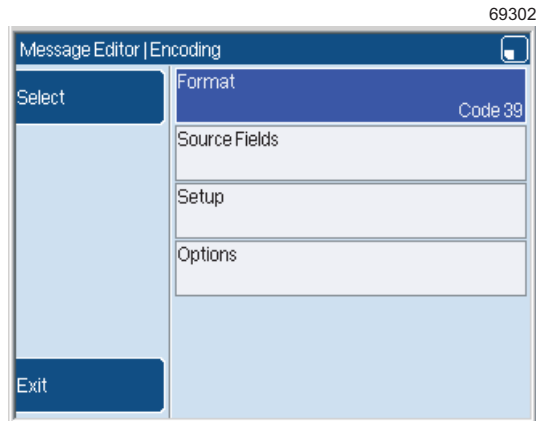


Figure 12. Encoding page



For descriptions of the other items in the **Encoding** page (**Setup** and **Options**), see 'Encoding Setup page' on page 11 and 'Encoding Options page' on page 15.

- 7 Select the **Source Fields** option to display the **Source Fields** page.

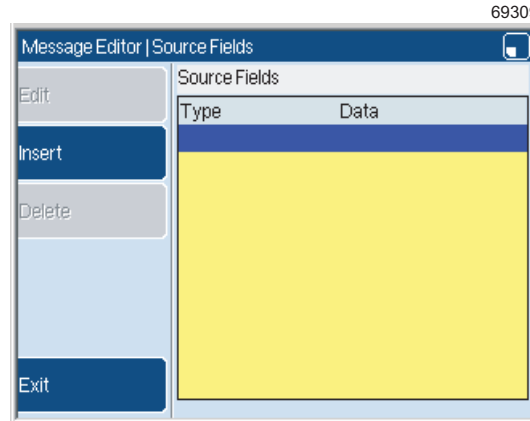


Figure 13. Source Fields page

- 8 Press the **Insert** key to display the **Field Type** page.

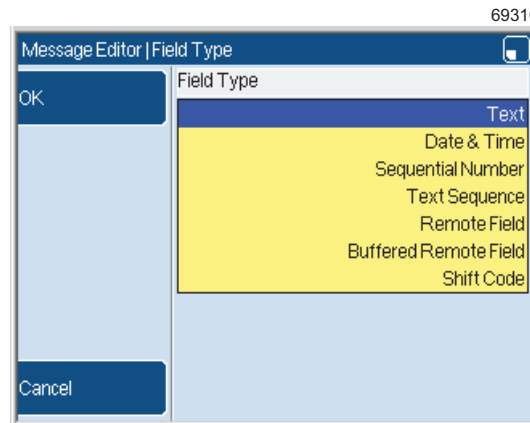


Figure 14. Field Type page

You can use this page to select any field format from the stores (except Text), or create a new format. To enter some text for the source data, select the **Text** option.

Some bar codes (see Figure 1 on page 2) cannot include any alphabetical or lower case characters. For these formats, the text must contain only numeric characters.

- 9 Use the arrow keys to highlight the required field type, then press the **OK** key. The printer displays an 'Insert' page that depends on the field type that you selected.



For example, if you select the Date & Time field type from the list, the printer displays the **Insert Date & Time** page.

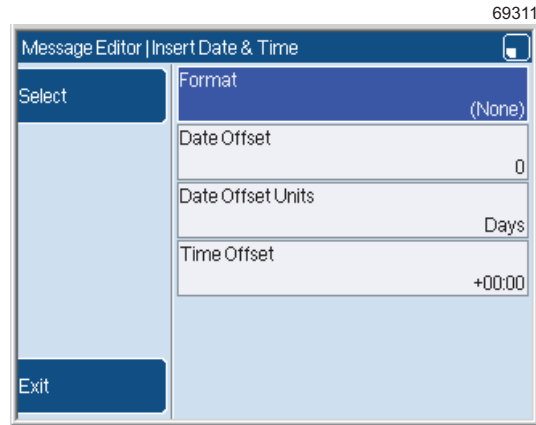


Figure 15. Insert Date & Time page

NOTE: There is no **Options** item on this page.

You use the page that is shown in Figure 15 to add a Date & Time *format* into a *bar code*. When you insert a Date & Time *field* into a *message*, the **Insert Date & Time** page has the **Options** item.

The **Options** item is not present in the pages that you use to insert other field types into a bar code (for example, Text, or Shift Code).

- 10 Use the options on the 'Insert' page to create and configure the field as necessary. (The 'Insert' page is different for each field type.)
- 11 When your changes in the 'Insert' page are complete, press the **Exit** key to return to the **Source Fields** page. In Figure 16, a Date & Time field was inserted and the format of this field is "HH:MM:SS".

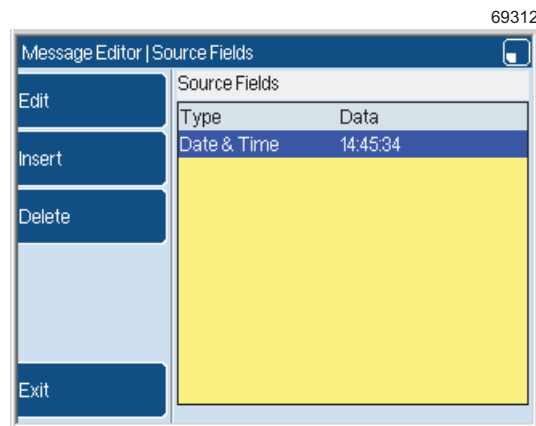


Figure 16. Source Fields: Date & Time field

How To Create Bar Codes



- 12 Press the **Insert** key to insert another field if necessary. For example in Figure 17 the encoded field has three source fields.

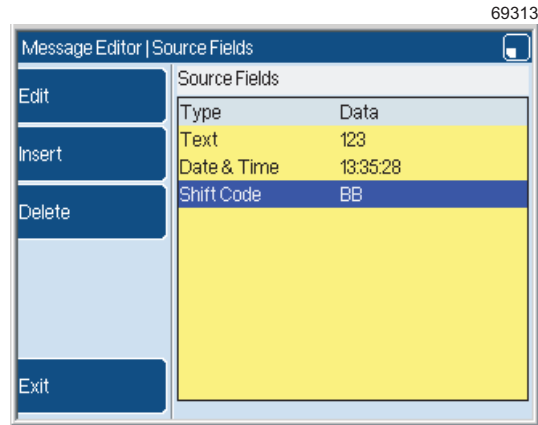


Figure 17. Source Fields page: three fields

- 13 Press the **Edit** key to change the highlighted field, or press the **Delete** key to delete the field.

To move a field to a different position:

- Use the arrow keys to highlight the field.
- Press the [alt] key and the Up or Down arrow key together to move the field to the required position.

- 14 When your changes are complete, press the **Exit** key three times to return to the **Message Editor** page. The printer displays the completed bar code.

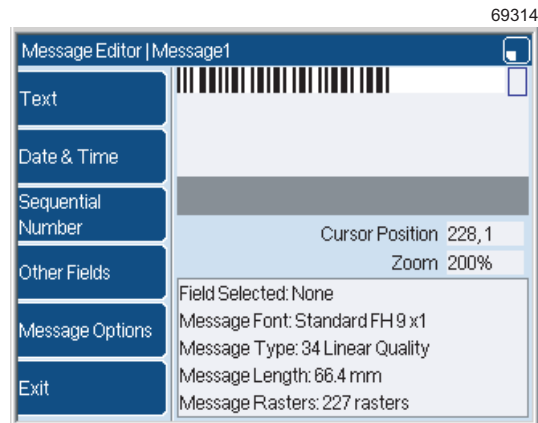


Figure 18. Message Editor page and bar code

In Figure 18 only a part of the code is visible—press the **Home** key to see the start of the code.



2.3 Encoding Setup page

At the **Encoding** page, highlight **Setup** and press the **Select** key to display the **Encoding Setup** page.

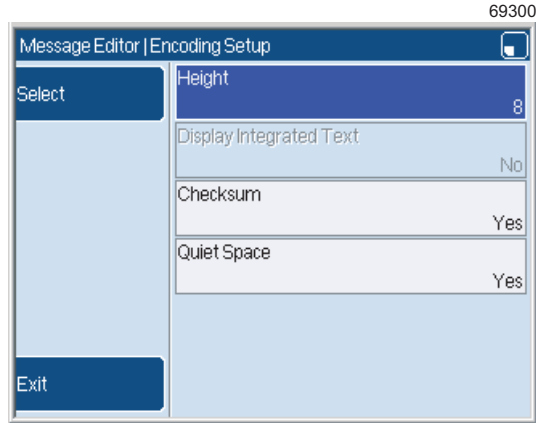


Figure 19. Encoding Setup page (bar code)

The options that are displayed depend on the bar code format that you selected. The Code 128 version is as shown below.

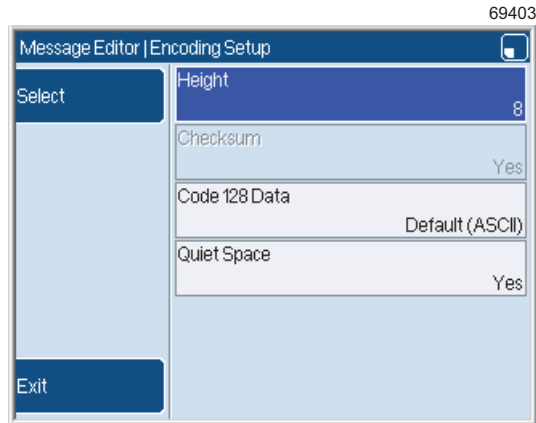


Figure 20. Encoding Setup page: Code 128



The **Code 128 Data** option displays a page that allows you to define the type of data that is encoded, as shown below.

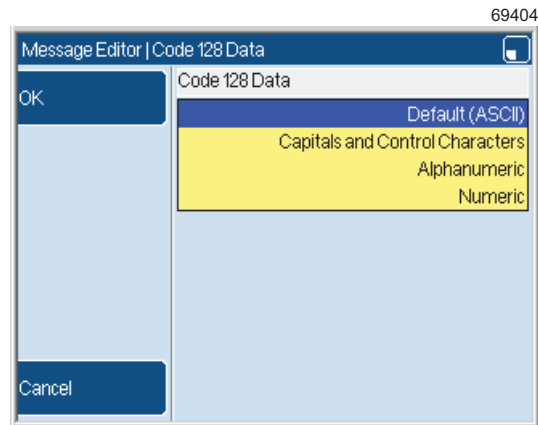


Figure 21. Code 128 Data page

Select the data type that is correct for your data. The printer uses this information to calculate the length of the bar code symbol.

NOTE: If you do not use the Default (ASCII) data type, the printer can generate very long bar code symbols.

The **Encoding Setup** page for a Data Matrix field is as shown below. The only menu option is the **Size** option.

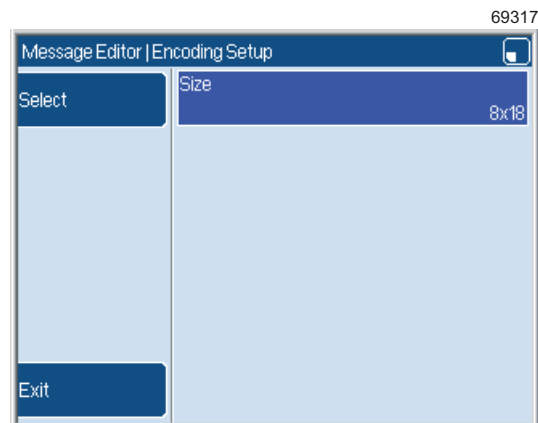


Figure 22. Encoding Setup page (Data Matrix)

The options on the **Encoding Setup** pages are as follows.

2.3.1 Height

You can set the height of the bar code (the number of ink drops). The maximum height depends on the printhead type. The maximum height of the bar code is the height of the largest message type that you can print.

2.3.2 Display Integrated Text

You can use the **Display Integrated Text** setup option with the bar code types EAN-13, EAN-8, or UPCA.



If you set this option to Yes, the printer displays the bar code text with the bars.

Figure 23 (a) shows a bar code with the option set to No. Figure 23 (b) shows the same bar code with the option set to Yes.



Figure 23. Integrated Text

2.3.3 Checksum

You can set bar code types Code 25, ITF, and Code 39 to include a checksum. If you set the **Checksum** option to Yes, the bar code includes a checksum.

The bar code types Code 128, EAN-13, EAN-8, and UPCA always include a checksum.

The Data Matrix (ECC220) bar code type includes error checks within the code.

2.3.4 Quiet Space

If you set this option to Yes, the printer inserts a blank area at each end of the bar code. The blank areas improve the accuracy of the scanning process.

2.3.5 Size

When you create a Data Matrix field, use this option to set the number of rows and columns in the field. The printer displays a list of the available sizes, which are shown in Figure 30 on page 20.



2.3.6 Aspect Ratio

When you select the Code 39 or ITF bar code formats, the **Aspect Ratio** option becomes available.

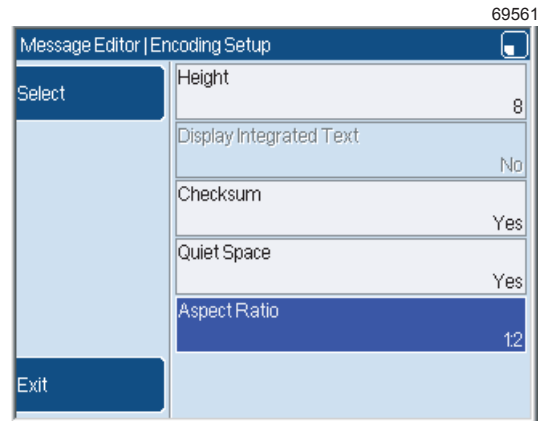


Figure 24. Encoding Setup page (Aspect Ratio option)

This option defines the difference in size between the narrow and wide lines of the bar code. The values are the ratio of vertical lines (rasters) that make up the narrow and wide lines in the bar code. The options available are as follows:

	Narrow	Wide
1:2	One vertical line	Two vertical lines
1:3	One vertical line	Three vertical lines
2:5	Two vertical lines	Five vertical lines
3:8	Three vertical lines	Eight vertical lines

The default option is 1:2.



2.4 Encoding Options page

At the **Encoding** page, highlight **Options** and press the **Select** key to display the **Encoding Options** page.

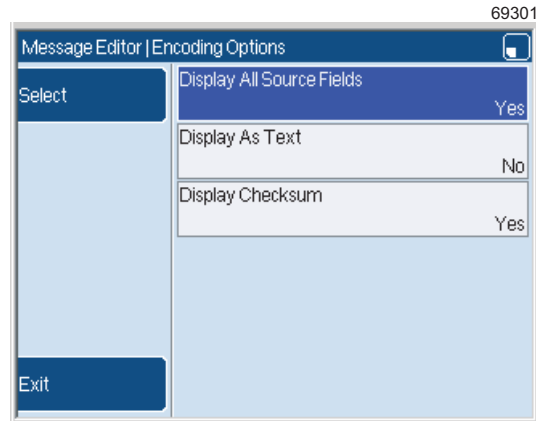


Figure 25. Encoding Options page: Code 25

The options that are displayed depend on the bar code format that you selected.

2.4.1 Display All Source Fields

If you set this option to Yes, all of the source fields are displayed in the message. If the bar code contains a number of source fields, each source field is a separate field (see Figure 26 on page 16).

NOTE: This option is only available if source fields are not displayed in the existing message.

2.4.2 Display As Text

If you set this option to Yes, the printer adds a text field below the bar code symbol. The text field is a single field that includes all the source data for the bar code. If the checksum is displayed, it is the last character in the text field (see Figure 26 on page 16).

2.4.3 Display Checksum

If the bar code includes a checksum, and you set this option to Yes, the bar code text includes the checksum character. If the checksum character is not in the range of characters that the printer can print, a square box is printed. (For example, the printer cannot print the ASCII character 27 ('ESC').)



Figure 26 shows an EAN-13 bar code with the following options set to Yes:

- **Display Integrated Text**
- **Display All Source Fields**
- **Display As Text**
- **Display Checksum**



Figure 26. EAN-13 bar code example

Figure 26 shows an EAN-13 bar code symbol (A) that contains the data from three text fields ("1234", "5678" and "9012"). The bar code encodes the fields as a single 12-digit number "123456789012".

- Because the **Display Integrated Text** option is set to Yes, the printer displays the 12-digit number (B) in the bar code symbol. The additional digit ("8") in this number is the checksum character.
- Because the **Display All Source Fields** option is set to Yes, the printer displays the source fields (D, E, F) next to the symbol. The lines with dashes in the figure indicate that the fields are separate. You can select and edit each one separately.
- Because the **Display As Text** option is set to Yes, the printer also shows the 12-digit number (C) under the bar code symbol. This field is a single field that contains all three text fields. You can move this field if necessary.
- Because the **Display Checksum** option is set to Yes by default, the number (C) includes the checksum character "8".

How To Create Bar Codes



The following table shows the options that are available for each type of bar code (N/A indicates that the option is not available).

7900 BAR CODE FORMATS AND PARAMETERS										
Format	Code 25	ITF	Code 39	Code 128	EAN 13	EAN 8	UPCA	Data Matrix	Code 27	Pharma-code
Setup page:										
Display Integrated Text	No	No	No	No	Yes	Yes	Yes	No	No	No
Checksum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A	N/A
Quiet Space	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	N/A
Aspect Ratio	N/A	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Options page:										
Display All Source Fields	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Display As Text	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Display Checksum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No

Figure 27. Bar code parameter availability



3 Data Matrix

3.1 About Data Matrix

A Data Matrix code operates like a normal bar code but the information is contained in a pattern of dots in a square or rectangle.



Figure 28. Data Matrix example

The size and shape of the Data Matrix code depends on the selected format.

NOTE: Linear Flexible message types print the most accurate Data Matrix fields. You can also use Linear Quality message types with the Midi Plus printhead.

The *2-D Dot Codes User Guide* (part number FA65210) contains more information about Data Matrix codes.

Figure 29 shows an example of a completed Data Matrix code that contains data from a text field and a Date & Time field.

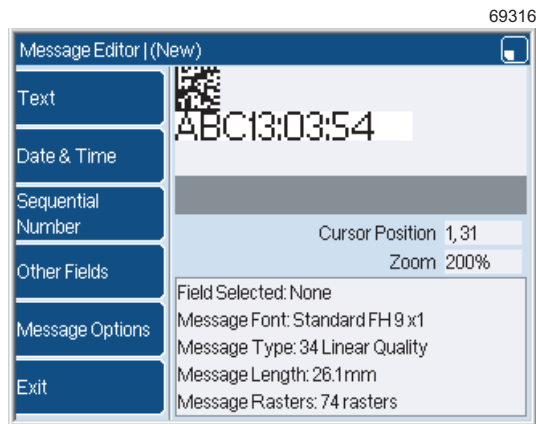


Figure 29. Data Matrix field with source data



3.2 Data Matrix fields

You use the same method to create a bar code field or a Data Matrix field, but some of the menu options are different.

3.2.1 Source data

You can use one Data Matrix field to encode any number of text items. The text items can be any of the following field types:

- Text
- Date and Time
- Sequential number
- Text sequence
- Remote field

3.2.2 Code Size

The 7900 printer can generate ECC 200 Data Matrix fields in 16 different sizes. Figure 30 on page 20 shows the available sizes.

If the height of the Data Matrix field is greater than the height of the Message Type, a warning message is displayed. If the Data Matrix field is large, the field can be on top of the displayed text. Move the field or the text to remove the problem.



3.2.3 Encoding capacity

The capacity of the Data Matrix field depends on the size, as shown in Figure 30. If the amount of encoded data is greater than the capacity, the printer displays an empty box instead of the field. Increase the size of the field or decrease the amount of data.

NOTE: The Data Matrix format uses some capacity for error correction. Figure 30 shows the maximum available capacity for numeric, alphanumeric, or binary data for each symbol size. The printer sets the encoding mode automatically for the type of data included in the symbol.

ECC 200 DATA MATRIX				
Symbol size		Capacity		
Rows	Columns	Numeric	Alphanumeric	8-bit byte
10	10	6	3	1
12	12	10	6	3
14	14	16	10	6
16	16	25	16	10
18	18	36	25	16
20	20	44	31	20
22	22	60	43	28
24	24	72	52	34
26	26	88	64	42
32	32	124	91	60
Rectangular Symbols				
8	18	10	6	3
8	32	20	13	8
12	26	32	22	14
12	36	44	31	20
16	36	64	46	30
16	48	98	72	47

Figure 30. Data Matrix sizes

The Data Matrix field can use a number of standard methods to encode the source data. The method that is used depends on the type of source data.

3.2.4 Remote fields

If the source data includes a remote field, the printer examines the format of the received data. The data type is alphanumeric unless the field contains only numeric data. Make sure that the received data contains the correct data type. If the data type is not correct, the printer displays an empty box instead of the Data Matrix symbol.



3.3 Data Matrix (GS1-128)

The 7900 printer can create a Data Matrix in GS1-128 format, a standard code used to identify animal health products. This format uses a 14-digit number to identify products at different levels of packaging. See Figure 31 for an example of a Data Matrix (GS1-128) code generated from the data shown in Figure 33 on page 22.



Figure 31. Data Matrix (GS1-128) field with source data

To create a Data Matrix in GS1-128 format:

- 1 From the **Encoding** page, select the Data Matrix (GS1-128) format from the **Format** option (see Figure 11 on page 7). When you use the Data Matrix (GS1-128) format for the first time, the **Data Matrix (GS1-128): Company Prefix** page is displayed.

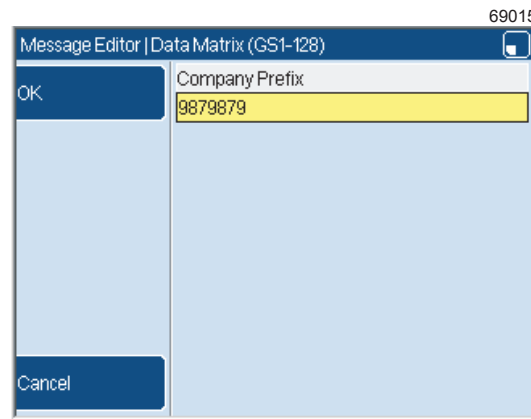


Figure 32. Data Matrix (GS1-128): Company Prefix page

- 2 The company prefix is a seven-digit number that identifies a given company by its Global Trade Item Number (GTIN) prefix.

Enter the required prefix. When you enter a prefix it is saved, but, if necessary, you can edit it in the **Company Prefix** option (see below).



- Press the **OK** key to display the **Data Matrix (GS1-128): Source Fields** page where you enter the information required to create the Data Matrix.

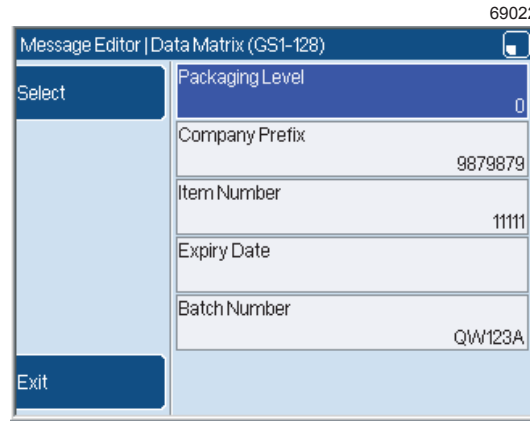


Figure 33. Data Matrix (GS1-128): Source Fields page

The options are as follows:

- Packaging Level**—the packaging level defaults to '0'. This number identifies the level of packaging of an item. For example '0' indicates a single item, '1' indicates a box of ten items, and '9' indicates a variable quantity of an item.

NOTE: At present you can only use a packaging level of '0' (that is a single item) on the 7900 printer.

- Company Prefix**—entered on the previous page. Users with a User Level C password or above can edit the prefix.
- Item Number**—a five-digit number that identifies an item by its catalogue number. Each item is allocated a different number.
- Expiry Date**—the expiry date of an item. Select this option to display the **Data Matrix (GS1-128): Format** page. When you use the Data Matrix (GS1-128) format for the first time you must select an expiry date format

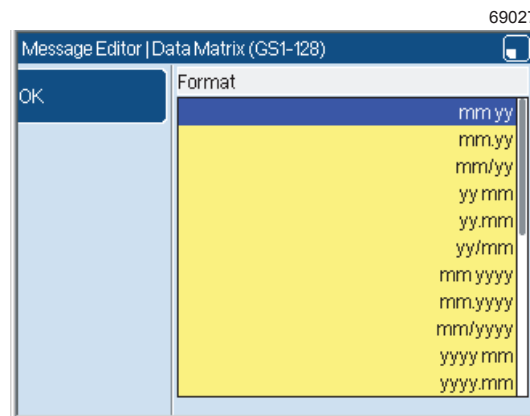


Figure 34. Data Matrix (GS1-128): Format page



Select the required date format (for example dd/mm/yy) and press the **OK** key. The **Data Matrix (GS1-128): Expiry Date** page is displayed.

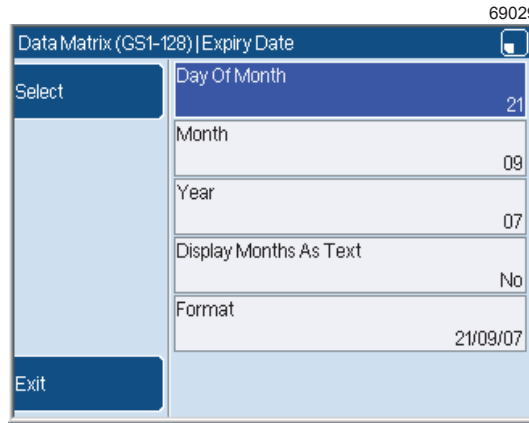


Figure 35. Data Matrix (GS1-128): Expiry Date page

The **Expiry Date** page options are as follows:

- **Day of Month**—enter the day (in the range 01 to 31). You can only enter a valid number for the day of month.
- **Month**—enter the month (in the range 01 to 12). You can only enter a valid number for the month.
- **Year**—enter the year (in the range 00 to 99). You can only enter a valid number for the year.
- **Display Months As Text**—if set to Yes, the selected month is displayed as text (for example 21/09/07 becomes 21/SEP/07, as shown in Figure 36). The option defaults to No.

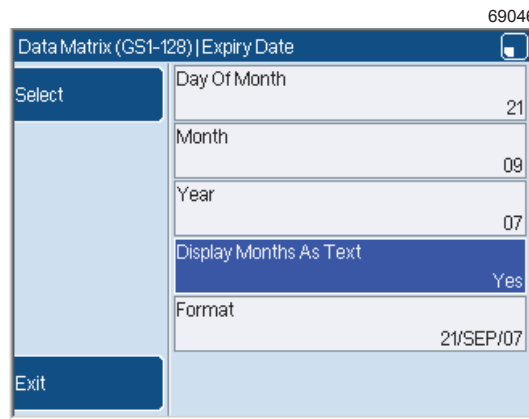


Figure 36. Data Matrix (GS1-128): Expiry Date page with month displayed as text

- **Format**—shows the date in the selected format. If you select this option, the **Data Matrix (GS1-128): Format** page is displayed.

NOTE: Some of the above options are not available for all expiry date formats.

How To Create Bar Codes



Enter the required information for each option and press the **Exit** key to return to the **Data Matrix (GS1-128): Source Fields** page.

- **Batch Number**—the batch number of an item in alphanumeric format. The batch number can be 1 to 20 characters in length.
- 4 Enter the required information for the above options and press the **Exit** key to return to the **Encoding** page. You can select the **Source Fields** option to edit any information entered

NOTE: Data Matrix (GS1-128) fields are 24 rows by 24 columns in size by default. You cannot change the size of the Data Matrix from the **Setup** option on the **Encoding** page.

- 5 Press the **Exit** key two times to return to the **Message Editor** page. The printer displays the completed Data Matrix as shown in Figure 31 on page 21.

Linx 7900



How To Use the Spectrum Printer

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document contains additional information for anyone who uses the 7900 Spectrum printer.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About the 7900 Spectrum printer

The 7900 Spectrum printer uses inks that contain a pigment. If the printer is idle, the pigment can become separated. This separation can cause internal problems in the printer.

2.1 Mix sequence

To maintain the print quality and prevent any problems, the printer can perform a mix sequence, which mixes the ink automatically. The mix sequence occurs at a fixed time every day. The start time of the mix sequence depends on several factors, as shown in the following table.

Printer power	Printer status	Active System Event	Mix sequence start time
On	Idle	None	Begins at the preset time
On	Jet Running	None	The mix sequence is not needed today
On	Ready to Print	None	The mix sequence is not needed today
Off	(Any)	None	Begins at next startup (if the last mix sequence did not occur because the printer was switched off)
On	Idle	3.21 Ink Low Prevented Mix	Begins when the ink is refilled
On	Idle	3.22 Fault Prevented Mix	Begins when the active fault is cleared

Figure 1. 7900 Spectrum Printer mix sequence

You cannot access the start time for the mix sequence if you use a User Level C password—contact your supervisor for more information.

NOTE: While you use the printer, the ink is mixed continuously and the mix sequence does not occur.

If the printer power is turned off for more than 24 hours, the automatic mix sequence occurs when you turn on the printer.



Identify a Mix Sequence

While the printer performs a mix sequence, the printer status area of the **Print Monitor** page displays the status message “MIX”.

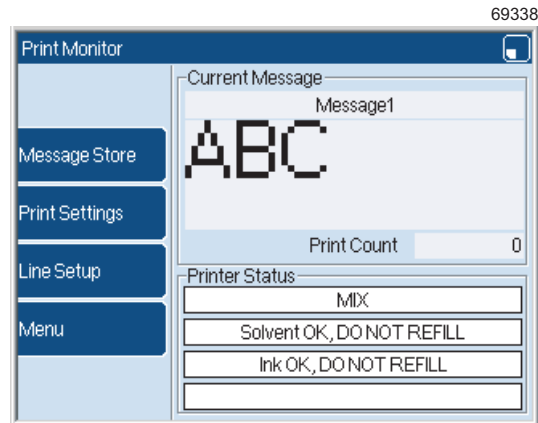


Figure 2. Print Monitor page (status: “MIX”)

While the printer status is “MIX”, you cannot use the printer. The [start] and [stop] keys do not operate during a mix sequence. Wait until the mix sequence ends and the printer status changes to “IDLE” before you try to use the printer.

NOTES:

1. A mix sequence takes between 6 and 19 minutes to complete. The time taken depends on when the printer was turned off.
2. If you switch off the printer during a mix sequence, the sequence restarts when you switch on the printer. (See ‘System events’ on page 5.)
3. If the ink level becomes low during a mix sequence, the sequence is cancelled. When you refill the ink, the mix sequence restarts. (See ‘System events’ on page 5.)

Start key and Stop key

If you press the [start] key or the [stop] key during a mix sequence, the printer does not respond until the mix sequence is complete.



2.2 System events

The system events include a number of events that occur only with the 7900 Spectrum printer. These events are shown below.

3.21 Ink Low Prevented Mix

Description: A mix sequence did not occur because the ink level is low.

Cause: The printer cannot perform a mix sequence because of the low level of the ink in the ink tank.

Solution: Refill the ink tank (see page 6).

3.22 Fault Prevented Mix

Description: A mix sequence did not occur because there is an active fault.

Cause: The printer cannot perform a mix sequence because of a system event that is active.

Solution: Clear the active event.

3.23 Power Off Occurred During Mixing

Description: The printer was turned off before the mix sequence was completed.

Cause: The printer was turned off during a mix sequence.

Solution: Wait until the printer completes the mix sequence before you switch off the printer. During the mix sequence, the printer status is "MIX". When the sequence is complete, the status changes to "IDLE".

3.25 Ink Unmixed For 4 Weeks

Description: The printer has detected that the ink was not mixed in the previous period of four weeks.

Cause: The printer was not turned on during the previous period of four weeks.

Solution: Wait until the printer completes the necessary mix sequence before you try to print. During the mix sequence, the printer status is "MIX". When the sequence is complete, the status changes to "IDLE".

3.27 Mix Disabled

Description: The mix sequence is disabled in the setup pages.

Solution: Contact your local Linx distributor.



2.3 Maintenance

To prevent problems and maintain the print quality, follow these recommended actions:

- Always wait until the mix sequence is complete. Do not switch off the printer during the mix sequence.
- If you can leave the printer power on when the printer is not in use, leave the printer in the "IDLE" state. If you leave the printer power on, the printer can perform the mix sequence automatically at a fixed time every day.
- If you cannot leave the printer power on when the printer is not in use, you *must* start the jet every two weeks. The jet must run for a minimum of 30 minutes.
- Never leave the printer turned off for more than four weeks.

Cleaning

Refer to the *Linx 5900 & 7900 Quick Start Guide* for information about the cleaning procedures for the printer and the printhead.

Refill the ink tank

If the printer displays the system warning "3.21 Ink Low Prevented Mix", refill the ink tank. The printer starts a mix sequence immediately. Wait until the printer completes the necessary mix sequence before you try to print. During the mix sequence, the printer status is "MIX".

NOTE: Before you refill the ink tank, shake the ink by following the method shown in the table below. Refer to the *Linx Ink Shaker User Guide* (part number FA65479) for instructions to use the Linx Ink Shaker.

Ink type	Shaking method
1009 (Black)	Shake the bottle manually.
1039 (Yellow)	Shake the bottle manually.
1059 (White)	Shake the bottle manually.
1305 (White)	Use the Linx Ink Shaker.
1306 (White)	Use the Linx Ink Shaker.
1310 (Grey)	Use the Linx Ink Shaker.
1311 (Grey)	Use the Linx Ink Shaker.
1355 (White)	Shake the bottle manually or use the Linx Ink Shaker.

Figure 3. Ink shaking method for pigmented inks

CAUTION: Do *not* use the Linx Ink Shaker for ink types 1009, 1039, or 1059. If you use the Linx Ink Shaker for these ink types, the ink separates.

LinX 7900



How To Create a Production Schedule

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document tells you how you create a production schedule.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.



2 About production schedules

A production schedule allows you to print a sequence of messages automatically. You can set the number of repeats for each message, or use a trigger signal to change to the next message. You can use an external device or an internal signal (for example the time or date) to provide the trigger signal.

NOTE: A production schedule can use any messages that exist in the message store. Before you delete a message from the store, make sure that the message is not used in a production schedule.



3 Create a production schedule

The following example shows how you create a new production schedule. This example uses the following three messages:

Message name	Text
'Message1'	"AAA"
'Message2'	"BBB"
'Message3'	"CCC"

Before you begin, create and store these three messages in the message store, as shown in the *Linx 5900 & 7900 Quick Start Guide*.

To create the production schedule, do the following:

- 1 At the **Print Monitor** page, press the **Menu** key then select the **Stores** option.
- 2 Scroll down to the **Production Schedule Store** and select this option to display the **Production Schedule Store** page.

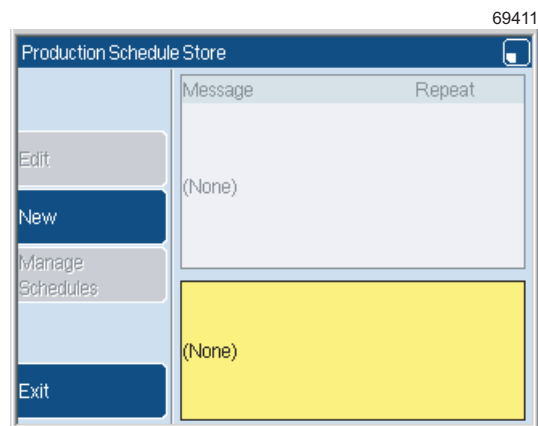


Figure 1. Production Schedule Store page

This page displays a list of the existing production schedules. In Figure 1, the store is empty.



- Press the **New** key to display the following page.

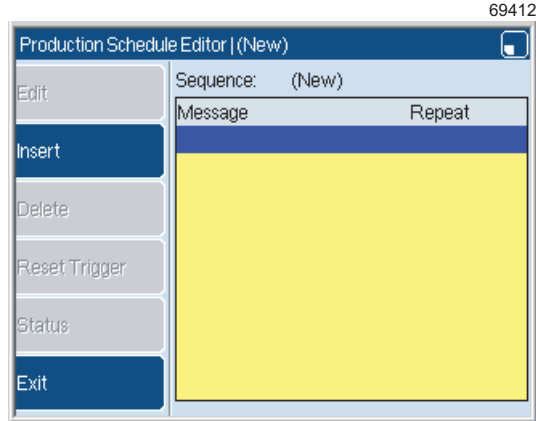


Figure 2. Production Schedule Editor page

- Press the **Insert** key to display the **Insert Item** page.

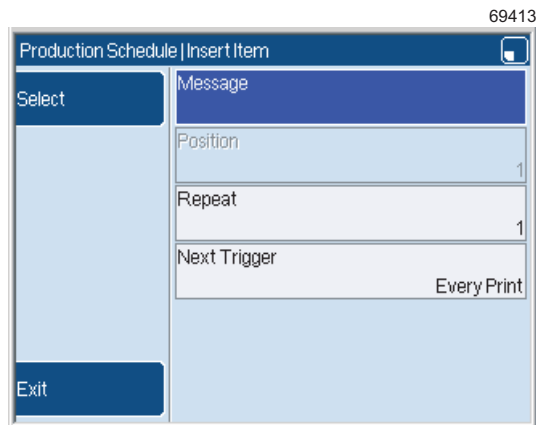


Figure 3. Insert Item page

- Select the **Message** option to display a list of the messages that are stored in the printer.

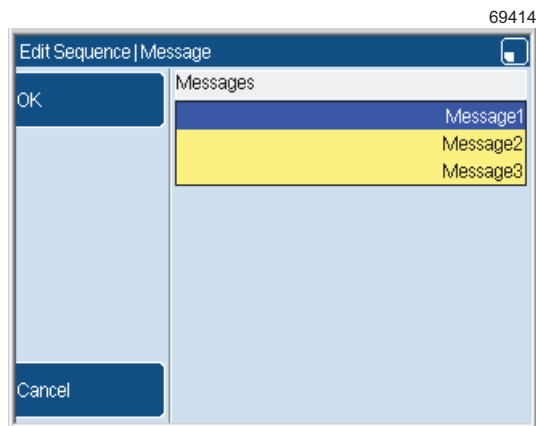


Figure 4. List of stored messages



- 6 Highlight the required message then press the **OK** key to return to the **Insert Item** page.

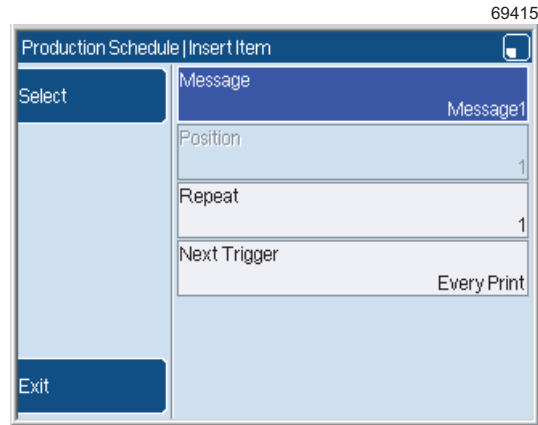


Figure 5. Insert Item page: first item

The **Message** option on the **Insert Item** page shows the name of the selected message. The other options (**Position**, **Repeat**, and **Next Trigger**) are described in 'Edit the production schedule' on page 8.

- 7 Press the **Exit** key to return to the **Production Schedule Editor** page. This page shows that the production schedule contains one message.

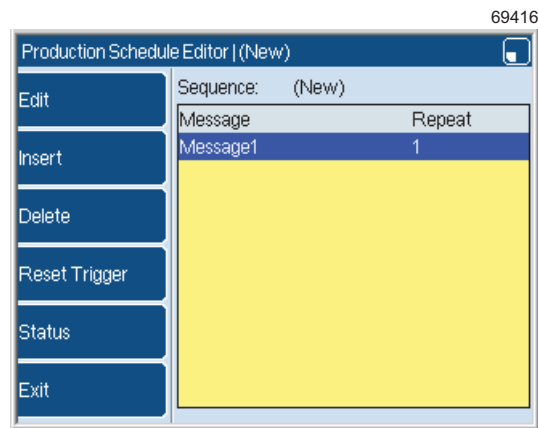


Figure 6. Production Schedule Editor page: first item

The options on this page are described in 'Edit the production schedule' on page 8.

- 8 Move the highlight downwards into the empty position.



- 9 Repeat steps 4 to 8 to add the second message, then the third message. The completed production schedule is shown below.

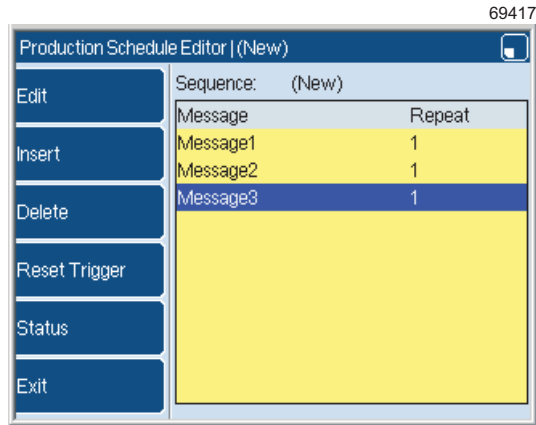


Figure 7. Production Schedule Editor page: complete schedule

- 10 Press the Exit key to display the Save As page.

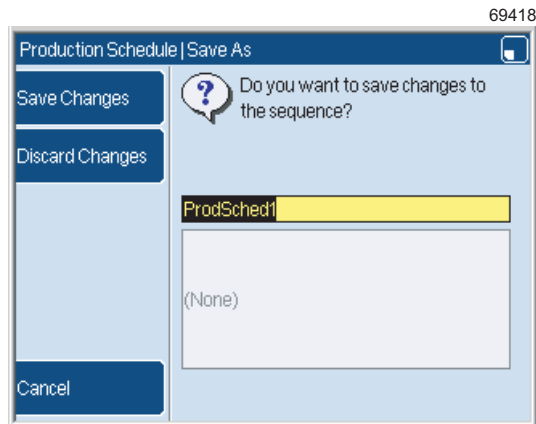


Figure 8. Save As page

Use this page to save or discard the production schedule, or change the default name before you save the schedule.



3.1 Edit the production schedule

At the **Production Schedule Store** page, you can create a new production schedule or edit the highlighted schedule.

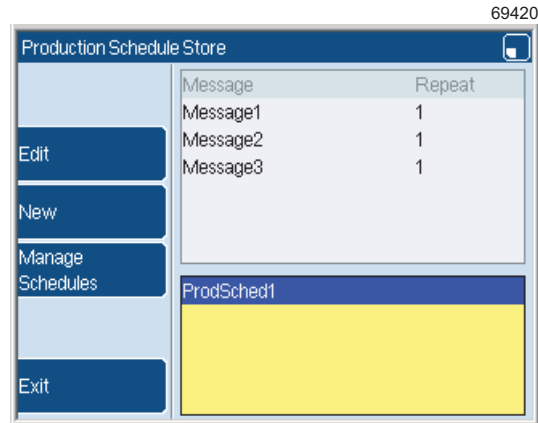


Figure 9. Production Schedule Store page

3.1.1 Production Schedule Store page

The options on this page are as follows.

Edit

Use the **Edit** key to display the **Production Schedule Editor** page (see page 9).

New

Use the **New** key to create a new production schedule.

Manage Schedules

You can use the **Manage Schedules** key to copy a schedule, change a schedule name, or delete a schedule. The **Copy** option, the **Rename** option, and the **Delete** option are not described in this document. These options are like the options in the **Message Store > Manage Messages** page, which is described in the *Linx 5900 & 7900 Quick Start Guide*.



3.1.2 Production Schedule Editor page

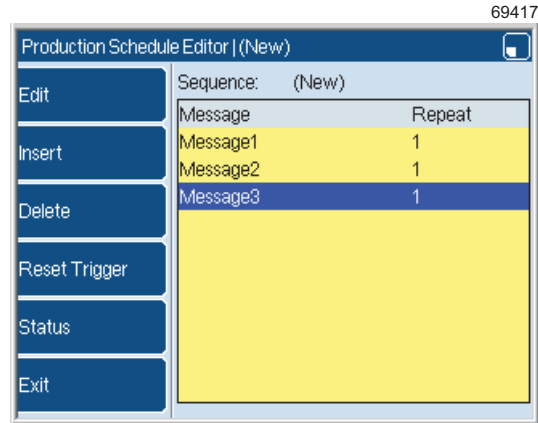


Figure 10. Production Schedule Editor page

This page contains the following options.

Edit

Use this option to display the **Edit Item** page for the highlighted item (see page 10).

Insert

Use this option to insert another item at the position indicated by the cursor.

Delete

Use this option to delete the item at the position indicated by the cursor. A confirmation page is displayed.

Reset Trigger

Use this option to define the external signal or internal condition that you use to reset the schedule to the start. (See 'Reset Trigger' on page 19).

Status

Use this option to display the **Status** page (see page 11).

Exit

Press the **Exit** key to save the completed Production Schedule. The printer displays the **Save As** page.



3.1.3 Edit Item page

The **Insert Item** page and the **Edit Item** page have the same options.

69419

Production Schedule | Edit Item	
Select	Orientation Normal
	Message Message3
	Position 3
	Repeat 1
	Next Trigger Every Print
Exit	

Figure 11. Edit Item page

Orientation

Use this option to define the orientation of this item. (Orientation is described in the *Linx 5900 & 7900 Quick Start Guide*.)

This option is not present unless the **Dictate Orientations** option in the **Status** page is set to Yes (see page 11).

Message

Use this option to change the message that you use for this schedule item.

Position

Use this option to change the position of the item in the schedule. In Figure 10 on page 9 'Message3' is the third item in the schedule.

Repeat

Use this option to change the number of repeats for this item. The printer maintains a counter to count the number of Next Trigger signals for each item in the schedule. For example, if the value is 20, the printer prints the same message 20 times, then prints the next message in the schedule. The default value is 1.

Next Trigger

Use this option to define the signal that tells the printer to update the counter that controls the schedule position. If the Repeat value for the current item is reached, the schedule moves to the next item. The **Next Trigger** settings are described on page 15.



3.1.4 Status page

The **Status** page allows you to inspect and change the current state of the sequence.

69421

Production Schedule Store | Status	
Select	Current Position 1
	Current Repeat 0
	Dictate Orientations Yes
	Aux-P/C Switches No
	Continuous Yes
Exit	Multiprint No

Figure 12. Status page

The options on this page are as follows.

Current Position

Use this option to set the schedule to a different position in the sequence of messages (for example, change from item 1 to item 3). The maximum value is equal to the number of items in the sequence.

Current Repeat

Use this option to set the Repeat counter to a different position for the current item. For example if the **Repeat** option is set to 200, you can set the **Current Repeat** option to 170. When you restart the print, the printer prints 30 more copies of the message then moves to the next message.

The maximum value is 1 less than the value of the **Repeat** option for the current item (see 'Repeat' on page 10). For example if the Repeat value is 1, the **Current Repeat** option is fixed at 0 and you cannot change the value.

Dictate Orientations

Set this option to Yes to enable the **Orientation** option in the **Edit Item** page (see page 10).

Aux-P/C Switches

If you set this option to Yes, you can use the secondary trigger device to control the schedule. The messages that are printed depend on the state of the input signal (active or inactive). The printer prints the following messages in the schedule:

Active input: Messages 1, 3, 5, 7...

Inactive input: Messages 2, 4, 6, 8...

You can change the input state during the schedule, so that the printer prints the other set of messages. For example if you change the input while the printer prints message 4, the printer changes to messages 5, 7, 9...



If the schedule contains an odd number of messages, the printer adds another message when you save the schedule. The additional message is a copy of the last message that has an even number, as shown in the following example.

The production schedule shown below contains an odd number of messages.

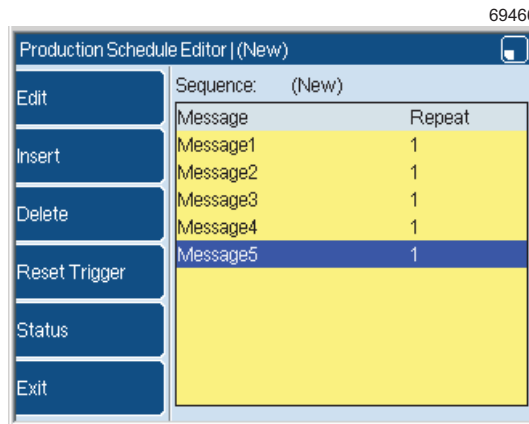


Figure 13. Production Schedule with five messages

The last message that has an even number is Message4. The printer adds Message4 to the end of the list when you save the schedule.

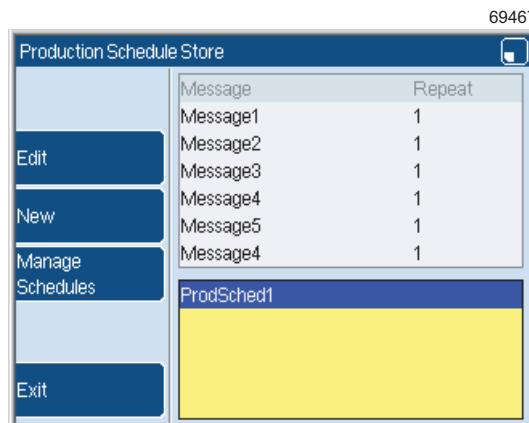


Figure 14. Production Schedule with six messages

Continuous

Set this option to Yes or No. The printer operation is as shown below:

- Yes After the last message is printed, the printer returns to the start of the schedule and repeats the schedule. While the trigger signals are received, this process continues.
- No The printer does not print any messages after the last item in the schedule is printed.

Multiprint

This option allows you to print multiple messages from a single trigger. See 'Multiprint' on page 13 for further details.



3.2 Multiprint

The **Multiprint** option allows you to create an entire production schedule that you can print from a single trigger. To use the **Multiprint** option with a production schedule:

- 1 Create a production schedule or edit an existing schedule, as described in 'Create a production schedule' on page 4 or 'Edit the production schedule' on page 8. An example production schedule is shown in Figure 15.

69128

Production Schedule Editor ProdSched1																	
<table border="1"> <tr><td>Edit</td></tr> <tr><td>Insert</td></tr> <tr><td>Delete</td></tr> <tr><td>Reset Trigger</td></tr> <tr><td>Status</td></tr> <tr><td>Exit</td></tr> </table>	Edit	Insert	Delete	Reset Trigger	Status	Exit	<table border="1"> <tr> <td>Schedule:</td> <td>ProdSched1</td> </tr> <tr> <th>Message</th> <th>Repeat</th> </tr> <tr> <td>Message1</td> <td>4</td> </tr> <tr> <td>Message2</td> <td>1</td> </tr> <tr> <td>Message3</td> <td>2</td> </tr> </table>	Schedule:	ProdSched1	Message	Repeat	Message1	4	Message2	1	Message3	2
Edit																	
Insert																	
Delete																	
Reset Trigger																	
Status																	
Exit																	
Schedule:	ProdSched1																
Message	Repeat																
Message1	4																
Message2	1																
Message3	2																

Figure 15. Example Multiprint production schedule

- 2 At the **Production Schedule Editor** page, press the **Status** key to display the **Status** page (see Figure 12 on page 11). Set the **Multiprint** option to Yes and press the **Exit** key to return to the **Production Schedule Editor** page.

When you use the **Multiprint** option the following items on the **Edit Item** page are changed:

- Repeat—in 'Multiprint' mode a message in a Production Schedule will be printed until the repeat count reaches zero. For example if the Next Trigger is set to 'Keyboard Trigger' and the repeat count to 1, the message is printed continuously until a keyboard trigger event occurs.
 - Next Trigger—this defaults to 'Every Print' in 'Multiprint' mode.
- 3 Set the options you require for each message in the schedule on the **Edit Item** page and press the **Exit** key two times to save the completed Production Schedule. The printer displays the **Save As** page as shown in Figure 8 on page 7. The Production Schedule is saved to the **Message Store**.



- 4 To print multiple prints from a single trigger, select the Production Schedule you require from the **Message Store**. The **Inter-Print Distance** page is displayed.

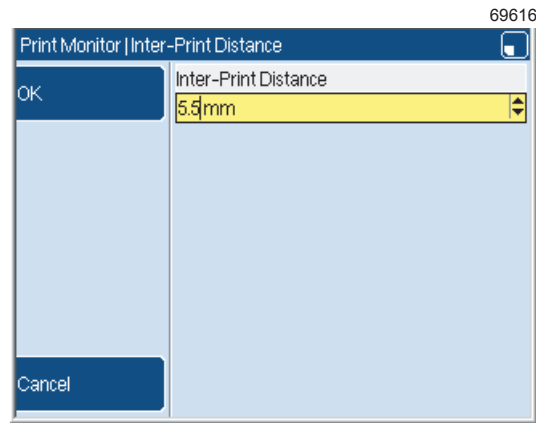


Figure 16. Inter-Print Distance page

You must enter an inter-print distance for the messages in the schedule. This value is the distance between the start of one message and the start of the next message.

- 5 You must then select a trigger for the Production Schedule as shown in 'Trigger setup' on page 15.

NOTE: If you use the High Level or Low Level Primary or Secondary trigger options, the **Multiprint** option is ignored. The Production Schedule returns to the default printing option.
- 6 For the example Production Schedule shown in Figure 15, Message1 is printed four times, followed by one print of Message2 and two prints of Message3 from one trigger.



3.3 Trigger setup

3.3.1 Next Trigger

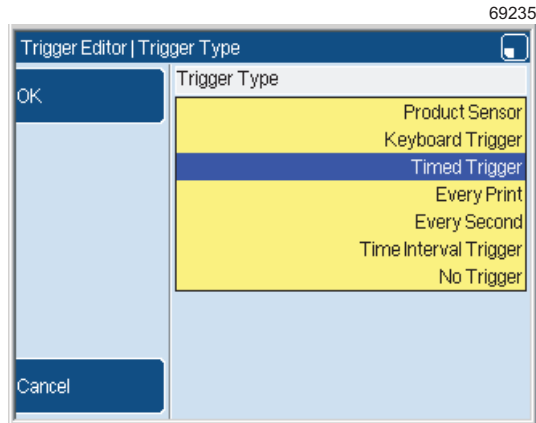


Figure 17. Trigger Type page

This option defines the signal that tells the printer to update the counter that controls the schedule position. The trigger type that you use controls the production schedule as follows:

Product Sensor

If the **Repeat** option is set to 5, the printer prints the message “AAA” until five pulses are received from the product sensor.

For many applications the **Product Sensor** trigger and the **Every Print** trigger give the same result. This is because the product sensor starts a print for each product that it detects.

If you use this type of trigger, the printer displays an additional option.

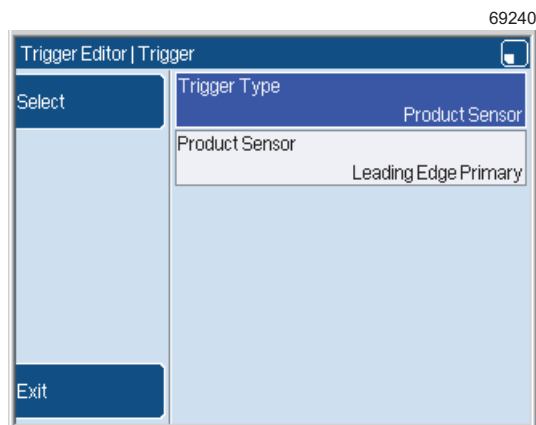


Figure 18. Trigger Editor page: Product Sensor



Product Sensor

Use the **Product Sensor** option to select the product sensor setup that you use.

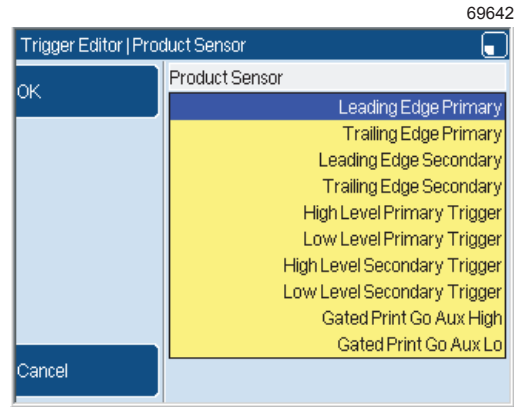


Figure 19. Trigger Editor: Product Sensor page

Leading Edge Primary

The printer updates the production schedule counter when the primary product sensor detects the leading edge of a product.

Trailing Edge Primary

The printer updates the production schedule counter when the primary product sensor detects the trailing edge of the product.

Leading Edge Secondary

The printer updates the production schedule counter when the secondary product sensor detects the leading edge of a product.

Trailing Edge Secondary

The printer updates the production schedule counter when the secondary product sensor detects the trailing edge of the product.

High Level Primary Trigger or High Level Secondary Trigger

The printer continuously prints or updates the message while the product sensor detects the presence of a product (the signal is active).

Low Level Primary Trigger or Low Level Secondary Trigger

The printer continuously prints or updates the message while the printer does *not* detect the presence of a product (the signal is not active).

Gated Auxiliary Input Triggers

You can use an auxiliary input (the Secondary Trigger input) to control the operation of a production schedule. The example in Figure 20 on page 17 shows the current state of the production schedule counter: N, N+1, N+2... The 'Print Go' signal is the signal that starts each print.



The printer checks the state of the Secondary Trigger input ('Aux' input) at the start of every message. The printer does not update the production schedule counter unless the Secondary Trigger input is in the correct state.

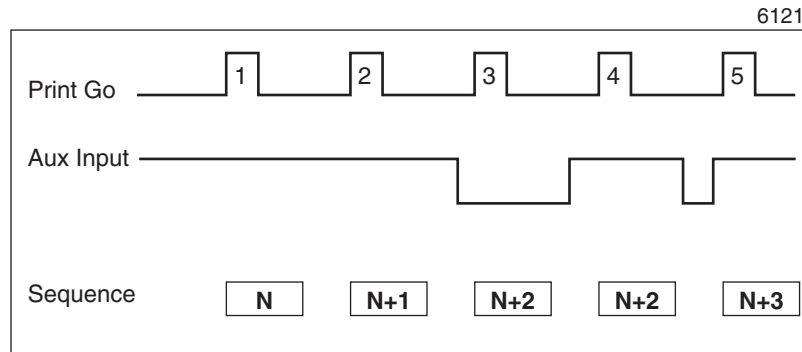


Figure 20. Production schedule counter

Gated Print Go Aux High

The printer updates the production schedule counter if the Secondary Trigger input signal is in the high state.

Figure 20 shows how the printer updates the production schedule counter when you use the Gated Print Go Aux High trigger setting.

- When the Print Go signal number 2 occurs, the Secondary Trigger input is in the high state. The printer updates the production schedule counter to prepare the message for Print Go number 3.
- When the Print Go signal number 3 occurs, the Secondary Trigger input is in the low state. The printer does *not* update the production schedule counter to prepare the message for Print Go number 4.

Gated Print Go Aux Low

The printer updates the sequence for the next message if the Secondary Trigger input is low.

Keyboard Trigger

If the **Repeat** option is set to 10, the printer prints the same message on every product until you generate a keyboard trigger signal 10 times. (To generate a keyboard trigger signal, press the [alt] key and the [T] key together.)

Timed Trigger

You can set this option to Daily, Weekly, Monthly, or Yearly. The printer updates the production schedule counter at the same time every day, every week, every month, or every year. The operation of the schedule is as follows.

- | | |
|--------|---|
| Daily | The schedule changes every day at the same time of day. If the Repeat option is set to 10, the printer prints the same message for 10 days, then changes to the next message. |
| Weekly | The schedule changes on the same day of every week, and at the same time of day. If the Repeat option is set to 5, the printer prints the same message for five weeks, then changes to the next message. |



- Monthly** The sequence changes on the same day of every month, and at the same time of day. If the **Repeat** option is set to 5, the printer prints the same message for five months, then changes to the next message.
- Yearly** The sequence changes on the same day of every year, and at the same time of day. If the **Repeat** option is set to 5, the printer prints the same message for five years, then changes to the next message.

If you use this type of trigger, the printer displays additional options that you must set. These additional options are described below.

Time

If you set the **Timed Trigger** option to “Daily” or “Weekly” or “Monthly”, use this option to set the time of day at which the trigger occurs.

Day of Week

If you set the **Timed Trigger** option to “Weekly”, use this option to set the day of the week and the time of day for the trigger.

Day of Month

If you set the **Timed Trigger** option to “Monthly” or “Yearly”, use this option to set the day of the month for the trigger. The range of values allowed for the day of the month is 1 to 31, or “End Of Month”.

NOTE: If a month does not include the day you set for the monthly trigger, the trigger does not occur in that month. For example, if you set **Day of Month** to 31, the trigger does not occur in February, April, June, September, and November.

Month

If you set the **Timed Trigger** option to “Yearly”, use this option to set the month of the year for the trigger.

Every Print

The printer updates the production schedule counter at every print.

Every Second

The printer updates the production schedule counter every second. If the **Repeat** option is set to 10, the printer prints the same message on every product that passes the printhead within 10 seconds. (The number of products is not defined.)

Time Interval Trigger

The printer begins the schedule at the Start Time that you set. The Time Interval that you set defines the times at which the printer updates the production schedule counter.



You can set any Start Time between 00:00:00 and 23:59:00. You can set any Time Interval from 00:01:00 until 23:59:00. If you set a Time Interval of 00:00:00, the printer uses 00:01:00 for the Time Interval.

NOTE: If you start the print before or after the Start Time, the printer adjusts the schedule position for the Current Message. This adjustment sets the schedule to the correct position for the current date and time.

No Trigger

The schedule counter is disabled and the printer always prints the first item.

3.3.2 Reset Trigger

You can use a trigger signal to reset the schedule to the start before the schedule is complete. Use the **Reset Trigger** option to define the type of trigger signal that you use to reset the schedule.

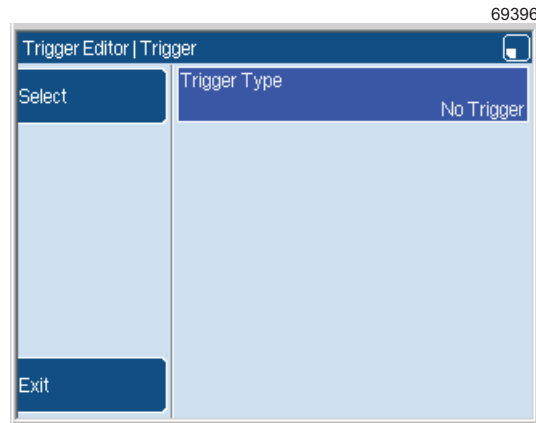


Figure 21. Trigger Editor page: No Trigger

Select the **Trigger Type** option to display a list of the trigger signals that are available.

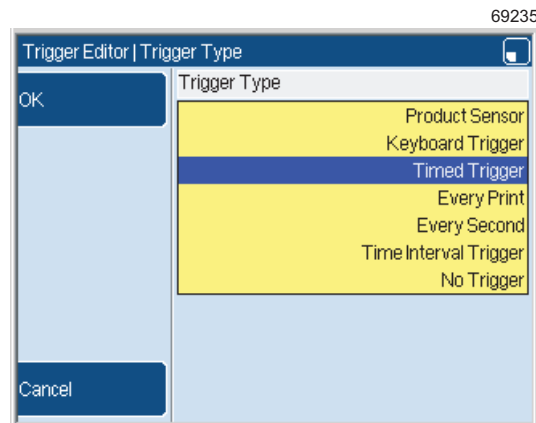


Figure 22. Trigger Type page

You can use any of the following trigger types:



Product Sensor

The printer resets the schedule when a signal is received from the product sensor. If you use this type of trigger, the printer displays an additional option.

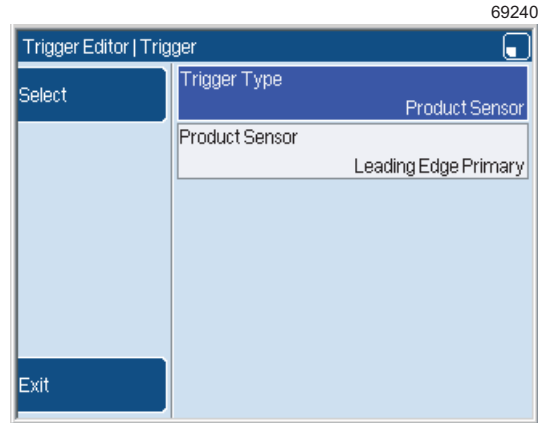


Figure 23. Trigger Editor page: Product Sensor

Product Sensor

Use the **Product Sensor** option to select the product sensor setup that you use.

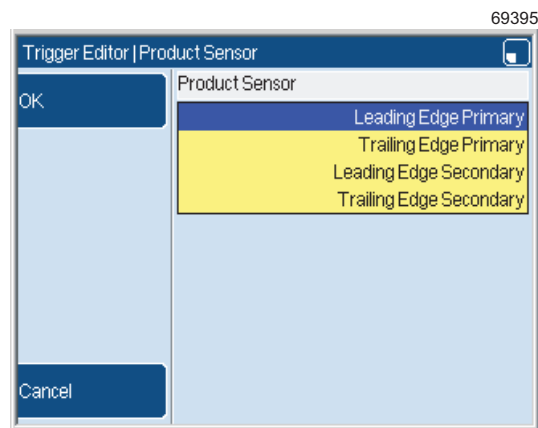


Figure 24. Product Sensor page

Leading Edge Primary

The printer resets the schedule when the primary product sensor detects the leading edge of a product.

Trailing Edge Primary

The printer resets the schedule when the primary product sensor detects the trailing edge of the product.

Leading Edge Secondary

The printer resets the schedule when the secondary product sensor detects the leading edge of a product.



Trailing Edge Secondary

The printer resets the schedule when the secondary product sensor detects the trailing edge of the product.

Keyboard Trigger

The printer resets the schedule when you generate a keyboard trigger. (To generate a keyboard trigger signal, press the [alt] key and the [T] key together.)

Timed Trigger

You can set this option to Daily, Weekly, Monthly, or Yearly. The printer resets the schedule at the same time every day, every week, every month, or every year.

The **Timed Trigger** settings for the **Reset Trigger** option are like the **Timed Trigger** settings for the **Next Trigger** option. Refer to 'Timed Trigger' on page 17 for a description of these settings.

Every Print

The printer resets the schedule at every print. The schedule does not move forward.

Every Second

The printer resets the schedule every second.

Time Interval Trigger

The printer resets the schedule at the Start Time that you set. The Time Interval that you set defines the times at which the printer resets the schedule again.

You can set any Start Time between 00:00:00 and 23:59:00. You can set any Time Interval from 00:01:00 until 23:59:00. If you set a Time Interval of 00:00:00, the printer uses 00:01:00 for the Time Interval.

No Trigger

The schedule is not reset—the printer always prints the whole schedule.



4 Applications

The following example shows how you can use a production schedule with a secondary trigger device to find a solution for a problem. The information in this section is not detailed—refer to the other ‘How To...’ guides if necessary.

4.1 Application example

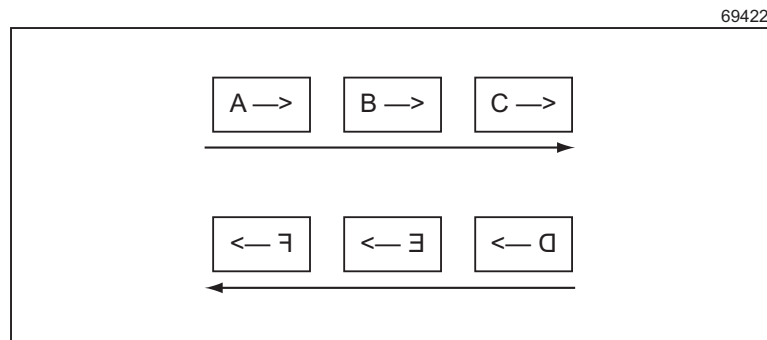


Figure 25. Application example

In this application, the printhead prints the three items A, B, and C. Then the printhead direction reverses and the printer prints the three items D, E, and F with reversed orientation.

The secondary trigger device performs the following functions:

- Select the message that is printed.
- Select the orientation of each message.
- Reset a text sequence within each message.

The state of the input signal for the Secondary Trigger depends on the printhead direction. The input signal is active for the items A, B, and C, and inactive for the items D, E, and F.

4.1.1 Setup

Text sequences

Create two text sequences S1 and S2.

- The sequence S1 contains the three items “A”, “B”, and “C”.

The **Reset Trigger** option is set to Product Sensor and Trailing Edge Secondary.

- The sequence S2 contains the three items “D”, “E”, and “F”.

The **Reset Trigger** option is set to Product Sensor and Leading Edge Secondary.

For each text sequence, set the **Repeat** option to 1 and the **Next Trigger** option to Every Print.



Message setup

Create two messages M1 and M2.

- Message M1 contains the text sequence S1.
- Message M2 contains the text sequence S2.

For both messages, set the options in the **Line Setup** and **Print Settings** pages as required. Make sure that the printer prints the messages correctly.

Production schedule setup

Create a production schedule that contains the messages M1 and M2.

At the **Production Schedule Editor** page:

- Press the **Reset Trigger** key and set the **Trigger Type** option to No Trigger.

At the **Production Schedule Editor > Status** page:

- For both messages, set the **Dictate Orientations** option to Yes.
- For both messages, set the **Aux-P/C Switches** option to Yes.

At the **Production Schedule Editor** page, press the **Edit** key to display the **Edit Item** page, and set the following options:

- For schedule position 1 (message M1), set the **Orientation** option to Normal.
- For schedule position 2 (message M2), set the **Orientation** option to Horizontal Flip.
- For both messages, set the **Repeat** option to 3.
- For both messages, set the **Next Trigger** option to Every Print.

Save the completed production schedule. To print the production schedule, select the schedule from the Message Store.

This example can fail if you change any of the settings. For example you cannot change the order of the messages M1 and M2 because the trigger setup is different for each text sequence. The trigger setup for the production schedule depends on these settings.

Linx 7900



How To Use the 7900 Food Grade Printer

LINX

THINKING ALONG YOUR LINES



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How To Use the 7900 Food Grade Printer



1 Introduction

This document contains information for anyone who uses the 7900 Food Grade printer.

You need a User Level C password to perform all the tasks that are described in this document.

1.1 Health and Safety

Make sure that you read and understand the Health and Safety information in the 'Safety' section of the *Linx 5900 & 7900 Quick Start Guide*.

How To Use the 7900 Food Grade Printer



2 About the 7900 Food Grade printer

The 7900 Food Grade printer is a special version of the Linx 7900 printer with the following differences to enable reliable operation when you use Linx food grade inks:

- The 7900 Food Grade printer uses a MidiEC printhead that can print a maximum of three lines of text or graphics. The printhead is only available as a straight printhead with a 2-metre conduit.
- The nozzle assembly in the printhead is not interchangeable with other types.
- The operating temperature range for the 7900 Food Grade printer is 0 °C to +40 °C, compared to the recommended temperature range of +5 °C to +45 °C for the standard 7900 printer.
- The printer uses only Linx Red food grade ink 6100, Linx Blue food grade ink 6120, and Linx food grade solvent 6600.
- The message type and font options for the MidiEC printhead are the same as those used with the standard Midi printhead and 7900 printer (with a maximum of three lines of text or graphics).
- A software link (Software Link F) must be fitted to configure a standard 7900 printer as a 7900 Food Grade printer. When the software link is fitted, only the 6100 and 6120 food grade inks and MidiEC printhead are available.
- When you turn on the printer, the jet start is delayed for a 5-minute warm-up period. This delay allows the heater in the printhead to clear condensation from the printhead. See 'Start print' on page 4 for more information.

NOTE: This option requires a configuration code that is set at the factory. A service engineer can change the set code.

- When you press the [stop] key, the printer shutdown is delayed (if necessary) until a calculated minimum run time has passed. This option prevents problems that can occur during short print runs. The minimum run time depends on the ambient temperature. See 'Minimum run time and delayed shutdown' on page 5 for more information.

2.1 Power-up sequence

When you turn on the printer, the display is blank until the printer completes its internal tests. Then the printer displays a splash screen. This screen shows you a progress bar for the power-up process.

The splash screen shows the software version that is installed in the printer (for example, 'v5.1.0.1469').

When the power-up is complete, the printer displays the **Print Monitor** page.

2.2 EHT flash test

The printer performs a 10-second EHT flash test on the printhead before jet startup to check for electrical leaks between components. This test can cause the following system warning before the jet starts:

How To Use the 7900 Food Grade Printer



2.01 EHT Trip

Description: The software has detected that an EHT trip has occurred (the printer has turned off the EHT output).

Cause: A build-up of ink or moisture on the EHT deflector plate.

Solution: Switch off the printer and clean the printhead, as shown in 'Clean the printhead' on page 7. When the printhead is clean, perform a Nozzle Flush, as shown in the *Linx 5900 & 7900 Quick Start Guide*.

2.3 Start print

Select the required message (refer to the *Linx 5900 & 7900 Quick Start Guide* for more information) and press the [start] key.

2.3.1 Delayed start

NOTE: This option requires a configuration code that is set at the factory. A service engineer can change the set code.

After the power-up sequence is complete, there is a warm-up period of five minutes before the printer is ready to print. This delay makes sure that the printer starts correctly at all temperatures. You can press the [start] key during this period. If the warm-up time has not expired when you press the [start] key, the printer calculates the time that remains before the printer starts normally. During this period, the printer status is 'Idle'.

If the warm-up time has expired when you press the [start] key, the printer starts normally. The printer status changes from 'Jet Starting' to 'Jet Running' then 'Printing'. The selected message is printed.

If the warm-up time has not expired when you press the [start] key, the printer displays a message to indicate the time that remains before the jet starts:

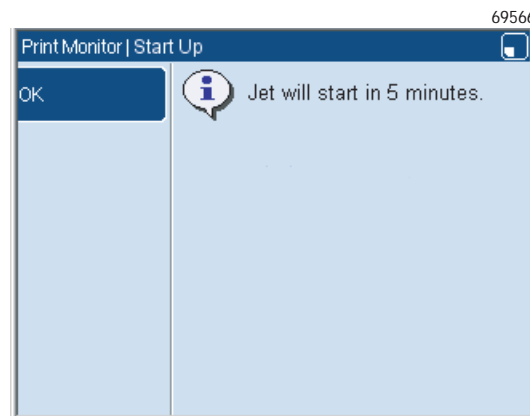


Figure 1. Start Up page

Press the **OK** key to clear the message and return to the **Print Monitor** page. When the warm-up time ends, the printer starts automatically.

2.4 Stop print and shutdown

To stop printing a message, press the **Pause Printing** key.

How To Use the 7900 Food Grade Printer



To begin the shutdown procedure, press the [stop] key.

2.4.1 Minimum run time and delayed shutdown

The 7900 Food Grade printer must be run continuously for a minimum period of several hours in some environments. This period depends on the ambient temperature where the printer is installed. When you press the [start] key, the printer measures the temperature and calculates the length of this 'minimum run time'. The printer shutdown is delayed until the end of the minimum run time.

If you press the [stop] key after the minimum run time has passed, the jet shutdown sequence begins immediately. The jet stops, and the printer cleans the nozzle and gutter with solvent.

If the minimum run time has not passed, the printer delays the jet shutdown sequence.

The printer displays a message to indicate the time that remains before the delayed shutdown automatically occurs. This message is displayed for approximately five seconds

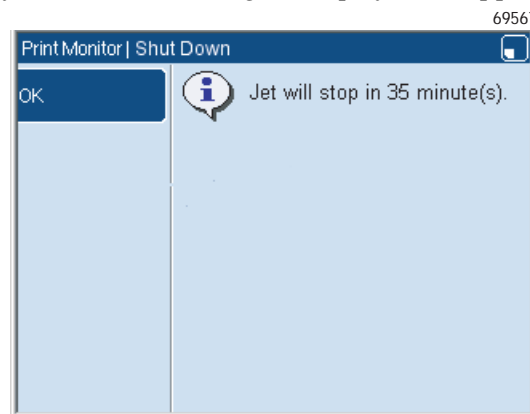


Figure 2. Shut Down page

After this message has cleared, the text of the message is displayed in the Printer Status area on the **Print Monitor** page, as shown in Figure 3. This text is updated every minute to show the time that remains.

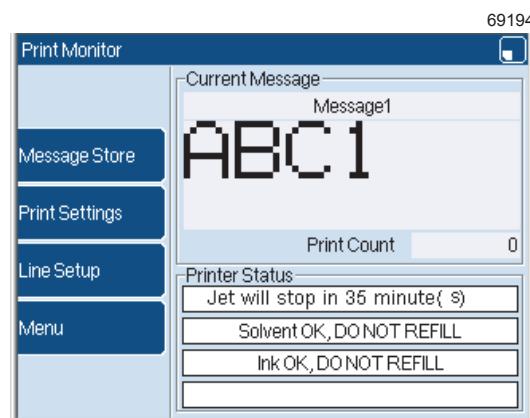


Figure 3. Print Monitor page with delayed shutdown message

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When the delayed shutdown period ends, the printer automatically starts the jet shutdown sequence. The jet shutdown takes approximately 4 minutes. The printer status during this period is 'Jet Stopping'.

When the printer has finished the jet shutdown sequence, the printer status changes to 'Idle'.

2.4.2 To cancel the delayed shutdown

If you press the [start] key during the delay period, the jet shutdown sequence is cancelled. The time passed is included when the printer again calculates the minimum run time before the next shutdown. The next time you press the [stop] key the shutdown time is shorter, or the shutdown sequence can start immediately.

2.4.3 Auto power-down

The auto power-down function is configured when the printer is installed. The default setting is that power-down is enabled. If auto power-down is enabled, when the printer status changes to 'Idle' the printer turns off automatically. First, the printer displays the message:

“You have 10 secs to cancel the power down”

The displayed number decreases every second (9, 8, 7...) until it reaches 1.

- If you do not press a key, the printer turns off when the displayed number reaches 1.
- If you press any key before the displayed number reaches 1, the power-down sequence is cancelled and the printer does not turn off.

NOTE: You can leave the mains power supply switch at the rear of the printer in the On (I) position.

Refer to the *Linx 5900 & 7900 Quick Start Guide* for more information about how to stop and turn off the printer.



3 Clean the printhead



WARNING: HAZARDOUS INKS AND SOLVENTS. SAFETY GLASSES AND SOLVENT-RESISTANT PROTECTIVE GLOVES MUST BE WORN THROUGHOUT THE FOLLOWING PROCEDURE. IGNORING THIS SAFETY WARNING COULD RESULT IN SEVERE EYE IRRITATION AND TEMPORARY (REVERSIBLE) EYE DAMAGE, AND NON-ALLERGIC CONTACT DERMATITIS.



WARNING: FLAMMABLE LIQUIDS. THE INKS AND SOLVENTS USED WITH THIS PRINTER ARE HIGHLY FLAMMABLE.

KEEP INKS AND SOLVENTS AWAY FROM SOURCES OF IGNITION. DO NOT SMOKE OR USE OPEN FLAMES NEAR THE PRINTER, OR INK AND SOLVENT STORAGE CONTAINERS. USE INKS AND SOLVENTS, AND OPERATE THE PRINTER, IN AN AREA WITH GOOD VENTILATION. THERE IS A RISK OF FIRE OR EXPLOSION IF THIS SAFETY WARNING IS IGNORED.

CAUTION: Do not clean the printhead by immersing it in solvent, or by using an ultrasonic bath. This will cause damage to the printhead and will void your warranty.

CAUTION: Do not dry the printhead with a cloth. This may deposit fibres that could block the printhead nozzle.

CAUTION: Only Linx foam swabs (FA69034) and Linx Food Grade solvent 6600 must be used to clean the printhead. Other materials or fluid can cause damage to the printer and invalidate its Food Grade status.

3.1 About the procedure

NOTE: To clean the MidiEC printhead you must use a special procedure. The cleaning procedure described is for the Linx 7900 Food Grade printer only. The cleaning procedure for the standard 7900 printer is described in the *Linx 5900 & 7900 Quick Start Guide*.

For reliable printer operation, you must make sure that the MidiEC printhead is free of ink deposits or moisture. Clean the printhead after every work shift, or after an incorrect shutdown (for example, a power failure when the jet is running).

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A cleaning kit is available from Linx (order as FA69035, 6800EC and 6900FG Cleaning Kit). This kit contains safety eyeglasses, latex gloves, hand cleaning cream, a solvent wash bottle, a beaker for used solvent, and foam swabs.

- The procedure described only applies to Linx Red food grade ink 6100 and Linx Blue food grade ink 6120.
- Linx food grade solvent 6600 can take up to 20 minutes to dry completely. The printhead must be completely dry before the printer is started.
- To keep delays to a minimum, clean the printhead at the end of a work shift.
- If ink causes a blockage in the nozzle, use the Nozzle Clear sequence or Nozzle Flush sequence, as shown in the *Linx 5900 & 7900 Quick Start Guide*. The printhead must be completely dry before the printer is started.

3.2 To clean the printhead

- 1 Stop and power down the printer, as shown on page 4.
- 2 Loosen the securing screw of the printhead cover tube, then slide the cover off.
- 3 Mount the printhead on a washstation or hold the printhead over a beaker or suitable container, as shown in Figure 4.

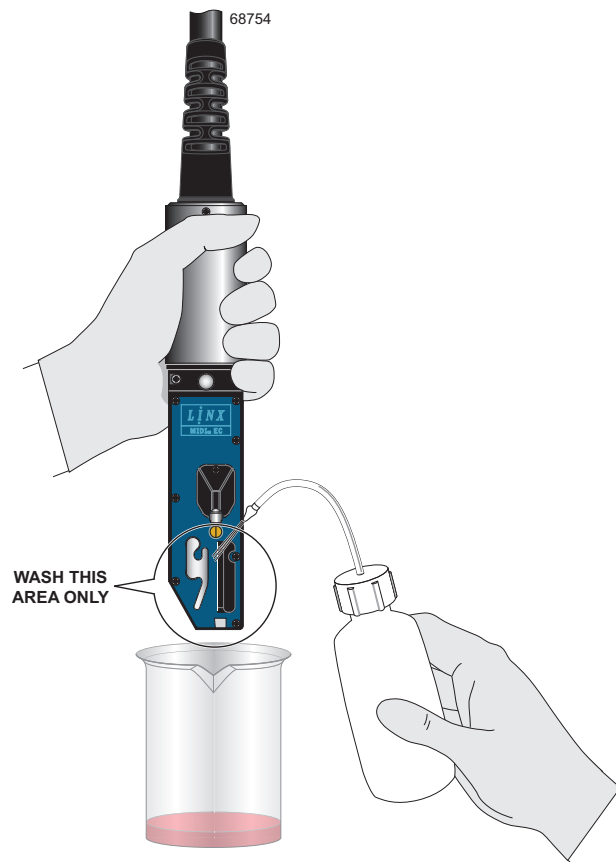


Figure 4. Use solvent to wash the printhead components

How To Use the 7900 Food Grade Printer



- 4 Carefully apply Linx food grade solvent 6600 to the printhead area shown in Figure 4 to remove the dried ink. Allow the solvent to dissolve after each application. Repeat until most of the ink is removed.

During the cleaning procedure, collect the used solvent in the beaker.

Discard the used solvent, according to local regulations.

- 5 Use Figure 5 to identify the following printhead components.

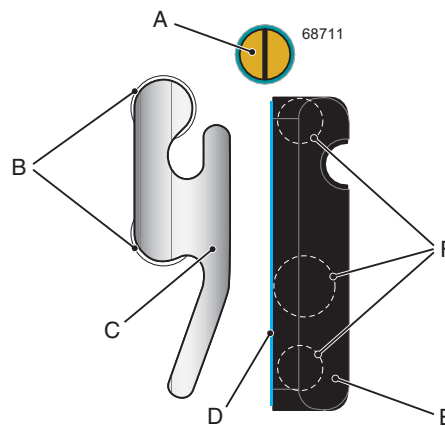


Figure 5. MidiEC printhead components

- Charge electrode (A)
- EHT plate (C) and mounting pillars (B)
- Deflector and Phase Plate (E) and mounting pillars (F)
- Face plate (D)
- The printed circuit board (PCB) to which these components are attached (the area shown with a circle in Figure 4 on page 8)

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- 6 Apply more solvent to the area shown with a circle in Figure 4 on page 8. Before the solvent dries, use a foam swab to carefully remove any ink deposits from the components identified in Figure 5 on page 9, as shown in Figure 6.



Figure 6. Clean the printhead components

Clean the following components:

- The reverse side of the EHT plate
- The EHT plate mounting pillars
- The DPP mounting pillars (on the side opposite the EHT plate)

Continue until any ink deposits that remain are removed.

- 7 Apply more solvent to the components. Before the solvent dries, use a foam swab to carefully remove any ink deposits from the following components:

- The DPP
- The EHT plate
- The PCB (in the area shown with a circle in Figure 4 on page 8)

Continue until any ink deposits that remain are removed.

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- 8 Continue to remove any ink deposits that remain with the solvent and foam swabs. Allow the components to dry.

NOTE: Allow a minimum of 10 minutes for the printhead to dry completely before you start the printer (this may take up to 20 minutes on a cold day). This is important as the printer may fail on startup if the printhead is not completely dry.

- 9 Remove any ink from the inside of the printhead cover tube with Linx food grade solvent 6600, as shown in Figure 7, and allow to dry.

NOTE: Allow a minimum of 10 minutes for the printhead cover tube to dry completely before you refit the tube (this may take up to 20 minutes on a cold day).

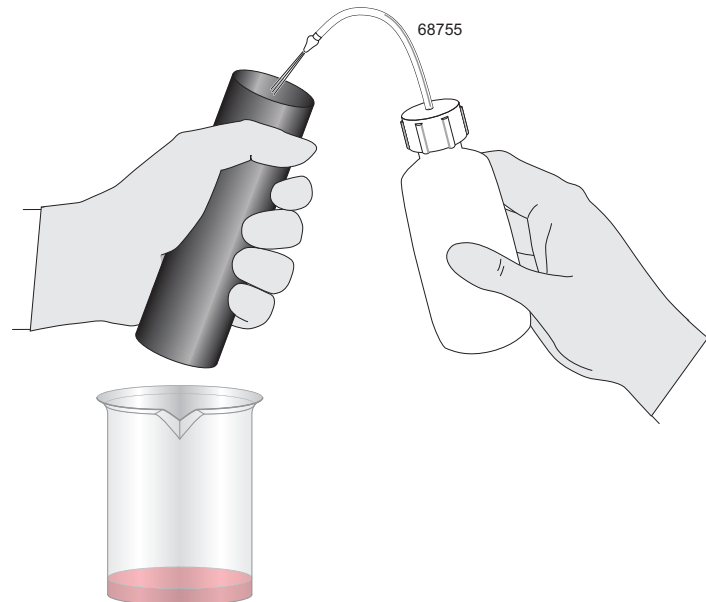


Figure 7. Clean the printhead cover tube

- 10 Refit the printhead into the printhead cover tube and tighten the securing screw.

3.2.1 Event messages

If the printer fails with the following event messages, use the procedure described above to clean the printhead:

- 2.02 Phase Failure
- 2.03 Time of Flight Failure
- 2.09 Misaligned Ink Jet

If the problem continues, perform a Nozzle Clear or Nozzle Flush sequence. Refer to the *Linx 5900 & 7900 Quick Start Guide* for more information.

Linx 7900



How To Use QuickSwitch Plus Product Selection

LINX

THINKING ALONG YOUR LINES



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1 Introduction

This document describes how to use QuickSwitch Plus functionality to create product selections. Product selections allow you to make quick and error-free changes between messages and printer settings for a range of products that need to be coded. You can connect a PC, Programmable Logic Controller (PLC), or barcode scanner to your printer to enter data to create product selections. The examples in this document assume that you use a barcode scanner to enter data.

For example, when a product barcode is read, the printer can select a message for printing, insert data from that barcode into the message, and also configure some print settings.

QuickSwitch Plus product selection can also simplify the import of data into messages and the creation of multiple message configurations for similar, but slightly different, products. Again, product data can be imported from sources like scanned barcodes.

You need a User Level C password to configure the product selection functionality described in this document. Users at all levels can use the functionality after it is configured.

1.1 Health and safety

Make sure that you read and understand the Health and Safety information in the 'Safety' chapter of the *Linx 5900 & 7900 Quick Start Guide*.



2 Product selection

Message data for a product selection is read from a barcode on a product or worksheet. The barcode scanner uses QuickSwitch® to send the data to the printer. This data is used as a product key to load a particular product selection. A product selection can contain the following data:

- Message
- Date offset
- Remote field data
- Print Delay
- Print Width
- Orientation
- Print Height

Product selection has the following benefits:

- It reduces the chances of user error when you enter or edit message data.
- It allows you to configure a printer quickly and reduces printer downtime (for example, time spent to configure messages for multiple products that require different print delays or orientations).
- It simplifies message management. If a company has a large number of products there is no need to create a new message for each product where the message data only varies slightly between the products. You can simply create one message for a similar set of products and populate the message with the required data. A smaller set of messages also reduces the chance of incorrect data being selected.
- It allows closer integration of message creation and message management on a production line.

2.1 How to use product selection

2.1.1 Message selection

You can use product selection to quickly select a different message for each product that is coded. This functionality is already available through QuickSwitch®, but if you use QuickSwitch® to select a message from a barcode scan, the message must have the same name as the barcode data. Product selection allows you to match imported data to a message with a more memorable name.

A message can be selected in a number of ways, for example:

- From a scan of a barcode on the product.
- From a scan of a sheet of barcodes that contains details of print jobs.

How To Use QuickSwitch Plus Product Selection



2.1.2 Single message for multiple similar products

As well as being able to use a barcode to select a message, product selection can also populate remote fields with data and apply an offset to a date or time field in a message. If there are a large number of messages for many different products, you can use product selection to reduce the number of messages that you need to cover all products.

Example 1

A manufacturer may have multiple messages for different products, where the only difference between printed messages is the use-by date and the product name. Sometimes a large number of different messages is created because there are minor changes in message content. If you use product selection, you can use only a single message with its associated configuration to print the required information. You can scan data from different barcodes to change the message content.

Example 2

A manufacturer has a number of products that are coded with a message that contains only one variable which is a text field that records the product size. If you use product selection, you can use a single message with a remote field. Input data is scanned from a barcode to insert the correct product size information in the remote field.

2.1.3 Multiple different products

If you print on many different products with different packaging you can use product selection to quickly set up print parameters, for example Print Delay or orientation, for multiple messages.

2.2 Configure communication settings

To use product selection, you must first configure the printer communications settings. Product selection functionality is currently only available with QuickSwitch®.

- 1 Navigate to the **RS232 Protocol** page from the **Print Monitor** page (**Menu > Setup > Communications > Protocol > RS232 Protocol**) and select the **QuickSwitch** option.

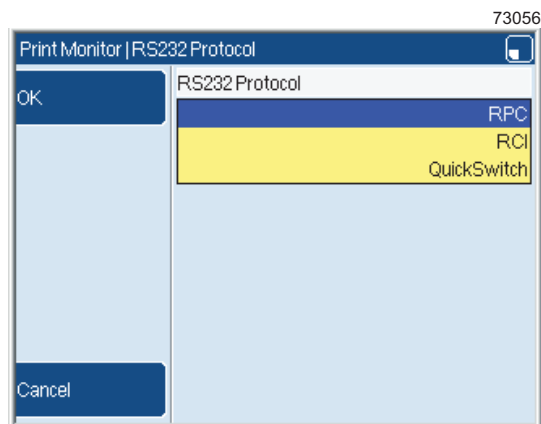


Figure 1. RS232 Protocol page: QuickSwitch option

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- 2 To configure QuickSwitch® to work with product selection, navigate to the **Mode** page (**Menu > Setup > Communications > Protocol > QuickSwitch Setup > Mode**) and select the **Product Selection** option.

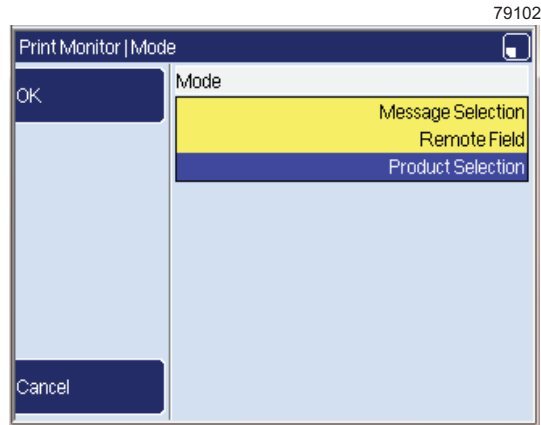


Figure 2. Mode page: Product Selection option

- 3 Press **OK** to return to the **QuickSwitch Setup** page.

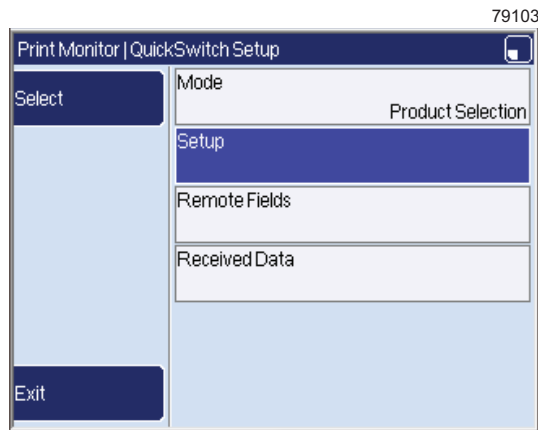


Figure 3. QuickSwitch Setup page

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- 4 Select the **Setup** option to display the **Setup** page. Scroll down to see all the available options.

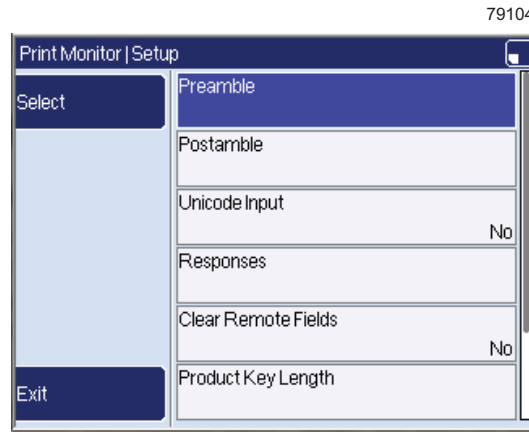


Figure 4. Setup page

- 5 For the **Preamble** and **Postamble** options, which allow you to set control characters for data transmission, you can create strings of undefined length. These strings depend on the configuration of the barcode scanner that is attached to the printer. Select the **Preamble** or **Postamble** option to open a text edit box where you can enter the required string. To insert any control characters (for example, 'STX' or 'ESC'), you can select these from a list or enter them in the text edit box within square brackets (for example, '[ESC]'). Control characters that are selected from the list appear in the text edit within square brackets (for example, 'AX[STX][ESC]').

NOTE: For information about the **Unicode Input**, **Responses**, and **Clear Remote Fields** options for QuickSwitch®, refer to *How To Use the Communications Options*.

- 6 If you want to use only some of the data as input (for example, the first five characters of a scanned barcode that describe the product name and not other characters that describe the batch number or date), you can use the **Product Key Length** option to define which part of the input data is used as the product key.

Select the **Product Key Length** option to display the **Product Key Length** page.

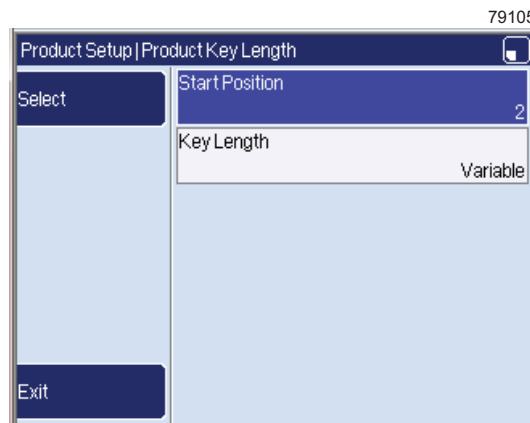


Figure 5. Product Key Length page

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The **Start Position** option allows you to specify the first character to use from the input data (for example, for the data 'ABCDEF', the character 'B' is used as the first character of the input data if the start position number is set to '2'). Select the required start position number.

- 7 Select the **Key Length** option to display the **Key Length** page.

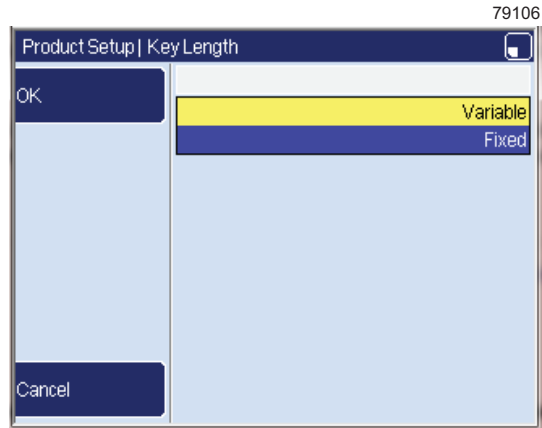


Figure 6. Key Length page

You can select either **Variable** or **Fixed**. If you select the **Variable** option, all the input data from the specified start position onwards is used as the product key, regardless of length. If you select the **Fixed** option, you can specify a fixed length for the input data used as the product key. An additional option, **Number of Characters**, becomes available on the **Product Key Length** page.

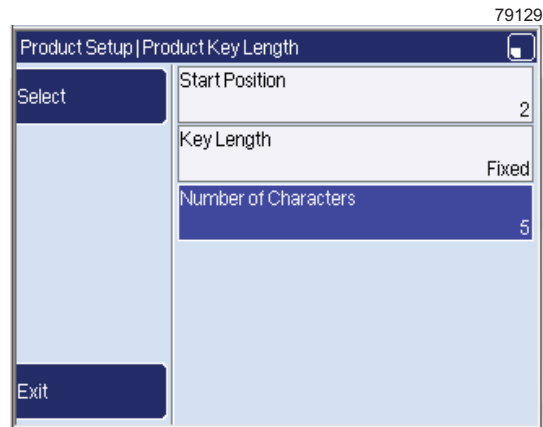


Figure 7. Product Key Length page: Number of Characters option

You can use this option to specify the total number of characters (including the start position character) to be used from the input data as the product key. Enter the required number of characters.

How To Use QuickSwitch Plus Product Selection



2.2.1 Key length examples

Example 1—Variable option

The input data from a scanned barcode is as follows:

Input data: A12004170214.

If the **Start Position** option is set to '2' and the **Key Length** option is **Variable**, the product key is '12004170214' ('A12004170214').

Example 2—Fixed option

The input data from a scanned barcode is as follows:

Input data: AC2136170214Q123.

If the **Start Position** option is set to '2', the **Key Length** option is **Fixed**, and the **Number of Characters** option is set to '5', the product key is 'C2136' ('AC2136170214Q123').

If you use the **Fixed** option, other data from the barcode can be used to populate remote fields in a message.

For example, the next six characters ('170214') can be used to represent a sell-by date (that is, 17th February 2014). The final four characters ('Q123') can be used to represent a batch code.

If another barcode (for example, 'BC2136220314Q166') is subsequently scanned, the same message is selected because the product key ('C2136') is the same, but different data is used to populate the remote fields in the message.

- 8 The **On Invalid Product Key** option is used to configure printer behaviour (while in the 'Printing' state) if an unrecognised product key is scanned or if no configuration for the key exists. You can select either **Warn and Ignore** or **Warn and Pause Print**.

In both cases, the printer displays the '3.36 Invalid Product Key' system warning.

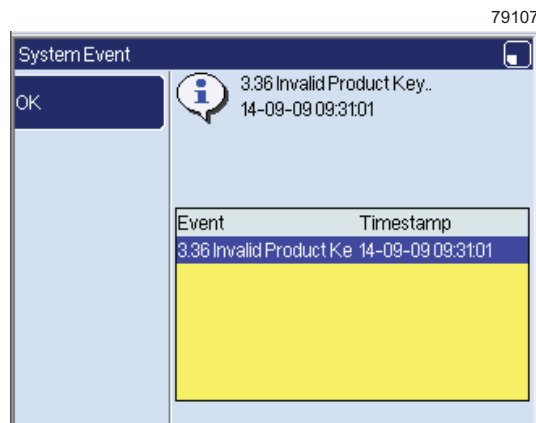


Figure 8. '3.36 Invalid Product Key' warning page

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If the **Warn and Ignore** option is selected, the printer reports the '3.36 Invalid Product Key' system warning, but continues to print the currently selected message. You can use this option if there are problems with the barcodes, or if a product contains other barcodes that need to be ignored.

If the **Warn and Pause Print** option is selected, the printer reports the '3.36 Invalid Product Key' system warning and pauses the print (if the printer is in the 'Printing' state). This prevents incorrect data being printed.

- 9 The **Pause and Prompt on Product Selection** option can force the printer to pause the print when a new product is selected (for example, if manual inspection of products is required for quality control). If required, it also allows you to update any prompted fields in a message (usually, when a message that contains prompted fields is selected remotely, the field entries default to their last known value).

If the option is set to **Yes**, and the printer is in the 'Printing' state, the print is paused when new input data is loaded. The new product message is selected and a confirmation page is displayed (as shown in Figure 9). The confirmation page is displayed until you dismiss it.

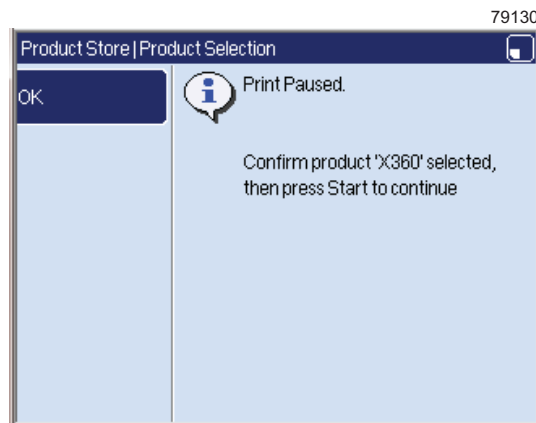


Figure 9. Product Selection confirmation page

Press **OK** to confirm that you want to continue the print job with the new data. You must then use the **Start** key to manually resume the print from the **Print Monitor** page. If there are any prompted fields in the selected product message, you are first prompted to enter the required information after the confirmation page is dismissed.

The **Pause and Prompt on Product Selection** option defaults to **Yes**. If the option is set to **No**, the printer pauses the print, selects the new product message, ignores any prompted fields, and then automatically starts to print the new product message.

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When you select a new product, the **Print Monitor** page displays the title 'Current Product' with the product selection name below, instead of the normal title ('Current Message'). This is to avoid confusion, because a product name does not have to be the same as that of the message associated with it and a single message can be used for multiple products. As shown in Figure 10, the current product selection is called 'SMALL BEANS'.

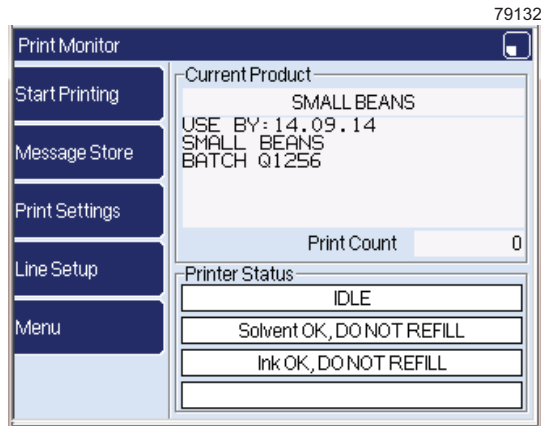


Figure 10. Print Monitor page: Current Product

If a message is selected, the **Print Monitor** page reverts to display the title 'Current Message', with the message name below.



3 Create a product selection

IMPORTANT: Before you start, you must first create any messages that will be associated with product selections, and then configure the parameters in those messages (for example, Print Delay and Print Width). For the best results, configure the message that is associated with each product selection and test that message on a production line to make sure it is configured correctly.

After you create your messages, you can enter input data to create a product selection (see below), and then associate a message with that product selection. If required, you can also configure time and date offsets and remote fields for the product selection.

NOTE: You cannot create a new product selection if the printer is in the 'Printing' state. Pause or stop printing before you continue.

3.1 Enter data for a product selection

To enter data for a product selection:

- 1 From the **Print Monitor** page, select **Menu > Stores > Product Store**. The **Product Store** page is displayed.

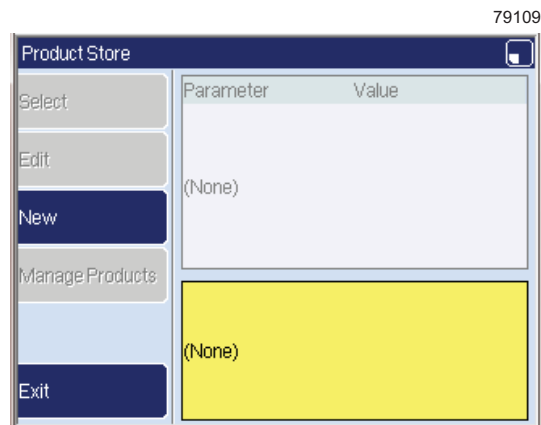


Figure 11. Product Store page

How To Use QuickSwitch Plus Product Selection



- 2 Press **New** to display the **Confirm Input Data** page, where you can enter the input data, for example from a barcode scanner.

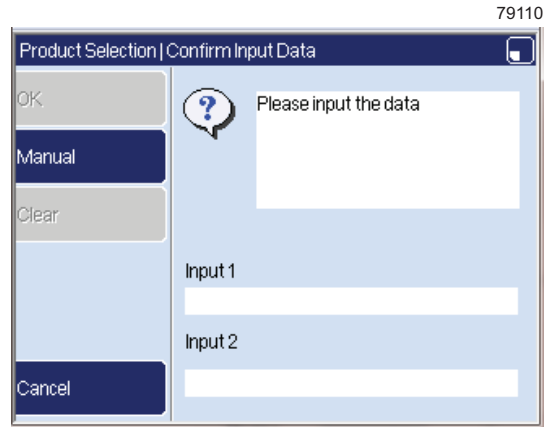


Figure 12. Confirm Input Data page

The **Confirm Input Data** page is displayed with scanned barcode data displayed in the **Input 1** text box, highlighted in yellow.

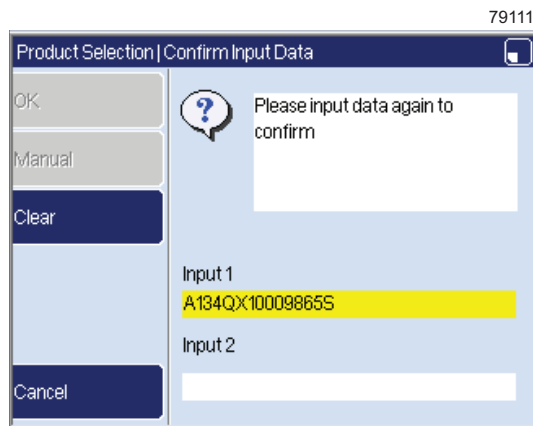


Figure 13. Confirm Input Data page: Input 1

How To Use QuickSwitch Plus Product Selection



If the scanned data does not contain enough characters to match the product key length parameter (see 'Configure communication settings' on page 4), a warning message is displayed.

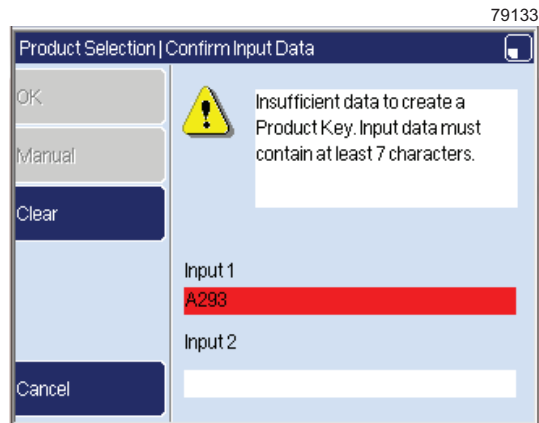


Figure 14. Confirm Input Data page: insufficient data warning

Check the communication settings to resolve any problems.

- 3 Scan the required barcode again to verify that the data matches. If the data in the **Input 1** and **Input 2** text boxes matches, the data in both fields is highlighted in green.

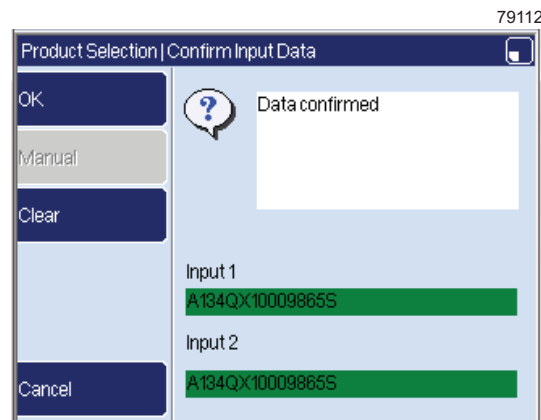


Figure 15. Confirm Input Data page: Data confirmed

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If the data in one of the text boxes does not match the data in the other text box, both boxes are highlighted in red and the **OK** key is disabled.

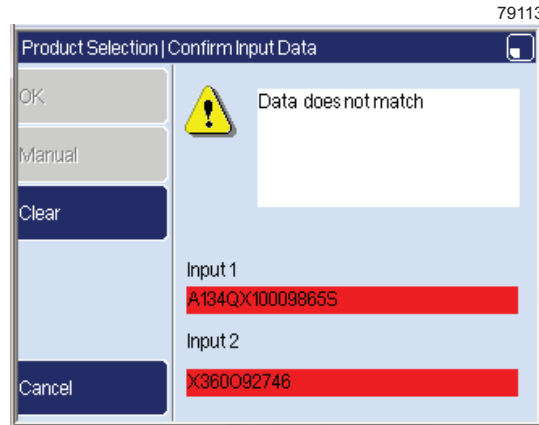


Figure 16. Confirm Input Data page: Data does not match

To clear data from both boxes, press the **Clear** key. You can then enter the data again.

- 4 When the input data is correct, press **OK** to display the **Product Setup** page (see 'Product Setup page' on page 15).

3.1.1 Manual data entry

If you need to enter data manually, you can use the **Manual** key on the **Confirm Data Input** page. This displays the **Manual** page with a text edit box.

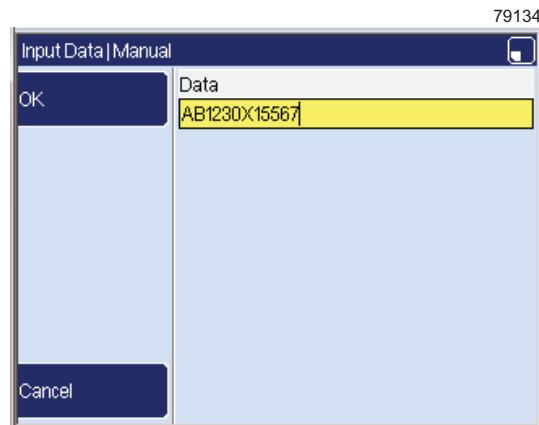


Figure 17. Manual page: text edit box

Enter the required data for the **Input 1** text box, and then press **OK** to return to the **Confirm Data Input** page. Repeat the process to enter data for the **Input 2** text box. When the input data is correct, press **OK** on the **Confirm Input Data** page to display the **Product Setup** page (see 'Product Setup page' on page 15).

How To Use QuickSwitch Plus Product Selection



3.2 Product Setup page

The **Product Setup** page allows you to enter a more memorable name for a product, edit the input data used, and select a message to associate with the product selection.

When a message is selected, you can configure any remote fields and date and time offsets for fields in the message. You can also edit parameters (for example, Print Width or Print Delay) that are used in the message for the product selection, although Linx recommends that this is done before you create your product selections.

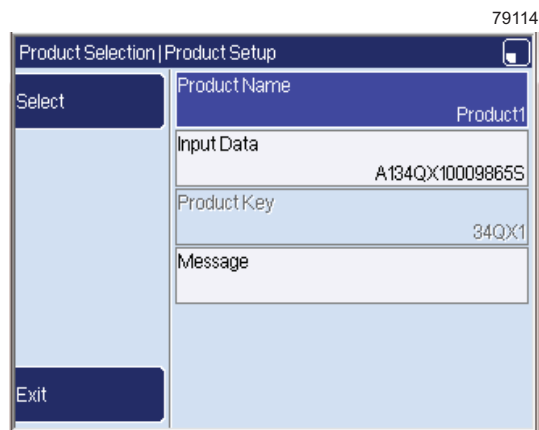


Figure 18. Product Setup page

The following options are available on the **Product Setup** page:

- **Product Name**—This option initially defaults to 'Product', followed by a unique number (for example, 'Product2'). You can use this option to enter a more memorable name for the product selection (for example, 'SMALL BEANS').

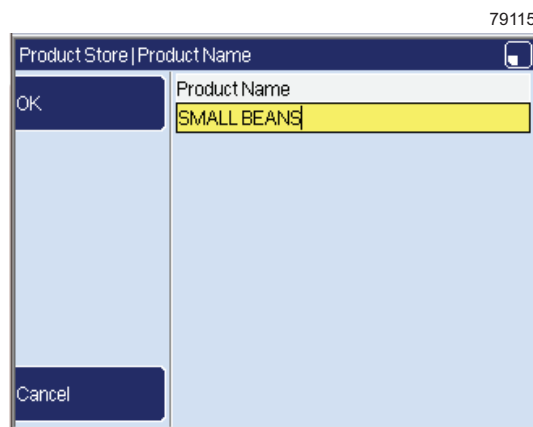


Figure 19. Product Name page

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- **Input Data**—This option displays the input data. Select this option to change the input data on the **Confirm Input Data** screen.
- **Product Key**—This option shows which part of the input data is used as the product key (see **Product Key Length** option on page 6 for more information). You cannot edit this option.
- **Message**—Use this option to display the **Message Store** page, where you can select an existing message on the printer to associate with the input data and configuration. You cannot select a message that contains production schedules.

NOTE: You must create the required message before this step. See 'Important' note on page 11.

When a message is selected, additional options become available on the **Product Setup** page (scroll down to see all the options).

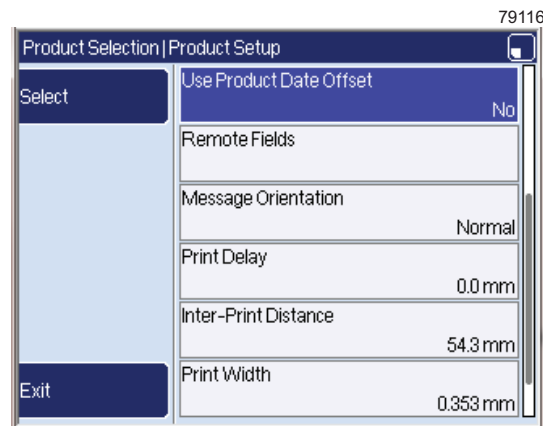


Figure 20. Product Setup page: additional options

These additional options are:

- Use Product Date Offset
- Date Offset
- Remote Fields
- Message Orientation
- Print Delay
- Inter-Print Distance
- Print Width
- Print Height

3.2.1 Date and time offsets

You can specify a date or time offset that overrides any offset in the selected message. As described in 'Single message for multiple similar products' on page 4, this allows you to use a single message for many products.

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If the selected message contains date or time fields, the **Use Product Date Offset** option is enabled on the **Product Setup** page. If this option is set to **Yes**, the **Date Offset** option is enabled (see Figure 21). You can use this option to configure date and time offsets. Refer to the *Linx 5900 & 7900 Quick Start Guide* for more information about how to use offsets.

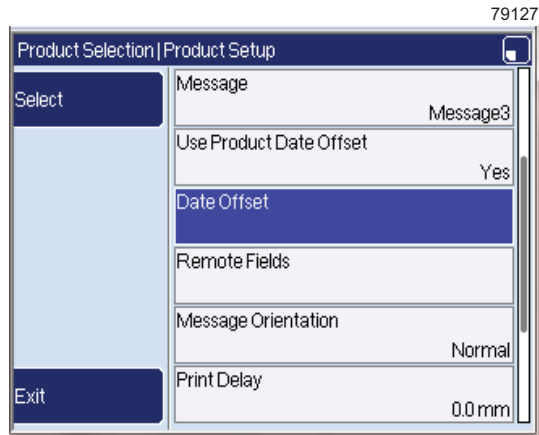


Figure 21. Product Setup page: Date Offset option

NOTE: Any product date offset is applied to all date or time fields in the selected message.

3.2.2 Remote fields

If the selected message contains remote fields, the **Remote Fields** option is enabled. Select this option to display the **Remote Fields Editor** page.

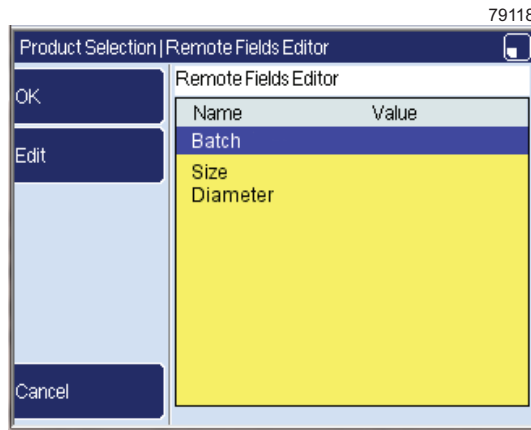


Figure 22. Remote Fields Editor page

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This page displays all the remote fields in the selected message with their name and current value. To enter data into any of these remote fields, select the required field, and then press **Edit** to display the **Edit Remote Field** page.

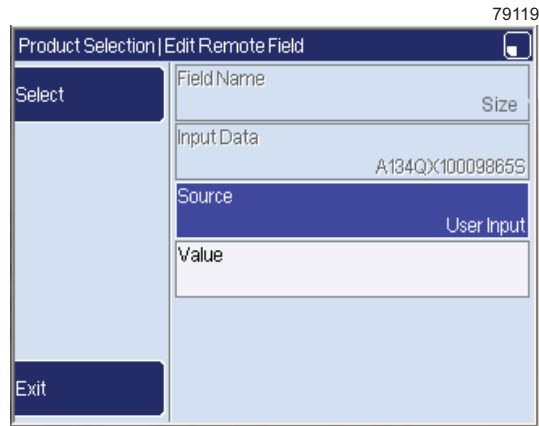


Figure 23. Edit Remote Field page

The following options are available:

- **Source**—This option allows you to select the data source for a remote field. Select either **User Input** (for data that is entered manually), or **Input Data** (for data that is read from a barcode).

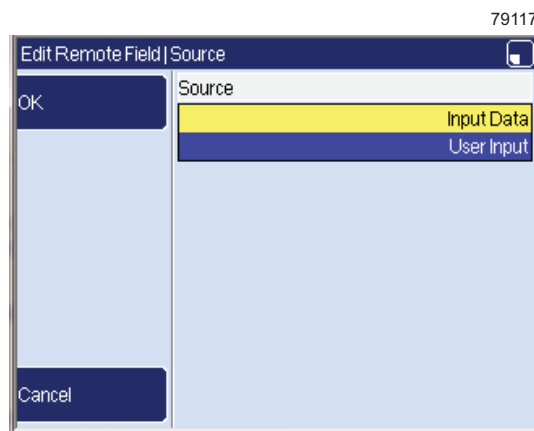


Figure 24. Source page

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- If **User Input** is selected, you can select the **Value** option to enter data into a text box (for example, 'SMALL'). You cannot enter more characters than the remote field can accept.

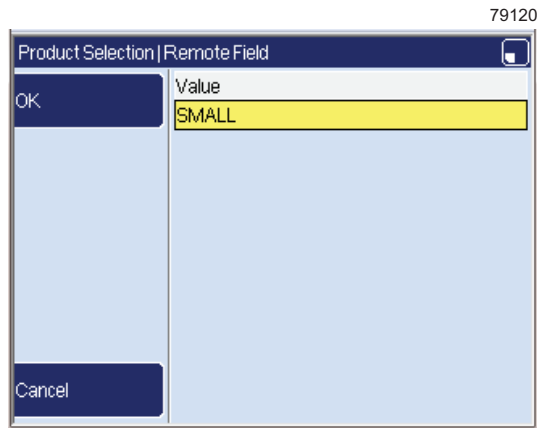


Figure 25. Remote Field page: Value option

The text that you enter is displayed in the **Value** option on the **Edit Remote Field** page, as shown in Figure 26.

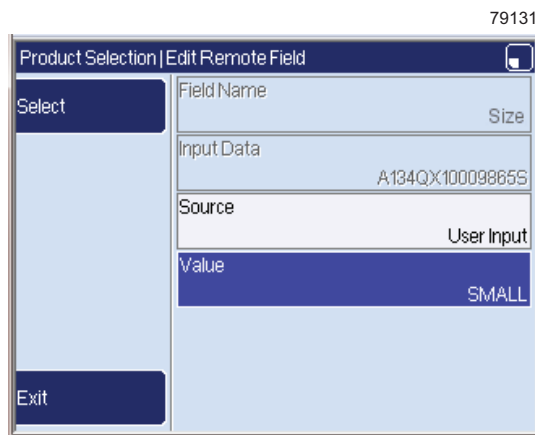


Figure 26. Edit Remote Field page: Value option

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If **Input Data** is selected, the **Edit Remote Field** page is displayed with two new options—**Start Position** and **End Position**. The **Value** option shows the scanned input data and you cannot edit it.

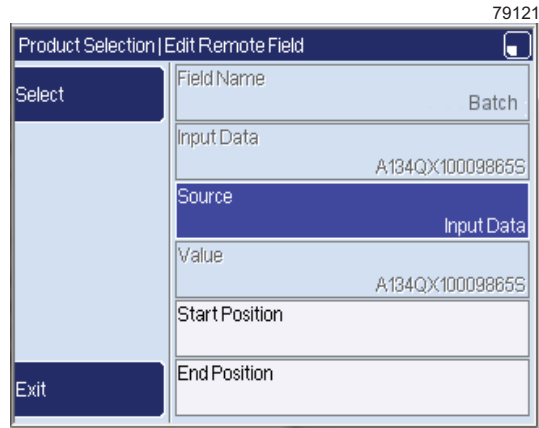


Figure 27. Edit Remote Field page: Input Data option

- **Start Position**—This option sets the start character for the remote field data. You can select the required character from a list.

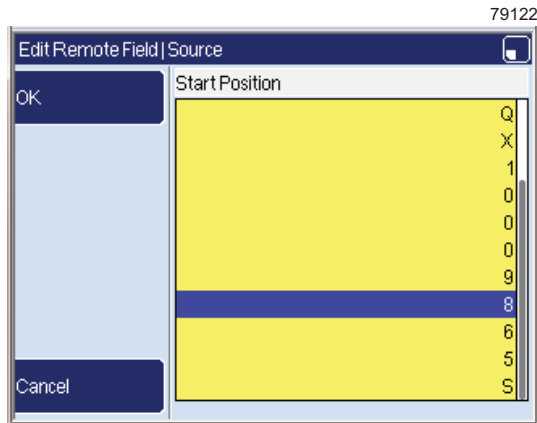


Figure 28. Source page: Start Position

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- **End Position**— This option sets the end character for the remote field data. You can select the required character from a list.

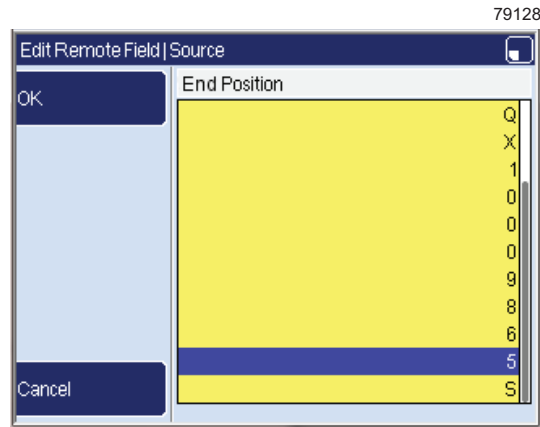


Figure 29. Source page: End Position

When the start position and end position are selected, the **Value** option shows the input data that is used. For example, in Figure 30, for the scanned barcode data is 'A134QX10009865S', the start position is '12' and the end position is '14'. The data used for the 'Batch' field is '865'.

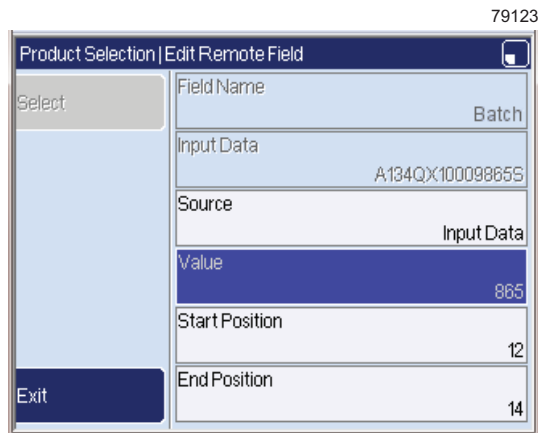


Figure 30. Edit Remote field page: Start Position and End Position options

NOTE: With this setup you can use another barcode to provide different data for the 'Batch' field, if the barcode contains the same product key. For example, if the scanned barcode is 'A134QX15009921S', the 'Batch' field data is '921'.

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Press **Exit** to return to return to the **Remote Fields Editor** page to review the data for the remote fields in the message.

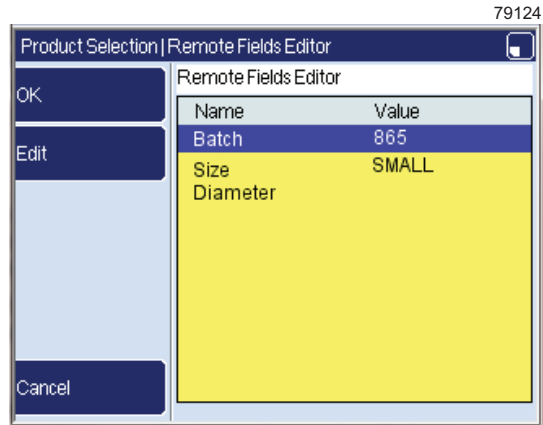


Figure 31. Remote Fields Editor page: field data

You can set the Start and End positions to extract other data from barcodes. For example, for the barcode 'A134QX10009865S', if the Start Position is '7' and the End Position is '9', the data for the 'Diameter' field is '100', as shown in Figure 32.

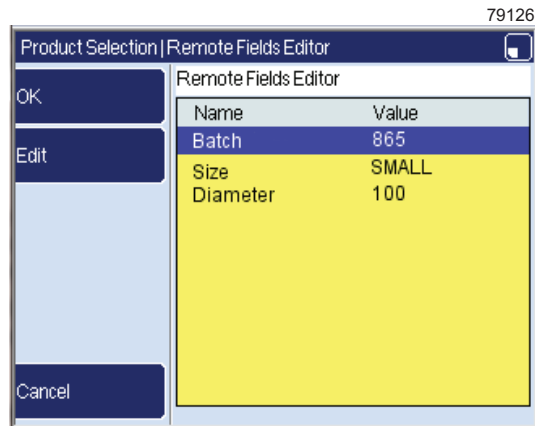


Figure 32. Remote Fields Editor page: Diameter field

3.3 Edit product selection parameters

The following options are available on the **Product Setup** page when a message is selected:

- Message Orientation
- Print Delay
- Print Width
- Print Height

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The parameters for these options are associated with a unique product selection. Linx recommends that you set these parameters for messages that you will associate with product selections before you create product selections. If you edit the parameters after a product selection is created, some differences can occur in the messages printed on the production line.

To set these parameters for the current print message, select the option you require, and then edit the value on the page that is displayed. Press **Apply**, and then **OK** to save your changes and return to the **Product Setup** page.

NOTE: If the message associated with the product selection is not the current print message, you cannot apply these settings to that message.

3.4 Save the product selection

When you have configured all the required parameters, press **Exit** at the **Product Setup** page. You are asked to save the product selection to the **Product Store**.

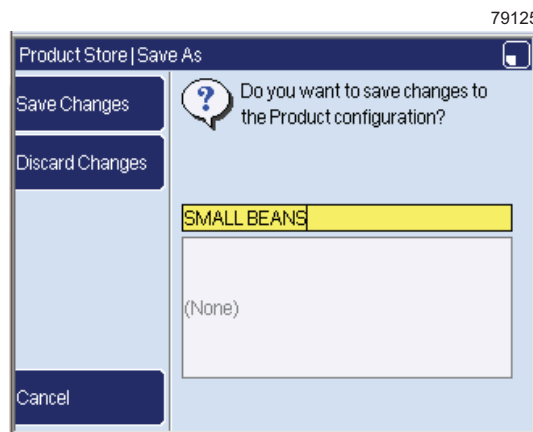


Figure 33. Save As page

The default name of the product selection is the product name created in the **Product Name** option (see 'Product Setup page' on page 15). If you enter a different name, the **Product Name** parameter changes to show this new name.

3.5 Manage and edit product selections

You can copy, rename, or delete entries in the **Product Store** in the same way as other stores on the printer (for example, the Message Store). Refer to 'Manage Your Messages' in the *Linx 5900 & 7900 Quick Start Guide* for more information.

After you create a product selection, you can edit the message associated with it. For example, you can add a Text field, Prompted field, or Remote field, or enter new input data from a barcode. Refer to the *Linx 5900 & 7900 Quick Start Guide* for information about how to edit messages.

For example, you can use the **Manage Products** option in the **Product Store** to use a single message for two similar products. If you have two products (for example, 'SMALL BEANS' and 'LARGE BEANS') that have different values for the 'Size' remote field, create a copy of the 'SMALL BEANS' product selection. You can then edit the product key and the value of the 'Size' remote field so that you can use the product selection to print the 'LARGE BEANS' data.



4 Error checks

When you select a product (for example, with a barcode scan), the printer performs a number of checks to make sure that the selected configuration is correct. For example, if you edit or delete a message on the printer that was previously associated with a product selection, errors can occur. The printer can report the following warnings.

4.1 '3.36 Invalid Product Key'

If an unrecognised product key is scanned, or if no configuration for the key exists, the '3.36 Invalid Product Key' system warning is reported. Refer to the **On Invalid Product Key** option on page 8 for more information.

4.2 '3.37 Incomplete Data for Product Selection'

When a product key is scanned, the printer checks to make that sure that:

- The message associated with the product key still exists.
- If the a message contains remote fields, there are enough remote fields, with the correct names and field size, to accept the downloaded data.

If either of these checks fails, the '3.37 Incomplete Data for Product Selection' system warning is reported.

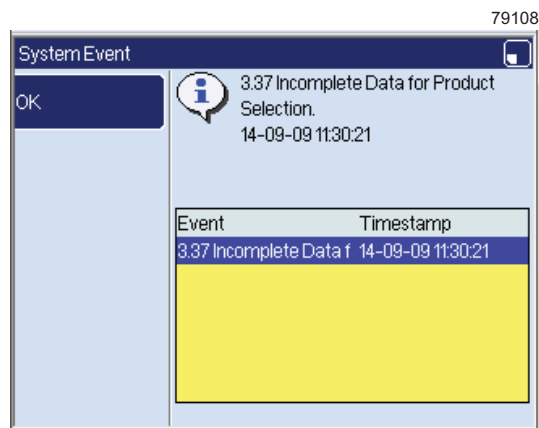


Figure 34. '3.37 Incomplete Data for Product Selection' warning page

You can configure the printer alarms to alert you if these warnings are reported (refer to *How to Change the System Setup* for more information about alarms).



5 Configuration example

The following example describes how you can use product selection in a production environment.

5.1 Scenario

A customer has two similar products ('LARGE BEANS' and 'SMALL BEANS') but each product has a different sell-by date, product name, and batch number, as shown in Figure 35.

79135

PRODUCT:	LARGE BEANS
SELL BY:	22/09/2014
BATCH NUMBER	Q446 LINE 1
PRODUCT:	SMALL BEANS
SELL BY:	22/06/2014
BATCH NUMBER	Q879 LINE 1

Figure 35. Product details

The highlighted fields show that the messages for both products are very similar. Product selection allows you to use a single message to print both sets of information.

The example uses the following assumptions:

- The barcode scanner for the input data is configured with the correct preamble and postamble options.
- The first four characters of the barcode uniquely identify the product.
- The batch number is encoded in characters 10 to 13 of the barcode.
- The printer is used on a number of production lines in the factory. The barcode data does not show the line that is used.

5.1.1 Configure the communication settings

First, you must first configure the communication parameters, as described in 'Configure communication settings' on page 4. In this example, the product key length is set to '4' and the product key starts at the first character of the scanned input data.

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After the communication settings are configured, you can create a message (called, for example, 'BEANS TEMPLATE') which you can associate with several different products.

79136

PRODUCT:	LARGE BEANS		
SELL BY:	22/09/2014		
BATCH NUMBER	Q446	LINE	1

KEY	TEXT FIELDS
	DATE FIELDS
	REMOTE FIELDS
	PROMPTED FIELDS

Figure 36. Example message template

As shown in Figure 36, the example message contains four text fields, a date field, two remote fields, and a prompted field. The prompted field allows you to manually enter the number of the production line before you print the message.

In the above example, you can scan a barcode to enter the product name and batch number in the remote fields. The barcode can also contain a date offset that changes the sell-by date. When you create the remote fields in the message, you are recommended to set the **Auto Reload** option on the **Insert Remote Field** page to **No**. Otherwise, data that was previously used for the remote field is reloaded when the printer restarts.

NOTE: If the barcode input already contains data that includes a sell-by date, you could replace the date field in the message with another remote field, and then get the date from the scanned barcode.

After you create your message, you can select it to print, and then configure the print parameters (for example, Print Delay and orientation). If required, you can use the remote fields editor to insert test values for the remote fields in the message.

NOTE: Any new product selection that you create uses the current print parameters and message parameters as default values. If required, you can change the values (see 'Edit product selection parameters' on page 22).

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5.1.2 Configure the first product selection

You can now create a new product selection to associate with the 'BEANS TEMPLATE' message. Follow the instructions in 'Create a product selection' on page 11 to scan a barcode associated with the required product. This can be the product itself, or another source (for example, a job sheet or product catalogue). The **Product Setup** page is displayed.

79140

Product Selection | Product Setup	
Select	Product Name Product1
	Input Data C13622914Q446
	Product Key C136
	Message BEANS TEMPLATE
	Use Product Date Offset No
Exit	Remote Fields

Figure 37. Product Setup page: BEANS TEMPLATE message

Because the 'BEANS TEMPLATE' message is the currently selected message, most of the product selection parameters are already set, because they were defined when the message was created. To complete the product selection, you can set a date offset and configure the remote fields in the message (see 'Date and time offsets' on page 16 and 'Remote fields' on page 17). For the 'PRODUCT' remote field, you can set a static value of 'LARGE BEANS'. The 'BATCH NUMBER' remote field uses the data ('Q446') from characters 10 to 13 of the input data from the scanned barcode, as shown in Figure 38.

79141

Product Selection Remote Fields Editor							
OK	Remote Fields Editor						
Edit	<table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Batch Field</td> <td>Q446</td> </tr> <tr> <td>Product Name Field</td> <td>LARGE BEANS</td> </tr> </tbody> </table>	Name	Value	Batch Field	Q446	Product Name Field	LARGE BEANS
Name	Value						
Batch Field	Q446						
Product Name Field	LARGE BEANS						
Cancel							

Figure 38. Remote Fields Editor page: Batch Field and Product Name Field

The product selection parameters are now set, and you can save the product selection with a memorable name (for example, 'LARGE BEANS'), and then scan the barcode to test that the product selection operates correctly.

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5.1.3 Configure the second product selection

To create a second product selection for the 'SMALL BEANS' product, you can repeat the steps that you performed to create the 'LARGE BEANS' product selection, and then change the parameters as required.

Alternatively, you can use the **Manage Products** page to create a copy of the 'LARGE BEANS' product selection (see 'Manage and edit product selections' on page 23). Then do the following to create the 'SMALL BEANS' product selection.

- Edit the value of the 'Product Name Field' remote field (you do not need to edit the 'Batch Field' because the value is taken from the barcode scan).
- Change the **Product Name** field on the **Product Setup** page to 'SMALL BEANS'.
- Edit the date offsets, as required.
- Scan the new product barcode to input the new product key.

NOTE: If the two products have different print parameters (for example, Print Delay or Print Height), you can use the **Apply** button on the edit pages to make some test prints until they are correct (see 'Edit product selection parameters' on page 22).

Save the new product selection with a memorable name (for example, 'SMALL BEANS'), and then scan the barcode to make sure that the product selection operates correctly.

IMPORTANT: If you use a barcode reader to scan products on a production line, there can be a delay in the message selection when you change the product selections. If the speed of the message selection is important, Linx recommends that you do not use a barcode reader on a production line.

Example product selections

When the barcode data 'C13622914Q446' is scanned, the product selection creates the 'LARGE BEANS' message in Figure 35 on page 25. 'C136' is the product key, '22914' represents the sell-by date, and 'Q446' is the batch number.

When the barcode data 'C14022614Q879' is scanned, the product selection creates the 'SMALL BEANS' message in Figure 35 on page 25. 'C140' is the product key, '22614' represents the sell-by date, and 'Q879' is the batch number.

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5.2 Product selection process

Figure 39 shows the workflow for product selection when a product barcode is scanned (or other data is entered) on a printer in the 'Printing' state. Steps that are highlighted in blue show where user interaction is required.

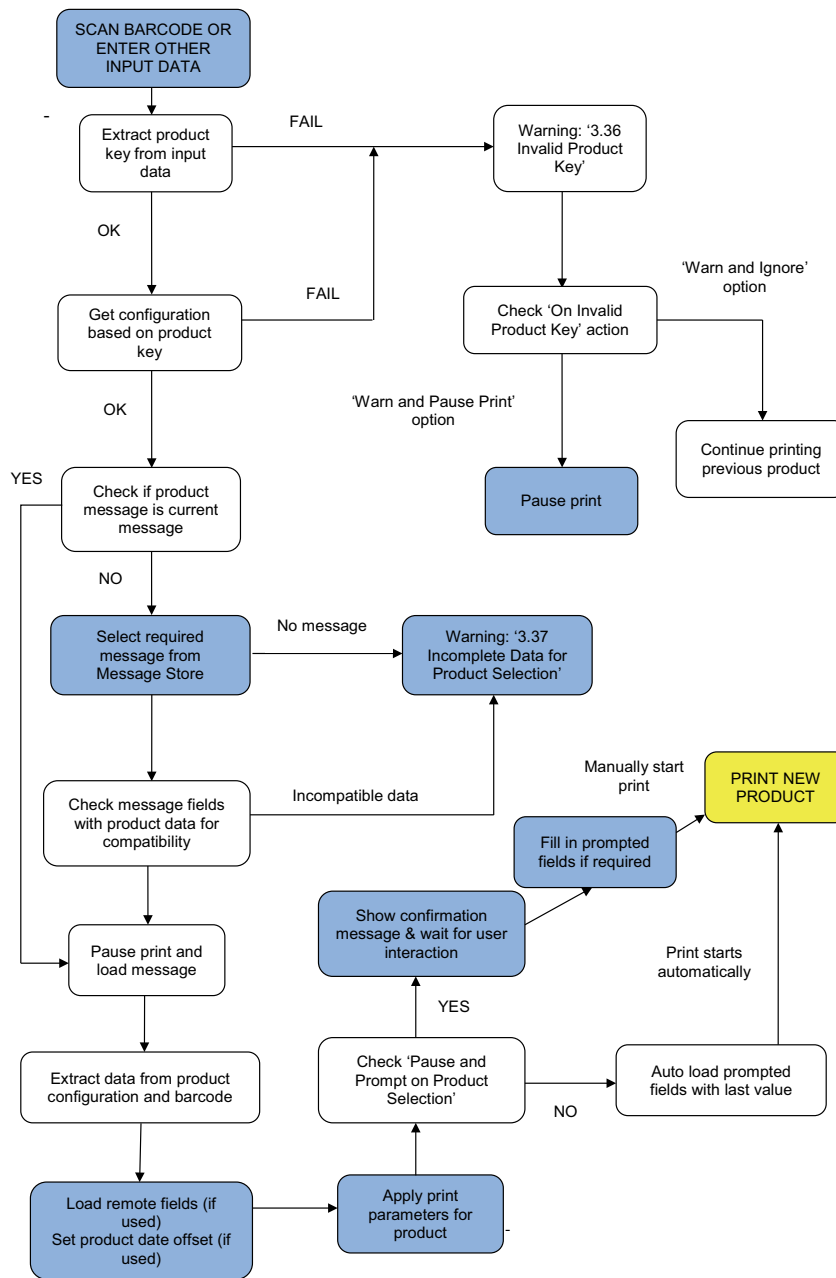


Figure 39. Product selection workflow