Linx 4900 Ink Jet Printer

Operating Manual

LINX

THINKING ALONG YOUR LINES

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At all times the printer must be operated with Linx approved spares and consumables. Maintenance not identified in this operating manual must be carried out by Linx engineers or its authorized distributors.

About this Manual

This manual describes how to operate the Linx 4900 Ink Jet Printer, a specialist printer system for use in production line environments for printing onto a wide range of substrates.
The information contained in this edition of the operating manual is applicable to software Version 1.0.

Products described in this operating manual are subject to continuous development, and reviews will be made accordingly in subsequent editions. Linx will be pleased to receive any correspondence relating to this operating manual and the information contained herein.

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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.

WARNING–EN55022: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Safety

Introduction

This section provides essential information concerning the precautions to be taken to ensure that all printer operations and routine maintenance are carried out with the maximum possible safety.

Therefore, it is essential that all operators of a Linx ink jet printer read and understand this safety section before attempting to operate it or to carry out any maintenance tasks on it.

About Safety Warnings and Cautions

At appropriate points within the text of this manual safety WARNING and CAUTION statements are provided. These are designed to draw your attention to information about the avoidance of hazards and safe handling of a product. Symbols often accompany these safety statements. NOTES also provide additional information, however, these are not safety related.

The different types of safety statements and associated symbols are defined below along with the conventions used in this operating manual.

Warnings

A WARNING alerts you to the possible hazards which may cause loss of life, physical injury or illness.

WARNING: THE GENERAL WARNING SYMBOL (SHOWN TO THE LEFT) ACCOMPANIES A WARNING OF POSSIBLE HAZARDS, HARMFUL OR POTENTIALLY LETHAL ACTIVITIES AND THE CONSEQUENCES OF IGNORING IT.

WARNING: THE MANDATORY EYE PROTECTION WARNING SYMBOL INDICATES THAT APPROVED EYE PROTECTION, WHICH CONFORMS TO EUROPEAN AND INTERNATIONAL SAFETY STANDARDS, MUST BE WORN WHEN CARRYING OUT INK OR SOLVENT RELATED ACTIVITIES.

WARNING: THE LETHAL VOLTAGE SYMBOL INDICATES THAT DANGEROUS VOLTAGES ARE PRESENT IN THE EQUIPMENT WHEN ELECTRICAL POWER IS APPLIED. THERE IS A DANGER OF DEATH OR INJURY FROM ELECTRIC SHOCK.

Cautions

CAUTION: A caution alerts you to activities that may cause damage to equipment or the environment but are not a direct danger to personnel.

Notes

NOTE: A Note provides additional information of an advisory nature or particular interest, but is not safety related.

NOTE: When the hand symbol accompanies a Note, this indicates that you should take particular notice of the information provided.

Printer Cover Security

The 4900 ink jet printer has a security locking device fitted to the printer cover, to prevent operators from opening the cover and subjecting themselves to the potential lethal electrical hazards contained within.

It is essential that operators do not attempt to open the printer cover, for any reason, whatsoever. Not only is there a danger of fatal or serious injury, but it may also void your Linx warranty.

WARNING: LETHAL VOLTAGE. DANGEROUS VOLTAGES ARE PRESENT IN THIS EQUIPMENT WHEN ELECTRICAL POWER IS APPLIED. THERE IS A DANGER OF DEATH OR INJURY FROM ELECTRIC SHOCK.

UNDER NO CIRCUMSTANCES ARE YOU TO ATTEMPT TO OPEN THE PRINTER COVER OR ATTEMPT TO REMOVE OR ADJUST ANY COMPONENTS FITTED WITHIN THE PRINTER. ONLY FULLY TRAINED, LINX APPROVED SERVICE ENGINEERS ARE QUALIFIED TO OPEN THE PRINTER COVER.

Operating the Printer

All personnel operating the printer must be aware of the hazards associated with ink jet printers. The following safety information should be made available to all personnel and is applicable to anybody in the printer's operating environment.

Only personnel who have been fully trained and authorized by Linx are qualified to operate or maintain Linx printers. If you are in any doubt as to your abilities to operate or maintain the printer, DO NOT DO SO; consult your supervisor for guidance or contact your local Linx distributor who will be happy to advise you.

- DO NOT smoke or use naked flames in the vicinity of the printer. The printer contains flammable inks and solvents

- ALWAYS ensure that the printer electrical supply is isolated prior to performing cleaning or maintenance activities. Lethal voltages are present in the printer cabinet and printhead when mains power is applied, which can cause death or serious injury if the correct electrical procedures are not observed. When an external alarm is connected to the printer alarm output, this must be disconnected before any maintenance activities are carried out.
  Never attempt to remove the printer cover. The printer cover must only be removed by fully trained, Linx approved service engineers

- ALWAYS check that all covers are correctly fitted to the printer before you use it. If you are not sure, ask your supervisor for guidance. Covers act as safety barriers and also ensure the printer retains its electromagnetic compatibility

- It is recommended that the printer is situated at least 600 mm from floor level for your comfort

Inks and Solvents

The effects of solvents and inks are potentially harmful. Whenever inks and solvents are used, the following precautions must be observed:

- BEFORE YOU START read the Material Safety Data Sheets. If you do not fully understand, 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

- Ensure that the printing area is adequately ventilated at all times when working on the printer, or with inks and solvents

- Wear safety eyeglasses that comply with the appropriate European and International Directives when handling inks and solvents. The eye protection symbol is shown in this manual, where appropriate, to remind personnel of the mandatory requirement to WEAR SAFETY GLASSES

- Wear approved, solvent resistant gloves. Barrier cream can be applied, but solvent resistant gloves must be worn when contact with inks or solvents is likely

- Store all inks and solvents in original containers, tightly closed, in a well ventilated cabinet away from any source of heat

- Remove all spilt ink and solvent, or build-up of ink deposits immediately, using the correct solvent type for the ink being used

First Aid

Precautions

Ensure that first aid information is readily available in the event of ingestion, inhalation, or contact with the skin or eyes.

Ideally, all operators should be trained in First Aid and should be aware of the 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 medical action to be taken if first aid is necessary.

Procedures

The following first aid procedures do not supersede any details stated in the Material Safety Data Sheets, which must be your prime source of first aid information.

Eye Contact

Contact lenses should be removed. Flush eyes copiously with clean running water and continue to do so for at least 10 minutes, holding the eyelids apart.

Obtain medical attention immediately.

Skin Contact

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.

Inhalation

Remove the affected person to fresh air immediately. Keep the affected person warm and at rest. If breathing is irregular obtain immediate medical attention.

Ingestion

If accidentally swallowed, obtain immediate medical attention. Wash out mouth with water and give 200 to 300 ml (half a pint) of water to drink. Keep at rest. Do NOT induce vomiting; obtain immediate medical attention.

In Case of Emergency

In an emergency situation you may need to stop the printer quickly. To do this:

- Switch the printer's wall mounted electrical isolator to the off position to shut off the electricity supply to the printer

- Alternatively, switch the printer mains power supply switch at the rear of the printer to the '**0**' (off) position

- Call for medical assistance as required

If possible, the printer should not be left in this state for a long period of time and should be restarted at the earliest possible opportunity to prevent ink blockages. If there is a hazard that prevents safe access to the printer's power supply, do not attempt to shutdown the printer, just vacate the area.

WARNING: IN ALL EMERGENCY CASES, REMOVE THE CASUALTY FROM THE HAZARD AND CHECK THE MATERIAL SAFETY DATA SHEETS FOR IMMEDIATE ACTION. EVACUATE THE CASUALTY TO MEDICAL AID IF REQUIRED.

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 and,
therefore, no legal requirement for ear protection to be worn when working
in the vicinity of this printer.

Contents

Contents

Using this Manual

How this Manual is Organized

The manual is structured as follows:

Chapter 1, 'Introduction' provides a short introduction to the 4900 printer system, principles of ink jet printing and an overview of the user interface software.

Chapter 2, 'Getting Started' describes how to switch the printer on, select a message, start and stop the printer, and power it down. It also introduces you to some fundamental controls and indicators of the 4900 printer system.

Chapter 3, 'Day-to-Day Operations' describes the day-to-day printer operations such as working with the current message, selecting another message, starting and stopping printing, and checking the printer status.

Chapter 4, 'Creating and Editing Messages' describes how to create and edit messages, including worked examples of how to create a message.

Chapter 5, 'Changing the System Setup' describes how to view and to make changes to the line and installation settings. Instructions on how to adjust the print parameters and set the time are provided in this chapter.

Chapter 6, 'Remote Interface Setup' describes how to define the various settings to enable the printer to communicate with a remote computer.

Chapter 7, 'Diagnostics and Maintenance' describes how to carry out diagnostic functions such as viewing the jet state and printing a test message. Also, how to perform routine maintenance, which includes daily inspections, cleaning the printer cabinet and printhead, replacing or replenishing ink and solvent, and replacing or cleaning the air filter.

Appendix A, 'Installation and Setup' describes how to install and set up the printer (in case you need to relocate the printer or make changes to ancillary equipment).

Appendix B, 'Printer Controls and System Menus' describes the General Control keys, keyboard keys, menu functions, and shortcut accelerator keys.

Appendix C, 'Line Speeds and Print Quality' describes how to determine the ideal production line speed to obtain optimum print quality. It lists the line speeds for each printer configuration and printhead type.

Appendix D, 'System Event Messages' details the 4900 printer system event messages including the cause and the recommended solution in each case.

Appendix E, 'Extended Character Sets' describes how to type European characters using the printer keyboard, and lists the alternative character sets and keyboards.

Appendix F, 'Technical Specification' provides technical data including printer dimensions, weight, power and environmental requirements.

Appendix G, 'EC Declaration of Conformity Certificates' contains the EU Declaration of Conformity certificates.

Appendix H, 'Training Documentation' contains the Linx training course 'Course One: Printer Operation (User Level A)'. This is designed to be used by line supervisors to train personnel how to operate a Linx 4900 printer.

How to Use this Manual

As a first step, read the **'Safety'** section and ensure that you fully understand the information contained in it.

Read Chapter 1, **'Introduction'** to get an overview of the 4900 ink jet printer system.

You should then follow at least some of the tasks described in the **'Getting Started'** chapter to familiarize yourself with some of the Printer Controls and System Menus. This chapter is designed for anyone new to the 4900 printer.

To get started creating a message, work through the step-by-step example in Chapter 4, **'Creating and Editing Messages'**.

Appendix B contains reference information for the printer controls and the display features. It is worth having a brief look at this appendix initially to see what information may be useful to you.

To see a detailed description of the full set of functions that the 4900 printer offers, refer to Chapters 3 and 4, which cover **Day-to-Day Operations** and **Creating and Editing Messages**, respectively.

Appendix C, **'Line Speeds and Print Quality'** lists the recommended line speeds for each printhead type and printer configuration.

Line supervisors should use the Linx training course provided in **Appendix H, 'Training Documentation'** to train personnel how to operate a Linx 4900 printer.

Related Publications

Publication...	Part number...
Simply the Linx 4900	MP65493 (order using FA65493)
Printer Care Card pack	FA68022

Document Conventions

This document uses the following conventions:

Text Conventions

Text emphasis	Use of emphasis
bold	for screen names and identifiers referenced in the operating manual. For example, **CURRENT MESSAGE** screen, **SETUP** menu, **Change Password** option, **Print Height** setting.
[square brackets]	for printer control and keyboard keys. For example, press the [start] key, press the [F1] function key.
'single quotes'	for internal cross-references (cross-references made to another section within this manual). For example, ...refer to Chapter 2, 'Getting Started'..., ...see 'Printer Status' on page 30...
"double quotes"	for text messages displayed on the printer display, such as system events and printer status. For example, ...the printer status changes to "Jet Stopped"...
italics	for external cross-references (cross-references made to another publication). For example, refer to the *Simply the Linx 4900* pocket guide for further information.

Menu and Screen Conventions

Unless otherwise stated, the menus and screens shown in this manual reflect the following:

- Software Version 1.0
- Printer status—"Jet Off"
- Password user level—Level C
- Ultima printhead

Other Conventions

The following symbols and pointer icons are used in this manual to identify and to draw your attention to particular types of information.

Hand symbol

When the hand symbol accompanies a Note, this indicates you should take particular notice of the information provided.

Tip pointer icon

This icon indicates that a useful tip or keyboard shortcut is provided.

See Also pointer icon

This icon indicates that a cross-reference to further information is provided.
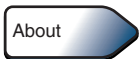
About pointer icon

This icon indicates that information about a particular printer feature is provided in the accompanying box, for example, the menu cursor:

Menu Cursor
The **Menu Cursor** is the 'greater than' symbol (>) found on system menus and screens. It indicates the current option by replacing the bullet to the left of the option name.

You move the **Menu Cursor** to the option you want by pressing the 'up' and 'down' cursor keys. Once the **Menu Cursor** is positioned at the option you want, press the [enter] key to select it. |

User Level icons

Two icons are used to indicate that the information (contained in the chapter, appendix, section or paragraph to which the icon refers) is suitable for the user levels shown. It also means that the functions described therein are only available for the user levels indicated.

This icon is displayed at the beginning of each chapter and appendix to indicate that the information is applicable to the user level shown (Level A, Level B, and/or Level C).

This pointer icon indicates that the information contained in the section or paragraph to which the icon refers is *only* applicable to the user level shown.

1 Introduction

This chapter introduces you to the Linx 4900 printer system, explains the main features of the printer system, the main features of the user interface and gives you a brief overview of the ink jet printing process.

1.1 About the 4900 Printer System

1.1.1 Overview

The Linx 4900 printer system is a fast, reliable, non-contact ink jet printer designed to provide versatile, uninterrupted operation in factory environments. It is used to apply sell-by dates, batch codes, logos and other variable information to a wide range of substrates on the production line using 'continuous ink jet' printing technology. A brief overview of the continuous ink jet process is described later in this chapter.

The printer has a stainless steel enclosure, known as the printer cabinet (see Figure 1-1 below) that houses the following:

- Electronics module

- Ink system

- Power supply

- Integral printer control panel (see Figure 1-1 below)

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A   Printer Control Panel
B   Printer Cabinet

Figure 1-1 Linx 4900 Ink Jet Printer

The printhead is attached to the rear of the printer cabinet by a flexible conduit.

During operation, the printer is located adjacent to a production line to allow printing onto the product as it passes the printhead. A product sensor (such as a photocell) is normally used to detect the presence of the product and synchronize printing.

1.1.2 Printer System Features

Stainless Steel Printer Cabinet

- Secure front opening prevents unauthorized internal access
- Smooth curved shape aids wash-down and minimizes dirt traps
- Protected to IP55 (International Protection rating against dust and water)
- External access to clean or replace the air filter, and mistake-proof ink and solvent addition

Operating Simplicity

- Convenient front panel 'power on' button
- Easy startup and shutdown requires minimal operator intervention
- Messages are easily created using the full size keyboard, Function keys and General Control keys

Printhead Design

- Robustly designed for industrial environments
- Minimal ink build-up; longer intervals between cleaning
- Hermetically sealed and permanently attached to the printer by a 2-metre length of robust conduit (optionally 4-metre length)
- Optimized printhead geometry for high quality, high speed printing

Printhead Options

- Ultima: optimized for 1 or 2 lines of text/graphics
- Ultima *plus*: for pigmented inks; optimized for 1 or 2 lines of text/ graphics

Viscosity Control

- Sophisticated system for monitoring and controlling ink viscosity at the printhead

Diagnostics

- On-screen system event messaging and event log
- Built-in diagnostics functions

Power Down Facility

- Power down function automatically switches the printer off once the printhead self-cleaning cycle is completed at the end of a shift

Product Sensors and Encoders

- Uses a product detection device (such as a photocell) to detect the presence of a product and synchronize printing
- Uses a shaft encoder to provide a constant print width regardless of line speed (combats conveyor speed fluctuation)

Choice of Font and Character Height

- New flexi-font capability for easy message size and print adjustment
- Wide range of character heights and speeds

1.2 Operating the Printer

Printer operations are controlled from the front of the printer, using the Printer Control Panel (see Figure 1-1 on page 1), which has a full size keyboard, General Control keys, LED indicators and an LCD (liquid crystal display), known as the printer 'Display'.

1.2.1 Printer Display Features

Function Key Driven Interface

- Simple menu-based user interface

- Keyboard shortcuts provide direct access to key printer functions

- Easy access to message creating and editing functions

- WYSIWYG message display

Password Protected Functionality

- Access to printer functions can be controlled by the password controlled user levels

- Three user levels to suit the needs and authority of users

Current Message Screen

- Main work area provides access to all printer functions

- View current message at all times

Message Storage

- Up to 50 message capacity

- Easy message selection with preview facility

1.2.2 Navigating the System Menus

The following illustration gives an overview of the system menus and screens. It shows how you can navigate between the menus and screens using the function keys [F1], [F2], [F3] and [F4], and the tasks you perform.

For full details of the system menu hierarchy, refer to Appendix B, 'Printer Controls and System Menus'.
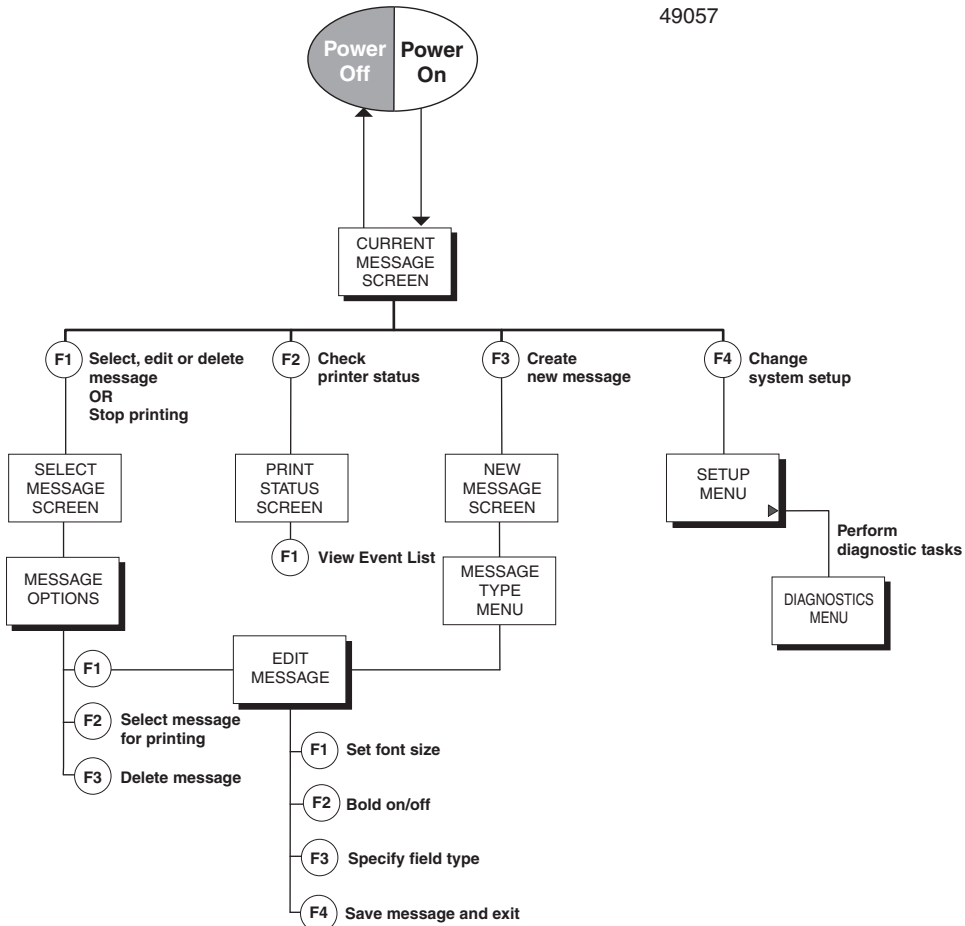
Figure 1-2 Navigating the System Menus

1.3 About Continuous Ink Jet Printing

What is continuous ink jet printing?

Continuous ink jet printing is a non-contact form of high-speed printing used to apply variable information such as dates, text, batch codes, product names and logos to individual products on the production line. This printing process is fast and versatile and can print on most materials regardless of size, shape and texture.

How do Linx printers work?

The printer works by propelling a jet of conductive ink through a hole in the printhead nozzle. Before the ink exits the nozzle, it is pulsed (modulated) to produce a constant stream of identical ink drops. These drops are emitted from the printhead in lines known as 'rasters'. Each raster has a certain maximum number of drops that determines the potential height of a character.

The drops are selectively charged and deflected. A character is formed from the ink drops emitted from the printhead and built up from successive rasters as the substrate travels past the printhead to form a print pattern (as illustrated in Figure 1-3 on page 6). Undeflected drops are recirculated.

About ink viscosity and time of flight

Precise placement of drops is dependent on the speed and amount of deflection of the drops as they travel between the deflector plates. For this reason, the printer constantly monitors the time of flight (TOF) of the drops and compares it with the optimum (TOF Reference) value. The ink pressure is increased or decreased, thus maintaining the correct speed of drops for accurate placement and, therefore, quality of print.
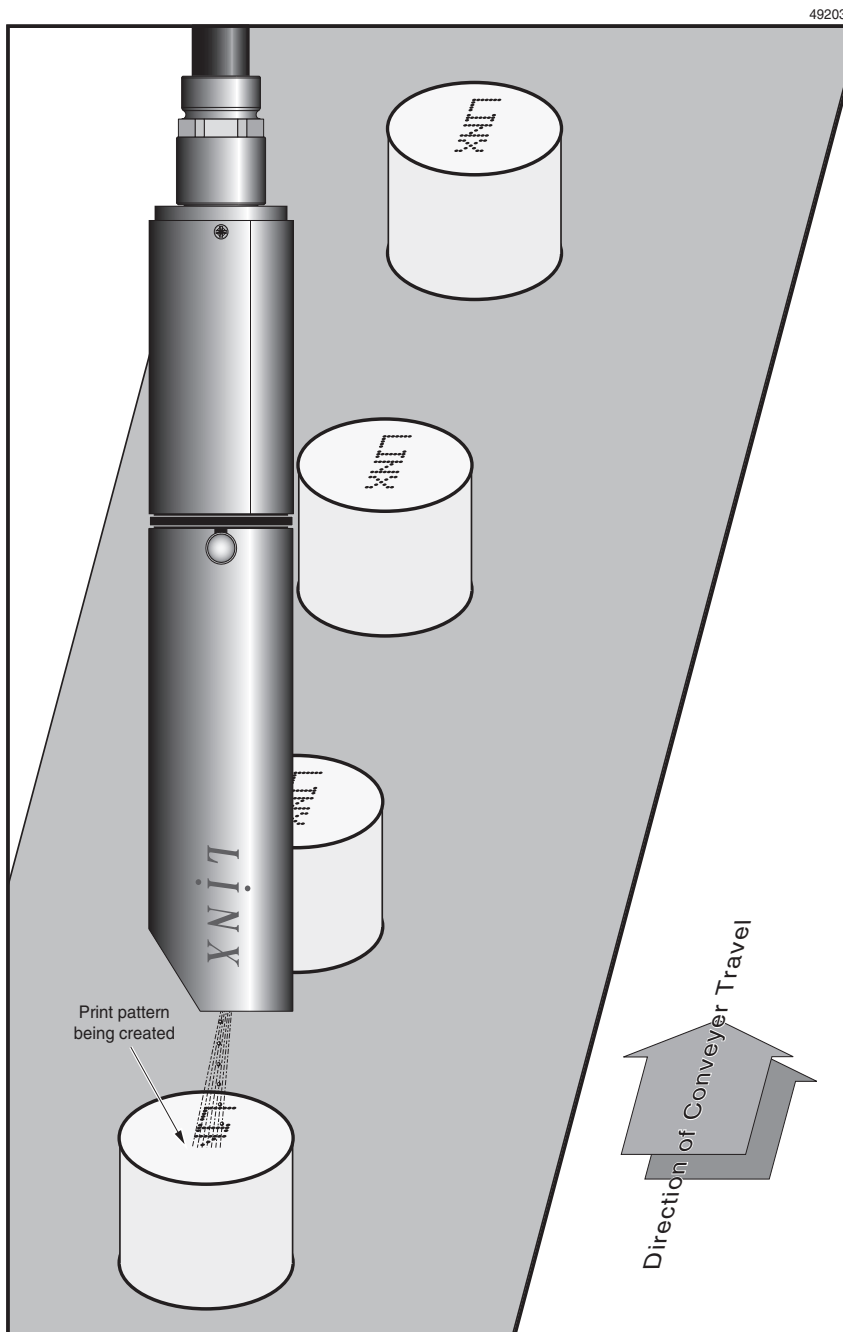
Figure 1-3 Printhead in Operation

1.4 Password Security System

The password system can be used to control operator access to the 4900 printer functions. It can either be switched on to activate the **PASSWORD** screen and enforce password entry to certain printer functions, or it can be switched off at a particular 'user level'. The three user levels are Level A, Level B and Level C:

Level A

This level provides user access to basic functions, such as selecting a message to print, starting and stopping the printer. No password is required.

Level B

Operating at this user level provides user access to most printer functions including creating and editing messages.

Level C

Operating at this user level allows full user access to all printer functions including changing the line settings.

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2 Getting Started

Level A
Level B
Level C

This chapter is designed for anyone who is new to the 4900 printer. It introduces you to some of the fundamental controls and indicators of the printer and aims to quickly get you started with some day-to-day printer operations.

2.1 Before You Start

CAUTION: You must read the 'Safety' section at the front of this manual before attempting to use the 4900 printer. If you are in any doubt, particularly where safety issues arise, please contact Linx or your Linx approved distributor.

2.1.1 Installation

The 4900 printer system should already be unpacked, installed and set up by a Linx approved Service Engineer. If the printer has been relocated or changes to the production line are made, information on how to install and set up the printer can be found in Appendix A, 'Installation and Setup'.

2.1.2 Power Connection

The power supply should already be connected when you come to use the printer.

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.

2.1.3 Mains Power Supply Switch

The mains power supply switch at the rear of the printer should already be set to the On position (**I**) when you come to use the printer (see Figure 2-1 below), so you will not normally need to touch this switch again.

Figure 2-1 Mains Power Supply Switch (On/Off Rocker Switch)

WARNING: WHILE THE MAINS POWER SUPPLY SWITCH IS SET TO THE ON POSITION (I) , MAINS VOLTAGES ARE STILL PRESENT WITHIN THE PRINTER CABINET.

2.2 Switching on and Starting Up

2.2.1 Switching the Printer On

The printer is started up by pressing and holding the front power button for at least 2 seconds.

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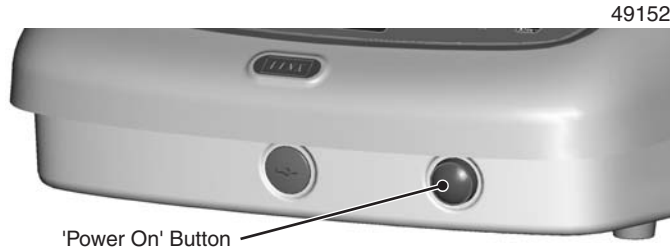
'Power On' Button

Figure 2-2 Front Power On Button

NOTE: If the printer fails to start up immediately after the front power button is released, check that the mains power supply switch at the rear of the printer is set to the On position; see Figure 2-1 on page 10. If necessary, switch on this mains power supply switch.

2.2.2 Checking the Power Indicator

Confirm that the printer has power applied. To do this, check that the green LED power indicator on the printer control panel is lit.
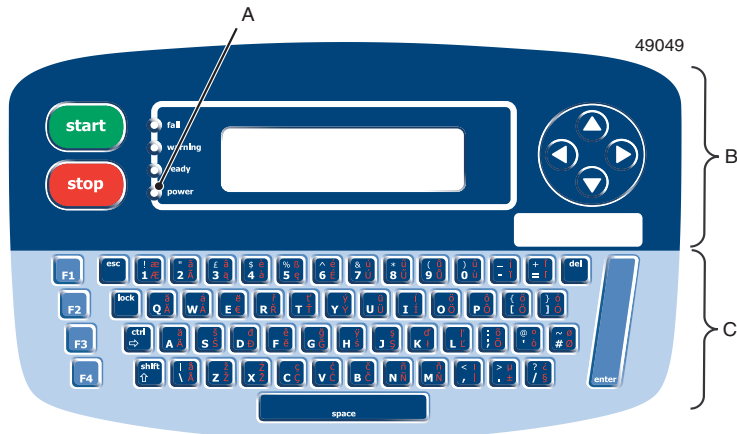
A   Power LED indicator

B   General Control keys and Display

C   Keyboard and Function keys

Figure 2-3 Printer Control Panel

About

LED Indicators
The four LED indicators are printer system status indicators. They light to show certain printer system conditions:

● fail	Red	Serious printer failure. It may be necessary to contact your local Linx distributor.
● warning	Red	Printer warning. A warning message is displayed on the Status line of the Display.
● ready	Green	Jet is running and the printer is ready to print. This LED switches off when printing is stopped (however, the jet may still be running).
● power	Green	Power supply to printer is on, and the printer is switched on.

2.2.3 Viewing the Power-up Sequence

The printer automatically powers up when the front power button is pressed. It carries out a power-up sequence, during which a 'Splash' screen (Figure 2-4) appears on the Display showing the progress of the sequence and the software version.

49048

Figure 2-4 Startup Splash Screen

Once the power-up sequence is complete, the **CURRENT MESSAGE** screen is displayed.

2.3 Introducing the Current Message Screen

The **CURRENT MESSAGE** screen is the first screen displayed once the printer completes the power-up sequence. It displays the current message and shows the options available to you:
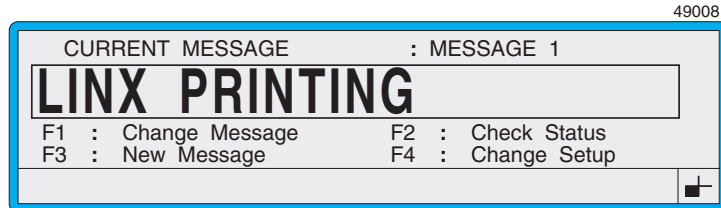
F1	Select or change a message
F2	Check the printer status
F3	Create a new message
F4	Change the system setup

Figure 2-5 Current Message Screen

The **CURRENT MESSAGE** screen is the starting point for all printer operations.

2.3.1 Getting to Know the Printer Display

The following example shows the main features and indicators displayed in the **CURRENT MESSAGE** screen.
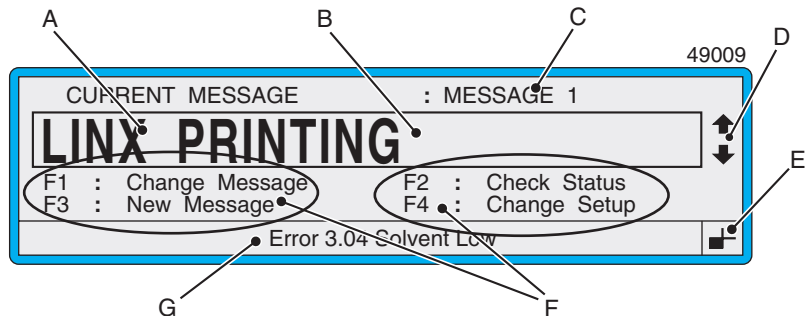
A   Current Message
B   Message Display Area
C   Current Message Name
D   Message Selection Cursor Indicators
E   Keyboard Status Indicator
F   Options
G   Status Line

Figure 2-6 Current Message Screen Indicators

2.4 How to Print a Message

The sequence of tasks in this section shows you how to select a message and then start and stop printing.

NOTE: These tasks assume that at least one message has been created, saved and printed. You should contact your supervisor if no messages have been set up.

2.4.1 To Select a Message

1. At the **CURRENT MESSAGE** screen, press the [F1] function key:

The **SELECT MESSAGE** screen is displayed:
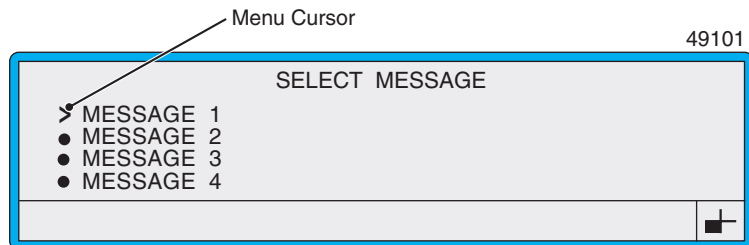
Figure 2-7 Menu Cursor at Select Message Menu

2. At the **SELECT MESSAGE** screen, use these control keys to select a message from the list:

Press...	To do this...
	Scroll through the list, moving the menu cursor (**>**) to the message you want.
	Select the message.

At the **SELECT MESSAGE** screen, you can type the first letter of the message name to quickly find the message you want.

Tip	**Menu Cursor**
	The **Menu Cursor** is the 'greater than' symbol (>) found on system menus and screens. It indicates the current option by replacing the bullet to the left of the option name. You move the **Menu Cursor** to the option you want by pressing the 'up' and 'down' cursor keys. Once the **Menu Cursor** is positioned at the option you want, press the [enter] key to select it.

The **MESSAGE OPTIONS** screen is displayed showing a preview of the message selected:

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```
MESSAGE  OPTIONS :        MESSAGE  1

F1 : Edit
F2 : Select               LINX PRINT
F3 : Delete

                                              ⏎
```
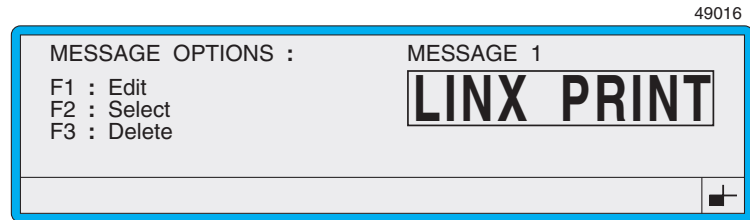
Figure 2-8 Message Options Screen

3. At the **MESSAGE OPTIONS** screen, press the [F2] function key:

F2

The **CURRENT MESSAGE** screen is redisplayed, showing the selected message as the current message.

2.4.2 To Start Printing

1. Select a message to print. Refer to previous section 'To Select a Message' for instructions.

2. Press the [start] key:

start

The printer starts up the jet, and the **Status Line** displays the message "Starting Jet : Please Wait".

When startup is complete:

- The message "Starting Jet : Please Wait" disappears from the status line

- The options on the left side of the screen change to display "F1 : Stop Print" and "Status : Printing" (see Figure 2-9 below)

- The green Ready LED indicator on the Printer Control Panel lights

- The printer starts printing (actual printing is controlled by the line settings configured for your production line. See 'Line Settings' on page 30 for further information)

49058

```
CURRENT  MESSAGE              : MESSAGE  1

LINX  PRINTING
F1  :  Stop  Print          F2  :  Check  Status
Status  :  Printing         F4  :  Change  Setup
                                                    ⌐
```
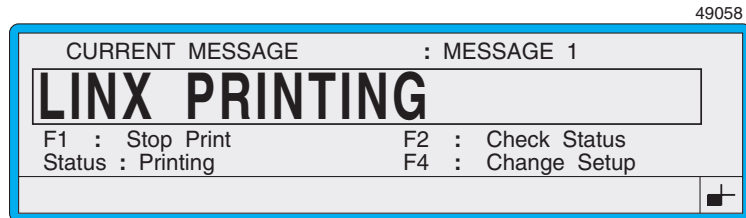
Figure 2-9 Current Message Screen—When Printing

2.4.3 To Stop Printing

1. Press the [F1] function key:

The message "Stop Print : Please Wait" is displayed briefly in the **Status Line**, then printing stops.

Once printing stops:

*   The options on the left side of the **CURRENT MESSAGE** screen are redisplayed (see Figure 2-6 on page 13)

*   The printer status changes to "Jet Running"

*   The green Ready LED indicator on the Printer Control Panel extinguishes

If you want to...	Do this...
Restart printing	Press the [start] key
View the status of the printer	Press the [F2] key
Stop the jet running	See the section 'To Shut Down the Jet' on page 21 for instructions

2.5 Working with the System Menus

Level B
Level C
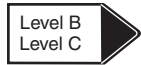
The tasks in this section show you how to navigate the system menus, enter the password and how to select and change menu options.

2.5.1 To Enter the Password

Whenever the **PASSWORD** screen is displayed, you need to enter a password to continue:

49300

```
                        PASSWORD
    ● Enter  Password  >  _


                                                   ◄┘
```
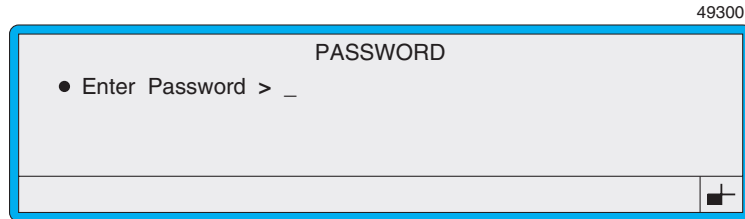
Figure 2-10 Password Screen

1. At the **PASSWORD** screen, type in the password then press the [enter] key to confirm your entry.

    NOTES:

    1. You need the password you were given during your initial printer training.

    2. If you enter the password incorrectly, the message "Invalid Password" is displayed in the **Status Line**. Re-enter the password and press the [enter] key.

2.5.2 To Change the System Time

NOTE: This task assumes that printing has been stopped. If necessary, refer to the previous section for instructions on how to do this.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key:

F4

NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter your password to continue. See 'To Enter the Password' above.

The **SETUP** menu is displayed:
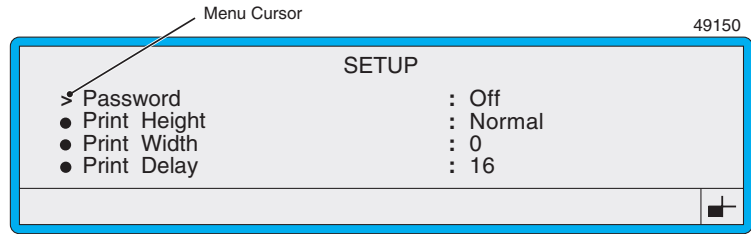
Figure 2-11 Menu Cursor at Setup Menu

NOTES:

1. System menus display four options at a time.

2. The menu cursor always rests beside the menu option that was selected last time the menu was displayed (accessed).

3. At the **SETUP** menu, press the ⬆ and ⬇ keys to move the menu cursor to the **Set Time** option:
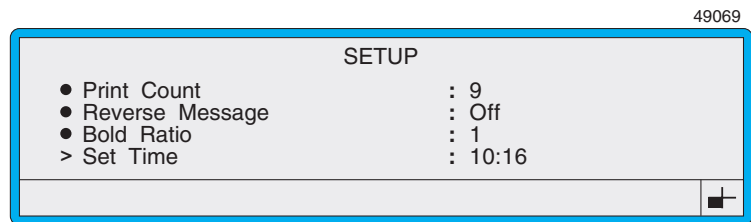
Figure 2-12 Setup Menu: Set Time Option

4. Press the [enter] key to select the **Set Time** option.

    The menu cursor moves to the setting on the right side of the screen:

Cursor at the Set Time setting
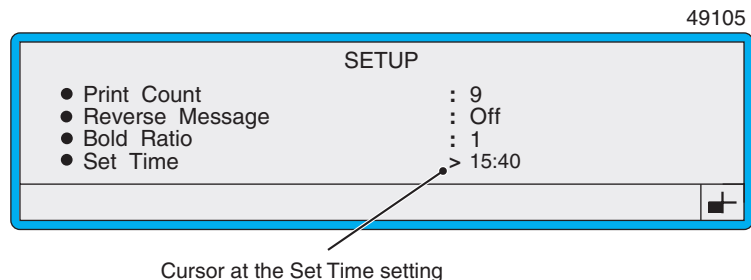
Figure 2-13 Cursor at Set Time Setting

5. At the **Set Time** setting, enter the current time by overtyping, for example, **15:40**, then press the [enter] key to confirm your entry.

6. Press the [esc] key to return to the **CURRENT MESSAGE** screen.

2.6 Typing Keyboard Characters

As you type keyboard characters, the keyboard status indicator allows you to quickly see which character will be displayed when a keyboard key is pressed:

Keyboard Status Indicator

49236

```
CURRENT  MESSAGE              : MESSAGE  1

LINX  PRINTING                                ↑
                                              ↓
F1  :  Change  Message      F2  :  Check  Status
F3  :  New  Message         F4  :  Change  Setup
```
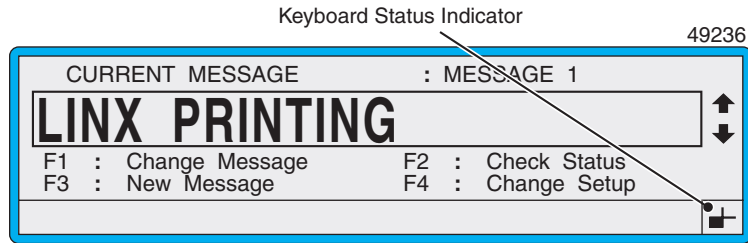
Figure 2-14 Keyboard Status Indicator: Default Position

It shows you which of the four keyboard key character positions is currently active:

B   C

£   â
3 a

49149

A   D

A **Standard characters** (uppercase and numbers).
Simply press the key showing the required character on the bottom left of the key. This is the default position (mode).
To reset the keyboard to Standard characters, simply reverse the locking action (as described below) by repeating the same keystrokes.

B **Shifted characters** (lowercase)
Hold the [shift] key down and press the key showing the required character on the top left of the key.
To lock the keyboard in this mode, hold the [shift] key down and press the [lock] key. To unlock, repeat this locking action.

C **Control and Shifted characters**
Hold the [ctrl] key + the [shift] key down and press the required character on the top right of the key. To lock the keyboard in this mode, hold the [ctrl] key + [shift] key down and press the [lock] key. To unlock, repeat this locking action.

D **Control characters**
Hold the [ctrl] key down and press the key showing the required character on the bottom right of the key.
To lock the keyboard in this mode, hold the [ctrl] key down and press the [lock] key. To unlock, repeat this locking action.

Figure 2-15 Typing Keyboard Characters

2.7 Shutting Down and Switching Off

WARNING: DO NOT USE THE MAINS POWER SUPPLY SWITCH (ROCKER SWITCH AT THE REAR OF THE PRINTER) TO STOP THE PRINTER, EXCEPT IN AN EMERGENCY. SHUTDOWN AND POWER OFF SHOULD ALWAYS BE CARRIED OUT FROM THE PRINTER CONTROL PANEL.

2.7.1 To Shut Down the Jet

1. Press the [stop] key:

stop

The printer initiates a jet shutdown procedure, which takes approximately 3 minutes. During jet shutdown the message "Stopping Jet : Please Wait" is displayed in the **Status Line**.

When the printer has finished the jet shutdown procedure, the message changes to "Jet Stopped : Press Stop to Power Down".

2.7.2 To Power Down and Switch Off

Powering Down and Switching Off Automatically

The 'Auto Power Down' function is set, as a default, to initiate automatically, so that after the jet is shut down, the printer automatically goes into power down mode (see Figure 2-16) and switches off the printer:

49023

```
AUTO  POWER  DOWN

About  to  power  down  in:
        10  seconds
Press  any  key  to  resume
```
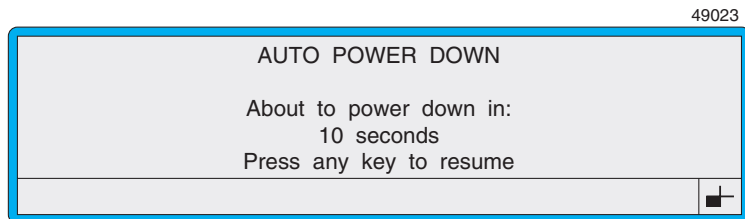
Figure 2-16 Auto Power Down Screen

When the countdown reaches zero, the power to the printer is switched off, and the printer Display and the Power LED indicator extinguish.

NOTE: that the mains power supply switch (rocker switch) at the rear of the printer remains in the On position.

About

Auto Power Down

Auto Power Down is a configurable function of the printer. As a default, the **Auto Power Down** setting is configured ON for the printer, and power down is automatically initiated after the jet is shut down.

When the printer goes into power down mode, a countdown dialog is displayed and you can press any key to stop the power down sequence and resume if you wish.

Note that **Auto Power Down** can also be configured using the **Printer Idle** setting. Using this method, a customized delay time can be enforced.

NOTES:

1. Initiation of automatic power down is determined by the options selected in the **Auto Power Down** screen. See Chapter 5, 'Changing the System Setup' for details.

2. If you are unsure whether or not to switch the printer off, you should consult your supervisor.

Initiating Power Down and Switching Off Manually

If the 'Auto Power Down' function is not enabled or you wish to manually switch off the printer:

1. Shut down the jet. To do this, press the [stop] key.

2. Check that the printer status on the **PRINT STATUS** screen is 'Jet Off'.

3. Press the [stop] key:

stop

The following screen is displayed:

49024

POWER DOWN

Switch off power?

F1 : Yes   F2 : No
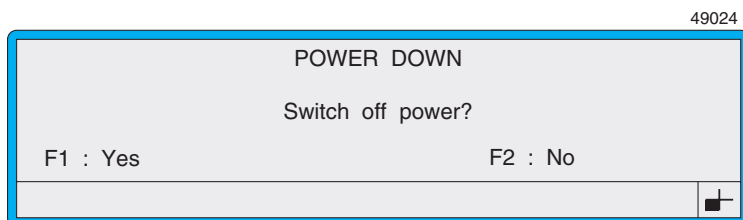
Figure 2-17 Power Down Screen

4. Press the [F1] function key to select **Yes** (alternatively, press the [F2] function key to select **No** and return to the **CURRENT MESSAGE** screen).

The power to the printer is switched off, and the printer Display, and the Power LED indicator extinguish.

Note that the mains power supply switch at the rear of the printer (rocker switch) remains in the ON position.

WARNING: WHILE THE MAINS POWER SUPPLY SWITCH IS SET TO THE ON POSITION (I) , MAINS VOLTAGES ARE STILL PRESENT WITHIN THE PRINTER CABINET.

2.7.3 Emergency Stop

In an emergency situation you may need to stop the printer quickly. Use one of the following methods to do this:

- Switch the printer's wall mounted electrical isolator to the off position to shut off the electricity supply to the printer

- Switch the printer mains power supply switch at the rear of the printer to the '**0**' (off) position

CAUTION: Wherever possible, do not leave the printer in this state for too long as this may result in ink blockages. You should restart the jet and carry out a normal shutdown using the correct procedure as soon as possible.

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3 Day-to-Day Operations

Level A
Level B
Level C

This chapter describes the day-to-day printer operations, such as working with the current message, selecting a message, starting and stopping message printing, and viewing the printer status. It also describes how to handle system 'event' messages and work with printer system passwords.

NOTE: If you are new to the 4900 printer, you should first read Chapter 2, 'Getting Started' to familiarize yourself with the fundamental printer controls and indicators, and to start performing some basic printer operations.

3.1 Introducing the Current Message Screen

The **CURRENT MESSAGE** screen is the starting point for all printer operations, and during day-to-day operations the printer display typically remains at this screen.

The following example shows the main features and indicators displayed on the **CURRENT MESSAGE** screen:
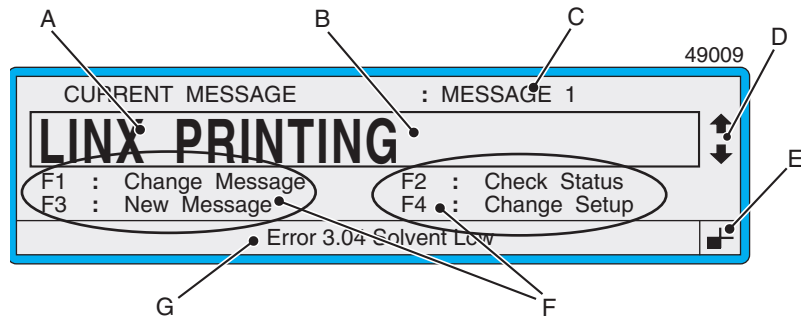
Figure 3-1 Current Message Screen Indicators

	Feature/Indicator...	Description...
A	Current Message	Message currently selected for printing.
B	Message Display Area	Area where the current message is displayed.
C	Current message name	Name assigned to the current message.
D	Message Selection Cursor Indicators	Indicates that you can press the Up [△] and Down [▽] cursor keys to scroll through the message list and view the stored messages.
E	Keyboard Status Indicator	Symbol showing which character will be displayed when a keyboard key is pressed.
F	Options	Indicates the printer functions available to you. To select an option, you press the associated function key—[F1], [F2], [F3] or [F4].
G	Status Line	Displays status messages, and printer warning and fault messages, known as 'event messages'.

3.2 Selecting and Printing Messages

This section describes how to select a message for printing, then start and stop message printing.

NOTE: These tasks assume that at least one message has been created and saved. You should contact your supervisor if no messages have been setup.

3.2.1 Before You Start Printing

- Check that the message displayed in the **CURRENT MESSAGE** screen is the message you wish to print.

  To choose another message for printing, you can select one from the list of existing messages (see 'To Select a Message for Printing' below).

3.2.2 To Select a Message for Printing

NOTE: Printing must be stopped to select a message. If necessary, press the [F1] function key to stop printing.

To select a message, use one of the following methods:

Method 1: Select and Preview

1. At the **CURRENT MESSAGE** screen, press the [F1] function key.

    The **SELECT MESSAGE** menu is displayed:

Menu Cursor

49101

```
                    SELECT  MESSAGE
  >  MESSAGE  1
  ●  MESSAGE  2
  ●  MESSAGE  3
  ●  MESSAGE  4
```
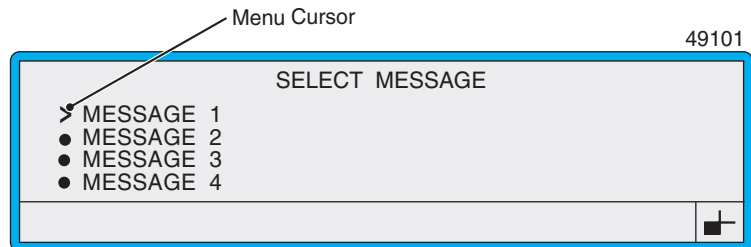
Figure 3-2 Select Message Menu

NOTES:

1. The menu cursor (**>**) indicates which message in the list is the currently selected message.

2. The **SELECT MESSAGE** menu lists all messages alphabetically, showing just four messages at a time.

3. At the **SELECT MESSAGE** menu, scroll through the list using the Up [△] or Down [▽] cursor keys until the cursor rests at the message you want.

    Tip

    Type in the first character of the message name to quickly find the message you want. Note that the letter you enter is case sensitive.

4. Press the [enter] key.

The **MESSAGE OPTIONS** screen is displayed, showing a preview of the message you selected:

49016
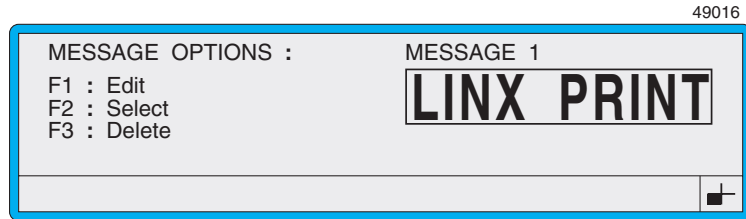
Figure 3-3 Message Options Screen

Note that in some cases, particularly when large messages are displayed, only the first part (leftmost) of the message is shown in the preview window.

5. At the **MESSAGE OPTIONS** screen, press the [F2] function key to select the message.

   The **CURRENT MESSAGE** screen is redisplayed, showing the selected message.

Method 2: Scroll to Select

1. At the **CURRENT MESSAGE** screen, check that the **Message Selection Cursor Indicators** are visible (see Figure 3-1 on page 26), if not, press the [F1] function key to stop printing.

2. Press the Up [△] key and the Down [▽] key to scroll through the list of stored messages. With each key press, the next message is displayed in the **Message Display Area**, and the message name changes accordingly.

3.2.3 To Start Printing

1. Press the [start] key.

start

The printer starts up the jet, and the **Status Line** displays the message "Starting Jet : Please Wait".

When startup is complete:

- The message "Starting Jet : Please Wait" disappears from the status line

- The options on the left side of the screen change to display "F1 : Stop Print" and "Status : Printing" (see Figure 3-4 below)

- The green Ready LED indicator on the Printer Control Panel lights

- The printer starts printing

49058

```
CURRENT  MESSAGE            :  MESSAGE  1

LINX  PRINTING
F1  :  Stop  Print          F2   :   Check  Status
Status :  Printing          F4   :   Change  Setup
```
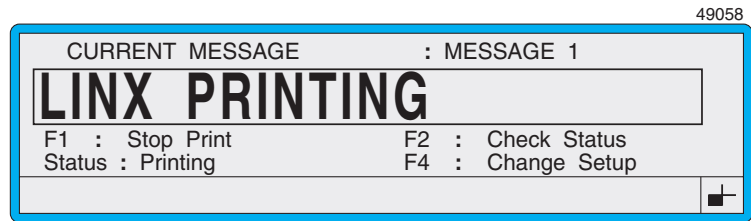
Figure 3-4 Current Message Screen—When Printing

See Also

NOTE: Actual printing is controlled by the line settings configured for your production line. For further information, see 'Line Settings' on page 30).

Printer Status

The action taken by the printer when the [start] key is pressed is determined by the current printer status. The following table shows what happens when the printer is started and stopped:

49059

Initial Printer Status	Pressing [start] key	Pressing [F1] key	Pressing [stop] key
Jet Off	Starts jet Starts printing*	—	Initiates Power Down
Jet Running	Starts printing*	—	Shuts down jet Initiates Power Down**
Printing	—	Stops printing	Stops printing Shuts down jet Initiates Power Down**

KEY: * Actual printing is controlled by the **Line Settings** configured for your production line.

** When the **Auto Power Down** function is set to On.

Figure 3-5 Starting and Stopping Printing

Line Settings

When the printer is in printing mode (printer Status is "Printing"—see Figure 3-4 on page 29), the time when a message prints, and the rate of print (printing speed) is controlled by the settings of the **Primary Trigger** option and the **Shaft Encoder** option in the **SETUP** menu, as follows:

- The trigger that initiates a print is configured using the **Primary Trigger** option. The trigger can be some form of product sensor such as a photocell, or none (continuous print). A product sensor is used to detect the presence of the product to be printed on.

  A message is usually printed in response to a trigger signal from the product sensor, however, there are variations in the way that the printer interprets a trigger signal.

- The speed that the printer prints at to match line speed is configured using the **Shaft Encoder** option. This can be On or Off. A shaft encoder is a device used for line speed detection.

See Also

Refer to Appendix A, 'Installation and Setup' for information about using and setting up product sensors and shaft encoders.

To check the current line settings, and for further information about your line setup, see Chapter 5, 'Changing the System Setup'.

The following table shows when the printer actually prints, depending on the settings configured for your production line:

49060

Product Sensor	Shaft Encoder	Printing result
Selected	Selected	Prints when Product Sensor is triggered, and Shaft Encoder has moved set distance.
	Not selected	Prints when Product Sensor is triggered.
Not selected	Selected	Prints continuously when Shaft Encoder has moved set distance.
	Not selected	Prints immediately and continuously irrespective of presence of a product.

Figure 3-6 Product Sensor/Shaft Encoder Printing Results

3.2.4 To Stop Printing

1. Press the [F1] function key:

The message "Stop Print : Please Wait" is displayed briefly in the **Status Line,** then printing stops.

The options on the left side of the **CURRENT MESSAGE** screen are redisplayed (see Figure 3-1 on page 26), and the printer status changes to "Jet Running".

3.2.5 To Shutdown the Jet

1. Press the [stop] key:

The printer initiates a jet shutdown procedure, which takes approximately 3 minutes. During jet shutdown the message "Stopping Jet : Please Wait" is displayed in the **Status Line**.

When the printer has finished the jet shutdown procedure, what happens next depends on whether or not the 'Auto Power Down' function is enabled:

- The 'Auto Power Down' function is enabled as a default—after the jet is shut down, the printer automatically goes into power down mode and switches the power off. See the next section for further details

- If the 'Auto Power Down' function is *not* enabled, after the jet is shut down, the message in the **Status Line** changes to "Jet Stopped : Press Stop Key to Power Down"

3.2.6 To Power Down and Switch Off

CAUTION: Always use the correct procedure (described below) to power down and switch off the printer. Do NOT use the mains power supply switch (rocker switch at the rear of the printer) to stop the printer, except in an emergency.

Using the correct procedure ensures that any recent changes are saved (and the printhead is automatically cleaned). If you switch off at the mains, you may lose any recent changes and experience printhead problems. Thorough cleaning of the printhead will be necessary.

Powering Down and Switching Off Automatically

The 'Auto Power Down' function is set, as a default, to initiate automatically, so that after the jet is shutdown, the printer automatically goes into power down mode (see Figure 3-7) and switches the power off.

49023

AUTO POWER DOWN

About to power down in:
10 seconds
Press any key to resume
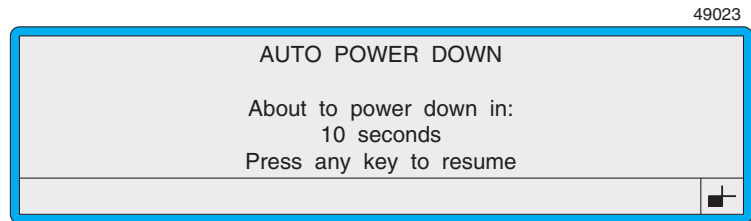
Figure 3-7 Power Down Countdown Screen

When the countdown reaches zero, the power to the printer is switched off, and the printer Display and the Power LED indicator extinguish.

NOTE: that the mains power supply switch (rocker switch) at the rear of the printer remains in the On position.

WARNING: WHILE THE MAINS POWER SUPPLY SWITCH IS SET TO THE ON POSITION (I) , MAINS VOLTAGES ARE STILL PRESENT WITHIN THE PRINTER CABINET.

NOTES:

1. Initiation of automatic power down (i.e. enabling or disabling) is determined by the options selected in the **AUTO POWER DOWN** screen. See Chapter 5, 'Changing the System Setup' for details.

2. If you are unsure whether or not to power the printer off manually, you should consult your supervisor.

Initiating Power Down and Switching Off Manually

If the 'Auto Power Down' function is not enabled, or you wish to manually power down the printer:

1. Stop the jet. To do this, press the [stop] key.

2. Check that the printer status on the **PRINT STATUS** screen is "Jet Off". See 'Viewing the Printer Status' on page 38.

3. Press the [stop] key:

The following screen is displayed:

```
                                                        49024
  ┌─────────────────────────────────────────────┐
  │                POWER  DOWN                    │
  │                                               │
  │              Switch  off  power?              │
  │                                               │
  │   F1 : Yes                       F2 : No      │
  ├─────────────────────────────────────────────┤
  │                                          ◄┘  │
  └─────────────────────────────────────────────┘
```
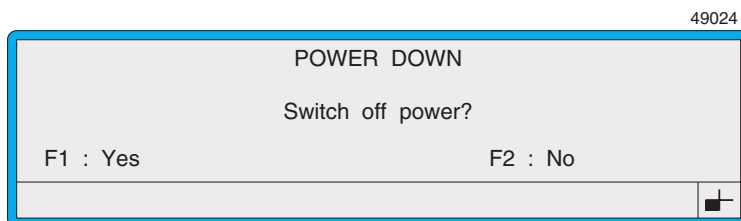
Figure 3-8 Power Down Screen

4. Press the [F1] function key to select **Yes** (alternatively, press the [F2] function key to select **No** and return to the **CURRENT MESSAGE** screen).

   The power to the printer is switched off immediately, and the printer Display and the Power LED indicator extinguish.

   Note that the mains power supply switch at the rear of the printer (rocker switch) remains in the ON position.

3.2.7 Emergency Stop

In an emergency situation you may need to stop the printer quickly. Use one of the following methods to do this:

- Switch the printer's wall mounted electrical isolator to the off position to shut off the electricity supply to the printer

- Switch the printer's mains power supply switch at the rear of the printer to the '**0**' (off) position

Note that if you use either of the above methods of stopping the printer, you may lose any recent changes made to the printer settings.

CAUTION: Wherever possible, do not leave the printer in this state for too long as this may result in ink blockages. You should clean the printhead and restart the jet, then carry out a normal jet shutdown and power down using the correct procedures as soon as possible.

3.3 Editing the Current Message

All messages are edited using the **EDIT MESSAGE** screen.

☞ NOTE: Printing must be stopped. If necessary, press the [F1] function key to stop printing.

3.3.1 To Select the Message for Editing

1. At the **CURRENT MESSAGE** screen, press the [F1] function key.

    The **SELECT MESSAGE** screen is displayed, with the current message at the top of the message list, as follows:

49014

```
                        SELECT  MESSAGE
    >  MESSAGE  1
    ●  MESSAGE  2
    ●  MESSAGE  3
    ●  MESSAGE  4

                                                          ◄┘
```
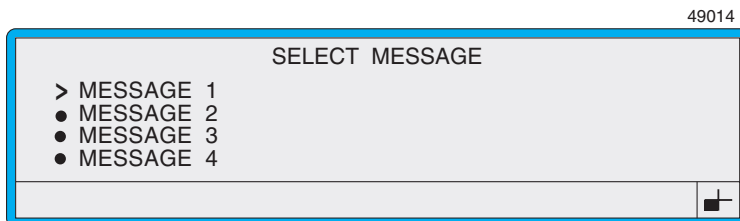
Figure 3-9 Select Message Screen

2. Press the [enter] key.

    The **MESSAGE OPTIONS** screen is displayed, showing a preview of the message:

49016

```
    MESSAGE  OPTIONS :        MESSAGE  1
    F1 : Edit
    F2 : Select               LINX  PRINT
    F3 : Delete

                                                          ◄┘
```
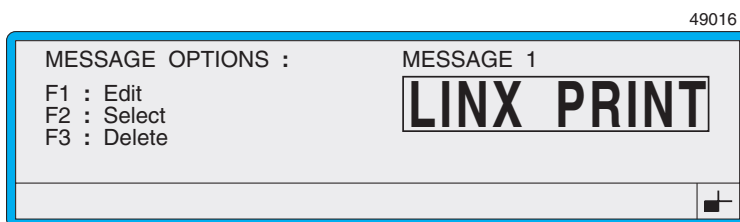
Figure 3-10 Message Options Screen

3. At the **MESSAGE OPTIONS** screen, press the [F1] function key.

NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter a password to continue. See 'To Enter the Password' on page 42 for further details.

The **EDIT MESSAGE** screen is displayed with the selected message shown in the Message Display Area:

49030

```
EDIT MESSAGE                    : MESSAGE 1

LINX PRINTING
F1  :  Size  16 FH (Caps)            F2  :  Bold  Off
F3  :  Field Type                    F4  :  Save  &  Exit
```
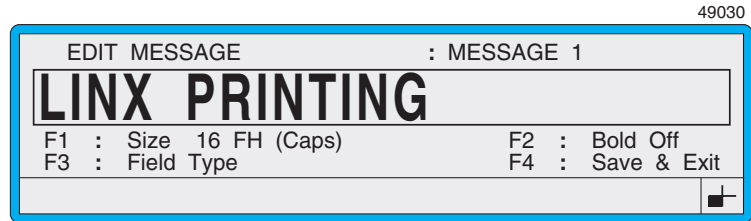
Figure 3-11 Edit Message Screen

3.3.2 To Edit the Message

1. With the message displayed in the Message Display Area of the **EDIT MESSAGE** screen, you edit the message by selecting each field in turn and making the required changes:

Press this key...	To...
[enter]	Select a field for editing.
[shift] + [◁] or [▷], [△], [▽]	Move to the start, end, top or bottom of the message.
[△], [▽], [◁] or [▷]	Move the cursor up, down, left or right (by one character).
[ctrl] +[△], [▽], [◁] or [▷]	Move the cursor up, down, left or right (by one drop).
[F1]	Change the character size.
[F2]	Switch the bold factor on/off.
[F3]	Change the field type.
[F4]	Save changes and exit.
[ctrl] + [del]	Delete the selected field.

See Also

For detailed instructions on how to create and edit all types of message fields, see Chapter 4, 'Creating and Editing Messages'.

2. When you have finished, press the [F4] function key to save the changes and exit.

The **CURRENT MESSAGE** screen is redisplayed, showing the edited message.

3.4 Viewing the Printer Status

The 4900 printer has the following visual guides that show you the current status of the printer:

- The **Status Line** at the bottom of the screen (or menu) displays messages about the operational status of the printer, such as "Starting Jet : Please Wait". These are advisory messages that appear as you work with the printer, starting and stopping printing, stopping the jet, and so on. The status line also displays system event messages when certain printer conditions occur, for example, "Error 3.03 Ink Low".

- The **PRINT STATUS** screen shows the current printer status (Printing, Jet Off, Jet Running) as well as the status of the ink and solvent levels. It also shows the print count and allows you to access the **EVENT LIST** screen to view the current system event messages.

3.4.1 To View the Current Printer Status

1. At the **CURRENT MESSAGE** screen, press the [F2] function key.

2. The **PRINT STATUS** screen is displayed:

49015

```
                          PRINT  STATUS
    F1 : Event  List                    Count    : 9
                                        Status   : Jet  Off
                                        Solvent  : OK
                                        Ink      : OK
```
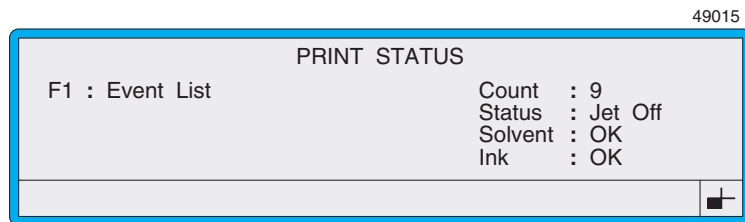
Figure 3-12 Print Status Screen

3. At the **PRINT STATUS** screen:

- Pressing the [F1] key displays the **EVENT LIST** menu where active event messages are listed. See 'To View Events in the List' on page 41 for details.

This parameter...	Indicates...
Count	The total number of prints made by the printer.
	You can reset or change this number via the **Print Count** option in the **SETUP** menu. See 'To Reset the Print Count' on page 39.
Status	The operational status of the printer:

	Jet Off	the jet is stopped.
	Jet Running	the jet is running, but not printing.
	Printing	the printer is printing.

This parameter...	Indicates...

Solvent — The solvent level status:

OK — solvent level is acceptable.

LOW — solvent level is low.

You should add one bottle of solvent. See Chapter 7, 'Diagnostics and Maintenance' for instructions.

Ink — The ink level status:

OK — ink level is acceptable.

LOW — ink level is low.

You should add one bottle of ink. See Chapter 7, 'Diagnostics and Maintenance' for instructions.

3.4.2 To Reset the Print Count

The **Print Count** option displays the total number of prints made by the printer. You can change this figure to reset the count. To do this:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter a password to continue.

    The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at **Print Count**, as follows:

49066

```
                            SETUP
   ● Print  Height              : Normal
   ● Print  Width               : 0
   ● Print  Delay               : 16
   > Print  Count               : 9

                                              ⌐┘
```
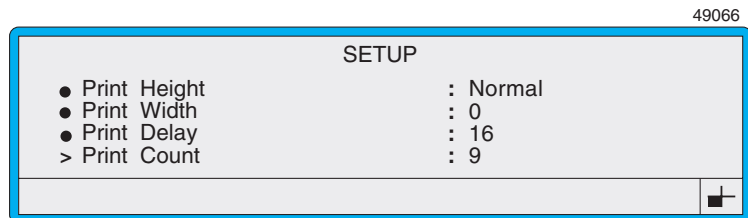
Figure 3-13 Setup Menu: Print Count Option

3. To reset or to change the value, press the [enter] key to select the **Print Count** option then overtype the number.

4. Press the [enter] key to confirm your entry.

5. Press the [esc] key to exit.

3.5 Handling System Events

A system 'event' is a message generated by the system when a certain printer condition occurs. Events are classified as either a Failure, or a Warning type event.

During day-to-day operation, if a Failure or a Warning type event occurs, a message is displayed in the **Status Line** at the bottom of the screen (see Figure 3-14 below), and the printer's internal beeper is activated to draw your attention to a particular printer condition that needs attention. The relevant LED indicator (Fail or Warning) on the Printer Control Panel also lights.
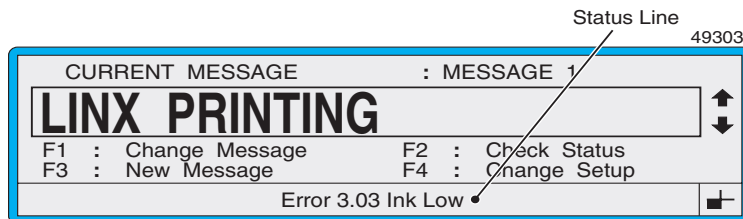
Figure 3-14 System Warning Event Message

Each event message is numbered for identification and classification as follows:

This type of event message...	Starts with...
System Failure	1
Print Failure	2
System Warning	3

NOTE: You should resolve the printer condition as soon as possible. If necessary, refer to Appendix D, 'System Event Messages', where all system events are listed and described.

System events are logged in the 'Event List' where they remain until they are resolved, or until the printer is switched off. See 'To View Events in the List' on page 41 for further information.

3.5.1 To View Events in the List

You can view a record of the current system events via the **EVENT LIST** menu. These events have occurred since the printer was last switched on. Events are automatically deleted from the list when the power to the printer is switched off, following shutdown, or when an event is resolved.

To view events in the list:

1. At the **CURRENT MESSAGE** screen, press the [F2] function key to display the **PRINT STATUS** screen (see Figure 3-12 on page 38).

2. Press the [F1] function key. The **EVENT LIST** menu is displayed as follows:

49315

```
                        EVENT  LIST
    > 3.12  Printhead  Cover  Off
    o 3.04  Solvent  Low


                                                        ◼┘
```
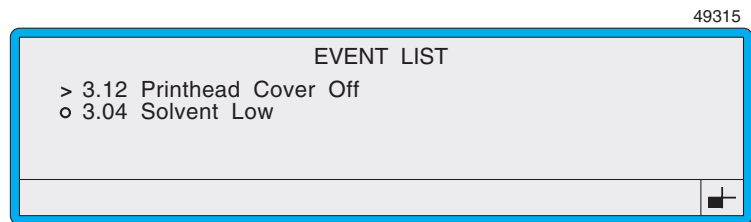
Figure 3-15 Event List Menu

See Also

Refer to Appendix D, 'System Event Messages' for a description of the system event messages.

3. Press the [esc] key to exit.

Tip

You can use a shortcut key to go to the **EVENT LIST** menu. To do this, press [L] at the **CURRENT MESSAGE** screen.

3.6 Working with Passwords

The Linx 4900 printer has a password system that allows you to control the printer functions available to the printer operator. You can elect to work with the password system On (password controlled access to certain printer functions), or you can choose to work with the password system switched Off at a designated 'user level'.

'User levels' determine which printer functions are available; these levels are Level A, Level B and Level C.

This section describes how to enter a password and how to switch the password system on or off.

See Also

For information on changing a password, see 'Changing the Passwords' in Chapter 5, 'Changing the System Setup'.

3.6.1 To Enter the Password

When the password system is switched On, you must enter a password at the **PASSWORD** screen to perform certain functions:

49300

```
                          PASSWORD
        ●  Enter  Password  >  _



                                                    ⊞
```
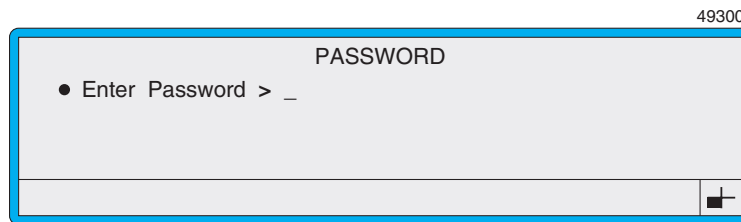
Figure 3-16 Password Screen

1. At the **PASSWORD** screen, type in your password and press the [enter] key. This must be the valid password for Level B, or Level C.

    NOTES:

    1. If you enter the password incorrectly, the message "Invalid Password" is displayed on the **Status Line.** Re-enter the correct password and press the [enter] key.

    2. Passwords are *not* case sensitive or keyboard sensitive.

    3. Use the password you were given during your initial printer training.

3.6.2 To Switch the Password System On/Off

The **Password** function allows you to either switch the password system Off at a designated user level, or to switch the password system On for password controlled access to certain functions.

To Switch the Password System Off

When you switch the password system off, operators can access all printer functions at the designated user level without having to enter a password at any stage.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    The **PASSWORD** screen is displayed (see Figure 3-16 on page 42).

2. Type in the password. Note that the password you enter here determines the user level at which the printer operates (Level B or Level C) when the password system is switched Off .

3. Press the [enter] key.

    The **SETUP** menu is displayed.

4. Scroll to the top of the **SETUP** menu until the cursor rests at the **Password** option:

```
                                                        49065
                            SETUP
        > Password                    : Off
        ● Print  Height               : Normal
        ● Print  Width                : 0
        ● Print  Delay                : 16

                                                    ◄┘
```
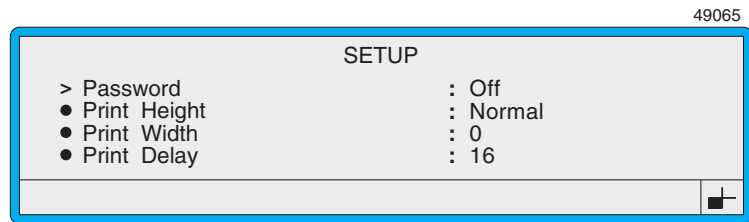
Figure 3-17 Setup Menu: Password Option

5. Press the [enter] key.

6. At the **Password** option setting, press the Left [◁] or Right [▷] cursor keys to toggle the setting to **Off**, then press the [enter] key.

7. Press the [esc] key to exit.

To Switch the Password System On

When the password system is switched On, a password must be entered to access certain printer functions. Note that the following instruction assumes that the password system is Off.

To switch the password system On:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    The **SETUP** menu is displayed.

2. Scroll to the top of the **SETUP** menu until the cursor rests at the **Password** option (see Figure 3-17 on page 43).

3. Press the [enter] key.

4. At the **Password** setting, press the Left [◁] or Right [▷] cursor key to toggle the setting to **On**, then press the [enter] key.

5. Press the [esc] key to exit.

3.7 Getting Help

- **For help with a system message**, for example, "3.04 Solvent Low", refer to Appendix D, 'System Event Messages'

- **For help with troubleshooting a printer system problem**, refer to Chapter 7, 'Diagnostics and Maintenance', and Appendix D, 'System Event Messages'

- **For any other help,** including using the printer or the software, refer to the 'Contents' or 'Index' sections to locate the relevant information

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4 Creating and Editing Messages

Level A
Level B
Level C

This chapter describes how to create and edit messages. It is organized into the following sections:

Tip

If you are new to the 4900 printer and wish to get started creating a message, go to the section 'Creating a Message: Worked Example' on page 82.

4.1 Introduction

4.1.1 Message Fundamentals

Messages are made up of one or more fields. A message can be a single field, for example, a text field, or it can contain several fields of varying type and size.

Text is just one of the field types that you can incorporate into a message; other types are logos, sequential numbers, time and date, and remote data.

The following illustration shows an example message, as viewed at the **EDIT MESSAGE** screen, containing the different field types:
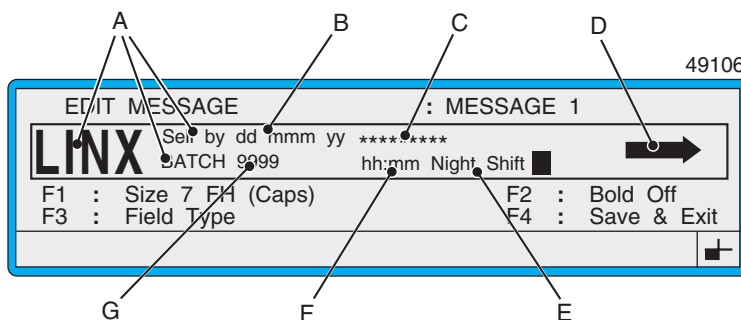
A   Text fields (various sizes)
B   Date field
C   Remote field
D   Logo field
E   Timed Message field
F   Time field
G   Sequential Number field

Figure 4-1 Example Field Types

The next subsection 'About Field Types' describes each type of message field.

4.1.2 About Field Types

When you create a message, you build up the message by inserting fields one at a time, until the message is formed to your requirements. The different types of message fields are described below.

Text

A text field can be made up of any alphanumeric characters, created by simply entering the characters via the keyboard. The size of the characters is set using the Size option and a bold ratio can be applied using the Bold option. See 'Creating a Text Field' on page 58 for further details.

Time

For 'timestamps', or any other time orientated information, a time field shows the actual time. There is a range of time formats available. See 'Creating a Time Field' on page 68 for further details.

Timed Message

A timed message comprises two or more text messages that print in turn, according to a specified start time. Useful for shift patterns, or any other time-based information. See 'Creating a Timed Message Field' on page 70 for further details.

Sequential Number

For batch numbers or item counts, a range (of numbers or letters) prints according to a specified sequence. See 'Creating a Sequential Number Field' on page 72 for further details.

Date

For 'sell-by' dates, or any other date, there is a wide range of date formats available. The date can be offset by a specified number of days. See 'Creating a Date Field' on page 75 for further details.

Remote

A remote field is a placeholder for incoming data received from a remote device via the RS232 serial port of the printer. One or more remote fields can be created. See 'Creating a Remote Field' on page 78 for further details.

Logo

A set of Arabic logos are installed on your printer as a standard. Additional logos may also be available in your printer software. You can place a logo in a message. See 'Inserting a Logo Field' on page 80 for further details.

4.1.3 Choosing the Message Type

The message type you choose determines the height of the message in numbers of drops. This can be from five drops high up to 16 drops high. It also dictates the maximum character size you can use. See 'Selecting the Size' on page 51 for further information.

There are several message types to cater for different speeds of operation, these are: Flexible, Quality, Speed, and Wide. When selecting message types, refer to Appendix C to identify which message types meet the maximum line speed of your operation; Quality message types are generally used for low speeds, Flexible for low to medium speeds, Speed for high speeds, and Wide for very high speed requirements. Note that Flexible message types have a greater print height adjustment range.

The range of message types available varies according to the printer configuration and printhead type in use.

You use the **MESSAGE TYPE** menu to specify the message type. The example below shows a sample of message types available for the Ultima printhead with a 2-line, Standard Speed (SS) configuration:

49189

```
                    MESSAGE  TYPE
  >  7  Quality
  ●  7  Flexible
  ●  16  Quality
  ●  16  Flexible
```

Figure 4-2 Example Message Types

| Tip | You can view the range of message types available on your printer via the **Diagnostics > System Configuration > Message Type** menu. |

| See Also | Full listings of message types for the Ultima and Ultima *plus* printheads are provided in Appendix A, 'Installation and Setup'. |

4.1.4 Selecting the Size

When you select the size, you choose the character set for the message field. This determines the size of the characters, which in turn dictates the height of the message field.

You use the **F1 : Size** option at the **EDIT MESSAGE** screen to select the character set:

49113

```
EDIT  MESSAGE                    : MESSAGE  1
■
F1  :  Size   7  FH  (Caps)          F2  :  Bold  Off
F3  :  Field  Type                   F4  :  Save  &  Exit
                                                        ┘
```

Selecting the Character Set
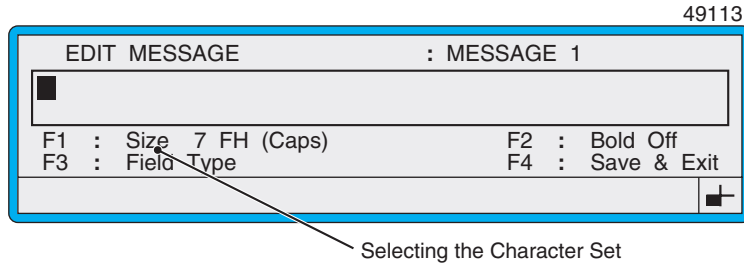
Figure 4-3 Selecting the Character Set

Character Set Availability

The range of character sets available is determined by the message type selected. For example, using a 16-drop high message type, the character size is limited to 16 or less (for a free format message), and for a 2-line message, the maximum size is 7.

The following table shows which character sets are available for each message type:

49079

Message Types	CHARACTER SETS					
	5 FH (Caps)	7 FH (Caps)	7 Arab Num	16 FH (Caps)	16 non-FH	16 Arab Num
5 Wide	✓	–	–	–	–	–
7 Flexible	✓	✓	✓	–	–	–
7 Quality	✓	✓	✓	–	–	–
7 Speed	✓	✓	✓	–	–	–
7 Wide	✓	✓	✓	–	–	–
16 Flexible	✓	✓	✓	✓	✓	✓
16 Quality	✓	✓	✓	✓	✓	✓
16 Speed	✓	✓	✓	✓	✓	✓
16 Wide	✓	✓	✓	✓	✓	✓

Figure 4-4 Character Sets

Note that the numerical value in the name of each message type and character set indicates the height of the printed character, in drops.

Choosing the Character Set

Character sets are available in either '**FH (Caps)**' (Full Height characters), or '**non-FH**', and have a complete set of upper-case and lower-case characters. However, they differ in the way that characters with 'descenders' are handled.

The example below shows how **non-FH** characters have an invisible margin to cater for descenders, whereas **FH (Caps)** characters have the same baseline as the upper-case characters; useful for printing capital letters.

49128
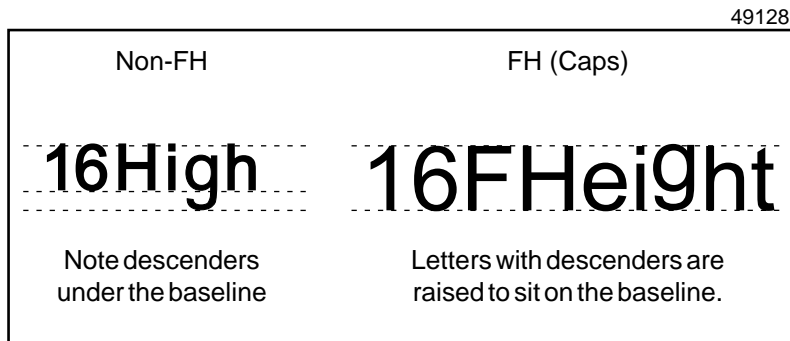
Figure 4-5 Full Height and Non-Full Height Characters

4.1.5 Using a Bold Ratio

You can set up a bold ratio (from x2 to x10), then apply it to any new message field to make the printed characters appear heavier.

As an example, a 7 High character is created with a matrix of 7x5 when the bold factor is set to x1 (standard print). With a bold factor of x2, the same character is formed on a matrix of 7x10, making it the same height but twice as wide.

You use the following settings to define and to apply a bold ratio:

- Use the **Bold Ratio** setting in the **SETUP** menu to define the ratio
- Use the **F2 : Bold** option on the **EDIT MESSAGE** screen to apply the defined bold ratio to a particular new message field

NOTE: The bold ratio can only be applied to a *new* field, not an existing field.

4.1.6 Reversing the Printed Message

You can change the orientation of the printed message from the normal forward orientation:

LINX 49275

to reverse orientation, where the message is printed right to left:

XNIJ 49276

Use the **Reverse Message** option in the **SETUP** menu to switch the setting **On** or **Off**.

4.2 Creating a New Message

Note that printing must be stopped. If necessary, press the [F1] function key to stop printing.

To create a new message, do the following:

- Name the message, using the **NEW MESSAGE** screen

- Select the message type, using the **MESSAGE TYPE** menu

- Add text and/or other types of fields using the **EDIT MESSAGE** screen

4.2.1 To Name the Message and Select the Message Type

1. At the **CURRENT MESSAGE** screen, press the [F3] function key.

NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter a password to continue.

The **NEW MESSAGE** screen is displayed:

49019

```
                    NEW  MESSAGE
  ● Enter  Name  >  _



                                                    ⌐┘
```

Figure 4-6 New Message Screen

2. At the **NEW MESSAGE** screen, type in the message name, for example, **MESSAGE 1**, then press the [enter] key. Note that you can enter up to 15 characters.

The **MESSAGE TYPE** menu is displayed:

49013

```
                    MESSAGE  TYPE
  ❯ 7  Quality
  o 7  Flexible
  o 16  Quality
  o 16  Flexible

                                                    ⌐┘
```

Figure 4-7 Message Type Menu

3. At the **MESSAGE TYPE** menu, scroll through the list of available message types until the cursor rests at the message type you want, then press [enter] key.

See Also

Refer to the section 'Choosing the Message Type' on page 50 for further information about message types.

The **EDIT MESSAGE** screen is displayed:

49118

```
 EDIT  MESSAGE                    : MESSAGE  1
■

 F1  :  Size   7 FH  (Caps)            F2  :  Bold  Off
 F3  :  Field  Type                    F4  :  Save  &  Exit
                                                        ⊶
```

Figure 4-8 Edit Message Screen: New Message

4. You can now create the content of your message by adding text and/or other types of fields and then save the message. See the following sections in this chapter for details.

4.3 Getting to Know the EDIT MESSAGE Screen

You use the **EDIT MESSAGE** screen to create and edit all types of messages. The following example shows you the main features and indicators:

	Feature/indicator...	Description...
A	Message Cursor	Shows current cursor position. See the Message Cursor 'About' box below.
B	Message Display Area	Area where the message being created or edited is displayed, and where you work on the message.
C	Message Name	The name of the message being created or edited.
D	Options	Allow you to perform message editing functions by pressing the associated function key:
		Press [F1] to select the character size.
		Press [F2] to switch the bold ratio on or off.
		Press [F3] to specify the field (Time, Timed Message, Sequential Number, Date, Remote or Logo field).
		Press [F4] to save the message and exit from the screen, back to the **CURRENT MESSAGE** screen.

Figure 4-9 Edit Message Screen Features and Indicators

About

Message Cursor
The **Message Cursor** shows the current position of the cursor in the Message Display Area of the Edit Message screen. The size of the message cursor changes according to the character size of the last selected field. When *creating* a field in a message, you move the message cursor to the start position of the new field. This position must be unoccupied by any other field. When *editing* a field, the position of the message cursor in the field is shown by the flashing action of the character it occupies between normal and reverse display.

The following illustration shows how the position of the message cursor within a field is indicated by the flashing action of the character it occupies:

Cursor position

49127

EDIT MESSAGE : MESSAGE 1

LINX

F1 : Size 16 FH (Caps) F2 : Bold Off
F3 : Field Type F4 : Save & Exit
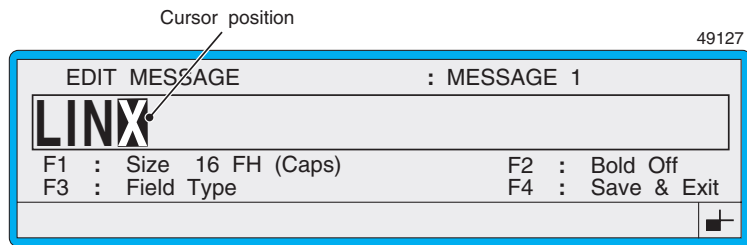
Figure 4-10 Message Cursor Position

4.4 Creating a Text Field

You create a text field using the **EDIT MESSAGE** screen as follows:

- Select the character size using the **Size** option

- Add text by typing it using the keyboard

- Turn the text into a field

You can also apply the bold ratio by using the **Bold** option.

4.4.1 To Select the Character Size

1. Press the [F1] key to step through the available character sets until the character size you want is displayed:

49113

```
EDIT  MESSAGE                    : MESSAGE  1

■

F1  :  Size   7  FH  (Caps)          F2  :  Bold  Off
F3  :  Field  Type                   F4  :  Save  &  Exit
```

Selecting the Character Set
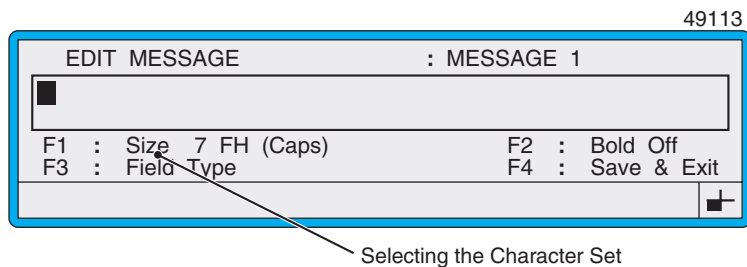
Figure 4-11 Selecting the Character Set

4.4.2 To Add Text

1. In the Message Display Area of the **EDIT MESSAGE** screen, position the cursor where you want the field to start. If necessary, move the cursor by pressing the Right [$\triangleright$], Down [$\triangledown$] or Left [$\triangleleft$] arrow keys.

2. Type in the text using the keyboard.

   As you enter the text, you can press the [del] key to delete the character to the left of the cursor.

NOTE: Take care not to press the [enter] key, or the Left [$\triangleleft$] arrow key (in an attempt to step back through the characters) before you have finished entering the text. If you do this, the text immediately turns into a field and if you attempt to continue entering text, the message "Overlap: Press Enter to Edit" is displayed in the Status Line. See 'Handling a Field Overlap Message' on page 63 for further information.

4.4.3 To Turn the Text into a Field

1. When you have finished entering the text, press the [enter] key to turn the text into a field.

    This action fixes the field length and the number of characters.

    NOTES:

    1. Moving the cursor with the Left [◁] or the Right [▷] arrow keys, or pressing the [enter] key or the [F1] key also turns the text into a field.

    2. As you are entering text, if the message "Overlap: Press Enter to Edit" is displayed in the **Status Line**, this means you have unintentionally turned the text into a field. The field length is now fixed so you cannot continue adding characters to the field.

        If you want to add characters to the field, delete the field and start entering text again. See 'To Delete a Field' on page 63 for details.

        If you want to change the text, edit the field. See 'To Edit a Text Field' on page 62 for details.

4.4.4 Saving the Message

When you have finished creating the message:

1. Press the [F4] function key to save the message and exit. Alternatively, press the [esc] key.

4.5 Working with Message Fields

This section describes how to work with message fields as you create and edit a message in the Message Display Area of the **EDIT MESSAGE** screen.

4.5.1 Navigating the Message Display Area

As you work with a message, you can use the following keystrokes:

Press...	To move the message cursor...
[shift] + [◁], [▷], [△] or [▽]	To the start, end, top or bottom of the message.
[▷] [◁]	Right or left by one character (width).
[△] [▽]	Up or down by one character (height).
[ctrl] +[△], [▽], [◁] or [▷]	Up, down, left or right (by one drop).

Press...	To do this...
[del]	To delete the character to the left of the cursor (as you enter text).
[enter]	To turn the text into a field (when you have finished entering text).
	To select a field (with cursor at field).
[ctrl] + [del]	Delete a field from the message.

4.5.2 Fine Tuning the Field Start Position

To position the cursor where you want the field to start, use the $[\triangle]$, $[\triangledown]$, $[\triangleleft]$ or $[\triangleright]$ arrow keys (see Example A in Figure 4-12 below).

By pressing the [ctrl] key in conjunction with the $[\triangle]$, $[\triangledown]$, $[\triangleleft]$ or $[\triangleright]$ arrow keys, you can move the cursor just one drop at a time (see Example B in Figure 4-12 below):
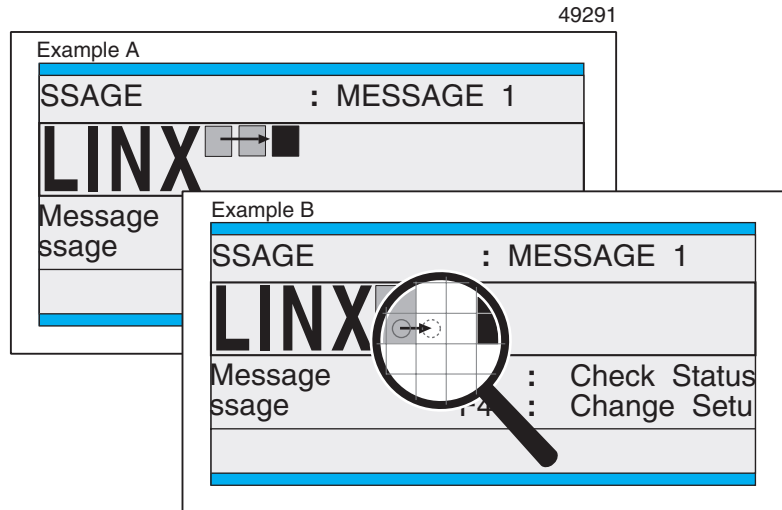
Figure 4-12 Positioning the Message Cursor

4.5.3 Applying Bold to a Field

You can switch the **Bold** option to **On** to apply bold to a message field as you create it; this makes the printed characters appear heavier.

The ratio of bold applied to the field is determined by the **Bold Ratio** value defined in the **SETUP** menu. See also 'Defining the Bold Ratio' on page 99.

To apply the defined bold ratio to a field:

1. At the **EDIT MESSAGE** screen, press the [F2] function key to toggle the **Bold** setting to **On**.
2. Continue creating the field as required.

Tip

For multiple field messages, create the emboldened field *before* you create the other fields in the message because once a bold ratio is applied to the field, the width of the field increases.

4.5.4 Entering Text

Type in the text using the keyboard then press the [enter] key to turn the text into a field.

As you enter the text, you can press the [del] key to delete the character to the left of the cursor.

Tip

To type lower-case characters, press and hold the [shift] key. For further information about typing keyboard characters, see 'Typing Keyboard Characters' on page 20.

NOTE: If you press the [enter] key, or the Left [◁] arrow key (in an attempt to step back through the characters), or the [F1] key, before you have finished typing, the text immediately turns into a field. If you then attempt to continue entering text, the message "Overlap: Press Enter to Edit" is displayed on the Status Line. See 'Handling a Field Overlap Message' on page 63 for further information.

4.5.5 To Select a Field for Editing

1.   In the Message Display Area, press the Left [◁] arrow and Right [▷] arrow keys to move the cursor to any character within the field you wish to edit.

2.   Press the [enter] key.

4.5.6 To Edit a Text Field

1.   Select the field for editing. To do this, move the cursor to any character within the field, then press the [enter] key.

The field is highlighted and the cursor position is shown by the flashing action of the character it occupies, see Figure 4-10 on page 57.

2.   Press the Left [◁] arrow or Right [▷] arrow key to move to the character you wish to change, then overtype.

NOTES:

1.   You cannot *delete* characters, or add characters to extend a field. If you wish to do this, you must delete the whole field (see 'To Delete a Field' on page 63) and start entering text again.

2.   Avoid typing in excess characters as this results in text 'wraparound'. For example, typing 'ABCD' in a field which reads 'ABC' results in overwriting the 'A', thus the field would read 'DBC'.

3.   See also NOTE under 'Entering Text'.

4.5.7 To Edit a Field

To edit any field type (except a text field, see 'To Edit a Text Field' above), that is, a date, time, timed message, sequential number, remote or a logo field, do the following:

1. Select the field for editing. To do this, move the cursor to any character within the field, then press the [enter] key.

2. The associated menu is displayed. For example, if you select a time field, the **TIME** menu is displayed.

3. Make the necessary changes as required, then press the [esc] key to return to the **EDIT MESSAGE** screen.

NOTES

1. You cannot *move* a field. If you wish to do this, you must delete the whole field (see 'To Delete a Field' below) and recreate it in the new position.

2. Editing option values: make sure you press the [enter] key to complete your entry and save the change before you press the [esc] key to exit.

3. Editing a timed message field: you can change the existing messages (**Time** and **Message** text), however, you cannot add new timed messages. If you wish to add another timed message to the field you must delete the field and start again. To do this, at the **EDIT MESSAGE** screen select the field and press [ctrl] + [del].

4.5.8 To Delete a Field

All field types are deleted using the same method:

1. Move the message cursor to the field you wish to delete.

2. Press the [ctrl] and [del] keys together.

    The field is removed from the message.

4.5.9 Handling a Field Overlap Message

At the **EDIT MESSAGE** screen, if the message "Overlap: Press Enter to Edit" is displayed on the **Status Line**, this means one of the following things:

*   If you are entering text, you have unintentionally turned the text into a field. This fixes the field length so you cannot continue adding characters to the field. If necessary, delete the field and start entering text again

*   You have pressed the [enter] key in an attempt to go back and correct a character in the field. Press the [enter] key again to turn the text into a field then edit it. See 'To Edit a Text Field' on page 62

*   If you are creating a new field, the cursor is in a position that is already occupied by another field. Move the cursor to a free space and start again

4.6 Selecting, Editing and Deleting Messages

4.6.1 To Select a Message for Editing

Note that printing must be stopped. If necessary, press the [F1] function key to stop printing.

1. At the **CURRENT MESSAGE** screen, press the [F1] function key.

    The **SELECT MESSAGE** menu is displayed:

49014

```
                      SELECT  MESSAGE

    >  MESSAGE  1
    ●  MESSAGE  2
    ●  MESSAGE  3
    ●  MESSAGE  4


                                                         ⏎
```
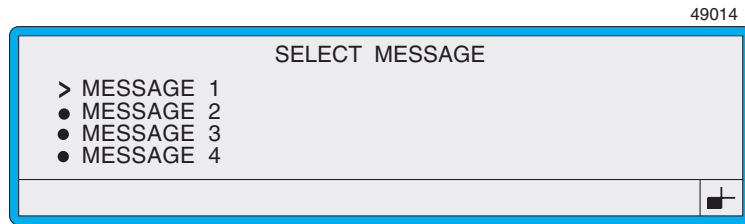
Figure 4-13 Select Message Menu

2. At the **SELECT MESSAGE** menu, scroll through the list until the cursor rests at the message you want to edit.

    Tip

    Type in the first letter of the message name to quickly find the message you want. Note that the letter you enter is case sensitive.

3. Press the [enter] key.

    The **MESSAGE OPTIONS** screen is displayed, showing a preview of the message:

49016

```
    MESSAGE  OPTIONS :          MESSAGE  1

    F1 : Edit
    F2 : Select                 LINX PRINT
    F3 : Delete


                                                         ⏎
```
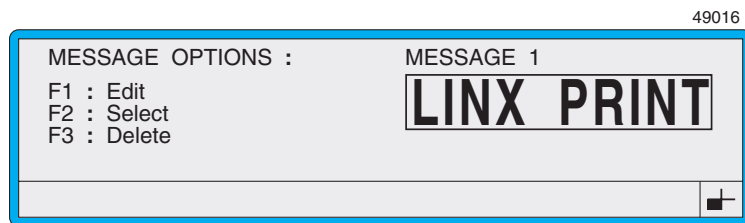
Figure 4-14 Message Options Screen

4. At the **MESSAGE OPTIONS** screen, press the [F1] function key.

    NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter a password to continue.

The **EDIT MESSAGE** screen is displayed:

49030

```
EDIT  MESSAGE                      : MESSAGE  1
┌──────────────────────────────────────────────┐
│ LINX  PRINTING                                 │
└──────────────────────────────────────────────┘
F1  :  Size  16  FH  (Caps)          F2  :  Bold  Off
F3  :  Field  Type                   F4  :  Save  &  Exit
                                                     ◄┘
```

Figure 4-15 Edit Message Screen

4.6.2 To Edit a Message

Note that printing must be stopped. If necessary, press the [F1] function key to stop printing.

1. Select the message for editing. Refer to 'To Select a Message for Editing' on page 64 for details.

2. With the selected message displayed in the Message Display Area of the **EDIT MESSAGE** screen, edit the message by selecting each field in turn and making the required changes:

Press this key...	To...
[enter]	Select a field for editing.
[shift] + [◁] or [▷], [△], [▽]	Move to the start, end, top or bottom of the message.
[△], [▽], [◁] or [▷]	Move the cursor up, down, left or right (by one character).
[ctrl] +[△], [▽], [◁] or [▷]	Move the cursor up, down, left or right (by one drop).
[F1]	Change the character size.
[F2]	Switch the bold factor on/off.
[F3]	Change the field type.
[F4]	Save changes and exit.
[del]	Delete the selected field.

    The section in this chapter 'Working with Message Fields' on page 60 gives you detailed instructions on how to select and edit all types of fields.

3. When you have finished, press the [F4] function key to save the changes and exit.

    The **CURRENT MESSAGE** screen is redisplayed, showing the edited message.

4.6.3 To Delete a Message

Note that printing must be stopped. If necessary, press the [F1] function key to stop printing.

1. At the **CURRENT MESSAGE** screen, press the [F1] function key.

    The **SELECT MESSAGE** menu is displayed:

49014

```
                        SELECT  MESSAGE
        ➤ MESSAGE  1
        ● MESSAGE  2
        ● MESSAGE  3
        ● MESSAGE  4

                                                            ◢
```
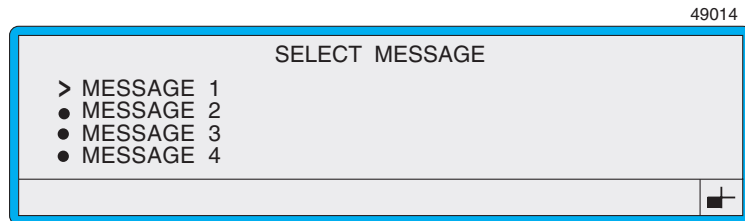
Figure 4-16 Select Message Menu

2. At the **SELECT MESSAGE** menu, scroll through the list until the cursor rests at the message you want.

3. Press the [enter] key.

    The **MESSAGE OPTIONS** screen is displayed, showing a preview of the message:

49016

```
    MESSAGE  OPTIONS :          MESSAGE  1
    F1 : Edit
    F2 : Select                 LINX PRINT
    F3 : Delete

                                                            ◢
```
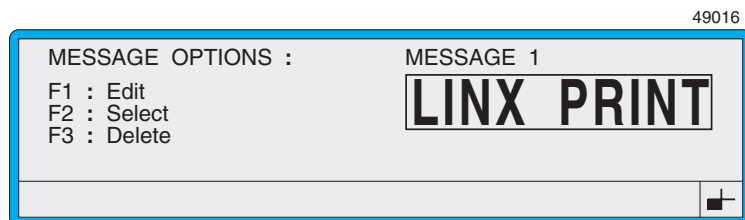
Figure 4-17 Message Options Screen

4. At the **MESSAGE OPTIONS** screen, press the [F3] function key.

    NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter a password to continue.

    The **DELETE MESSAGE** screen is displayed:

49129

```
                        DELETE  MESSAGE
                Delete  Message  :   MESSAGE  1

    F1 : Yes                              F2 : No
                                                            ◢
```
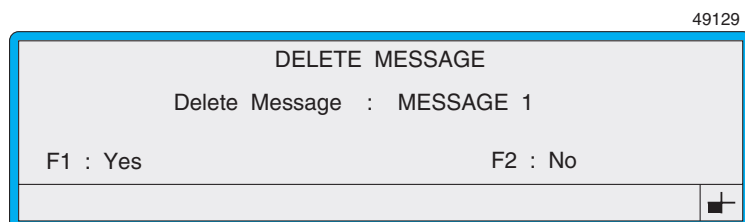
Figure 4-18 Delete Message Screen

5. Press the [F1] function key to select **Yes**. The message is deleted and the **CURRENT MESSAGE** screen is redisplayed. Note that the Message Display Area is blank (no message is selected).

    OR

    Press the [F2] function key to select **No**. The message is not deleted and the **CURRENT MESSAGE** screen is redisplayed showing the selected message.

4.6.4 To Delete the Current Message

To delete the message displayed on the **CURRENT MESSAGE** screen:

1. Press the [del] key.

    The **DELETE MESSAGE** screen is displayed (see Figure 4-18 on page 66).

2. Press the [F1] function key to select **Yes**. The message is deleted and the **CURRENT MESSAGE** screen is redisplayed. Note that the Message Display Area is blank (no message is selected).

    OR

    Press the [F2] function key to select **No**. The message is not deleted and the **CURRENT MESSAGE** screen is redisplayed showing the selected message

4.7 Creating a Time Field

The current time can be added to a message by creating a time field.

NOTE: The current time (system time) is set using the **Set Time** option in the **SETUP** menu.

The **TIME** menu allows you can choose from the following time formats:

49125

TIME FORMATS	
Format	**Usage / Example**
hh:mm	24 hr clock / 16:35
hh:mmpm	12 hr clock / 04:35pm
hhmm	24 hr clock / 1635
hhmmpm	12 hr clock / 0435pm
hh (24h)	24 hr clock, 00 through 23
hh (12h)	12 hr clock, 01 through 12
mm	minutes, 00 through 59

Figure 4-19 Time Formats

4.7.1 To Create a Time Field

1. In the Message Display Area of the **EDIT MESSAGE** screen, move the cursor to the required start position of the field.

2. Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed:

49308


```
            SELECT  FIELD  TYPE
    > Time
    ● Timed  Message
    ● Sequential  No.
    ● Date
```
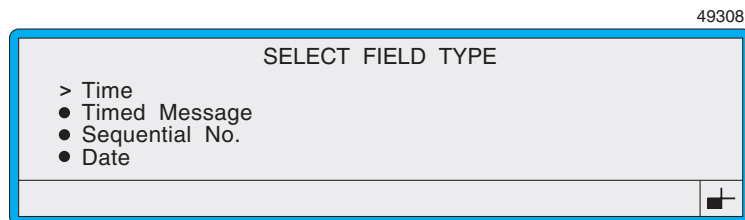
Figure 4-20 Select Field Type Menu: Time Option

3. Scroll to the **Time** option (as shown in the above example), then press the [enter] key.

The **TIME** menu is displayed.

49309

```
                         TIME
    > hh:mm
    ● hh:mmpm
    ● hhmm
    ● hhmmpm
```

    ● hh (24h)
    ● hh (12h)
    ● mm
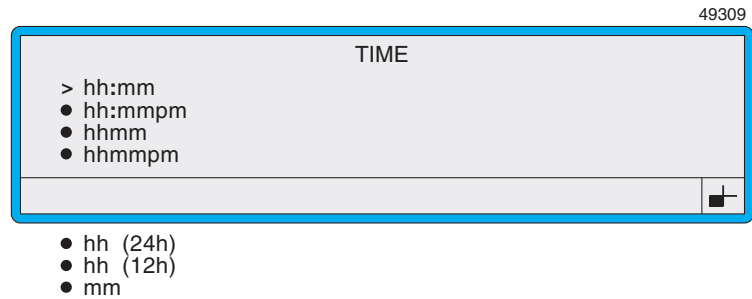
Figure 4-21 Time Menu

4. At the **TIME** menu, press the Up [△] or Down [▽] arrow key to scroll to the format you want.

5. Press the [enter] key to select the format and return to the **EDIT MESSAGE** screen:

49119

```
    EDIT  MESSAGE                    : MESSAGE  1

    LINX  Sell  by  dd  mmm  yy
          BATCH  9999        hh:mm ▓
    F1  :  Size  7  FH  (Caps)        F2  :  Bold  Off
    F3  :  Field  Type                F4  :  Save  &  Exit
```
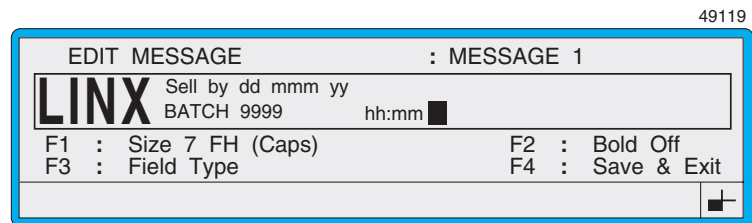
Figure 4-22 Edit Message Screen: Time Field

NOTE: The current time is not displayed in the message until you have finished editing the message and returned to the **CURRENT MESSAGE** screen.

4.8 Creating a Timed Message Field

Creating a timed message field allows you to set up two or more text messages that print in turn according to the specified start time.

For each timed message field you create, up to 24 text messages can be set up, each with a unique time at which the message appears within the printed message.

See Also

To work through an example of setting up a timed message field (containing two messages **Day Shift** and **Night Shift**), refer to 'To Insert a Timed Message' on page 89.

4.8.1 To Create a Timed Message Field

1. In the Message Display Area of the **EDIT MESSAGE** screen, move the cursor to the required start position of the field.

2. Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed:

49307

```
                    SELECT  FIELD  TYPE
        ● Time
        > Timed  Message
        ● Sequential  No.
        ● Date
```
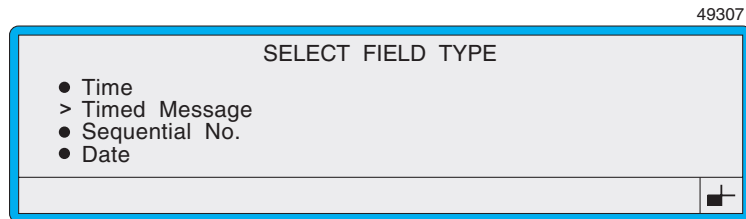
Figure 4-23 Select Field Type Menu: Timed Message Option

3. Scroll to the **Timed Message** option (as shown in the above example), then press the [enter] key.

    The **TIMED MESSAGE** menu is displayed.

49130

```
                     TIMED  MESSAGE
        > Next  Message
        ● Time                        :
        ● Message                     :
```
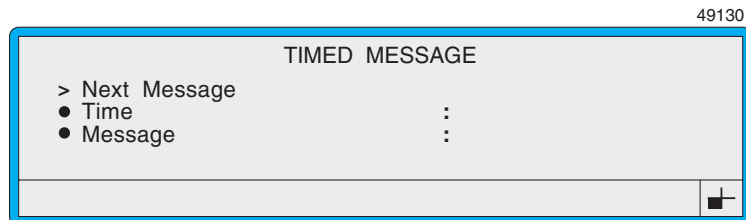
Figure 4-24 Timed Message Menu

4. At the **TIMED MESSAGE** menu, you can do the following:

    NOTE: You must set up a minimum of two messages, each with a different start time.

At this option...	You can do this...
Next Message	When creating a new field, press the [enter] key to clear the screen ready to enter the first (or next) timed message.
	When editing an existing timed message field, scroll through existing messages.
Time	Type in the time to start printing the message, in the 24 hour format, for example **18:00**.
	You must enter either a space, or any one of the separators (**/ . : : ,**) between the hours and the minutes.
Message	Type in the message text, then press the [enter] key.
	Always create the timed message with the longest text first. The length of the first timed message sets the maximum length of all subsequent messages specified for the field.
	Note that up to 10 characters are displayed as you type in the text, however, you can enter up to 99 characters.

NOTE: *Do not* exit from the screen until all the messages are set up. You cannot add messages to an existing timed message field.

5. When you have finished, press the [esc] key to save the messages and return to the **EDIT MESSAGE** screen:

49120

```
EDIT  MESSAGE                    : MESSAGE  1

LINX   Sell by dd mmm yy
       BATCH  9999        Day Shift █
F1  :  Size  7  FH  (Caps)         F2  :  Bold  Off
F3  :  Field  Type                 F4  :  Save  &  Exit

                                              ◢
```

Figure 4-25 Edit Message Screen: Timed Message

Note that the last message created is displayed in the message area. At the time of printing (at the **CURRENT MESSAGE** screen), the appropriate message is displayed.

4.8.2 Editing a Timed Message Field

When you edit a timed message field, you can change the existing messages (**Time** and **Message** text), however, you cannot add new messages.

If you wish to add another message to the field, you must delete the field and start again. To delete the field, at the **EDIT MESSAGE** screen select the field and press [ctrl] + [del].

4.9 Creating a Sequential Number Field

A sequential number field is useful for incrementing (and decrementing) numbers such as batch numbers and item counts.

You specify a range of numbers, or letters, or a combination of both. Printing is controlled by the **Print Trigger** option setting in the **SETUP** menu.

Before You Start

You may wish to precede the sequential number field with text, for example, 'BATCH'. If this is the case, you can refer to the worked example 'To Insert a Batch Number' on page 87 for details.

To create a sequential number field:

1. In the Message Display Area of the **EDIT MESSAGE** screen, position the cursor at the required start position of the field.

2. Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed:

49305

```
            SELECT  FIELD  TYPE
        ●  Time
        ●  Timed  Message
        >  Sequential  No.
        ●  Date
                                                    ⤵
```
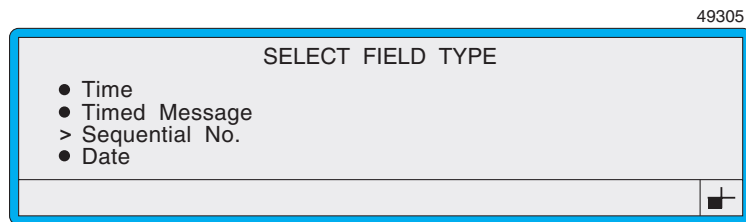
Figure 4-26 Select Field Type Menu: Sequential No. Option

3. Scroll to the **Sequential No.** option (as shown in Figure 4-26 above), then press the [enter] key.

    The **SEQUENTIAL NUMBER** menu is displayed:

49123

```
                SEQUENTIAL  NUMBER
        >  Reset  Number
        ●  Current  Number              :
        ●  Start  Number                :
        ●  End  Number                  :
                                                    ⤵

        ●  Interval                     : 1
        ●  No  of  Repeats              : 1
        ●  Repeat  Count                : 0
```
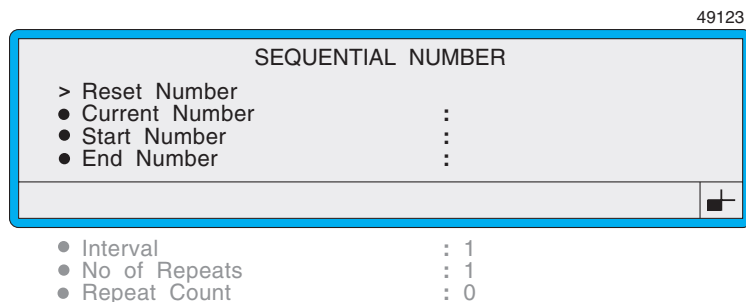
Figure 4-27 Sequential Number Menu

4. At the **SEQUENTIAL NUMBER** menu, you can do the following:

At this option...	You can...
Reset Number	Press the [enter] key to reset the **Current Number** to the value of the **Start Number**, and to set the **Repeat Count** value to zero.
Current Number	View the current number.
Start Number	Enter the value of the first number in the range, for example, 0000. See the Sequential Number Values 'About' box below.
End Number	Confirm the last number in the range.
	Enter the last number in the range, for example, 9999. Overtype the number displayed as required. For a decrementing number, enter a value less than the **Start Number** value.
Interval	Enter the value by which to increment or decrement. For example, with a start number of 000, an interval value of 2 increments as 002, 004, 006, and so on, and -2 decrements as 999, 997, 995, and so on. The interval value defaults to 1 and the range is 1 through 127.
No of Repeats	Enter the number of times the sequential number is printed before the next increment. This value defaults to 1.
Repeat Count	Displays the number of times the sequential number has printed with the **Current Number** value. Maximum value is **No of Repeats** value minus 1.
	This value defaults to 0.

Sequential Number Values
Start Number, End Number and Current Number

Up to 10 alphanumeric characters can be included in a sequential number, in the format 0–9, a–z, A–Z. For example, **Start Number** 000 **End Number** 999. Each position can contain a character from one of these formats, for example, **Start Number** 00a00A **End Number** 99z99Z.

Use any other characters as non-incrementing characters, for example, '.' or '/'. These must be entered at the same position in both the **Start Number** and **End Number** option values, for example, **Start Number** 000/000A **End Number** 999/999Z.

5. When you have finished, press the [esc] key to save the information and return to the **EDIT MESSAGE** screen, for example:

49115

```
  EDIT  MESSAGE                    :  MESSAGE  1

  LINX    Sell  by  dd  mmm  yy
          BATCH  9999

  F1  :  Size   7  FH  (Caps)       F2  :  Bold  Off
  F3  :  Field  Type                F4  :  Save  &  Exit
```

Figure 4-28 Edit Message Screen: Sequential Number

4.10 Creating a Date Field

You can create a date field for sell-by dates, use-by dates, or any other date related information.

The **DATE FORMAT** menu allows you to choose from the following date formats:

49126

DATE FORMATS	
Format	**Usage / Example**
dd mmm yy	23 JUN 04
dd mmm yyyy	23 JUN 2004
mmm dd yy	JUN 23 04
mmm dd yyyy	JUN 23 2004
mmm	month, Jan, Feb, Mar, etc.
dd mmm	23 JUN
dd.mm.yy	23.06.04
mm/dd/yy	06/23/04
yy.mm.dd	04.06.23
d	day of week, 0 through 6 (Sun–Sat)
d (1-7)	day of week, 1 through 7 (Mon–Sun)
dd	day of month, 1 through 31
jjj	Julian date, 001 through 366. See Note 1.
ww	week number, 1 though 52
mm	month number, 1 through 12
y	year of decade, 0 through 9
yy	year of century, 00 through 99
yyyy	full year, 2004
y jjj	year of decade, Julian date (001 through 366). See Note 1.
yy–mm–dd a	Arabic format, 4– 6–23. See Note 2.

Figure 4-29 Date Formats

NOTES:

1. To specify the Julian date format as either European or American, please refer to 'To Specify the Julian Date Format' on page 110.

2. The Arabic date format 'yy-mm-dd a' can be used with standard fonts (for roman numerals), or with Arabic fonts (for Arabic characters). When used with standard fonts, note the leading spaces (4– 6–23).

The **DATE** menu allows you to specify the 'offset' number of days. This period from the current date creates the actual printed date.

4.10.1 To Create a Date Field

1. In the Message Display Area of the **EDIT MESSAGE** screen, move the cursor to the required start position of the field.

2. Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed:

49302

```
                    SELECT  FIELD  TYPE

          ● Time
          ● Timed  Message
          ● Sequential  No.
          > Date
```

Figure 4-30 Select Field Type Menu: Date Option

3. Scroll to the **Date** option (as shown in Figure 4-30 above), then press the [enter] key.

   The **DATE FORMAT** menu is displayed:

49011

```
                      DATE  FORMAT

          > dd  mmm  yy
          ● dd  mmm  yyyy
          ● mmm  dd  yy
          ● mmm  dd  yyyy
```

Figure 4-31 Date Format Menu

4. At the **DATE FORMAT** menu, scroll to the format you want, then press the [enter] key to select it.

   The **DATE** menu is displayed showing the date format selected:

49304

```
                          DATE
          > Offset                    : 0
          o Format                    : dd  mmm  yy
```
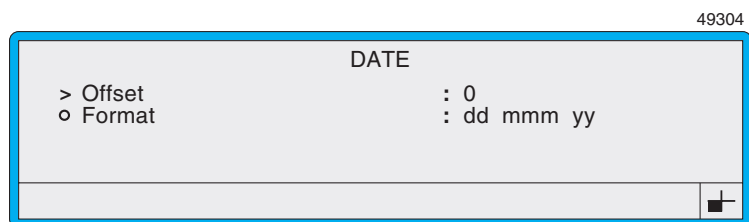
Figure 4-32 Date Menu

5. At the **DATE** menu, you can specify the offset as follows:

At this option...	**You can...**
Offset	Enter the number of days to be added to the current date to create the printed date.
	NOTE: Remember to press the [enter] key once you have entered this value.
Format	View the date format selected. This is display only.
	If you wish to change the format displayed, press [esc] to return to the **DATE FORMAT** menu and select another format.

6. Once you press the [enter] key following your **Offset** value entry, the **EDIT MESSAGE** screen is redisplayed, for example:

49112

```
┌─────────────────────────────────────────────┐
│  EDIT  MESSAGE              : MESSAGE  1      │
│ ┌──────────────────────────────────────────┐ │
│ │LINX Sell  by  █d  mmm  yy                 │ │
│ └──────────────────────────────────────────┘ │
│  F1  :  Size   7  FH  (Caps)     F2  :  Bold  Off │
│  F3  :  Field  Type              F4  :  Save  &  Exit │
│                                           ▗▄▖  │
└─────────────────────────────────────────────┘
```

Figure 4-33 Edit Message Screen: Date Field

NOTE: The actual printed date is not displayed until you have finished editing the message and returned to the **CURRENT MESSAGE** screen.

4.11 Creating a Remote Field

A remote field reserves an area in a message (comprising a specified number of characters) to which data can be downloaded from a remote computer. You can create one or more remote fields, in which case incoming data fills each field in the order in which the fields are created.

The 4900 printer has RS232 communications installed as standard, however, data can only be received by the printer once it is connected to the remote device using an RS232 interface cable, and the Remote Interface settings have been configured. See Chapter 6, 'Remote Interface Setup' for further details.

To create a remote field:

1. In the Message Display Area of the **EDIT MESSAGE** screen, position the cursor at the required start position of the field.

2. Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed:

49310

SELECT FIELD TYPE
- Timed Message
- Sequential No.
- Date
> Remote
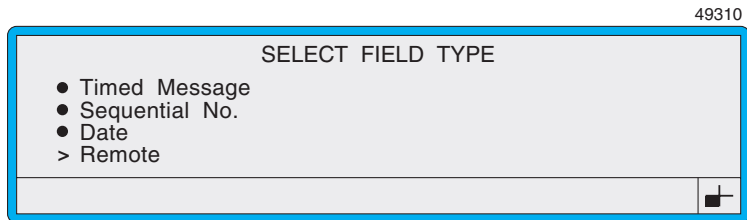
Figure 4-34 Select Field Type: Remote

3. Scroll to the **Remote** option (as shown in Figure 4-34 above), then press the [enter] key.

    The **REMOTE** menu is displayed:

49311

REMOTE
> Number of Characters   : 9
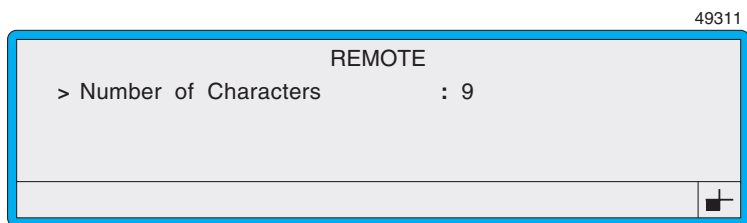
Figure 4-35 Remote Menu

4. At the **REMOTE** menu, press the [enter] key to select the **Number of Characters** option.

5. Type in the number of characters (up to a maximum of 255), then press the [enter] key. This is the number of characters to be downloaded into the field from a remote device.

6. Press the [enter] key to confirm your entry.

    The **EDIT MESSAGE** screen is redisplayed showing the newly created remote field:

49121

```
┌─────────────────────────────────────────────────┐
│  EDIT  MESSAGE              : MESSAGE  1          │
│  ┌──────┐ Sell  by  dd  mmm  yy  *********        │
│  │ LINX │ BATCH  9999          hh:mm  Night  Shift ▮│
│  F1  :  Size  7  FH  (Caps)        F2  :  Bold  Off │
│  F3  :  Field  Type                F4  :  Save  &  Exit │
│                                              ◄┘   │
└─────────────────────────────────────────────────┘
```

Figure 4-36 Edit Message Screen: Remote Field

Note that a remote field is indicated by a number of asterisks (*), according to the number of characters specified when the field is created. Once data is received, the asterisks are replaced by the incoming data.

4.12 Inserting a Logo Field

A set of Arabic logos are installed in your printer as standard. Additional logos are only available if your printer software has been configured with logos. For further information, contact your local Linx distributor.

Logos can then be used with any message by inserting a logo field.

To insert a logo field:

1. In the Message Display Area of the **EDIT MESSAGE** screen, position the cursor at the required start position of the field.

    NOTE: To maximize the space available for a logo within the message and the range of logos available, ensure that the cursor is positioned at the outside edge of the Message Display Area. If the cursor is moved inside the perimeter of the Message Display Area, the logos available will be limited to those that fit within the area.

2. Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed:

49312

```
                    SELECT  FIELD  TYPE
    >  Logo
    ●  Time
    ●  Timed  Message
    ●  Sequential  No.

                                              ⌐┘
```
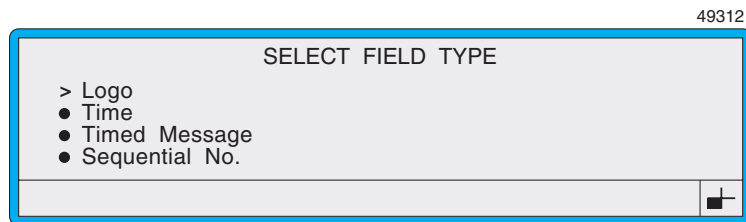
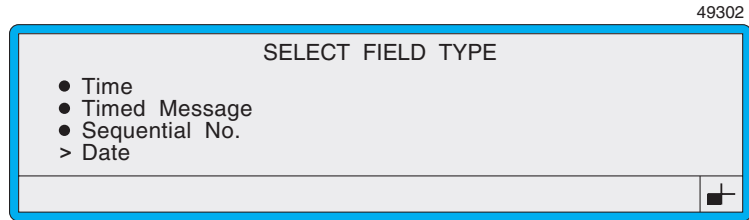**Figure 4-37 Select Field Type: Logo**

3. Scroll to the **Logo** option (as shown in Figure 4-37 above), then press the [enter] key.

    The **LOGO** menu is displayed showing a list of available logos:
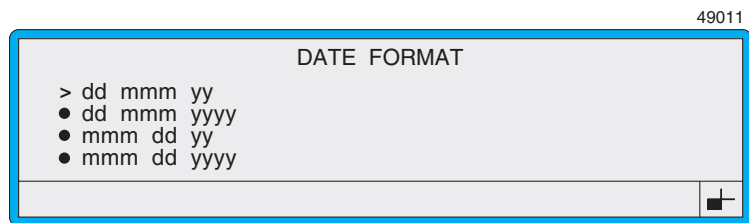
49313

```
                         LOGO
    >  ArabE7
    ●  ArabP7
    ●  Exp.  7  (Arab)
    ●  Man.  7  (Arab)

                                              ⌐┘
```

Figure 4-38 Logo Menu

NOTE: Only logos that fit within the message you are creating or editing are available (displayed). See Note at Step 1 above.

4. At the **LOGO** menu, scroll to the logo you want, then press the [enter] key.

The **EDIT MESSAGE** screen is redisplayed showing the newly created logo field, for example:

Figure 4-39 Edit Message Screen: Logo Field

4.13 Creating a Message: Worked Example

This section provides worked examples that show you how to create the following example message:

49107

```
CURRENT  MESSAGE            : MESSAGE  1
LINX  Sell  by  12  Jun  04
      BATCH  9999        Day  Shift
F1  :  Change  Message      F2  :  Check  Status
F3  :  New  Message         F4  :  Change  Setup
```

Figure 4-40 Example Message Viewed at the Current Message Screen

By working through this section, you learn how to:

- Create a 16-drop high message
- Add text, and insert a sell-by date, a batch number and a timed message
- Print the message

NOTE: The following examples assume that the correct line speed is set up for your production line. For further information about setting up the line speed see Chapter 5, 'Changing the System Setup'.

4.13.1 To Create a New Message

In this example, you create a 16-drop high message.

1. At the **CURRENT MESSAGE** screen, press the [F3] function key.

NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter a password to continue. See 'To Enter the Password' in Chapter 2, 'Getting Started' for further details.

The **NEW MESSAGE** screen is displayed:

49019

```
                        NEW  MESSAGE
   ● Enter  Name  >  _



                                                              ◄┘
```

Figure 4-41 New Message Screen

2. At the **NEW MESSAGE** screen, type in the message name **MESSAGE 1**:

49020

```
                        NEW  MESSAGE
   ● Enter  Name  >  MESSAGE 1



                                                              ◄┘
```

Figure 4-42 New Message Screen: Message 1

3. Press the [enter] key.

The **MESSAGE TYPE** menu is displayed:

49189

```
                        MESSAGE  TYPE
   >  7  Quality
   ●  7  Flexible
   ●  16  Quality
   ●  16  Flexible

                                                              ◄┘
```

Figure 4-43 Message Type Menu

4. At the **MESSAGE TYPE** menu, press the Down [▽] and Up [△] arrow keys to scroll through the menu options until the menu cursor (**>**) rests at **16 Quality**.

5. Press the [enter] key.

    The **EDIT MESSAGE** screen is displayed.

4.13.2 To Create a Text Field

In this example, you add the text field '**LINX**' using 16-high characters.

1. At the **EDIT MESSAGE** screen, press the [F1] function key to step through the **Size** options until **16 FH (Caps)** is displayed:

49108

```
EDIT  MESSAGE              : MESSAGE  1
┌───────────────────────────────────────┐
│ ▉                                       │
F1  :  Size   16  FH  (Caps)      F2  :  Bold  Off
F3  :  Field  Type                F4  :  Save  &  Exit
                                              ◄┘
```
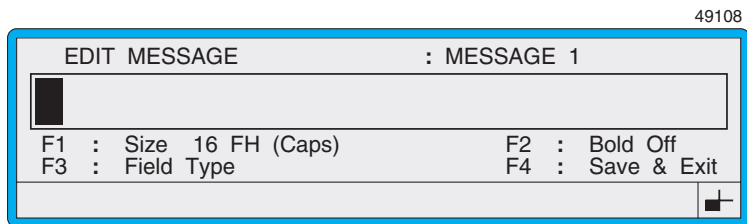
Figure 4-44 Edit Message Screen: Size 16 FH (Caps)

Note how the message cursor size changes to reflect the height of the selected character size.

2. Type in **LINX**:

49109

```
EDIT  MESSAGE              : MESSAGE  1
┌───────────────────────────────────────┐
│LINX▉                                    │
F1  :  Size   16  FH  (Caps)      F2  :  Bold  Off
F3  :  Field  Type                F4  :  Save  &  Exit
                                              ◄┘
```
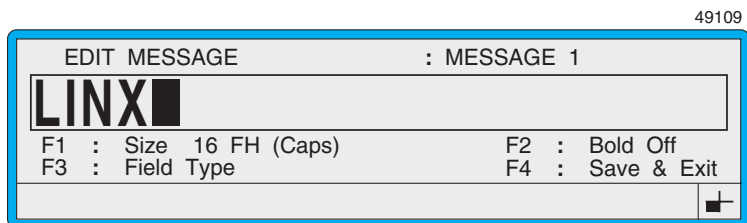
Figure 4-45 Edit Message Screen: LINX

3. Press the [enter] key. This action turns the text into a field.

NOTE: Pressing any one of the following control keys changes the text you are entering into a field: [enter] key, [esc] key, [F1] function key, Left [◁] arrow key or Right [▷] arrow key.

4.13.3 To Insert a Sell-by Date

In this example, you add a text field '**Sell by**', and a date in the format '**dd mmm yy**' (using 7-high characters).

1. Set the character size:

    (a) At the **EDIT MESSAGE** screen, press the [F1] function key to step through the **Size** option until **7 FH (Caps)** is displayed:

49110
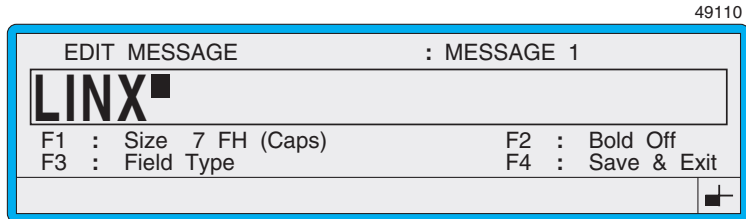
Figure 4-46 Edit Message Screen: Size 7 FH (Caps)

Note how the message cursor changes in size to reflect the height of the selected character size.

2. Type in **Sell by**, then press the [enter] key.

To type lower-case characters, press and hold the [shift] key.

Tip

49111
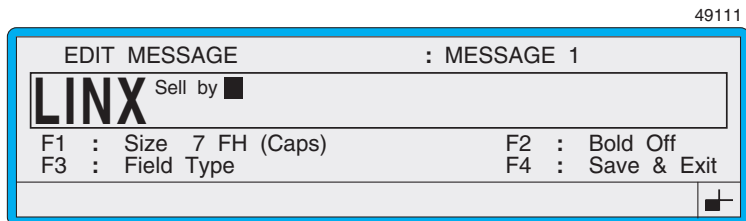
Figure 4-47 Edit Message Screen: Sell-by Text

3. Insert the date, with an offset period of 60 days from the current date. To do this:

    (a) Press the Right [▷] arrow key once to create a space after the **Sell by** text field.

    (b) Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed.

    (c) Press the Up [△] or Down [▽] arrow key to move the menu cursor to the **Date** option:

49302

Figure 4-48 Select Field Type Menu: Date Option

(d) Press the [enter] key.

The **DATE FORMAT** menu is displayed:

49011

```
                        DATE  FORMAT
    >  dd  mmm  yy
    ●  dd  mmm  yyyy
    ●  mmm  dd  yy
    ●  mmm  dd  yyyy
```
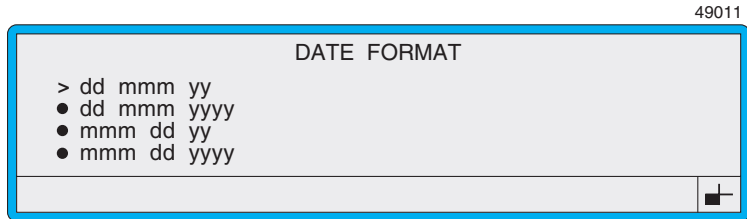
Figure 4-49 Date Format Menu

(e) Press the Up [△] or Down [▽] arrow key to move the menu cursor to the **dd mmm yy** option (as shown in the above example), then press the [enter] key.

The **DATE** menu is displayed:

49304

```
                         DATE
    >  Offset                        :  0
    ○  Format                        :  dd  mmm  yy
```
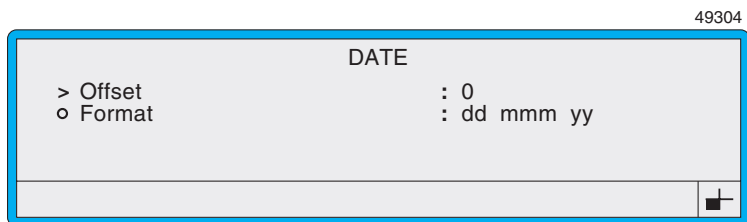
Figure 4-50 Date Screen

(f) Press the [enter] key to select the **Offset** option, which moves the cursor to the **Offset** value on the right side of the screen.

(g) Type in **60**, then press the [enter] key.

The **EDIT MESSAGE** screen is redisplayed:

49112

```
    EDIT  MESSAGE                :  MESSAGE  1
    LINX  Sell  by  dd  mmm  yy

    F1  :  Size   7  FH  (Caps)          F2  :  Bold  Off
    F3  :  Field  Type                   F4  :  Save  &  Exit
```
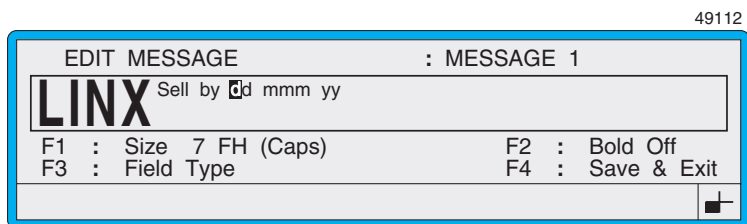
Figure 4-51 Edit Message Screen: Sell-by Date

4.13.4 To Insert a Batch Number

In this example, you add a text field **'BATCH',** and a decrementing sequential batch number that starts at '**9999**' and counts down to '**0000**' (using 7-high characters).

1. Insert the text field '**BATCH**'. To do this:

    (a) Position the message cursor at the start position of the field. To do this, press the Down [▽] and Left [◁] arrow keys as follows:

49114

```
EDIT  MESSAGE                    : MESSAGE  1

LINX  Sell by dd mmm yy
      ■◀▪▪

F1  :  Size   7 FH  (Caps)        F2  :  Bold  Off
F3  :  Field  Type                F4  :  Save  &  Exit
```
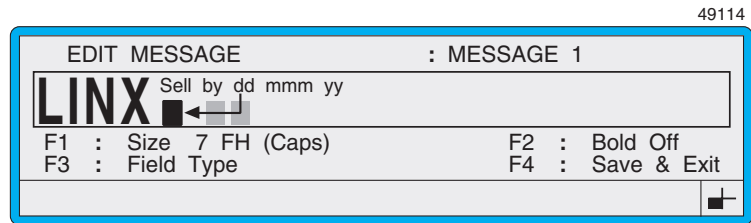
Figure 4-52 Moving the Cursor to the Start Position

    (b) Type in **BATCH**, then press the [enter] key:

49116

```
EDIT  MESSAGE                    : MESSAGE  1

LINX  Sell by dd mmm yy
      BATCH■

F1  :  Size   7 FH  (Caps)        F2  :  Bold  Off
F3  :  Field  Type                F4  :  Save  &  Exit
```
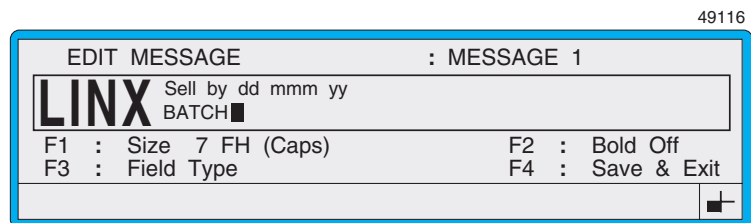
Figure 4-53 Edit Message Screen: BATCH Text

2. Insert the sequential number. To do this:

    (a) Press the Right [▷] arrow key once to create a space after the **BATCH** text field.

    (b) Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed.

    (c) Press the Up [△] or Down [▽] arrow key to move the menu cursor to the **Sequential No.** option:

49305

```
            SELECT  FIELD  TYPE
  ● Time
  ● Timed  Message
  > Sequential  No.
  ● Date
```
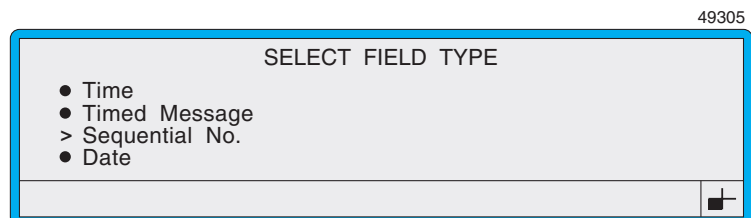
Figure 4-54 Select Field Type Menu: Sequential No. Option

(d) Press the [enter] key.

The **SEQUENTIAL NUMBER** menu is displayed:

49131

```
                    SEQUENTIAL  NUMBER
    ● Reset  Number
    ● Current  Number                    :
    ● Start  Number                      :
    > End  Number                        :

                                                         ⏎
```
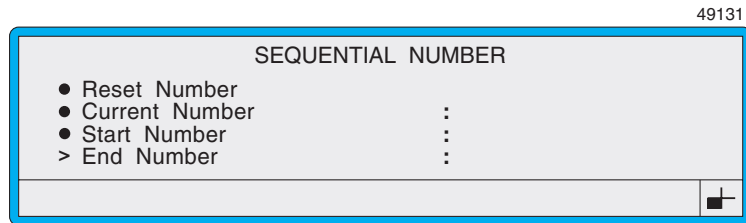
Figure 4-55 Sequential Number Menu

(e) Press the Up [△] or Down [▽] arrow key to move the menu
cursor to the **End Number** option (as shown in the example
above), then press the [enter] key.

The cursor moves to the **End Number** value on the right side of
the screen.

(f) Type in **0000** and press the [enter] key.

The **Start Number** value defaults to **9999**, with a **Current
Number** of **9999**:

49306

```
                    SEQUENTIAL  NUMBER
    > Reset  Number
    ● Current  Number                    : 9999
    ● Start  Number                      : 9999
    ● End  Number                        : 0000

                                                         ⏎
```
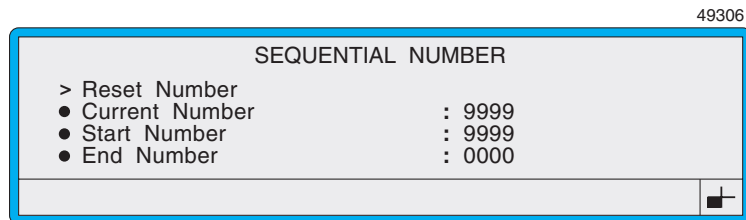
Figure 4-56 Sequential Number Menu : Start Number 9999

(g) Press the [esc] key to save and return to the **EDIT MESSAGE**
screen:

49115

```
    EDIT  MESSAGE                  : MESSAGE  1
    LINX  Sell by dd  mmm  yy
          BATCH  9999
    F1  :  Size   7 FH  (Caps)          F2  :  Bold  Off
    F3  :  Field  Type                  F4  :  Save  &  Exit
                                                         ⏎
```
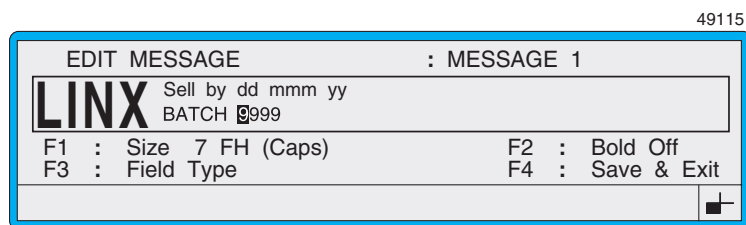
Figure 4-57 Edit Message Screen: Sequential Number

4.13.5 To Insert a Timed Message

In this example you create a timed message field made up of these two text messages:

- **Day Shift** to print from 08:00 through to 17:59
- **Night Shift** to print from 18:00, and continue through to 07:59

To create a timed message field:

1. Position the cursor at the start position of the field. To do this, press the Right [▷] arrow key as follows:

49132
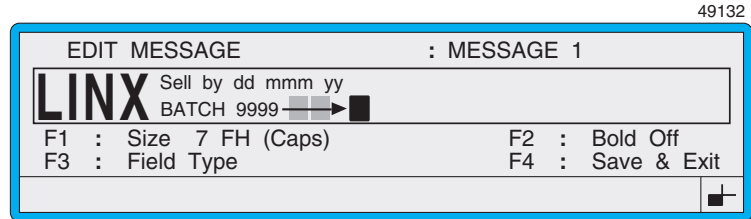
Figure 4-58 Moving the Cursor to the Start Position

2. Press the [F3] function key. The **SELECT FIELD TYPE** menu is displayed.

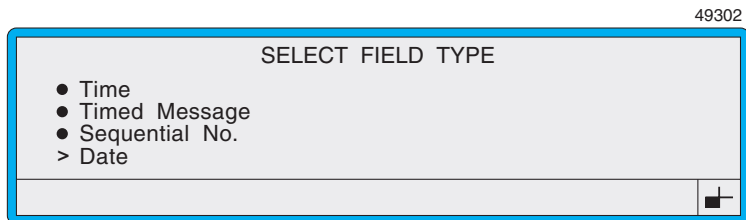3. Press the Up [△] or Down [▽] arrow key to move the menu cursor to the **Timed Message** option:

49307
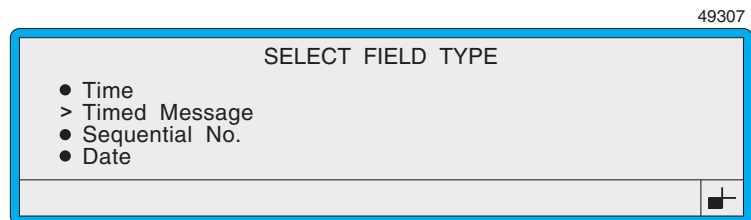
Figure 4-59 Select Field Type Menu: Timed Message Option

4. Press the [enter] key.

The **TIMED MESSAGE** menu is displayed:

49130
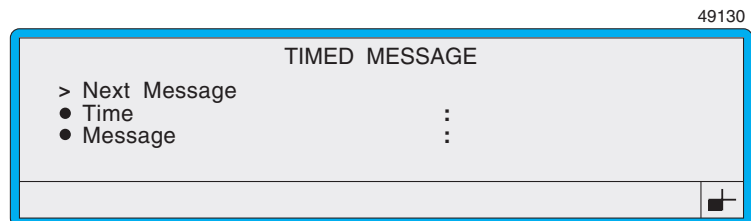
Figure 4-60 Timed Message Menu

5. At the **TIMED MESSAGE** menu, set up the text messages as follows:

   Note that you set up the message with the longest text first—**Night Shift** as this sets the length of the field.

   To set up **Night Shift**:

   (a) At the **Next Message** option, press the [enter] key.

   (b) At the **Time** option, press the [enter] key, type in **18:00**, then press the [enter] key.

   (c) At the **Message** option, press the [enter] key, type in **Night Shift**, then press the [enter] key.

   > **Tip**
   >
   > To type lower-case characters, press and hold the [shift] key.

   Now continue to set up **Day Shift**:

   (d) Scroll back up to the **Next Message** option and press the [enter] key.

   (e) At the **Time** option, press the [enter] key, type in **08:00**, then press the [enter] key.

   (f) At the **Message** option, press the [enter] key, type in **Day Shift**, then press the [enter] key.

6. Press the [F4] key to save the message, create the field and return to the **EDIT MESSAGE** screen:

49120

```
EDIT  MESSAGE                    : MESSAGE  1

LINX   Sell  by  dd  mmm  yy
       BATCH  9999        Day  Shift ■
F1  :  Size  7  FH  (Caps)          F2  :  Bold  Off
F3  :  Field  Type                  F4  :  Save  &  Exit
                                                      ▬◄
```

Figure 4-61 Edit Message Screen: Timed Message

4.13.6 To Print the Message

1. Press the [start] key.

The printer starts printing and the **CURRENT MESSAGE** screen is displayed showing the message.

5 Changing the System Setup

Level B
Level C

The Linx 4900 printer provides a menu of options that enables you to change various system settings to your requirements.

From the **SETUP** menu, you can change the message parameters, line settings and installation settings if you make any changes to the configuration of your production line. For example, when you relocate the printer, or if you wish to change certain system attributes, such as the passwords, time setting, and system language. You may also wish to adjust aspects of the printed message by changing the message height or bold ratio.

This chapter describes how to configure the following:

- Message parameters
- Installation settings
- Line settings
- Passwords

See Also

This Setup menu option...	Is described in...
Remote Setup Menu options	Chapter 6, 'Remote Interface Setup'
Solvent Add option	Chapter 7, 'Diagnostics and Maintenance'
Ink Type Selection	Chapter 7, 'Diagnostics and Maintenance'

5.1 Accessing the Setup Menu

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point, and you must enter a password to continue.

    The **SETUP** menu is displayed:

49061

```
                              SETUP
       >  Password                       :  Off
       ●  Print  Height                  :  Normal
       ●  Print  Width                   :  0
       ●  Print  Delay                   :  16


                                                              ⬦
```

```
       ●  Print  Count                   :  9
       ●  Reverse  Messsage              :  Off
       ●  Bold  Ratio                    :  1
       ●  Set  Time                      :  10:16
       ●  Set  Date                      :  15:08:03
       ●  Julian  Date  Format           :  European
       ●  Primary  Trigger               :  Leading  Edge
       ●  Shaft  Encoder                 :  On
       ●  Auto  Power  Down
       ○  Ink  Type  Selection           :  A
       ●  Head  Height                   :  0.5m
       ●  Alarm
       ●  Change  Password
       ●  Change  Language
       ●  Remote  Setup  Menu
       ●  Diagnostic  Menu
       ○  Solv  Add  Time                :  30
```
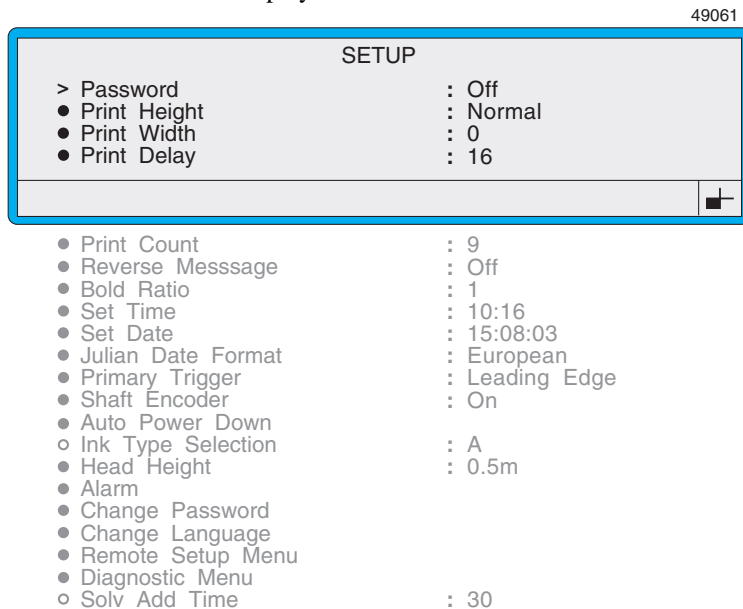
Figure 5-1 Setup Menu

The example above shows the **SETUP** menu options that are displayed for the User Level C password, when the printer status is "Jet Off". See the next section, 'Option Availability' on page 93 for further details.

5.2 Option Availability

The options you see when you access the **SETUP** menu differ according to the current printer status (Jet Off, Jet Running or Printing), and the user level password (Level B or Level C).

The following table shows the validity of the **SETUP** menu options, according to the printer status.

49136

KEY:

●   Option is displayed *and* can be selected and changed.

○   Option is displayed for viewing only; it *cannot* be selected or changed.

−   Option is not available.

Setup Menu Options	USER LEVEL B PASSWORD			USER LEVEL C PASSWORD		
	Jet Off	Jet Running	Printing	Jet Off	Jet Running	Printing
Password	●	●	●	●	●	●
Print Height	●	●	●	●	●	●
Print Width	●	●	●	●	●	●
Print Delay	●	●	●	●	●	●
Print Count	●	●	●	●	●	●
Reverse Message	●	●	○	●	●	○
Bold Ratio	●	●	○	●	●	○
Set Time	●	●	○	●	●	○
Set Date	●	●	○	●	●	○
Julian Date Format	●	●	○	●	●	○
Primary Trigger	●	●	○	●	●	○
Shaft Encoder	−	−	−	●	●	○
Auto Power Down	−	−	−	●	●	●
sub-options	−	−	−	●	●	●
Ink Type Selection	−	−	−	○	○	○
Head Height	−	−	−	●	○	○
Alarm	−	−	−	●	●	●
sub-options	−	−	−	○	○	○
Change Password	−	−	−	●	●	●
Change Language	−	−	−	●	●	○
Remote Setup Menu	−	−	−	●	●	●
sub-options	−	−	−	●	●	●
Diagnostic Menu	−	−	−	●	●	●
sub-options	see Diagnostics Menu in Chapter 7, 'Diagnostics and Maintenance'.					
Solv Add Time	−	−	−	○	○	○

Figure 5-2 Setup Menu Option Availability

5.3 Adjusting the Message Parameters

This section describes how to adjust the message height and width, reverse the printed message, set the print delay, and define the bold ratio.

5.3.1 To Adjust the Message Height

You can adjust the height of the current message by changing the **Print Height** setting.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

NOTE: If the **Password** system is switched On, the **PASSWORD** screen is displayed at this point and you must enter a password to continue.

The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Print Height** option, as shown below:

49062

```
                          SETUP
   ● Password                     : Off
   > Print  Height                : Normal
   ● Print  Width                 : 0
   ● Print  Delay                 : 16
```

Figure 5-3 Setup Menu: Print Height Option

3. Press the [enter] key.

4. At the **Print Height** setting you can specify a percentage increase or decrease, within the adjustment range of the current message type (see Figure 5-4 below). For example, the adjustment range of the 7 Quality message type is +10% to –5%.

To do this, press the Right [$\triangleright$] and Left [$\triangleleft$] arrow keys to step through the available settings, then press the [enter] key.

49222

MESSAGE TYPE PRINT HEIGHT RANGES		
Message type	**Ultima**	**Ultima _plus_**
5 Wide	0% to –5%	0% to –5%
7 Flexible	+50% to –20%	N/A
7 Quality	+10% to –5%	+10% to –5%
7 Speed	0% to –5%	0% to –5%
7 Wide	0% to –5%	0% to –5%
16 Flexible	+10% to 0%	N/A
16 Quality	+10% to –5%	+10% to –5%
16 Speed	0	0% to –5%
16 Wide	0% to –5%	0% to –5%

Figure 5-4 Print Height Ranges

Note that the **Normal** setting is 0%.

5. Press the [esc] key to exit.

5.3.2 To Adjust the Message Width

You can adjust the width of the current message by increasing or decreasing the **Print Width** value. This value is proportional to the time delay between the printed characters, *or*, if you are operating with a shaft encoder (**Shaft Encoder** option set to **On**), the **Print Width** value is equivalent to the shaft encoder pulses between rasters—if this is the case, refer to the next section 'To Set the Print Width Value: Shaft Encoder' on page 97 for details.

NOTE: Changing the **Print Width** setting can also affect the **Print Delay** setting, so you may need to make an adjustment to the **Print Delay** setting value to achieve the precise print registration (see 'To Set the Print Delay' on page 98 for further details).

To adjust the message width:

1.   At the **CURRENT MESSAGE** screen, press the [F4] function key.

The **SETUP** menu is displayed.

2.   Scroll through the menu options until the cursor rests at the **Print Width** option, as shown below:

49279

```
                          SETUP
    ● Password             : Off
    ● Print  Height        : Normal
    > Print  Width         : 8
    ● Print  Delay         : 16
```

Figure 5-5 Setup Menu: Print Width Option

3.   Press the [enter] key.

4.   At the **Print Width** setting, type in the value to adjust the message width, then press the [enter] key.

5.   Press the [esc] key to exit.

5.3.3 To Set the Print Width Value: Shaft Encoder

If you are using a shaft encoder on your production line (**Shaft Encoder** option set to **On**), the **Print Width** setting allows you to set the print width value for your particular shaft encoder and encoder wheel combination. This value is equivalent to the shaft encoder pulses between rasters, and must be computed using calculations provided in Appendix A, 'Installation and Setup'.

When operating *without* a shaft encoder, the **Print Width** value is proportional to the time delay between the printed characters and can be increased or decreased to adjust the width of the current message. See 'To Adjust the Message Width' on page 96 for details.

To set the print width value:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    The **SETUP** menu is displayed.

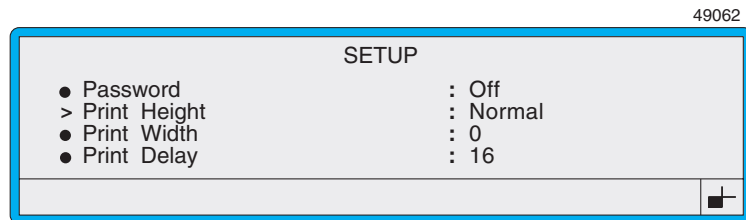2. Scroll through the menu options until the cursor rests at the **Print Width** option.

3. Press the [enter] key.

4. At the **Print Width** setting, type in the value, as shown below:

49063

```
                          SETUP
   ● Password                    : Off
   ● Print  Height               : Normal
   > Print  Width                : 8
   ● Print  Delay                : 16
```

Enter the calculated pulses per mm value at this setting.

Figure 5-6 Setting the Print Width

5. Press the [enter] key to confirm your entry.

6. Press the [esc] key to exit.

5.3.4 To Set the Print Delay

The **Print Delay** option allows you to control:

- The delay between receiving a print signal, such as a product sensor trigger or a signal from a remote device, and the start of printing (if the **Primary Trigger** option is set to **Leading Edge**, **Trailing Edge,** or **Remote**). The value is counted in rasters and determines the number of blank rasters between the signal and the actual start of printing.

  or

- The delay between individual messages (if the **Print Trigger** option set to **High Level, Low Level** or **Off**). The value is counted in rasters and determines the number of blank rasters between individual messages.

  NOTES:

  1. If the delay value entered is too small, the event message "3.02 Over Speed (Print Go)" is displayed.

  2. The **Print Delay** setting and the **Print Width** setting should be set up in conjunction with each other (see **Tip** at the end of this section for the recommended setup procedure).

To set the print delay:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll through the menu to the **Print Delay** option:

49064

```
                              SETUP
    ● Password                      :  Off
    ● Print  Height                 :  Normal
    ● Print  Width                  :  0
    > Print  Delay                  :  16
```
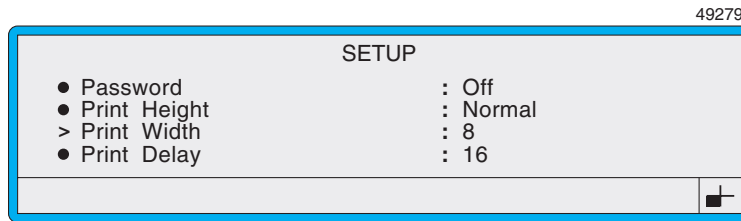
Figure 5-7 Setup Menu: Print Delay Option

3. Press the [enter] key.

4. At the **Print Delay** setting, type in the value, then press the [enter] key.

5. Press the [esc] key to exit.

Tip

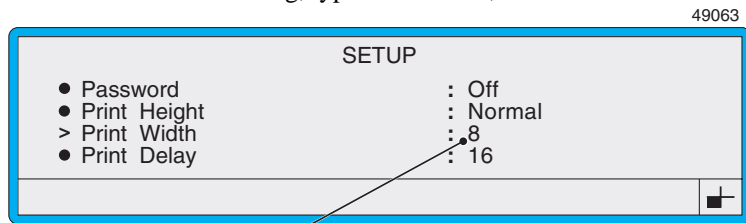As the **Print Delay** setting can be affected by the **Print Width** setting, you should set up these two options in conjunction with each other as follows:

- Adjust the **Print Delay** to initially print the message on the product.

- Adjust the **Print Width** for the required message width.

- Make final adjustments to the **Print Delay** to achieve the precise print registration.

5.3.5 Defining the Bold Ratio

The **Bold Ratio** option allows you to define the ratio of bold that can be applied to a new message field when creating a message.

Applying bold to a new message field makes the printed characters appear heavier. As an example, a 7 High character is created with a matrix of 7x5 when the bold factor is set to x1 (standard print). With a bold factor of x2, the same character is formed on a matrix of 7x10, making it the same height but twice as wide.

See Also | See Chapter 4, 'Creating and Editing Messages' for details about applying bold to a new field as you create a message.

To define the bold ratio:

Note that printing must be stopped to change the **Bold Ratio** option.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Bold Ratio** option, as shown below:

49068

```
                        SETUP
    ● Print  Delay                 : 16
    ● Print  Count                 : 9
    ● Reverse  Message             : Off
    > Bold  Ratio                  : 2
```

Figure 5-8 Setup Menu: Bold Ratio Option

3. Press the [enter] key to select the option.

4. At the **Bold Ratio** option setting, type in the ratio within the range of **1–9** (1 is standard print), then press the [enter] key to save the setting.

5. Press the [esc] key to exit.

5.3.6 Reversing the Printed Message

The **Reverse Message** option allows you to change the orientation of the printed message. The message can either be printed in the normal forward orientation (as viewed at the **CURRENT MESSAGE** screen), or it can be reversed.

When the **Reverse Message** option is set to On, *all* messages are reversed when printed.

To reverse the printed message:

Note that printing must be stopped to change the **Reverse Message** option.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

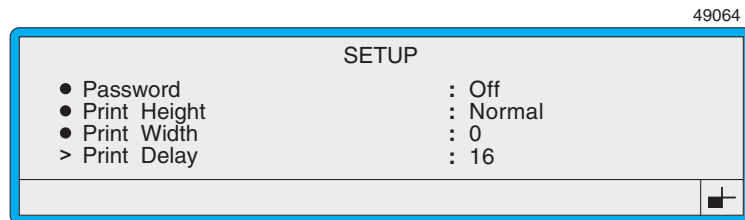   The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Reverse Message** option, as shown below:

49067

```
                        SETUP
     ● Print  Width                    : 0
     ● Print  Delay                    : 16
     ● Print  Count                    : 9
     > Reverse  Message                : Off
```
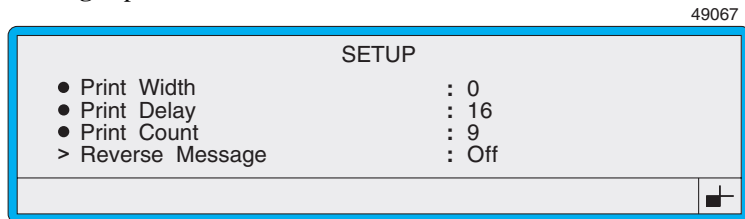
Figure 5-9 Setup Menu: Reverse Message Option

3. Press the [enter] key to select the option.

4. At the **Reverse Message** setting, press the Left [$\triangleleft$] or Right [$\triangleright$] arrow key to toggle the setting **On** or **Off**:

Use this setting...	To print the message like this...
Off	Normal and forward:

LINX 49275

On	In reverse, from left to right:

XИI⅃ 49276

NOTE: Messages are always displayed on the **CURRENT MESSAGE** screen in the normal forward orientation, even when the **Reverse Message** setting is On.

5. Press the [enter] key to save the setting.

6. Press the [esc] key to exit.

5.4 Changing the Line Settings

This section describes how to set the print trigger, enable a shaft encoder, and configure the alarm settings and power down options.

5.4.1 To Set the Print Trigger

The **Primary Trigger** option allows you to specify the print trigger signal.

To set the print trigger:

Note that printing must be stopped to change the **Primary Trigger** option.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Primary Trigger** option, as shown below:
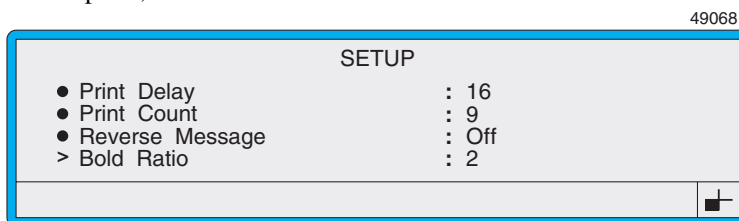
49072

```
                          SETUP
     ● Set  Time                    :  10:16
     ● Set  Date                    :  15:08:03
     ● Julian  Date  Format         :  European
     > Primary  Trigger             :  Leading  Edge
```
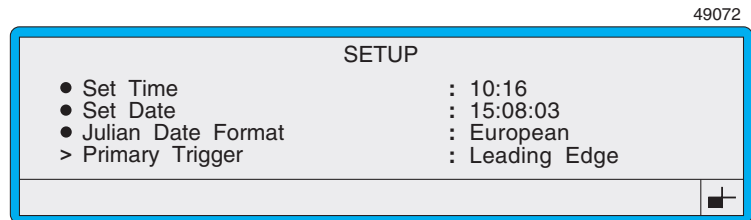
Figure 5-10 Setup Menu: Primary Trigger Option

3. Press the [enter] key to select the option.

4. At the **Primary Trigger** setting, press the Left [◁] or Right [▷] arrow key to select a setting, as follows:

- **Leading Edge**

  When you select this setting, the printer prints when the product sensor (such as a photocell) detects the leading edge of a product. A single message is printed for each signal received. The **Print Delay** option determines the number of blank rasters between the signal and the actual start of printing.

- **Trailing Edge**

  If you select this setting, the printer prints a message when the product sensor detects the trailing edge of a product. A single message is printed for each signal received. The **Print Delay** option determines the number of blank rasters between the signal and the actual start of printing.

- **High Level**

  If you select this setting, the printer prints continuously as long as the trigger signal is HIGH. The printer stops printing the message when the trigger signal becomes LOW, and continues when the signal becomes HIGH.

  The rate at which the printer prints is dictated by the **Print Width** and **Print Delay** settings. The **Print Delay** option determines the number of blank rasters between individual messages.

- **Low Level**

  If you select this setting, the printer prints continuously as long as the trigger signal is LOW. The printer stops printing the message when the trigger signal becomes HIGH, and continues when the signal becomes LOW.

  The rate at which the printer prints is dictated by the **Print Width** and **Print Delay** settings. The **Print Delay** setting determines the number of blank rasters between individual messages.

- **Remote**

  When you select this setting, the printer prints on receipt of a signal from a remote device, via the RS232 link.

- **Off**

  If you select this setting, the printer prints continuously at a rate dictated by the **Print Width** and **Print Delay** settings. The product sensor (photocell) input is ignored. In this mode, the **Print Delay** option determines the number of blank rasters between individual messages.

5. Press the [enter] key to save the setting.

6. Press the [esc] key to exit.

5.4.2 To Enable a Shaft Encoder

If you have a production line that runs at a variable speed, and you use a shaft encoder to determine the line speed, the **Shaft Encoder** option allows you to enable (or disable) the shaft encoder operation.

When enabled, pulses direct from the shaft encoder are used to control print speed, and a value for the print width must be calculated and entered in the **Print Width** setting. See 'To Set the Print Width Value: Shaft Encoder' on page 97 for details.

For further information about line speed detection and how to connect a shaft encoder, see Appendix A, 'Installation and Setup'.

To enable a shaft encoder:

Note that printing must be stopped to change the **Shaft Encoder** option.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Shaft Encoder** option, as shown below:

49074

```
                              SETUP
    ● Set  Date                      : 15:08:03
    ● Julian  Date  Format           : European
    ● Primary  Trigger               : Leading  Edge
    > Shaft  Encoder                 : On
```
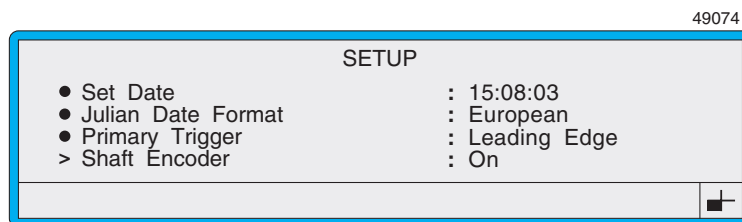
Figure 5-11 Setup Menu: Shaft Encoder Option

3. Press the [enter] key to select the option.

4. At the **Shaft Encoder** setting, press the Left [◁] or Right [▷] arrow key to toggle the setting **On** or **Off**, as follows:

   - **On**

     Select this setting to enable the shaft encoder operation.

   - **Off**

     Select this setting when a shaft encoder is not in use. The **Print Width** option is used to determine the width of each message. See 'To Set the Print Width Value: Shaft Encoder' on page 97 for details.

5. Press the [enter] key to save the setting.

6. Press the [esc] key to exit.

5.4.3 To Set the Alarm

The **Alarm** option settings allow for different combinations of events to be selected to trigger the external alarm.

When a printer warning or failure event occurs, the system activates an internal alarm tone (beeper), and an LED on the front control panel. In a warning condition the alarm tone is pulsed twice, whereas in a failure condition the alarm tone sounds continuously.

If an external alarm is fitted, this is also activated. The external alarm output is either used to control an internally generated 24 volts for a 24-volt external alarm (standard), or volt-free for a mains controlled alarm (available as an option).

To set the alarm:

Note that the printer must be in the "Jet Off" state to change the alarm settings. To verify this, check the **Status** in the **PRINT STATUS** screen.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Select the **Alarm** option.

   The following **ALARM** menu is displayed:

49224

```
                          ALARM
       > Mode                    : Pulsed
       ● Failure                 : Yes
       ● Warning                 : Yes
       ● Printing                : No
                                                    ⏎

       ● Ink  and  Solvent       : No
```

Figure 5-12 Alarm Menu

Note that the above example shows the default settings.

3. At the **ALARM** menu:

- The **Mode** option allows the alarm output to be changed to activate the external alarm, as follows:

Select this setting...	To...
Continuous	Sound the external alarm continuously when a System Warning event occurs.
Pulsed	Pulse the external alarm on/off twice, in time with the internal alarm when a System Warning event occurs.
	Sound the external alarm continuously when a System Failure or Print Failure event occurs.

Note that once system events are cleared, the alarm output is automatically deactivated.

- The following options can be set to **Yes** (On) or **No** (Off), as follows:

Set this option to Yes...	To...
Failure	Sound the external alarm continuously when a Print Failure event occurs.
Warning	Pulse the external alarm on/off twice, *or*, sound alarm continuously when a system failure event occurs—depending on the **Mode** option setting above.
Print Disabled	Sound the external alarm continuously when the printer cannot print for any reason, e.g jet stopped, printhead cover removed. As soon as printing is resumed, or when the printer is printing, the alarm is switched off.
Ink and Solvent	Sound the external alarm continuously, *or*, pulse the external alarm on/off twice when a "3.03 Ink Low" or "3.04 Solvent Low" event message occurs—depending on the **Mode** option setting above.

4. Press the [enter] key to save each setting.

5. Press the [esc] key to exit.

5.4.4 To Set the Auto Power Down Options

The **Auto Power Down** option allows you to configure the printer for automatic power down using either the **Auto Power Down** setting, or for a delayed power down, the **Printer Idle** setting.

See Also

For further information about the **Auto Power Down** function, and how to switch off the printer see Chapter 2, 'Getting Started'.

Note that regardless of whether the **Auto Power Down** options are configured ON or not, you can manually initiate power down by pressing the [stop] key at any screen, when the printer is in the "Idle" state.

To set the power down options:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    The **SETUP** menu is displayed.

2. Select the **Auto Power Down** option.
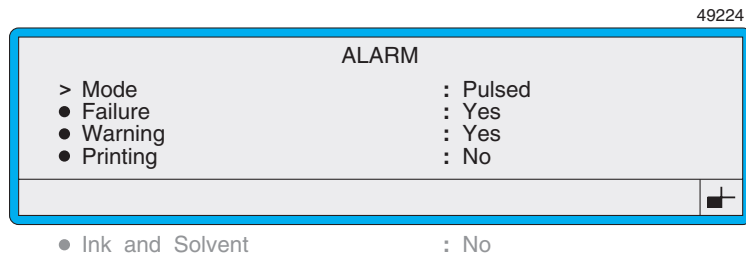
    The following menu is displayed:

    49021

    ```
                    AUTO  POWER  DOWN
    > Auto  Power  Down            : On
    ● Printer  Idle                : Off
    ● Idle  Time  (mins)           : 60
    ```
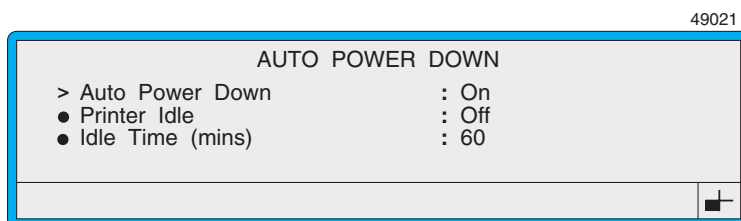
    Figure 5-13 Auto Power Down Menu

    Note that Figure 5-13 above shows the default Auto Power Down settings.

3. At the **AUTO POWER DOWN** menu:

    - Set the **Auto Power Down** option to **On** or **Off**.

        When set to **On**, the printer goes into power down mode and switches off automatically after jet shutdown is complete, followed by a power down delay time of 10 seconds.

        When set to **Off**, the printer will not automatically power down (unless the Printer Idle function is enabled). It must be switched off manually using one of the following methods:

        - Press the [stop] key from any screen when the printer is in "Idle", followed by the [F1] key

        - Set the main power supply switch on the rear panel to the '**0**' (Off) position (as a last resort)

        The default **Auto Power Down** setting is **On**.

- Set the **Printer Idle** option to **On** or **Off**:

  When set to **On**, the Printer Idle function is enabled. This means that the printer goes into power down mode and switches off (regardless of the **Auto Power Down** setting) after jet shutdown is complete, followed by the time stated in the **Idle Time (mins)** setting, plus the power down delay time of 10 seconds.

  When set to **Off**, the Printer Idle facility is disabled.

  The default **Printer Idle** setting is **Off**.

- At the **Idle Time (mins)** option, specify the time for the printer to wait (in an "Idle" state, *and* with no keyboard activity or other intervention) until it automatically powers down. You can set the time between 1 and 300 minutes. The default time is 60 minutes.

  Note that the **Idle Time (mins)** setting is only used in conjunction with the **Printer Idle** setting, not the **Auto Power Down** setting.

4. Press the [enter] key to save each setting.

5. Press the [esc] key to exit.

5.5 Changing the Installation Settings

This section describes how to change the installation settings for the printer. These include the time, date, printhead height, system language, and display contrast.

5.5.1 To Set the Time

The **Set Time** option enables you to view and change the current time.

Printing must be stopped to change the time.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Set Time** option, as shown below:

49069

```
                          SETUP
   ● Print  Count                    : 9
   ● Reverse  Message                : Off
   ● Bold  Ratio                     : 1
   > Set  Time                       : 10:16

                                                    ⊣
```

Figure 5-14 Setup Menu: Set Time Option

3. Press the [enter] key.

4. At the **Set Time** setting, enter the time, in a 24 hour format, by overtyping.

5. Press the [enter] key to confirm your entry.

6. Press the [esc] key to exit.

5.5.2 To Set the Date

The **Set Date** option enables you to view and change the current system date.

Printing must be stopped to change the date.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Set Date** option, as shown below:

49070

```
                        SETUP
    ● Reverse  Message          : Off
    ● Bold  Ratio               : 1
    ● Set  Time                 : 10:16
    > Set  Date                 : 15:08:03


                                        ◼┘
```

Figure 5-15 Setup Menu: Set Date Option

3. Press the [enter] key.

4. At the **Set Date** setting, enter the date, in the format dd:mm:yy, by overtyping.

5. Press the [enter] key to confirm your entry.

6. Press the [esc] key to exit.

5.5.3 To Specify the Julian Date Format

Printing must be stopped to change the **Julian Date Format** option.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Julian Date Format** option, as shown below:

49071

```
                          SETUP
   ● Bold  Ratio                    : 2
   ● Set  Time                      : 10:16
   ● Set  Date                      : 15:08:03
   > Julian  Date  Format           : European
```

Figure 5-16 Setup Menu: Julian Date Format Option

3. Press the [enter] key.

4. At the **Julian Date Format** setting, press the Left [◁] or Right [▷] arrow key to select either **European** or **American** format:

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 5-17 Julian Date Format

5. Press the [enter] key to confirm your entry.

6. Press the [esc] key to exit.

5.5.4 To Set the Head Height

The head height is the distance between the end of the printhead and the base of the printer.

To set the head height, the jet must first be stopped, then do the following:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Head Height** option, as shown below:
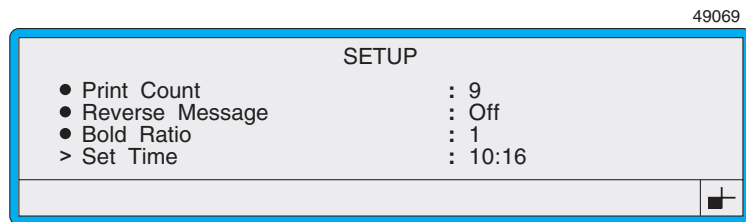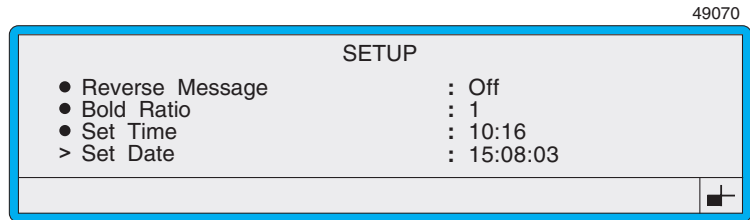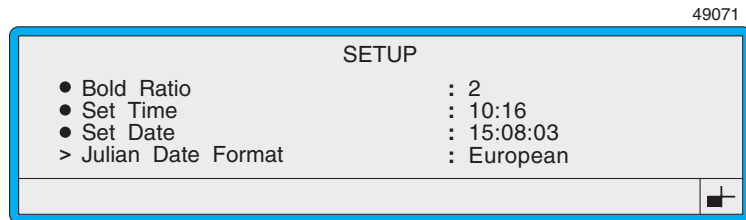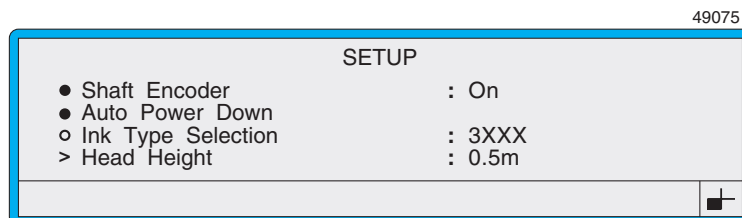

Figure 5-18 Setup Menu: Head Height Option

3. Press the [enter] key.

4. At the **Head Height** setting, enter the distance between the end of the printhead and the base of the printer (as shown in Figure 5-19 below).

Head Height is the distance
between the end of the printhead
and the base of the printer.
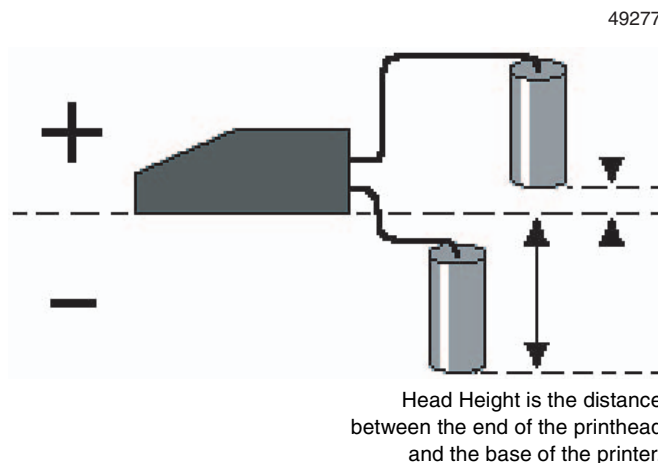
Figure 5-19 Head Height Example

Enter the value in units of whole or half metres, for example '0.5m'. If the end of the printhead is lower than the base of the printer, you must type a negative (–) value, for example, '–2.0m'.

The **Head Height** setting range is: +2.0m to –2.0m for 2-metre and 4-metre printhead conduit lengths.

NOTE: Care must be exercised with this option, otherwise poor printer performance *will* result if incorrectly set.

5.   Press the [enter] key to confirm your entry.

6.   Press the [esc] key to exit.

5.5.5 To Set the System Language

Printing must be stopped to change the language.

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

    The **SETUP** menu is displayed.

2. Scroll through the menu options until the cursor rests at the **Change Language** option, as shown below:

49270

```
                         SETUP
    >  Change  Language
    ●  Remote  Setup  Menu
    ●  Diagnostic  Menu
    ○  Solv  Add  Time                    : 30
```
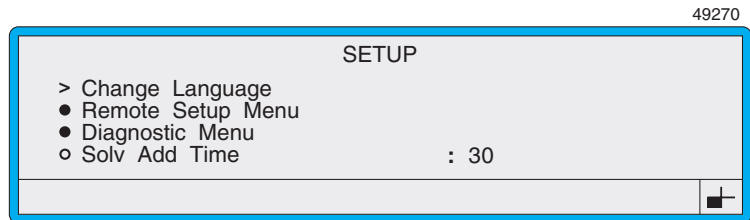
Figure 5-20 Setup Menu: Change Language Option

3. Press the [enter] key.

    The **CHANGE LANGUAGE** menu is displayed:

49188

```
                   CHANGE  LANGUAGE
    >  English
    ●  French
    ●  German
    ●  Italian
```

    ● Spanish
    ● Portuguese
    ● Dutch
    ● Indonesian

Figure 5-21 Change Language Menu

This example (Figure 5-21) shows the languages available in the Euro 1 Language Group. See 'About Language Groups' on page 114 for further information.

4. Scroll to the language required and press the [enter] key to select it.

5. Press the [esc] key to exit.

5.5.6 About Language Groups

The languages available vary according to the Language Group installed as part of the system software. The Language Group also determines other printer parameters, such as character sets, date formats and logos. Figure 5-22 below shows which languages and other printer parameters are available in each Language Group:
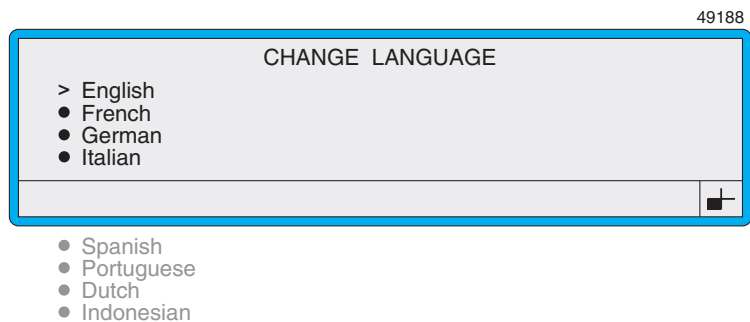
49271

LANGUAGE GROUP	Euro 1	Euro 2	Euro 3	Russian	Greek
KEYBOARD DRIVER	Euro	Euro	Euro	Russian	Greek
KEYPAD	Euro	Euro	Euro	Russian	Greek
Languages	English	English	English	English	English
	French	Norwegian	Hungarian	Russian	Greek
	German	Swedish	Polish		
	Italian	Finnish	German		
	Spanish	Danish	Croatian		
	Portuguese		Czech		
	Dutch		Turkish		
	Indonesian		Slovakian		
Character Set(s)	5 FH Caps	5 FH Caps	5 FH Caps	5 FH Caps (Cyrillic)	5 FH Caps (Greek)
	7 FH Caps	7 FH Caps	7 FH Caps	7 FH Caps (Cyrillic)	7 FH Caps (Greek)
	16 FH Caps	16 FH Caps	16 FH Caps	15 non-FH (Cyrillic)	16 FH Caps (Greek)
	16 non-FH	16 non-FH	16 non-FH	7 FH Caps (Arabic Numerals)	16 non-FH (Greek)
	7 FH Caps (Arabic Numerals)	7 FH Caps (Arabic Numerals)	7 FH Caps (Arabic Numerals)	16 non-FH (Arabic Numerals)	7 FH Caps (Arabic Numerals)
	16 non-FH (Arabic Numerals)	16 non-FH (Arabic Numerals)	16 non-FH (Arabic Numerals)		16 non-FH (Arabic Numerals)
Date Format(s)	Numeric	Numeric	Numeric	Numeric	Numeric
	Alpha (language specific)	Alpha (language specific)	Alpha (language specific)	Alpha (language specific)	Alpha (language specific)
	Arabic	Arabic	Arabic	Arabic	Arabic
Logos	Arabic	Arabic	Arabic	Arabic	Arabic
Special Logos (customised)	Available via Linx	Available via Linx	Available via Linx	Available via Linx	Available via Linx

Figure 5-22 4900 Language Groups

5.5.7 To Set the Display Contrast

You can increase or decrease the contrast of the printer display to suit your requirements.

To set the display contrast, at any screen: press [ctrl]+[shift] in conjunction with the Up [△] and Down [▽] arrow keys.

5.6 Changing the Passwords

The **Change Password** option enables you to change the Level B and Level C passwords.

For further information on the 4900 password system, including switching the password system on/off, refer to 'Working with Passwords' in Chapter 3, 'Day-to-Day Operations'.

To change a password:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key.

   The **SETUP** menu is displayed.

2. Scroll to the menu option **Change Password** and press the [enter] key.

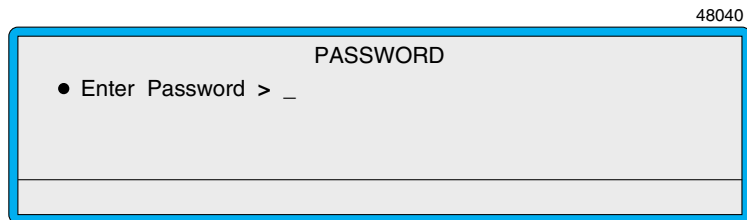   If the **Password** option is set to **On**, the **PASSWORD** screen is displayed:

48040

```
                        PASSWORD
        ● Enter  Password  >  _
```

Figure 5-23 Password Screen

3. At the **PASSWORD** screen, enter the password.

   NOTE: The password you enter here determines which passwords you are able to change. Entering the Level B password allows you to change the Level B password only; entering the Level C password allows you to change the passwords for Level B and Level C.

4. The **CHANGE PASSWORD** menu is displayed:

49314

```
                   CHANGE  PASSWORD
        > Level  B                    : ****1
        ● Level  C                    : ****2
```
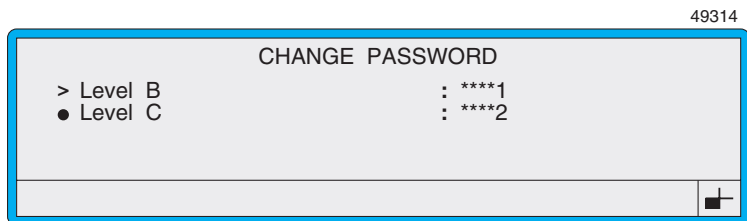
Figure 5-24 Change Password Menu

5. To change a password, overtype the existing password by entering between four and 10 characters.

   Note that passwords are *not* case sensitive.

6. Press the [enter] key to confirm your entry.

7. Press the [esc] key to exit.

Tip

Make sure you record the new password in a secure place.

6 Remote Interface Setup

Level C

This chapter describes how to configure the remote interface settings in order to prepare the printer for remote communications via the Linx Remote Communications Interface.

6.1 About the Linx Remote Communications Interface

The Linx Remote Communications Interface is a method of controlling printer functions from a remote host (for example, a PC or other device) via the serial port, rather than using the local keyboard and printer Display.

The printer acts as a 'slave' that receives commands from the remote host and sends back status information and data as requested.

The remote interface is designed to allow the majority of functions to be controlled from a remote host. It uses a point-to-point, serial data transfer protocol. The hardware connection to Linx printers is based on the RS232 standard.

See Also

The format of the commands and data is described in the *Linx Remote Communications Interface Reference Manual* (FA76014), together with examples and information on hardware connections and printer setup.

6.2 Introducing the Remote Setup Menu

The **REMOTE SETUP** menu allows you to access the menu options necessary to configure the remote settings, and to view certain parameters.

6.2.1 To Access the Remote Setup Menu

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

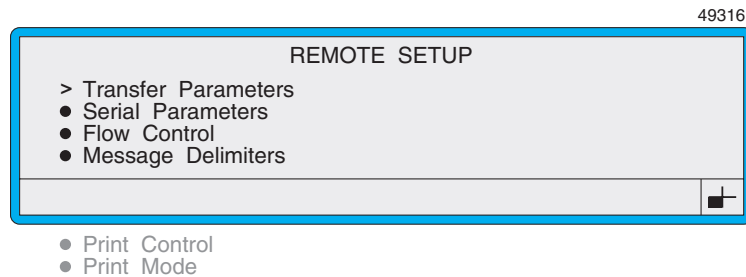2. Select the **Remote Setup Menu** option, which displays the **REMOTE SETUP** menu:

49316

```
                    REMOTE  SETUP

      > Transfer  Parameters
      ● Serial  Parameters
      ● Flow  Control
      ● Message  Delimiters

                                                    ◄┘
```
      ● Print Control
      ● Print Mode

Figure 6-1 Remote Setup Menu

| Tip |

You can use a shortcut key to access the **REMOTE SETUP** menu. To do this, press [R] at the **SETUP** menu.

6.2.2 Option Availability

The options and sub-options you see when you access the **REMOTE SETUP** menu differ according to the current printer status (Jet Off, Jet Running or Printing), and the user level password (Level B or Level C).

| See Also |

The table on page 93 shows you the validity of the **REMOTE SETUP** menu options and sub-options.

6.3 Configuring the Remote Interface Settings

Note that the menus displayed in this section show the default settings.

Before you start, ensure that the printer is in the "Jet Off" state. To verify this, check the **Status** in the **PRINT STATUS** screen.

6.3.1 Transfer Parameters Menu

The **Transfer Parameters** menu options define the general parameters for the RS232 link:

49266

```
                    TRANSFER  PARAMETERS
    > Mode                           : RS232
    ● Escape  Char                   : ESC  (27)
    ● Checksum  Disabled             : No
    ● Buffer  Threshold              : 128

                                                    ⌐⌐
    ● 4800  Translation              : No
```
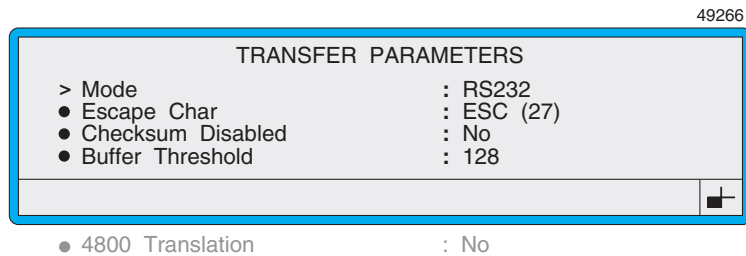
Figure 6-2 Transfer Parameters Menu

The **TRANSFER PARAMETERS MENU** includes the following options:

- **Mode**
  This option displays the communication protocol name.

- **Escape Char**
  This option defines the character that is used by the RS232 communications protocol to identify the delimiting characters for the start and end of data transferred to and from the printer. Any value between 01 and 31 can be set. It is also used to identify other 'special' data characters. This is described in further detail in the *Linx Remote Communications Interface Reference Manual* (FA76014).

  NOTE: Special characters are used for various tasks in the interface and, as with the escape character, may be set to any value between 01 and 31 (ASCII control characters SOH to US). No two special characters may have the same value. If an attempt is made to set two special characters to the same value, a warning is given and displayed in the status line.

- **Checksum Disabled**
  This option allows you to disable the insertion of checksums at the end of data transmitted from the printer, by setting the option from **No** (default) to **Yes**. The printer does not look for checksums on the end of received data. It is recommended that the **Yes** setting is not used continuously. This is because without the checksum there is no check on the basic integrity of the transferred data, and corrupted data may cause problems in both the printer and the remote computer.

- **Buffer Threshold**
  Both the printer and the remote computer use areas of memory called
  'buffers' to receive incoming characters. This option defines the
  number of characters to be received in the printer receive buffer before
  the printer disables data flow using either hardware or software flow
  control. This is used to ensure that no characters are lost, as there is a
  finite time between the receiver telling the transmitter to stop sending
  data, and the transmitter actually stopping. The **Buffer Threshold**
  allows the receiver to receive those additional characters without
  running out of buffer space.

  This option can be set to any value between 1 and 244.

- **4800 Translation**
  This option allows you to enable translation of 4900 data so that the
  4900 printer can be used within applications that communicate with
  other types of Linx printers, typically alongside 4800 and 6200
  printer(s).

  When set to **No** (default), the 4900 printer uses its own naming
  conventions for printer data and parameter values during data transfer.
  The printer is therefore not compatible with applications that
  communicate with other types of Linx printers.

  When set to **Yes**, the 4900 printer is compatible with applications that
  communicate with other types of Linx printers (4800 or 6200). The
  names of various data and parameter values that are used during data
  transfer are translated from the 4900 convention to the 4800
  convention.

  For example, when the 4900 message type name '5 FH (Caps)' is
  used, it is translated to the 4800 message type name '5 High Caps'. In
  addition, parameter values that are recognised as bit sets are also
  translated internally.

  NOTE: There is a limitation on translating data when messages are
  transferred from a 4900 printer to other types of Linx
  printers. This is that messages created on a 4900 printer then
  transferred via a PC to another Linx printer (4800 or 6200)
  will *not* be translated.
  Messages created on other Linx printers (4800 or 6200) and
  then transferred via a PC to a 4900 printer *will be*
  successfully translated.

  Details of the 4900 to 4800 translations are provided in the *Linx
  Remote Communications Interface Reference Manual* (FA76014).

6.3.2 Serial Parameters Menu

The **SERIAL PARAMETERS** menu options define the communications parameters used by the serial hardware to determine the format and speed of the transferred data:
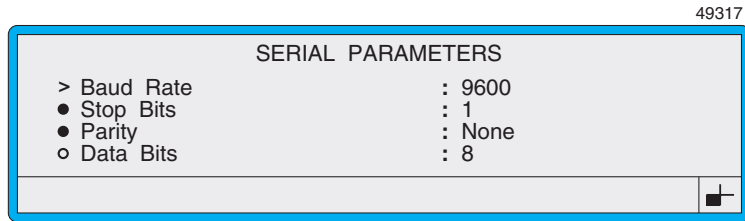
49317

```
                    SERIAL  PARAMETERS
    > Baud  Rate                        : 9600
    ● Stop  Bits                        : 1
    ● Parity                            : None
    ○ Data  Bits                        : 8
```

Figure 6-3 Serial Parameters Menu

Note that both the transmitter and receiver should use the same serial parameters for successful transmission and reception to take place.

The **SERIAL PARAMETERS** menu includes the following options:

- **Baud Rate**
  This option determines the transfer speed of the data and can be set to **9600** or **19200**.

- **Stop Bits**
  This option determines the number of Stop Bits used. The value can be set to **1**, **1.5** or **2**.

- **Parity**
  This option determines the type of Parity Bit to be used. It can be set to **None**, **Odd** or **Even**.

- **Data Bits**
  This option shows the number of Data Bits used. This is for display purposes only and cannot be changed.

6.3.3 Flow Control Menu

Both the printer and the remote computer use areas of memory called 'buffers' to receive incoming characters. These areas of memory are limited in size, and to ensure that they do not overflow and lose characters, flow control is implemented at regular intervals to stop the receipt of characters:
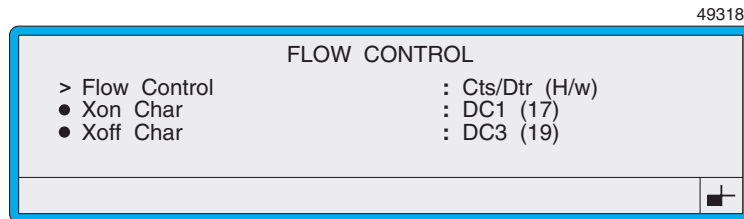
49318

```
                        FLOW  CONTROL
        > Flow  Control                    : Cts/Dtr  (H/w)
        ● Xon  Char                        : DC1  (17)
        ● Xoff  Char                       : DC3  (19)


                                                          ◄┘
```

Figure 6-4 Flow Control Menu

The **FLOW CONTROL** menu includes the following options:

- **Flow Control**

  Flow control can be implemented either by using hardware lines (Cts and Dtr) in the RS232 cable, or by sending special characters called Xon and Xoff over the link. These special characters are identified in the data stream by the escape character preceding them.

  The two settings for this option are **Cts/Dtr** (Hardware) and **Xon/Xoff** (Software).

- **Xon Char**

  The **Xon Char** option can be set to any value between 01 and 31 (ASCII control characters SOH to US).

- **Xoff Char**

  The **Xoff Char** option can be set to any value between 01 and 31 (ASCII control characters SOH to US).

6.3.4 Message Delimiters Menu

The characters used to delimit transmitted and received data over the interface can be specified in the **MESSAGE DELIMITERS** menu:
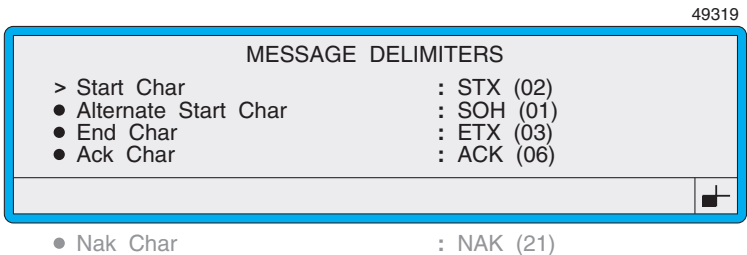
49319

```
                    MESSAGE  DELIMITERS
  > Start  Char                        : STX  (02)
  ● Alternate  Start  Char             : SOH  (01)
  ● End  Char                          : ETX  (03)
  ● Ack  Char                          : ACK  (06)

                                                    ⌐┘
```
  ● Nak Char   : NAK (21)

Figure 6-5 Message Delimiters Menu

Note that all the characters are identified in the data stream by the escape character preceding them.

All options in the **MESSAGE DELIMITERS** menu can be set to any value between 01 and 31 (ASCII control characters SOH to US).

6.3.5 Print Control Menu

Under most circumstances, the remote computer initiates communications and the printer only replies to a received command. The **Print Control** menu options allows certain ASCII control characters to be transmitted and received by the printer without the normal communications being initiated by the computer:
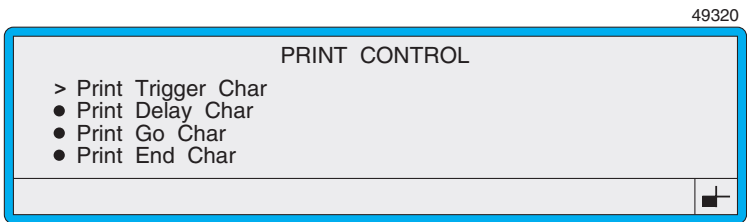
49320

```
                     PRINT  CONTROL
  > Print  Trigger  Char
  ● Print  Delay  Char
  ● Print  Go  Char
  ● Print  End  Char

                                                    ⌐┘
```

Figure 6-6 Print Control Menu

This control character...	Indicates...
BS 08	The printer has started the print delay.
SI 15	The printer has started to generate rasters.
EM 25	The printer has completed a print sequence.
ENQ 05	The computer is triggering a 'print go'.

Note that each character is preceded by the escape character so that it can be distinguished from normal data.

Each of the following characters can be enabled or disabled (On or Off state) as appropriate, and each character can be set in the range 1 to 31.

- **Print Trigger Char**

  The **Print Trigger** character can be issued by the host device to start a print. The printer treats this character in the same way as a product sensor trigger and starts the print delay. The **Primary Trigger** option in the **SETUP** menu should be set to **Remote** for the **Print Trigger** character to be actioned.

- **Print Delay Char**

  The **Print Delay** character is issued by the printer when a photocell trigger occurs, i.e. just before the print delay starts. If the **Primary Trigger** option in the **SETUP** menu is set to **Off**, this character is not sent, as, under these circumstances, a photocell trigger never occurs.

- **Print Go Char**

  The **Print Go** character is issued by the printer at the end of the print delay, i.e. when printing is about to commence.

- **Print End Char**

  The **Print End** character is issued by the printer when printing stops, i.e. when a 'stop print' command is issued or the message print count reaches 0 with no other message pending.

6.3.6 Print Mode Menu

In addition to the static printing process, where data is downloaded for printing and *then* printing is started, using the **Print Mode** menu, the printer can be set up to receive data while printing:
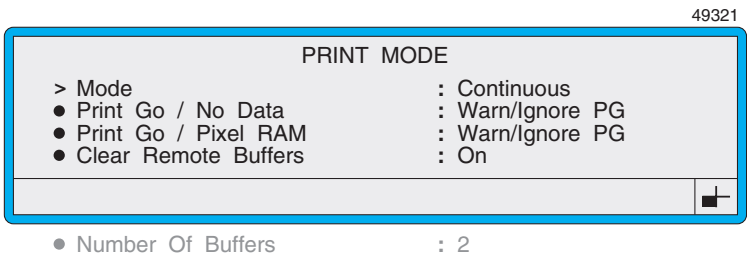
49321

```
                        PRINT  MODE
   > Mode                           : Continuous
   ● Print Go / No Data             : Warn/Ignore PG
   ● Print Go / Pixel RAM           : Warn/Ignore PG
   ● Clear Remote Buffers           : On
```
```
   ● Number Of Buffers              : 2
```

Figure 6-7 Print Mode Menu

Using the **PRINT MODE** menu options enable you to control the following:

- Circumstances under which printing takes place

- Field data download during printing

- Failure conditions

- Issuing of print control characters

- Size and amount of data received

The **PRINT MODE** menu includes the following options:

- **Mode**

  The **Mode** option can be set to **Continuous** or **Single** print:

This setting...	Does this...
Continuous	Printing always takes place, regardless of whether or not any remote data has been received. Therefore, if one set of remote data is received, this is printed continuously until more remote data is received.
Single	Printing takes place once for each set of remote data received. If no more data is received, any print triggers that occur are dealt with according to how the failure condition has been set up (see below).

NOTES:

1. For normal printing, where no remote data is expected, this option should always be set to **Continuous** mode. **Single** print mode should be used exclusively with messages expecting remote data.

2. The two commands that should be used to download the remote data are 28 (download field data) and 29 (download remote field data). The former is used to download complete static field structures, and the latter is used to download text characters to be inserted in predefined remote fields in the message. Both are described in the *Linx Remote Communications Interface Reference Manual* (FA76014).

-   **Print Go/No Data**

    This is one of the two failure conditions that can be configured (see also **Print Go/Pixel RAM** below), and is implemented when a 'print go' occurs and no remote data has been received.

    The **Print Go/No Data** option can be set to carry out one of the following three actions:

Select this setting...	To does this...
Warn/ Ignore PG	Report the error and ignore the 'print go'.
Ignore Prn Go	Do nothing and ignore the 'print go'.
Fail/Stop Prn	Report the error and stop printing but not stop the jet.

    Note that if the **Mode** option (see above) is set to **Continuous** print, the **Print Go/No Data** will not occur. This is regardless of whether any remote data has been received or not. In **Continuous** print mode, printing always takes place.

-   **Print Go/Pixel RAM**

    This is the second of the two failure conditions that can be configured (see also **Print Go/No Data** above), and is implemented when a 'print go' occurs and the printer is still generating the pixel pattern.

    The **Print Go/Pixel RAM** option can be set to carry out one of the three actions described above for **Print Go/No Data**.

- **Clear Remote Buffers**

  The remote print buffer is used to store any remote data that has been downloaded to the printer using commands 28 and 29.

  The **Clear Remote Buffers** option can be used to clear the buffer when printing stops:

Select this setting...	To do this...
On	Once printing stops, the buffer is cleared. This does not affect the data that has already been loaded into the message.
Off	Any data in the remote buffer remains there when printing stops. Therefore, if printing is restarted, it continues with the data already contained in the buffer.

- **Number Of Buffers**

  The remote buffer is 1024 bytes long and can be divided into 1, 2, 4, 8, 16, 32, 64 or 128 blocks by changing the setting of this option. For example, if the buffer was divided into 8 blocks, each block would be 128 (1024 / 8) bytes long. The minimum value for the remote buffer divisor is 1 in Single print mode, and 2 in Continuous print mode.

  As data is downloaded, using commands 28 or 29, it is loaded into each of these blocks, one command per block. Therefore, all the commands must be smaller than the current size of each block.

  For each print, the printer checks whether any data exists in the remote buffer. If there is data, it is taken from the next occupied block and loaded into the message for printing.

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7 Diagnostics and Maintenance

Level C

This chapter describes how to perform diagnostic functions and routine maintenance to ensure trouble-free operation of the printer.

7.1 Introducing the Diagnostics Menu

The **DIAGNOSTICS** menu allows you to access the menu options necessary to carry out diagnostic and maintenance tasks, and to view certain parameters.

7.1.1 To Access the Diagnostics Menu

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

2. Select the **Diagnostics Menu** option, which displays the following menu:

49029

```
                          DIAGNOSTICS
      > Clear  Nozzle                        : 1
      ● Nozzle  Flush                         :
      ● Monitor  Jet                          :
      ● System  Times                         :

                                                      ⏎
```

```
      ● System  Configuration               :
      ● Ref  Pressures                       :
      ● Set  Pressure                        : 0
      ● Set  Modulation                      : 0
      ● Generate  Test  Pattern              :
```
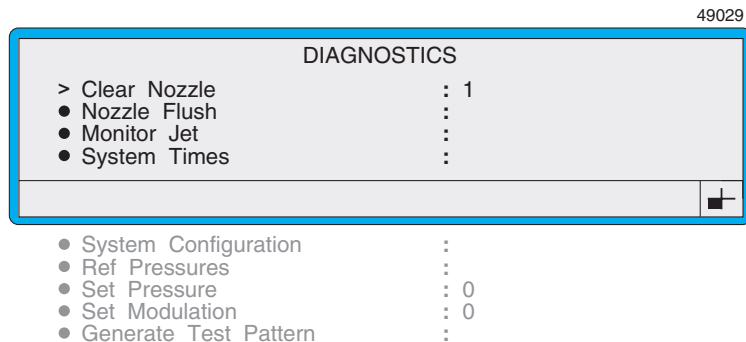
Figure 7-1 Diagnostics Menu

The example above shows the **DIAGNOSTICS** menu options that are displayed for the User Level C password, when the printer status is "Jet Off". See the next section 'Option Availability' for further details.

Tip

You can use a shortcut key to access the **DIAGNOSTICS** menu. To do this, press [D] at the **SETUP** menu.

7.1.2 Option Availability

The options you see when you access the **DIAGNOSTICS** menu differ according to the current printer status (Jet Off, Jet Running or Printing), and the user level password (Level B or Level C).

The following table shows the validity of the **DIAGNOSTICS** menu options, according to the printer status:

49137

KEY:

●   Option is displayed *and* can be selected and changed.

○   Option is displayed for viewing only; it *cannot* be selected or changed.

−   Option is not available.

Diagnostics Menu Options	USER LEVEL B PASSWORD			USER LEVEL C PASSWORD		
	Jet Off	Jet Running	Printing	Jet Off	Jet Running	Printing
Clear Nozzle	−	−	−	●	−	−
Nozzle Flush	−	−	−	●	−	−
Monitor Jet	−	−	−	●	●	●
System Times:	−	−	−	●	●	●
sub-options	−	−	−	○	○	○
System Configuration:	−	−	−	●	●	●
Head Type	−	−	−	○	○	○
Message Type	−	−	−	●	●	●
Messages Stored	−	−	−	○	○	○
SW Links	−	−	−	○	○	○
SW Version	−	−	−	○	○	○
PCB Issue	−	−	−	○	○	○
Configuration	−	−	−	○	○	○
Ref Pressures	−	−	−	●	●	●
Set Pressure	−	−	−	○	○	○
Set Modulation	−	−	−	○	○	○
Generate Test Pattern	−	−	−	●	●	−

Figure 7-2 Diagnostics Menu Option Availability

7.2 Performing Diagnostic Functions

The Linx 4900 printer provides several diagnostic indicators that enable you to identify quickly all the events (failures and warnings) that might have occurred during printer operation. These indicators include the following:

- The **Status Line** (at the bottom of the display) that displays system event messages

- The **PRINT STATUS** screen that displays the current status of the printer, the solvent level and the ink level

- An **EVENT LIST** that shows a history of events that have occurred since the printer was last switched on

- LED (light emitting diode) indicators that light when the printer reports a warning or fault

- An internal alarm beeper that sounds when the printer reports a warning or fault

Collectively, these indicators provide a general guide that helps you to identify and, possibly, correct any warning or fault that may occur.

See Also

See 'To View Events in the List' on page 41, 'To View the Current Printer Status' on page 38, and Appendix D, 'System Event Messages' for more details.

This section describes how to perform simple diagnostic tasks, such as, viewing the operating values of the jet, viewing the scheduled maintenance interval, viewing printer pressure values, and generating test patterns.

7.2.1 To View the Jet State

The **MONITOR JET** screen shows the current operating values of the jet.
To go to the **MONITOR JET** screen, do the following:

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to
    display the **SETUP** menu.

2. Select **Diagnostics Menu > Monitor Jet**. The following **MONITOR
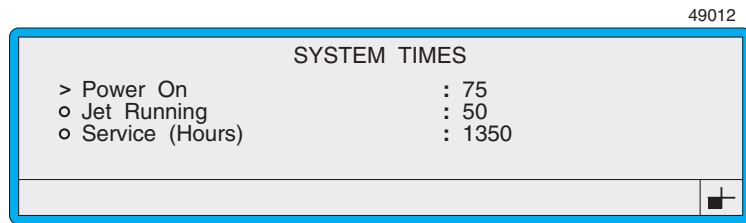   JET** screen is displayed. This screen is for viewing only; you cannot
    change any of its values:

49228

```
                     MONITOR  JET
  Press  : 185  (186)          Add  Press   : 188
  TOF    : 7862                Ref  TOF     : 7843
  Modln  : 92                  Ref  Modln   : 90
  Phase  : 14                  Phd  Temp    : 25
```
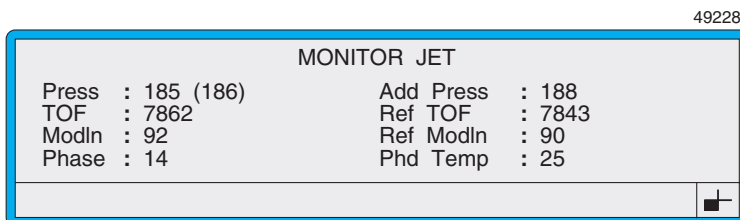
Figure 7-3 Monitor Jet Screen

The example shown above is for an Ultima printhead with the jet
running, and the parameter values are typical of what would normally
be seen.

This value...	Indicates...
Press	Two parameters are displayed. The first is the Set Pressure value and the second, in brackets, is the Read Pressure value: Set Pressure: This pressure value is set and constantly adjusted to maintain the time of flight. Note that this value is also shown in the **DIAGNOSTICS** menu (see Figure 7-1, **Set Pressure** menu option). Read Pressure: This pressure value is the actual pressure in the ink system.
TOF	The actual time of flight (current time of flight reading).
Modln	The actual modulation; current modulation voltage being used by the printer. The **DIAGNOSTICS** menu option **Set Modulation** also shows this value (see Figure 7-1 on page 129).
Phase	The phase position, which is the drop break-off point from the jet stream.

This value...	Indicates...
Add Press	The solvent add pressure value that the printer uses as a trigger to add solvent. When the pressure exceeds this value after the jet warm-up period solvent is normally added. The **PRESSURE REFS** menu option **Solvent Add** also shows this value.
Ref TOF	The time of flight reference value.
Ref Modln	The reference modulation value being used by the printer. This is unique to each printhead and forms part of the printhead code.
Phd Temperature	The printhead temperature, in ° C.

3.   Press the [Esc] key to exit from the screen.

Tip

You can use a shortcut key to open the **MONITOR JET** screen. To do this, press [M] at the **CURRENT MESSAGE** screen, or press [M] at the **DIAGNOSTICS** menu.

7.2.2 To View the Scheduled Maintenance Interval

The **SYSTEM TIMES** screen displays valuable information about the operating times of the printer and the jet, and most importantly, the time remaining to the next scheduled maintenance.

To view the maintenance interval, do the following:

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

2. Select **Diagnostics Menu > System Times**.

The following **SYSTEM TIMES** menu is displayed.

49012

```
                        SYSTEM  TIMES
    >  Power  On                    :  75
    o  Jet  Running                 :  50
    o  Service  (Hours)             :  1350
```

Figure 7-4 System Times Menu

This value...	Indicates...
Power On	The cumulative time, in hours, that the printer has been running since the last power-on.
Jet Running	The cumulative time, in hours, that the jet has been running since the last power-on.
Service (Hours)	The time remaining, in hours, until the next scheduled maintenance of the printer is due.
	Once the time has counted down to zero (0) hours, the system event message "Scheduled Maintenance Req'd" is reported, and a minus (–) sign appears in front of the time.

3. Press the [Esc] key to exit from the menu.

7.2.3 To View the System Configuration

You can view the system configuration information including the printhead type, printer configuration and the current software version number at the **SYSTEM CONFIGURATION** menu. To do this:

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

2. Select **Diagnostics Menu > System Configuration**.

   The **SYSTEM CONFIGURATION** menu is displayed:

49148

```
                    SYSTEM  CONFIGURATION
  > Head  Type               : Ultima
  ● Message  Type
  ○ Messages  Stored         : 26
  ○ SW  Links                : A
```

```
  ○ SW  Version              : v1.0.15
  ○ PCB  Issue               : 1
  ○ Configuration            : SS
  ○ Language  Group          : Euro1
```
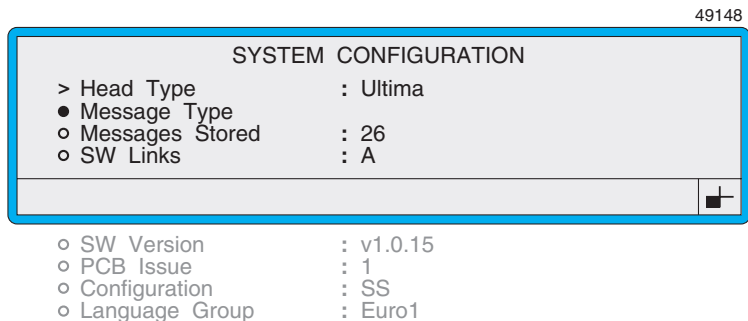
Figure 7-5 System Configuration Menu

With the exception of the **Message Type** option, this screen is for viewing only; you cannot change any of the options.

This setting...	Does this...
Head Type	Indicates the type of printhead fitted to the printer.
Message Type	Allows you to display the **MESSAGE TYPE** menu, which lists the available message types. The example below shows a sample of the message types available for the Ultima printhead with a 2-line Standard Speed (SS) configuration:

49013

```
                    MESSAGE  TYPE
  > 7  Quality
  ○ 7  Flexible
  ○ 16  Quality
  ○ 16  Flexible
```
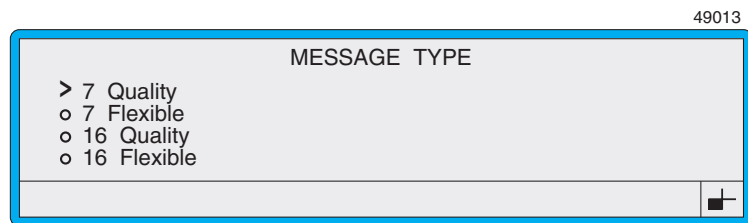
Figure 7-6 Message Type Menu

Messages Stored	Indicates the number of messages currently stored.

This setting...	Does this...
SW Links	Indicates, where relevant, any software links fitted.
SW Version	Indicates the current software version number.
PCB Issue	Indicates the issue number of the main processor PCB.
Configuration	The printer configuration, for example, **SS** is a Standard Speed printer.
Language Group	Indicates the name of the language group installed.

4. Press the [esc] key to exit.

7.2.4 To View the System Pressure Values

The **PRESSURE REFS** screen displays the key pressure values used by the printer to maintain the correct ink viscosity, and the maximum allowable system pressure.

To view the pressure values, do the following:

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

2. Select **Diagnostics Menu > Ref Pressures**.

    The following **PRESSURE REFS** screen appears.

49230

```
                    PRESSURE  REFS
  > Printhead  Ref                 : 184
  o Solvent  Add                   : 188
  o Maximum  Run                   : 255
```
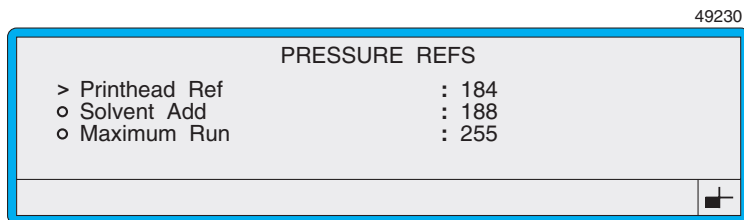
Figure 7-7 Pressure Refs Screen

This value...	Indicates...
Printhead Ref	The reference pressure value as specified in the printhead code, found on the printhead conduit label.
Solvent Add	The pressure value that the printer uses as a trigger to add solvent. When the pressure exceeds this value after the jet/warm-up period solvent is normally added.
Maximum Run	The maximum pressure used by the printer to establish the jet.

3. Press the [Esc] key to exit from the screen.

7.2.5 To Generate and Print Test Patterns

A standard test pattern is available for each message type. These test patterns enable you to verify the print quality of the printed message. Because a test pattern comprises several fields—for example, logos, sequential numbers—the printer is tested to a high standard of print quality.

The **Generate Test Pattern** option allows you to create the test pattern messages. Once the patterns are generated, you can select, edit and print a test pattern and check the print quality. This is an effective method for diagnosing print-related faults.

Generating Test Patterns

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

2. Select the **Diagnostics** option, then scroll through the menu until the cursor rests at the **Generate Test Pattern** option, as shown below:

49076

```
                          DIAGNOSTICS
        ● Ref  Pressures
        ● Set  Pressure                    :  186
        ● Set  Modulation                  :  90
        > Generate  Test  Pattern          :
```
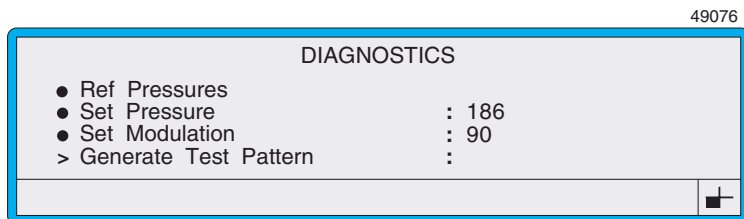
Figure 7-8 Diagnostics Menu: Generate Test Pattern Option

3. At the **Generate Test Pattern** option, press the [enter] key. The message "Test Patterns Generated" is displayed briefly in the status line.

4. Press the [esc] key to exit.

Once the test patterns have been generated, you can select, print, and edit a test pattern message. See 'Editing and Printing a Test Pattern' on page 139.

Editing and Printing a Test Pattern

Once the test patterns have been generated, they are stored as messages—one message for each message type available on the printer. Test pattern messages are automatically allocated names beginning with 'TEST', followed by the message type name, for example, **TEST16 Flexible**.

You can select, edit, and print a test pattern message using the same method as a normal message.

Tip

When you select a test message for printing, at the **SELECT MESSAGE** menu, type in **T** (first character of a test message) to quickly find the test message you want.

49077
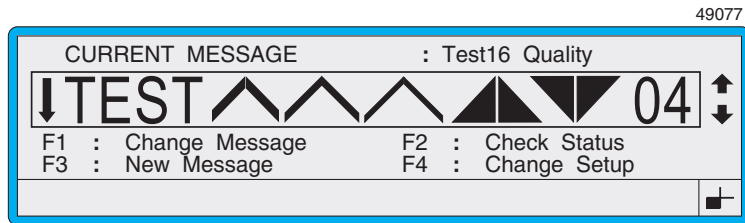
Figure 7-9 Test Pattern Selected for Printing

7.2.6 To View the Type of Ink in Use

The **Ink Type Selection** option displays the ink type used in the printer. This option is set during commissioning of the printer and cannot be changed. There are four types of ink available for the 4900 printer: A, B, C and D. Type A is the default ink type.

To view the type of ink being used in the printer:

1. At the **CURRENT MESSAGE** screen, press the [F4] function key to display the **SETUP** menu.

2. Scroll through the menu options to **Ink Type Selection**, as shown below:

49280
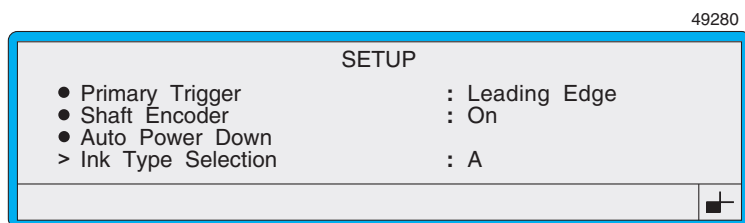
Figure 7-10 Setup Menu: Ink Type Selection Option

7.2.7 To View the Solvent Add Time

The **Solvent Add Time** option displays the cumulative time that the printer has added solvent since the jet was last started. The duration of each solvent add is 10 seconds; the value is shown in multiples of 10 seconds.

To view the **Solvent Add Time**:

1. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

2. Scroll through the menu options to **Solvent Add Time**, as shown below:

49045

```
                            SETUP
        ● Change  Language
        ● Remote  Setup  Menu
        ● Diagnostic  Menu
        > Solvent  Add  Time              : 30
```
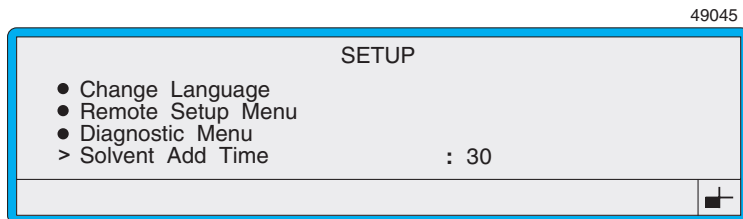
Figure 7-11 Setup Menu: Solvent Add Time Option

7.3 Performing Routine Maintenance

The Linx 4900 printer requires minimal, but regular maintenance to ensure trouble-free operation. This section describes how to perform the following routine maintenance tasks:

- Cleaning the printer cabinet

- Cleaning the printhead

- Cleaning or replacing the air filter

- Refilling the printer with ink and solvent

- Cleaning and flushing the nozzle

The following table outlines the recommended intervals required for each maintenance task:

49044

	Inspect	Clean	Replace or Replenish
1. Printer Cabinet	Daily/each time used.	Weekly or as required.	Not applicable.
2. Printhead	Daily/each time used.	Weekly or as required.	Not applicable.
3. Ink and Solvent	Check for "3.03 Ink Low" and "3.04 Solvent Low" messages in the Status Line at startup and during use.	Not applicable.	As required.
4. Air Filter	Weekly in normal conditions. Daily in very dusty or contaminated conditions.	Weekly or as required.	As required.

Figure 7-12 Linx 4900 Printer Routine Maintenance Intervals

7.3.1 To Clean the Printer Cabinet

WARNING: HAZARDOUS INKS AND SOLVENTS. SAFETY GLASSES AND SOLVENT RESISTANT PROTECTIVE GLOVES MUST BE WORN THROUGHOUT THE FOLLOWING PROCEDURE. FAILURE TO COMPLY WITH THIS SAFETY WARNING COULD RESULT IN IRRITATION AND REVERSIBLE LOCAL DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS.

CAUTION: It is very important that the cleaning solvent matches the solvent type used in the printer. Use of the wrong cleaning fluid is likely to result in print failures and printer damage, so read the label and confirm that the solvent is of the correct type.

CAUTION: Do not use excessive amounts of solvent; do not frequently use solvent to remove ink from the front panel and LCD screen as this can lead to deterioration of the membrane surface.

CAUTION: Do not use abrasive cleaning agents. Do not use excessive pressure when wiping the LCD screen; excessive pressure can cause damage to the surface of the membrane.

General

To clean the printer cabinet, use a soft lint-free cloth lightly soaked in a mild detergent.

Ink Spillages

If ink is accidentally spilled onto the exterior of the printer, Linx recommends the following procedures:

To clean this…	Do this…
Cabinet	Wipe the cabinet clean using a soft lint-free cloth lightly soaked in solvent.
Front Panel and LCD	Wipe the membrane and panel clean using a soft lint-free cloth lightly soaked in solvent. Do not apply excessive pressure to the LCD screen.

7.3.2 To Clean or Replace the Air Filter

When replacing the air filter, check that the replacement filter is of the correct type (part number FA13178) and remove all the filter packaging before fitting.

To clean or replace the air filter, do the following:

1. Power down and switch off the printer (see 'To Power Down and Switch Off' on page 33).

2. Withdraw the filter element using the nylon tab (you may need to apply gentle pressure to release the filter from the housing). Refer to the illustration below:
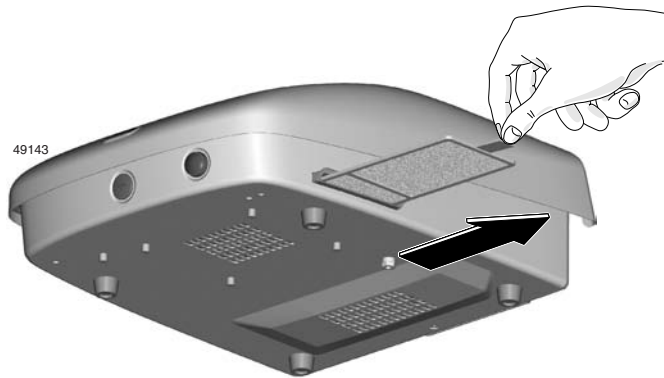
Figure 7-13 Removing the Filter Element

3. Clean the filter by gently knocking obstructions away, or use an air line to blow air through the filter in the reverse direction to the normal air flow.

4. Check that the filter is clean and there is no debris visible in the filter housing. If the filter cannot be cleaned, replace it with a new filter.

5. Fit the clean or new filter into the filter housing and ensure that it is fitted correctly.

NOTES:

1. The filter's soft surface must face up (to the top of the printer), the wire mesh surface must face down (to the base of the printer), and the tab facing outmost (away from the printer).

2. The air filter should be cleaned at least once a week; in dusty conditions, however, this may have to be done on a daily basis.

7.3.3 To Refill with Ink or Solvent

WARNING: HAZARDOUS INKS AND SOLVENTS. SAFETY GLASSES AND SOLVENT RESISTANT PROTECTIVE GLOVES MUST BE WORN THROUGHOUT THE FOLLOWING PROCEDURE. FAILURE TO COMPLY WITH THIS SAFETY WARNING COULD RESULT IN IRRITATION AND REVERSIBLE LOCAL DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS.

CAUTION: Use only Linx ink and solvent. Do not add ink or solvent until prompted by the printer. Never add more than one bottle of ink or solvent at a time—overfilling the printer with ink or solvent, or using incorrect inks and solvents could seriously damage the printer.

NOTES:

1. When the printer displays a "3.03 Ink Low" or "3.04 Solvent Low" system warning, you should refill the printer with ink or solvent.

2. Before you refill the printer with ink or solvent, do the following:

    *   Ensure that you are using the correct refill bottles. Refer to your Printer Care card for the correct ink and solvent types, or ask your line supervisor

    *   Verify that the use-by date on the bottle label has not expired. We recommend that you do not use out-of-date inks and solvents because they will not guarantee the high standards of print quality and reliability that you expect from your Linx printer

3. If you use pigmented inks, shake the refill bottle thoroughly before use.

4. Read the instructions on the refill bottle before use.

To refill with ink or solvent, do the following:

1. Remove the appropriate filler cap. The white filler cap with the letter 'S' indicates the solvent tank, while the black filler cap with a 'drop' icon indicates the ink tank.

2. Remove the cap from the filler bottle, and invert the bottle into the correct filler point as shown below:

Figure 7-14 Refilling with Ink and Solvent

3. Press down the bottle to pierce the foil seal, and wait for approximately 15 seconds to allow the contents to drain into the system. The "3.03 Ink Low" or "3.04 Solvent Low" warning disappears from the **Status Line**.

4. Ensure that the bottle is empty, then remove the bottle and refit the filler cap.

7.3.4 To Clean the Printhead

WARNING: HAZARDOUS INKS AND SOLVENTS. SAFETY GLASSES AND SOLVENT RESISTANT PROTECTIVE GLOVES MUST BE WORN THROUGHOUT THE FOLLOWING PROCEDURE. FAILURE TO COMPLY WITH THIS SAFETY WARNING COULD RESULT IN IRRITATION AND REVERSIBLE LOCAL DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS.

WARNING: MOST INKS AND SOLVENTS ARE FLAMMABLE. IT IS IMPORTANT TO DISPOSE OF THE WASTE CLEANING FLUID IN ACCORDANCE WITH LOCAL REGULATIONS.

CAUTION: It is very important that the cleaning solvent matches the solvent type used in the printer. Use of the wrong cleaning fluid is likely to result in print failures and printer damage, so read the label and confirm that the solvent is of the correct type.

CAUTION: Do not dry the printhead with a cloth or towel as this may leave fibres that could interfere with the printed drops.

CAUTION: Do not attempt to clean the printhead by immersing it in solvent or by using an ultrasonic bath. This will cause damage to the printhead and may void your warranty.

Cleaning solvent

The solvent used to clean the printhead must be the same as that used in the printer.

The procedure for cleaning the printhead varies according to the type of ink being used in the printer—non-pigmented ink or pigmented ink.

For Printers Using Non-pigmented *and* Pigmented Inks:

To clean the printhead, do the following:

1. Ensure that the printer is in the "Jet Off" state. To verify this, check the **Status** in the **PRINT STATUS** screen.

2. Unscrew the securing screw of the printhead's cover tube and slide off the cover. The printhead is hermetically sealed, so there is no risk of cleaning fluids affecting any of the electrical connections.

3. Hold the printhead as shown in Figure 7-15 below, or mount it on a wash station if you have one.
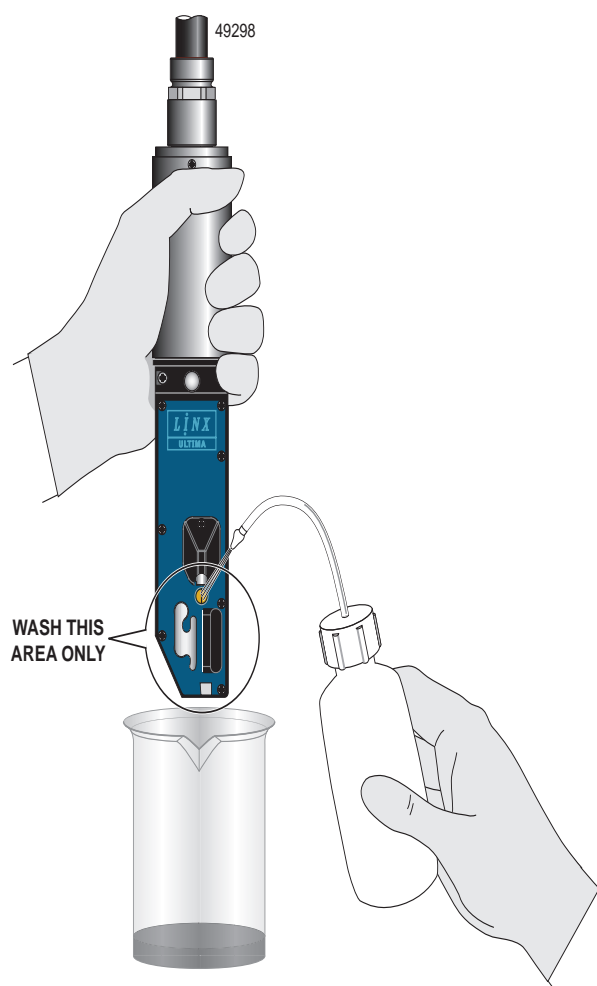
Figure 7-15 Cleaning the Printhead

Ensure that the cleaning solvent corresponds to the solvent type being used in the printer.

4. Place a container underneath the printhead and gently squirt the solvent onto the affected parts in short bursts, with a delay between bursts to allow the ink to dissolve.

    Any surplus solvent will run down the printhead and can be collected in the container for disposal (in accordance with local regulations).

5. Let the printhead stand for a few minutes to allow it to dry completely. You must take particular care to ensure that the space between the nozzle and charge electrode is free of solvent.

6. Refit the printhead in the cover tube and firmly tighten the securing screw.

For Printers Using Pigmented Inks *only*:

CAUTION: It is very important that the brush you use to clean the printhead is the non-abrasive, solvent resistant brush supplied with the printer (part number BP940029, order as a spare part using FA940029).

To clean the printhead, do the following:

1. Ensure that the printer is in the "Jet Off" state. To verify this, check the **Status** in the **PRINT STATUS** screen.

2. Unscrew the securing screw of the printhead's cover tube and slide off the cover. The printhead is hermetically sealed, so there is no risk of cleaning fluids affecting any of the electrical connections.

3. Hold the printhead as shown in Figure 7-15, or mount it on a wash station if you have one.

    Ensure that the cleaning solvent corresponds to the solvent type being used in the printer.

4. Place a container underneath the printhead and gently squirt the solvent onto the affected parts in short bursts, with a delay between bursts to allow the ink to dissolve.

    Any surplus solvent will run down the printhead and can be collected in the container for disposal (in accordance with local regulations).

5. Using the brush supplied with the printer, gently remove any ink deposits that will not wash off from the circled area in Figure 7-15, paying particular attention to the deflector plates (see Figure 7-16 below). **Do not use the brush to clean the nozzle:**

49297

CLEAN ONLY THIS
AREA WITH THE BRUSH.
DO NOT USE THE BRUSH
ON THE NOZZLE
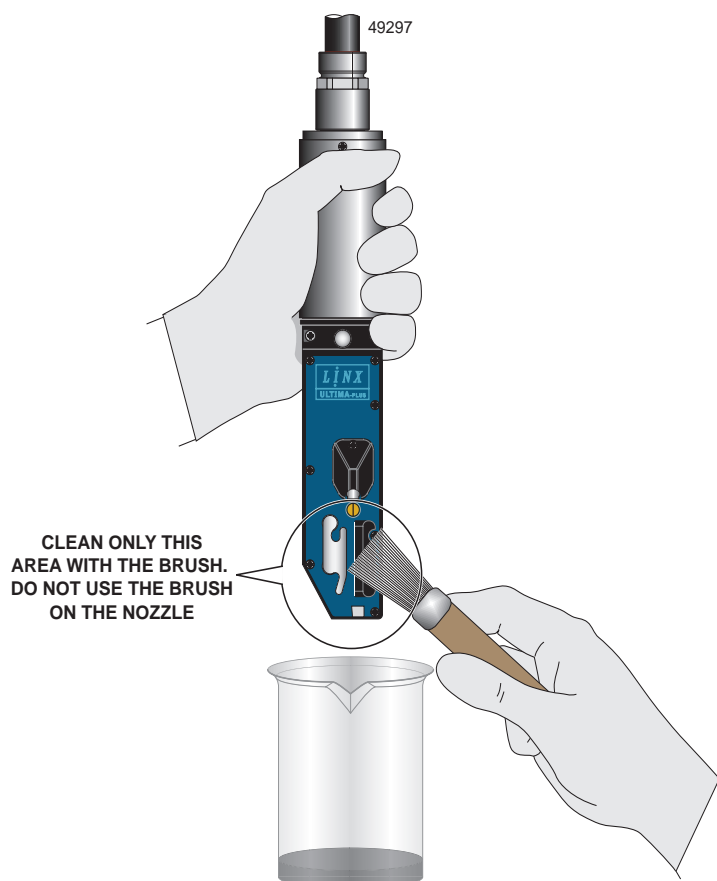
Figure 7-16 Cleaning the Printhead with the Brush (Pigmented Inks Only)

Ensure that the cleaning brush used is the non-abrasive, solvent resistant brush supplied with the printer.

6. Let the printhead stand for a few minutes to allow it to dry completely. You must take particular care to ensure that the space between the nozzle and charge electrode is free of solvent.

7. Wash the inside of the printhead cover tube with solvent until all ink has been removed. Use the brush, where possible, to remove ink deposits that do not immediately wash off. Finish the cleaning with a wash and allow the cover tube to dry.

8. Refit the printhead in the cover tube and firmly tighten the securing screw.

7.3.5 To Flush the Nozzle

WARNING: HAZARDOUS INKS AND SOLVENTS. SAFETY GLASSES AND SOLVENT RESISTANT PROTECTIVE GLOVES MUST BE WORN THROUGHOUT THE FOLLOWING PROCEDURE. FAILURE TO COMPLY WITH THIS SAFETY WARNING COULD RESULT IN IRRITATION AND REVERSIBLE LOCAL DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS.

You can use the Nozzle Flush sequence to clear the nozzle of any debris that may cause the ink jet to misalign, for example, dried ink or minute fibres.

During a Nozzle Flush, a stream of solvent is forced out of the nozzle and returned to the ink system through the gutter.

To flush the nozzle, do the following:

1. Ensure that the printer is in the "Jet Off" state. To verify this, check the **Status** in the **PRINT STATUS** screen.

2. Place a container beneath the printhead to collect any solvent that may drain off.

3. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

4. Select **Diagnostics Menu > Nozzle Flush**. The printer displays a "Flushing Nozzle : Please Wait" message on the **Status Line** to indicate that the nozzle flush is in progress.

   This message is displayed for approximately 2 minutes 20 seconds, which is the time it takes the nozzle flush to complete.

NOTE: The Nozzle Flush sequence should normally cure any nozzle alignment problems. However, if the procedure is unsuccessful, use the Nozzle Clear sequence to solve the problem.

7.3.6 To Clear the Nozzle

WARNING: HAZARDOUS INKS AND SOLVENTS. SAFETY GLASSES AND SOLVENT RESISTANT PROTECTIVE GLOVES MUST BE WORN THROUGHOUT THE FOLLOWING PROCEDURE. FAILURE TO COMPLY WITH THIS SAFETY WARNING COULD RESULT IN IRRITATION AND REVERSIBLE LOCAL DAMAGE TO THE EYES, AND NON-ALLERGIC CONTACT DERMATITIS.

WARNING: SOLVENT JET HAZARD. THE USE OF THE NOZZLE CLEAR FUNCTION MUST NOT BE CONFUSED THE WITH NOZZLE FLUSH 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 Clear Nozzle sequence enables you to clear an obstruction or blockage behind the nozzle by applying a vacuum to the nozzle. During the Clear Nozzle sequence, unlike Nozzle Flush, solvent is drawn into the ink system through the small orifice in the nozzle in order to clear the nozzle of any obstructions, such as dried ink or any particles.

To clear the nozzle, do the following:

1. Ensure that the printer is in the "Jet Off" state. To verify this, check the **Status** in the **PRINT STATUS** screen.

2. Remove the printhead cover tube.

3. At the **CURRENT MESSAGE** screen**,** press the [F4] function key to display the **SETUP** menu.

4. Select **Diagnostics Menu > Clear Nozzle**. The printer displays a "Clearing Nozzle : Please Wait" message on the **Status Line** to indicate that the Clear Nozzle sequence is in progress. This message is displayed for the duration of the Clear Nozzle sequence—approximately 20 seconds.

5. While the sequence is still in operation, invert the printhead and apply small amounts of solvent to the nozzle face, as shown in the following illustration. The solvent is drawn in through the nozzle:

Take care to build up a good coating of solvent on the nozzle face, as shown here
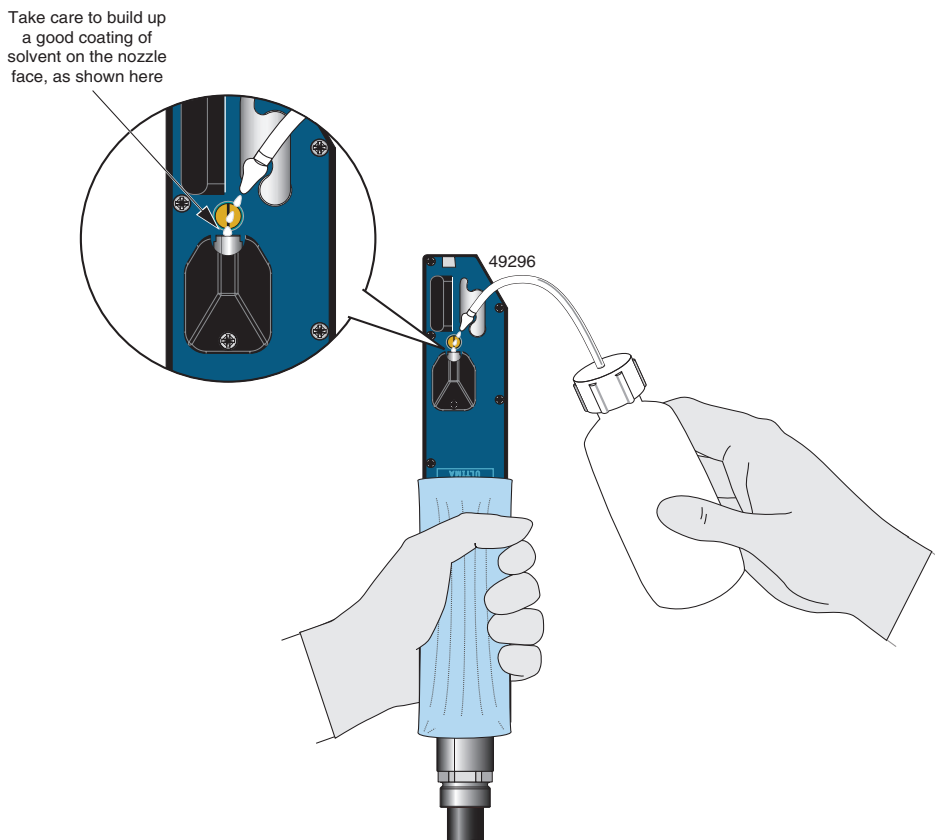
Figure 7-17 Clearing the Nozzle

6. Repeat Steps 4 and 5 twice to ensure that the nozzle is totally free from debris.

NOTE: To verify that the nozzle is clear, start the jet and check that the jet is coming from the nozzle and passing directly into the gutter. If the Clear Nozzle sequence was unsuccessful, contact your local Linx distributor.

Appendix A: Installation and Setup

This appendix describes how to install and set up the Linx 4900 printer. Although Linx engineers have already carried this out during commissioning, you can use the instructions in this appendix if you relocate the printer or make changes to ancillary equipment.

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

A.1 Locating the Printer

You must locate the printer in a room that has adequate ventilation, and on a firm base that is close to a clean mains power supply (that is, free from electrical interference). Ensure that:

- The vents at the base of the printer are free from obstructions, and there is adequate ventilation around the base of the printer

- There is a gap of *at least* 150 mm at the rear of the printer to allow adequate space for the printhead conduit to bend

Figure A-1 shows the layout (including cable connections) of the rear panel of the Linx 4900 printer:
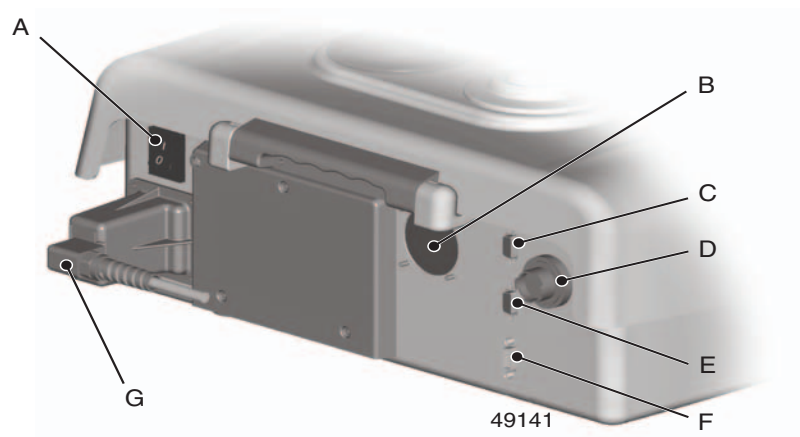
> A Mains Power Supply Switch
> B Printhead Conduit Entry/Exit
> C Trigger/Shaft Encoder Connector
> D External Alarm Connector
> E Trigger/Shaft Encoder Connector
> F RS232 Interface Connector
> G External Power Connector

Figure A-1 Linx 4900 Printer Rear Panel

A.2 Connecting to a Power Source

The Linx 4900 printer has a power rating of 200 VA, and operates on a single-phase, 50/60 Hz a.c. supply of 100 V to 230 V. This means that any a.c. voltage within this range will power the printer satisfactorily.

See Also

Refer to Appendix F, 'Technical Specification' for a detailed specification of the Linx 4900 printer.

NOTE: Please check that the details shown on the label at the rear of the printer match your power source **before switching on**.

Before you connect the printer to the mains power supply, make sure that the mains power supply switch (rocker switch) is in the '**0**' (off) position.

IMPORTANT: For the printer to comply with EN60204–1:1997. *Safety of machinery. Electrical equipment of machines. Specification for general requirements*, the printer **must** be connected to the mains supply in one of the following two ways:

1. By using a plug and socket arrangement.

2. If the printer is hard wired to the mains supply, a mains disconnecting device must be used between the printer and the mains supply.

The wires in this electrical supply lead are coloured in accordance with the following code:

Wire Colour	Connection
Green-Yellow	**E**arth
Blue	**N**eutral
Brown	**L**ive

WARNING: THIS PRINTER MUST BE EARTHED.

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

A.3 Attaching the Printhead to the Production Line

The printhead can work from any angle if clamped in place with a Linx printhead bracket. The printhead bracket ensures secure and vibration-free operation.

68446

The ideal distance between the printhead and the product is 12 mm.

Direction of conveyor
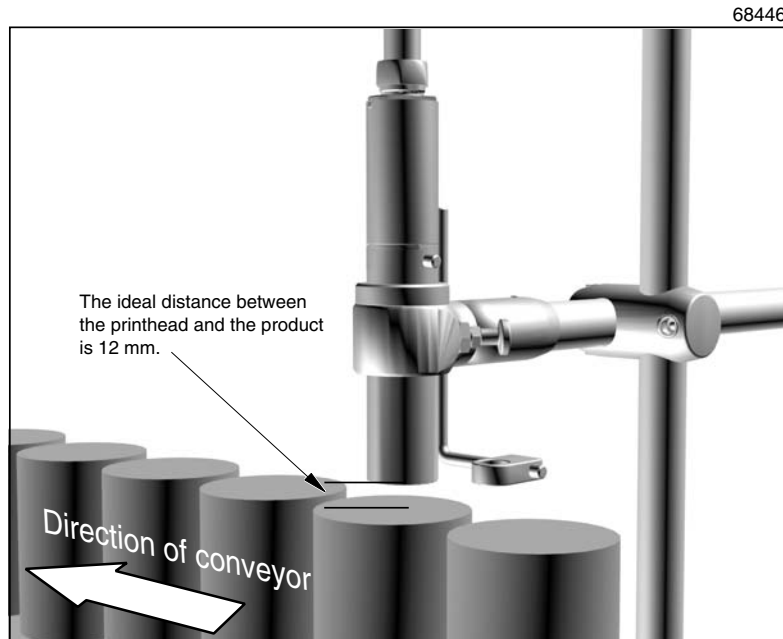
Figure A-2 Attaching the Printhead

The distance between the end of the printhead and the surface to be printed on should be set to the recommended initial setting to ensure optimum print quality; any other setting may result in substantial deterioration of print quality.

Printhead	Recommended Distance
Ultima	12 mm
Ultima *plus*	12 mm

A.3.1 Routing the Printhead Conduit

Ensure that the following printhead conduit guidelines are adhered to:

- Don't force the conduit to take a sharp bend

- Leave a loop in the conduit to take up movements on dynamic applications (use a 4 m conduit to assist with this type of application)

- Ensure that the conduit has adequate (fixed) support

- Remember to allow adequate access for printhead cleaning

- Ensure that there are cut-outs in machinery guarding to prevent the conduit being crushed when the guards are closed

- Ensure that the conduit is not in contact with sharp edges

NOTE: Refer to Appendix F, 'Technical Specification' for the dimensions of the conduit length, diameter and minimum bend radius.

A.4 Setting up Product Sensors

The Linx 4900 printer uses product sensors to detect the presence of the product to be printed on. There are variations in the way the printer interprets a trigger signal. However, it usually prints a message in response to such a signal from the product sensor.

68553

Direction of conveyor

Product sensor mounted on bracket and positioned before the printhead.
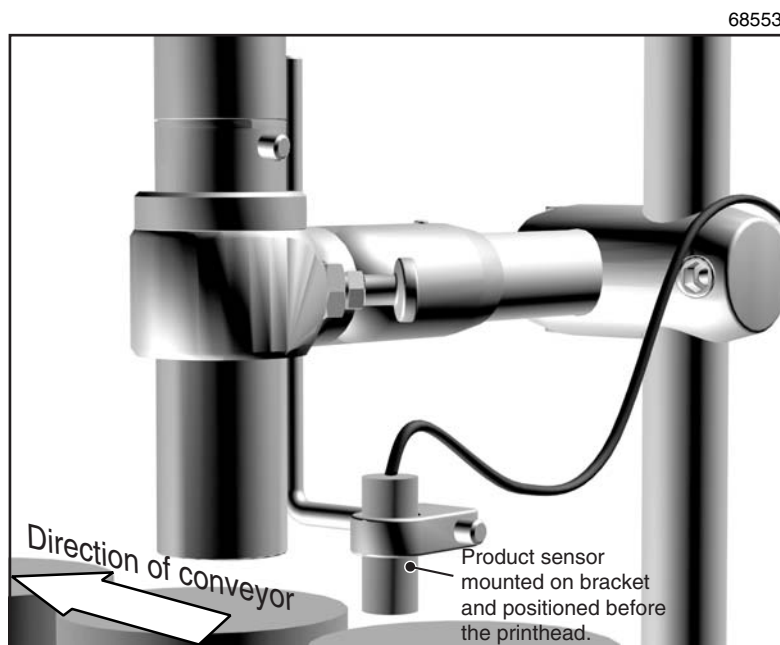
Figure A-3 Setting up the Product Sensor

Typically, the product sensor is mounted upstream of the printhead, and the distance between printhead and product sensor would be less than one message spacing.

A delay between the triggering product sensor and the start of printing is set through the **Print Delay** option in the user interface. This allows direct setting of the print position.

See Also

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

A.4.1 To Connect a Product Sensor

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

49299

Function	Connection
+ 24 V	Pin 1
0 V	Pin 2
Not used	Pin 4
Primary Trigger	Pin 6

Figure A-4 Product Sensor Pin Connections

The product sensor cable has a braided screen. You must connect the screen to the shell of the connector, which is in turn connected to the printer chassis. You must **not** connect the screen to 0 volts.

CAUTION: EMC performance may be compromised by the use of unsuitable product sensors and cables. Use only Linx approved accessories.

A.5 Setting up Line Speed Detection

Linx recommends that you use shaft encoders on production lines where variable speed is likely. A shaft encoder generates a pulse for a fixed distance of product movement. This enables the printer to print at a constant width as the line speed increases or decreases.

If you need to fit a shaft encoder, you should attach it to a suitable production line drive shaft. It must be installed and driven in a position where it best follows the movement of the product being printed on.

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

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

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

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

Each shaft encoder is available with a 5-metre cable and a suitable connector.

For applications where the shaft encoder needs to be driven from a conveyor belt or from the product, Linx provides the following selection of encoder wheels:

- 500 mm circumference

- 333 mm circumference

- 304.8 mm (1 ft) circumference

- 200 mm circumference

- 50 mm circumference

A given encoder and encoder wheel has a fixed encoder pitch, that is, the distance travelled by the product for each pulse cycle of the encoder output.

A.5.1 To Connect a Shaft Encoder

You must connect the shaft encoder to the system using a 9-pin D-type connector. The following table describes the function of each pin:

68443

Function	Connection
+ 24 V	Pin 1
0 V	Pin 2
+ 5 V	Pin 3
Single Ended Input	Pin 8

Figure A-5 Shaft Encoder Pin Connection

The shaft encoder cable has a braided screen. You must connect the screen to the shell of the connector, which is in turn connected to the printer chassis. You must *not* connect the screen to 0 volts.

CAUTION: EMC performance may be compromised by the use of unsuitable shaft encoders and cables. Use only Linx approved accessories.

Width Adjuster Unit

A Width Adjuster Unit (WAU) is available, which can be connected between the shaft encoder and the printer to intercept the shaft encoder signal. The WAU enables the printed length of a message to be more finely adjusted to suit the application than would be possible with the printer's **Print Width** setting alone. Alternative values for print width are generated by the WAU to provide precise positioning of the code within a restricted space on a product.

Refer to the *Width Adjuster Unit User Guide* (MP65362, order using FA65362) for details of how to set up and use the unit.

A.5.2 To Enable a Shaft Encoder

You must enable the shaft encoder via the user interface by setting the **Shaft Encoder** option in the **SETUP** menu to **On**.
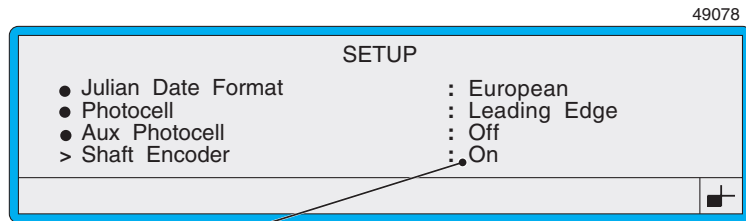
Figure A-6 Setting the Shaft Encoder Option

A.5.3 To Select the Encoder, Gearing and Print Width

When using a shaft encoder, *it is vitally important* that you carry out the following calculations to compute the print width value based on the geometry of the setup. If you do not follow these calculations, your messages will not be printed at the required size; rasters will be printed too close together or too far apart.

The calculations involve a series of steps as shown below:

Step 1: Define the required raster pitch for the application.

Step 2: Select the encoder, gearing and pitch factor that gives an actual raster pitch close to that required.

Step 3: Check that the calculated print performance—size and speed—is adequate.

Step 4: Calculate the print width value from the pitch factor and enter it at the **Print Width** setting in the **SETUP** menu.

Step 5: Check the print samples for performance.

Step 1: Define the Required Raster Pitch for the Application

For each message type on each printhead (Ultima or Ultima *plus*), there is a drop pitch that gives the best quality print, that is, a 1:1 aspect ratio at the default printer settings. This value is known as the Ideal Raster Pitch.

For a particular application, you may want to choose a different pitch, bearing in mind that the aspect ratio can be adjusted using the **Print Height** setting (see Chapter 3, 'Day-to-Day Operations').

The following table shows you how to calculate the required raster pitch:

49082

CALCULATING THE REQUIRED RASTER PITCH (mm)

$$\text{Required raster pitch (mm)} = \frac{\text{Printed Length (mm)}}{\text{Number of Characters} \times \text{Character Width (rasters)}}$$

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

Where:

Printed Length = Length of message on product. This must be less than the length of any area left clear for printing.

Number of Characters = Number of characters in the longest line of the message.

Character Width = Number of rasters in each character; see the table below showing character widths.

Figure A-7 Calculating the Required Raster Pitch

The width of a character varies according to the size of the character set chosen. The following table (Figure A-8) shows the character widths for each character set. These figures include the gaps between characters; this introduces a small error as the gap after the last character is not printed.

49146

Character Set	Character Width
5 FH (Caps)	6
7 FH (Caps)	6
16 FH (Caps)	11
16 non-FH	11
7 Arab Num	8
16 Arab Num	11

Figure A-8 Character Widths

The character widths shown in Figure A-8 also apply to the Russian and Greek character sets of the same size. For example, '7 FH (Caps)' Greek has a character width of 6. Note that the Russian character set 15 non-FH (Cyrillic) has a character width of 11.

For example:

Consider printing "Sell By 12 May 03" onto a print area 38 mm long, using a 7 Quality message type and an Ultima 62 µm printhead.

From the table above (Figure A-8), the width of each character is 6 rasters. The message is 17 characters long, including spaces, therefore, the required raster pitch is given by:

$$\text{Required raster pitch (mm)} = \frac{38 \text{ mm}}{17 \text{ characters x 6 rasters}}$$

$$= \textbf{0.373 mm}$$

This is the maximum pitch possible; any larger, and the message will not fit in the print target area.

At this stage, it is also worth considering if any other pitch values are required for other products that you intend to run on the production line.

The following tables (Figure A-9 and Figure A-10 on page 165) show the ideal raster pitch (mm), raster rate (kHz), and the maximum line speed (m/s) at ideal raster pitch, for each printhead and message type combination.

From Figure A-9, the required raster pitch (0.373 mm) is slightly higher than the ideal raster pitch (0.353 mm) for a 7 Quality message type, using an Ultima 62 µm printhead.

In this instance, the message will fill the print area. However, there will be a small gap between the drops on the print area. In addition, the higher value of the required raster pitch may increase the potential maximum line speed.

49081

ULTIMA PRINTHEAD			
Message Type	Ideal Raster Pitch (mm)	Maximum Raster Rate (kHz)	Maximum Line Speed at Ideal Raster Pitch (m/s)
5 Wide	0.469	13.33	6.25
7 Flexible	0.423	5.00	1.99
7 Quality	0.353	6.15	2.01
7 Speed	0.353	10.00	3.53
7 Wide	0.469	10.00	4.69
16 Flexible	0.423	1.54	0.63
16 Quality	0.353	1.74	0.56
16 Speed	0.400	2.11	0.82
16 Wide	0.469	3.20	1.44

Figure A-9 Ultima Printhead Ideal Raster Pitch, and Raster Rate

49269

ULTIMA PLUS PRINTHEAD			
Message Type	Ideal Raster Pitch (mm)	Maximum Raster Rate (kHz)	Maximum Line Speed at Ideal Raster Pitch (m/s)
5 Wide	0.568	12.80	7.28
7 Quality	0.428	4.00	1.61
7 Speed	0.428	8.00	3.42
7 Wide	0.568	9.14	5.20
16 Quality	0.428	1.31	0.54
16 Speed	0.428	1.83	0.78
16 Wide	0.559	1.88	1.05

Figure A-10 Ultima *plus* Printhead Ideal Raster Pitch, and Raster Rate

Step 2: Select the Encoder, Gearing, and Pitch Factor

A particular combination of encoder and encoder drive (gearing or wheel) gives a particular encoder pitch—the distance the product travels for each cycle of the encoder output signal. The encoder pitch is multiplied by the pitch factor (a whole number) to give the actual raster pitch. This should be as close as possible to the required raster pitch.

The table below gives the encoder pitch for standard Linx encoders and wheels. You can calculate the encoder pitch for other gearing or drives by using the following:

$$\text{Encoder Pitch (mm)} = \frac{\text{Wheel Circumference (mm)}}{\text{Encoder Pulses per Revolution}}$$

Where:

Wheel circumference = distance the product moves for one revolution of the encoder. This may be 3.14 x roller diameter, or 3.14 x star-wheel diameter, and so on, depending on the application.

68542

Encoder p.p.r.	Your Application	Wheel Circumference/Encoder Pitch (mm)				
		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 A-11 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. By selecting a suitable encoder and gearing, the actual raster pitch can be made close to the required raster pitch.

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

Where:

The Pitch Factor is a whole number.

This typically requires trial and error; first select an encoder/gear combination, and then multiply it by whole numbers to get the actual pitch. This is then compared to the required pitch.

6512

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

Figure A-12 Selecting Encoder Pitch Combinations

For each encoder pitch that you try, the starting point for the pitch factors can be:

Pitch Factor (rounded to the nearest whole number) =

$$\frac{\text{Required Pitch (mm)}}{\text{Encoder Pitch (mm)}}$$

Using the example from Step 1, the required raster pitch is 0.373 mm. A standard Linx encoder and wheel is used to try to achieve this.

68543

	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 A-13 Example Encoder Pitch Combinations

The actual raster pitch from Try 3 is close enough to the required raster pitch to be used, particularly as the required raster pitch is the maximum, therefore, a 5000 p.p.r. encoder and a 200 mm wheel is specified, and the pitch factor is 9.

It can be seen that the higher the encoder pulses per revolution, the closer the actual pitch approaches the required pitch. This also gives the possibility of accommodating changes in the required pitch, however, the cost of the encoder will be higher and there may be limitations in terms of speed.

Step 3: Check the Calculated Print Performance

Any difference between the required raster pitch and the actual raster pitch influences the print performance. There is also a limitation due to the frequency of the encoder signals.

This step requires that you do the following:

1. **Calculate the length of the printed message**

   Number of Rasters (Step 1) x Actual Raster Pitch (Step 2).

2. **Calculate the maximum line speed for the message type**

   Actual Raster Pitch (Step 2) x Raster Rate (kHz). See Figure A-9 on page 165 and Figure A-10 on page 165.

   The raster rate varies with printhead type and raster.

3. **Calculate the maximum encoder speed**

   Encoder Pitch (Figure A-11 on page 166) x Specified Frequency (kHz).

NOTE: The Limiting Signal Frequency for Linx standard encoders is 80 kHz.

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

   The maximum line speed must be less than the maximum encoder speed. If this is not the case, repeat the selection process.

The following table lists the maximum encoder speeds for standard Linx encoders and wheels:

68546

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

Figure A-14 Maximum Encoder Speeds for Standard Linx Encoders and Wheels

Referring back to the example, the actual raster pitch is 0.36 mm (Step 2) and the number of rasters is 102 (Step 1).

Printed Message Length (mm) = 102 x 0.36 (mm)

= **36.72 mm**

Therefore, this will fit in the target area of 38 mm.

The message will be printed using a 7 Quality message type and an Ultima 62 µm printhead. From Figure A-9 on page 165, the raster rate is 1.74 kHz.

Maximum Line Speed (m/s)   =   0.36 mm x 6.15 kHz

                                   =   **2.214 m/s**

This is slightly higher than the quoted maximum line speed for the message type, achieved at the expense of a small gap between the printed drops.

The encoder/gearing chosen has an encoder pitch of 0.040 mm (Step 2), and a specified frequency of 80 kHz.

Maximum Encoder Speed (m/s)   =   0.040 mm x 80 kHz

                                     =   **3.2 m/s**

This will not limit the expected printable maximum line speed.

NOTE: The Limiting Signal Frequency for Linx standard encoders is 80 kHz.

Step 4: Calculate and Enter the Print Width Value

1. Calculate Print Width Value

Calculate the print width value for the particular combination of encoder and encoder wheel used in the application:

Print Width = Pitch Factor –1

Referring back to the example, the calculated pitch factor is 9 (Step 2).

Print Width = 9 –1

= **8**

This value indicates that the printer will print one raster for every 9 encoder pulses.

2. Enter Value

Enter the calculated print width value at the **Print Width** setting (in the **SETUP** menu) for the particular combination of encoder and encoder wheel used in the application:

49063

```
                        SETUP
  ● Password                    : Off
  ● Print  Height               : Normal
  > Print  Width                : 8
  ● Print  Delay                : 16
```

Enter the calculated pulses per mm value at this setting.
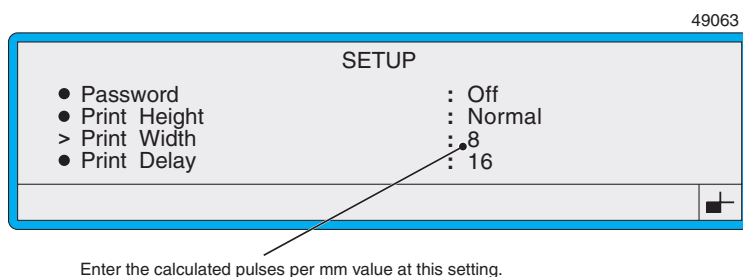
Figure A-15 Print Width Setting Showing the Calculated Value

Step 5: Check the Print Performance

When you have entered the print width value, create a message using the character size and raster from the calculation.

Take print samples at a variety of normal running speeds to confirm the settings. This must include the maximum running speed of the line.

Summary

1. Calculate the **Required Raster Pitch**

    $$= \frac{\text{Print Length}}{\text{No. of Rasters in Message}}$$

2. Refer to Figure A-9 on page 165 and Figure A-10 on page 165 for the **Ideal Raster Pitch** for the particular printhead and message type

3. Calculate the **Encoder Pitch**

    $$= \frac{\text{Wheel Circumference}}{\text{Encoder pulses per Revolution}}$$

4. Calculate the **Pitch Factor** (rounded down to the nearest whole number)

    $$= \frac{\text{Required Raster Pitch}}{\text{Encoder Pitch}}$$

5. Calculate the **Actual Raster Pitch** = Pitch Factor x Encoder Pitch

6. Calculate the **Printed Message Length**

    = Number of Rasters in the message x Actual Raster Pitch

    Ensure that the Printed Message Length is less than the Print Length in Step 1.

7. Calculate the **Maximum Line Speed** for the particular message type = Actual Raster Pitch x Raster Rate

8. Calculate the **Maximum Encoder Speed** =

    Encoder Pitch x Specified Frequency for Linx Standard Encoders (80 kHz)

9. Ensure that the **Maximum Line Speed** (Step 7) is less than the **Maximum Encoder Speed** (Step 8)

10. Calculate the **Print Width** = Pitch Factor (Step 2) –1 for the encoder and wheel combination

11. Enter the calculated print width value at the **Print Width** setting

12. Check the print performance

Appendix B: Printer Controls and System Menus

This appendix describes the controls and indicators of the Linx 4900 printer. These include the General Control keys and the Keyboard Control keys of the Printer Control Panel. It also describes the system menu options and the keyboard shortcuts.

The Linx 4900 Printer Control Panel is divided into the following two functional areas:

- General control keys, printer display, and the LED (light emitting diode) status indicators, which are located in the top half of the panel

- Function keys, keyboard and keyboard control keys, which are located in the bottom half of the panel

The following illustration illustrates the layout of the Linx 4900 Printer Control Panel:
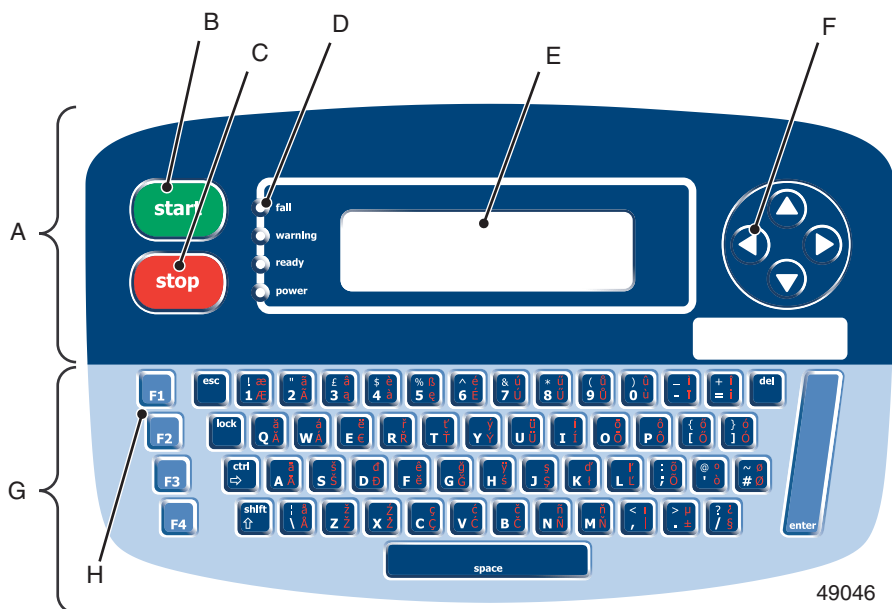
A   General Control keys and Display
B   start key
C   stop key
D   LED status indicators
E   Display
F   Cursor Control keys
G   Keyboard and Function keys
H   Function keys

Figure B-1 Linx 4900 Printer Control Panel

B.1 General Control Keys and Indicators

B.1.1 General Control Keys

Press this key…	To do this…
start	Initiate a jet startup procedure to start printing.
stop	1. Stop printing and initiate a jet shutdown procedure. 2. Initiate printer power down (when printer is in "Jet Off" state).
(navigation keys)	Navigate the following: • Menu options • Option values • Text fields

B.1.2 LED Status Indicators

fail

warning

ready

power

This indicator …	Indicates...
fail	A printer failure event.
warning	A printer warning event.
ready	That the jet is running and the printer is ready to print.
power	That the printer has power applied to it and is switched on.

B.1.3 Function Keys

At the **CURRENT MESSAGE** screen, the **PRINT STATUS** screen, the **MESSAGE OPTIONS** screen and the **EDIT MESSAGE** screen, you use the function keys to select an option:
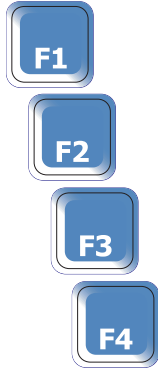
For example, at the **CURRENT MESSAGE** screen, press the [F2] function key to select the option **F2: Check Status**.

The section 'System Menu Options' on page 180 describes the options available from the **CURRENT MESSAGE** screen, the **PRINT STATUS** screen, the **MESSAGE OPTIONS** screen and the **EDIT MESSAGE** screen.

B.1.4 Keyboard Control Keys

Press this key…   **To do this…**

Exit from a menu or screen, and return to the previous screen.

Toggle between locking and unlocking the keyboard:

- Lock the keyboard with the [shift] key on to type lower-case characters (top left). The Keyboard Status Indicator changes to ▛─. See 'Keyboard Status Indicator' on page 179 for further information.

- Lock the keyboard with the [ctrl] key on to type characters from the extended character set (bottom right). The Keyboard Status Indicator changes to ─▄. See 'Keyboard Status Indicator' on page 179 for further information.

- Lock the keyboard with the [shift] + [ctrl] key on to type characters from the extended character set (top right). The Keyboard Status Indicator changes to ─▛. See 'Keyboard Status Indicator' on page 179 for further information.

Toggle between the special characters (top right), and uppercase and number characters (bottom left, default) of the keyboard.

The Keyboard Status Indicator changes to ─▄. See 'Keyboard Status Indicator' on page 179 for further information.

Note that pressing the [lock] key in conjunction with this key locks the keyboard with this key on.

Toggle between lowercase, and uppercase and number characters (default) of the keyboard.

The Keyboard Status Indicator changes to ▛─. See 'Keyboard Status Indicator' on page 179 for further information.

Note that pressing the [lock] key in conjunction with this key locks the keyboard with this key on.
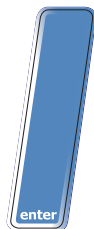
Press this key…   **To do this…**

1. Delete the character at the cursor position without moving the cursor.
2. When editing text, delete the character to the left of the cursor position.

Move the cursor one space forward within a text entry field.

1. Select the menu option at the menu cursor position.
2. Confirm an entry.
3. Select a message field for editing.

B.1.5 Keyboard Status Indicator

The Keyboard Status Indicator allows you to quickly see which character will be displayed when a keyboard key is pressed:
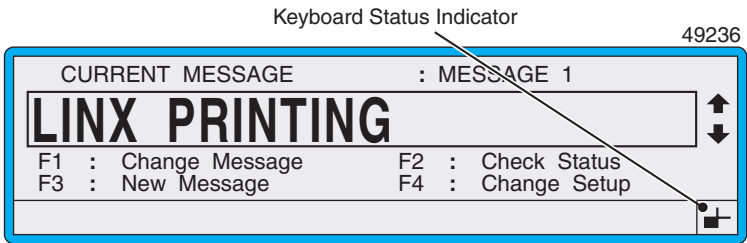
Figure B-2 Keyboard Status Indicator: Default Position

Each keyboard key allows you type up to four different characters, and the Keyboard Status Indicator is designed to denote these four character positions.

As you press a keyboard key in conjunction with one or more control keys: [shift] key, [ctrl] key and [lock] key, the keyboard status indicator changes according to the control key or keys that are pressed. This is illustrated in Figure B-3 below.
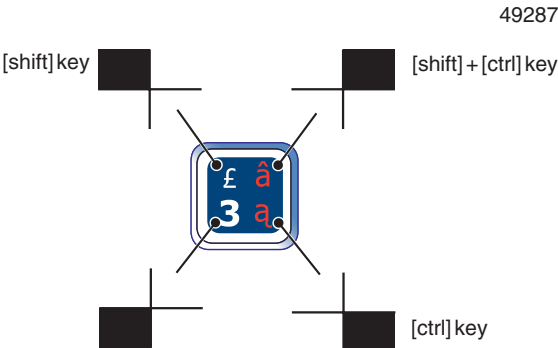
Figure B-3 Using the Keyboard Status Indicator

B.2 System Menu Options

B.2.1 System Menus: Hierarchy Overview
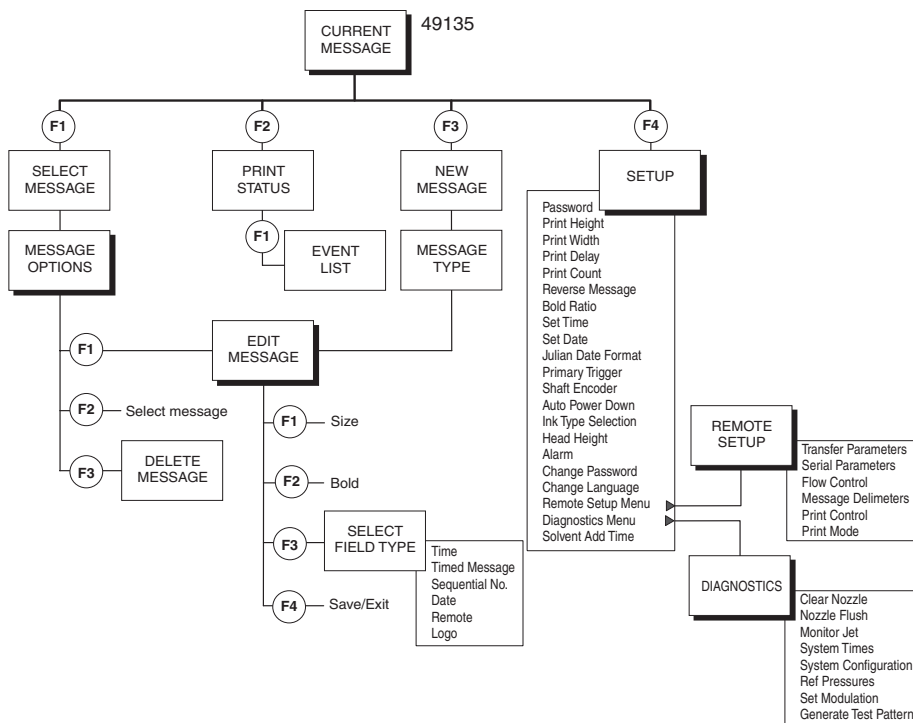
Figure B-4 4900 System Menus: Hierarchy Overview
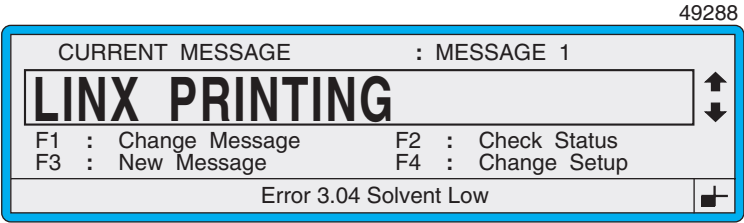
B.2.2 Current Message Screen

49288

```
CURRENT  MESSAGE              :  MESSAGE  1

LINX  PRINTING

F1  :  Change  Message        F2  :  Check  Status
F3  :  New  Message           F4  :  Change  Setup

                  Error 3.04 Solvent Low
```

Figure B-5 Current Message Screen

Select this option…	To do this…
F1 : Change Message*	Display the **SELECT MESSAGE** screen, where you can select an existing message then go to the **MESSAGE OPTIONS** screen and choose to select the message for printing, or edit/delete the message.
	See 'Message Options Screen' on page 182 for details.
F2 : Check Status	Display the **PRINT STATUS** screen, which shows you the status of the printer, the ink and the solvent. It also gives you access to the **EVENT LIST** menu to view a list of system event messages.
F3 : New Message	Display the **NEW MESSAGE** screen where you specify a message name, open the **MESSAGE TYPE** screen to specify a message type, then go on to the **EDIT MESSAGE** screen. See 'Edit Message Screen' on page 183 for details.
F4 : Change Setup	Display the **SETUP** menu where you can view and edit various system options. It also gives you access to two further menus—**REMOTE SETUP** menu and **DIAGNOSTICS** menu.
	See 'Setup Menu' on page 184, and 'Diagnostics Menu' on page 187 for further details.

*or, when printing:

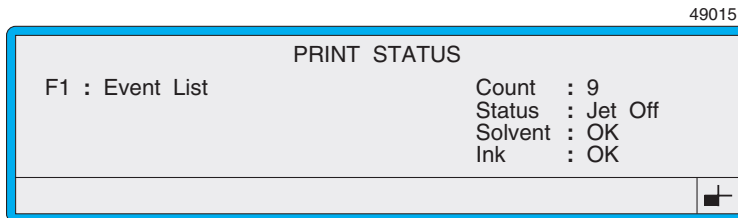|	
F1 : Stop Printing	Stop printing. When printing is stopped, the option changes to **F1: Change Message**.

B.2.3 Print Status Screen

49015

```
                    PRINT  STATUS
F1 : Event  List                    Count    : 9
                                    Status   : Jet  Off
                                    Solvent  : OK
                                    Ink      : OK
```

Figure B-6 Print Status Screen

Select this option…   **To do this…**

F1: Event List   Display the **EVENT LIST** menu to view a list
                          of the current system events.

B.2.4 Message Options Screen

49016

```
MESSAGE  OPTIONS :      MESSAGE 1
F1 : Edit
F2 : Select             LINX  PRINT
F3 : Delete
```
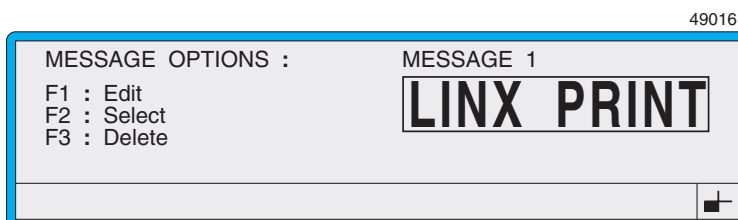
Figure B-7 Message Options Screen

Select this option…   **To do this…**

F1: Edit   Display the **EDIT MESSAGE** screen where
                          you can edit the selected message. See 'Edit
                          Message Screen' on page 183 for details.

F2: Select   Select the message for printing and return to
                          the **CURRENT MESSAGE** screen.

F3: Delete   Delete the selected message.

B.2.5 Edit Message Screen

49030

```
EDIT MESSAGE              : MESSAGE 1

LINX  PRINTING
F1  :  Size   16 FH (Caps)          F2  :  Bold Off
F3  :  Field Type                   F4  :  Save & Exit
```
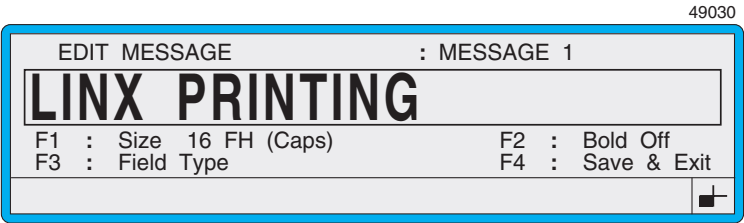
Figure B-8 Edit Message Screen

Select this option…	To do this…
F1: Size	To select the character size.
F2: Bold	Switch the bold ratio on or off.
F3: Field Type	Display the **SELECT FIELD TYPE** screen where you choose the field type: Time, Timed Message, Sequential No, Date, Remote or Logo, then create a field.
F4: Save & Exit	Save the message and exit from the screen back to the **CURRENT MESSAGE** screen.

B.2.6 Setup Menu

49061

```
                              SETUP
    > Password                        : Off
    ● Print  Height                   : Normal
    ● Print  Width                    : 0
    ● Print  Delay                    : 16

                                                        ⬏
    ● Print  Count                    : 9
    ● Reverse  Messsage               : Off
    ● Bold  Ratio                     : 1
    ● Set  Time                       : 10:16
    ● Set  Date                       : 15:08:03
    ● Julian  Date  Format            : European
    ● Primary  Trigger                : Leading  Edge
    ● Shaft  Encoder                  : On
    ● Auto  Power  Down
    ○ Ink  Type  Selection            : A
    ● Head  Height                    : 0.5m
    ● Alarm
    ● Change  Password
    ● Change  Language
    ● Remote  Setup  Menu
    ● Diagnostic  Menu
    ○ Solv  Add  Time                 : 30
```

Figure B-9 Setup Menu

Select this option…	To do this…
Password	Switch the password system on or off.
Print Height	Adjust the height of the current message.
Print Width	Adjust the width of the current message.
Print Delay	Change the print delay value.
Print Count	View and change/reset the number of prints to-date.
Reverse Message	Reverse the printed message.
Bold Ratio	Define the ratio of bold for use with any message.
Set Time	Change the printer system time.
Set Date	Change the printer system date.
Julian Date Format	Set the Julian date format.
Primary Trigger	Define the print trigger.
Shaft Encoder	Set up a shaft encoder.
Auto Power Down	Display the **AUTO POWER DOWN** menu where you can specify the auto power down settings.

Select this option…	To do this…
Ink Type Selection	View the ink type used in the printer.
Head Height	Specify the height of the printhead in relation to the printer.
Alarm	Display the **ALARM** menu where you can specify the alarm settings.
Change Password	Display the **CHANGE PASSWORD** menu to change the Level B and Level C passwords.
Change Language	Display the **CHANGE LANGUAGE** menu to specify the system language.
Remote Setup Menu	Display the **REMOTE SETUP** menu where you specify the remote communications parameters. See 'Remote Setup Menu' on page 186 for further details.
Diagnostics Menu	Display the **DIAGNOSTICS** menu. See 'Diagnostics Menu' on page 187 for further details.
Solv Add Time	View the total time that the printer has added solvent since the jet was last started.

NOTE: Note that the options you see when you access the **SETUP** menu differ according to the current printer status and the user level password. Chapter 5, 'Changing the System Setup' includes a table detailing the validity of the **SETUP** menu options.

B.2.7 Remote Setup Menu

49316

REMOTE SETUP

> Transfer Parameters
● Serial Parameters
● Flow Control
● Message Delimiters

● Print Control
● Print Mode
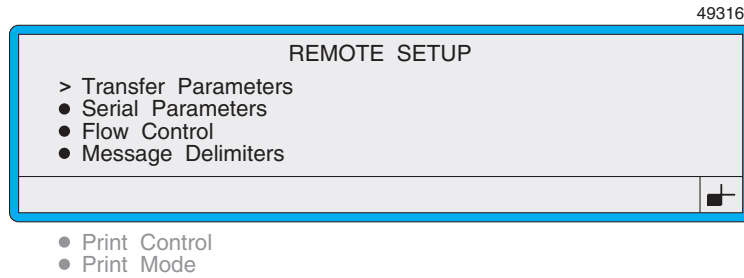
Figure B-10 Remote Setup Menu

Select this option…	To do this…
Transfer Parameters	Define the general parameters for the RS232 link.
Serial Parameters	Define the communications parameters used by the serial hardware to determine the format and speed of the transferred data.
Flow Control	Configure the flow control settings.
Message Delimiters	Specify the characters used to delimit transmitted and received data over the interface.
Print Control	Specify and enable/disable ASCII control characters for print controls, such as 'Print Trigger' and 'Print Go'.
Print Mode	Define various printing control setting.

B.2.8 Diagnostics Menu

49029

```
                         DIAGNOSTICS
   > Clear  Nozzle                    : 1
   ● Nozzle  Flush                    :
   ● Monitor  Jet                     :
   ● System  Times                    :

                                                        ⌐⏌
```

```
   ● System  Configuration           :
   ● Ref  Pressures                  :
   ● Set  Pressure                   : 0
   ● Set  Modulation                 : 0
   ● Generate  Test  Pattern         :
```
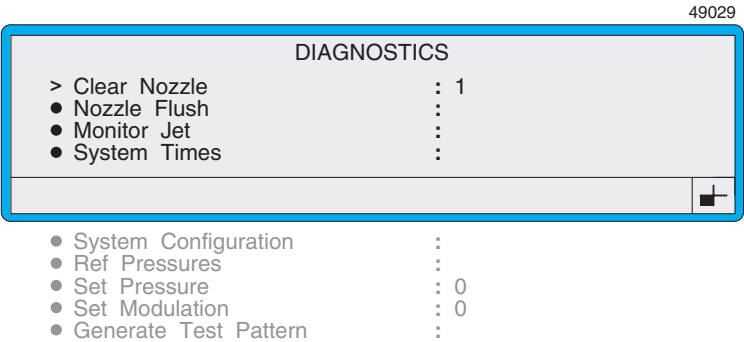
Figure B-11 Diagnostics Menu

Select this option…	To do this…
Clear Nozzle	Perform a Clear Nozzle sequence, which applies vacuum to the nozzle.
Nozzle Flush	Perform a Nozzle Flush sequence, which forces a stream of solvent out of the nozzle and returns it through the gutter.
Monitor Jet	Display the **MONITOR JET** screen where you can view the current operating values of the jet.
System Times	Display the **SYSTEM TIMES** screen where you can view printer and jet operating times, and the time remaining to the next scheduled maintenance.
System Configuration	Display the **SYSTEM CONFIGURATION** screen where you can view printer configuration information.
Ref Pressures	Display the **PRESSURE REFS** screen where you can view the printer's key pressure values.
Set Pressure	View the currently set pressure value.
	Note that this value is also shown in the **MONITOR JET** screen.
Set Modulation	View the current modulation voltage value being used by the printer.
Generate Test Pattern	Create test messages for each message type.

NOTE: Note that the options you see when you access the **DIAGNOSTICS** menu differ according to the current printer status and the user level password. Chapter 7, 'Diagnostics and Maintenance' includes a table detailing the validity of the **DIAGNOSTICS** menu options.

B.3 Keyboard Shortcuts

B.3.1 Current Message Screen

Use this shortcut…	To do this…
[M]	Display the **MONITOR JET** screen.
[L]	Display the **EVENT LIST** menu.
[del]	Delete the current message.

B.3.2 Setup Menu

Use this shortcut…	To do this…
[D]	Display the **DIAGNOSTICS** menu.
[R]	Display the **REMOTE SETUP** menu

B.3.3 Diagnostics Menu

Use this shortcut…	To do this…
[M]	Display the **MONITOR JET** screen.

Appendix C: Line Speeds and Print Quality

This appendix shows you how to determine the ideal speed to obtain optimized print quality.

C.1 Introduction

Using the correct line speed ensures optimum print performance on both fixed speed production lines and for lines with a shaft encoder.

The speed at which the product passes the printhead affects print quality. Ideal line speeds vary according to the printhead in use and the selected message type. Line speeds can be calculated using product pitch and product frequency.

☞ NOTE: You must determine the correct line speed for your production line and configure the Message Parameters and Line Settings using the **SETUP** menu before you start printing. See Chapter 5, 'Changing the System Setup' for details.

Printing at Speeds Below Recommended Maximum

When using a shaft encoder to determine print positioning, printing at speeds below the recommended maximum will *not* affect print quality.

On lines not using a shaft encoder, printing at speeds below the speed set in the **Print Width** option will compress the appearance of the printed message.

Printing at Speeds in Excess of the Recommended Maximum

Printing at speeds in excess of the recommended maximum will stretch the appearance of the printed message. This applies irrespective of whether a shaft encoder is being used or not.

C.2 Printable Line Speeds

The following tables show the maximum line speed at which good printing will be obtained for each printer configuration, printhead type and message type at Ideal Raster Pitch.

49080

KEY

Configuration:	SS	= Standard Speed
	HS	= High Speed
	SHS	= Super High Speed

| **Message Types:** | 5, 7, etc. | = Raster or Pixel height of a Message Type |

C.2.1 Ultima Printhead

49004

ULTIMA PRINTHEAD				
Configuration			**Message Type**	**Maximum line speed at Ideal Raster Pitch (m/s)**
SS	**HS**	**SHS**		
		●	5 Wide	6.25
●	●	●	7 Flexible	1.99
●	●	●	7 Quality	2.01
	●	●	7 Speed	3.53
	●	●	7 Wide	4.69
●	●	●	16 Flexible	0.63
●	●	●	16 Quality	0.56
	●	●	16 Speed	0.82
		●	16 Wide	1.44

Figure C-1 Ultima Printhead Maximum Line Speeds

C.2.2 Ultima *plus* Printhead

49186

ULTIMA PLUS PRINTHEAD				
Configuration			Message Type	Maximum line speed at Ideal Raster Pitch (m/s)
SS	HS	SHS		
		●	5 Wide	7.28
●	●	●	7 Quality	1.61
	●	●	7 Speed	3.42
	●	●	7 Wide	5.20
●	●	●	16 Quality	0.54
	●	●	16 Speed	0.78
		●	16 Wide	1.05

Figure C-2 Ultima *plus* Printhead Maximum Line Speeds

C.3 Ideal Raster Pitch

As illustrated in the tables on the previous pages, maximum line speeds are shown for 'Ideal Raster Pitch'. Ideal raster pitch is dependent on the message type being used. For each message type, with each printhead type there is a drop pitch that gives the best quality print, i.e. 1:1 aspect ratio at the default printer settings. This value is known as the Ideal Raster Pitch.

Tables contained in Appendix A, 'Installation and Setup' list the ideal raster pitch values for each message type.

Line speeds can be adjusted if printing is not at ideal raster pitch (see Appendix A, 'Installation and Setup' for further information).

As ink jet printers use individual drops of ink to form a character or image, the speed at which the substrate passes the printhead determines how the print appears. The faster the speed, the more separated the drops. The slower the speed, the more concentrated the drops.

Character heights using Linear Wide message types have increased height because the pitch is larger. This helps to form 'square' (more precisely uniform) characters.

For a particular application, you may wish to choose a different pitch, bearing in mind that the aspect ratio can be adjusted using the **Print Width** option.

C.4 Calculating Line Speeds

The following table is a general reference to line speeds, showing line speeds in metres per second according to the product pitch (gap between products), and the products per minute.

48075

LINE SPEED PER PRODUCT FREQUENCY (m/s)										
Product Pitch	**mm**	**50**	**100**	**200**	**300**	**400**	**500**	**750**	**1000**	**1500**
	inch	**2**	**4**	**8**	**12**	**16**	**20**	**30**	**39**	**59**
Products per Minute										
10		0.01	0.02	0.03	0.05	0.07	0.08	0.12	0.24	0.24
25		0.02	0.04	0.08	0.13	0.17	0.21	0.31	0.42	0.62
50		0.04	0.09	0.17	0.26	0.34	0.43	0.65	0.86	1.30
75		0.06	0.13	0.26	0.39	0.51	0.64	0.96	1.07	1.92
100		0.09	0.17	0.34	0.51	0.68	0.85	1.28	1.78	2.56
125		0.11	0.21	0.42	0.64	0.85	1.07	1.60	2.14	3.20
150		0.13	0.26	0.51	0.77	1.03	1.28	1.92	2.56	3.84
200		0.17	0.34	0.68	1.03	1.37	1.71	2.57	3.42	5.14
300		0.26	0.51	1.03	1.54	2.05	2.56	3.84	5.12	7.68
400		0.34	0.68	1.37	2.05	2.74	3.42	5.13	6.84	10.26
500		0.43	0.85	1.71	2.56	3.42	4.27	6.41	8.54	12.82
750		0.64	1.28	2.58	3.88	5.13	6.41	9.62	12.82	19.24

Figure C-3 Line Speed per Product Frequency

C.3.1 Calculation Formula

The formula used to calculate the line speed is defined below, together with an example. The formula can be used to calculate the speed of specific product pitches and/or product frequencies not shown in the above table.

Line Speed (m/s)

$$= \frac{\text{Number of products per second}}{\text{Number of products per metre}}$$

OR

Line Speed (m/s)

= Number of products per second x Pitch between products (in metres)

Example Formula
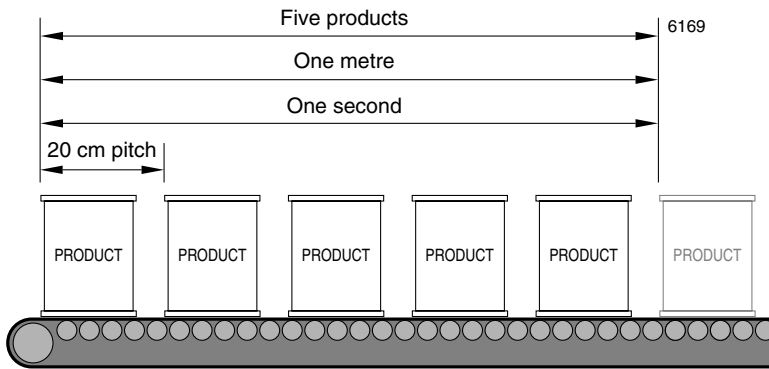
$$\frac{5 \text{ products} / 1 \text{ second}}{5 \text{ products} / 1 \text{ metre}} \; = \; \frac{5}{5} \; = \; 1 \text{ metre per second line speed}$$

OR

5 products / 1 second x 0.20 metre pitch between products = 1 metre per second line speed

Figure C-4 Example Calculation Formula

Appendix D: System Event Messages

This appendix describes the System Event messages for Version 1.0 software of the Linx 4900 printer.

The Linx 4900 printer provides on-screen messages to help you diagnose problems and, in some cases, take corrective actions before imminent failure of the system. These messages are known as 'System Event messages'.

System Event messages are divided into the following three categories:

- **System Failures**

  Occur when the printer cannot operate due to software failures. These events are numbered 1.XX.

- **Print Failures**

  Occur when the print cannot continue due to mechanical or electrical failure. These events cause the printer to shutdown, and are numbered 2.XX.

- **System Warnings**

  Occur when the printer is operated outside specified limits, or when a failure is imminent. These events are numbered 3.XX.

The printer also displays **Advisory Messages**. These messages appear either as a direct response to user commands, for example, "Invalid Data", or to inform you of the operational status of the printer (as you work with the printer, starting and stopping printing, stopping the jet, and so on), for example, "Starting Jet : Please Wait".

These messages are not failures or warnings, but are for your information only. Because these messages are self explanatory, they are not described in this appendix.

D.1 System Event Messages Summary

49268

SYSTEM EVENT MESSAGES SUMMARY		
1. System Failures	**2. Print Failures**	**3. System Warnings**
1.00 Internal Failure	2.00 Printhead Over Temperature	3.00 Shutdown Incomplete
1.01 Stack Overflow	2.01 EHT Trip	3.02 Memory Corrupt
1.02 Corrupt Program Data	2.02 Phase Failure	3.03 Ink Low
1.03 Unexpected Interrupt	2.03 Time Of Flight Failure	3.04 Solvent Low
1.04 Unexpected RST	2.04 300V Power Supply	3.05 Over Speed (Print Trigger)
1.05 Unexpected NMI	2.05 Ink Tank Empty	3.06 Over Speed (Synchronous Data)
	2.06 Solvent Tank Empty	3.07 Over Speed (Asynchronous Data)
	2.07 Internal Spillage	3.11 Scheduled Maintenance Req'd
	2.09 Misaligned Ink Jet	3.12 Printhead Cover Off
	2.11 Pressure Limit Reached	3.18 Low Pressure
	2.12 Viscosity	3.19 Valid UNIC Chip Not Found
	2.13 Hardware Safety Trip	3.20 No Time Of Flight
		3.26 User Data Corrupt
		3.29 No Message Stored
		3.30 Message Name Exists
		3.31 Message Memory Full
		3.32 Remote Error

Figure D-1 System Event Messages Summary Table

D.2 System Failures

1.00 Internal Failure

Description: Undefined software failure.

Cause(s): Unknown

Solution: Contact your local Linx distributor.

1.01 Stack Overflow

Description: Memory allocation has been exceeded.

Cause(s): Programming error.

Solution: Power down and restart the printer.

If failure persists, contact your local Linx distributor.

1.02 Corrupt Program Data

Description: Program and/or data stored in memory is corrupt.

Cause(s): Unknown.

Solution: Contact your local Linx distributor.

1.03 Unexpected Interrupt

Description: Software has been reset after receiving an interrupt signal.

Cause(s): Undefined software interruption.

Solution: Contact your local Linx distributor.

1.04 Unexpected RST

Description: Software has been reset after receiving a corrupting signal.

Cause(s): Undefined software interruption.

Solution: Contact your local Linx distributor.

1.05 Unexpected NMI

Description: Software has been reset after receiving an interrupt signal.

Cause(s): Undefined software interruption.

Solution: Contact your local Linx distributor.

D.3 Print Failures

When a Print Failure occurs, a Print Failure message is displayed in the Status Line, and a jet shutdown sequence is initiated. The 'fail' LED on the Printer Control Panel lights and the internal beeper is switched on.

When the jet shutdown sequence has finished, the **PRINT FAILURE** screen is displayed:

49206

```
                    PRINT  FAILURE
  Print  Failure  2.00  Printhead  Over  Temperature

  F1   :   Reset  Printer

          Print  Failure  2.00  Printhead  Over  Temperature   ▪┙
```
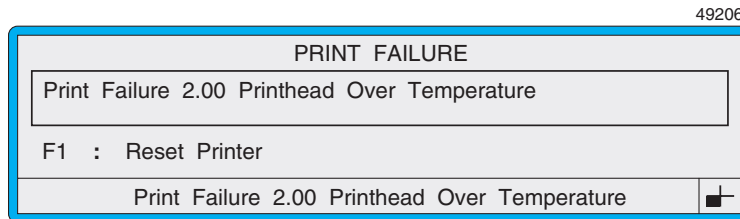
Figure D-2 Print Failure Screen

Press the [F1] function key to reset the printer.

NOTE: In some cases, although certain message editing funtions may still be available, the printer must be switched off at the mains power supply switch and then back on before printing can be continued. However, most Print Failures initiate a normal jet shutdown sequence, and the printer can be restarted in the normal manner afterwards without the need to switch the mains power off and back on.

2.00 Printhead Over Temperature

WARNING: HIGH TEMPERATURE. WHEN THIS FAULT IS REPORTED, THE PRINTHEAD AND COVER TUBE MAY BE VERY HOT. EXTREME CARE MUST BE TAKEN TO AVOID SKIN BURNS AND INCREASING THE RISK OF FIRE. DO NOT TOUCH THE PRINTHEAD OR ATTEMPT TO REMOVE THE PRINTHEAD COVER TUBE UNTIL IT HAS BEEN ALLOWED TO COOL DOWN NATURALLY. REMOVING THE PRINTHEAD COVER TUBE BEFORE IT HAS COOLED DOWN SUFFICIENTLY MAY RESULT IN SEVERE BURNS TO THE HANDS AND THE POSSIBILITY OF FIRE DUE TO THE SUDDEN INCREASE IN OXYGEN AROUND THE PRINTHEAD.

Description:	Excessive high temperature at the printhead, which indicates a high ambient temperature or a possible fire condition. The trip (or maximum) temperature is approximately 60 °C.
Cause(s):	Printhead too close to source of high temperature.
Solution:	If it is safe to do so, power down the printer, or switch off the printer at the mains supply.
	Do not touch the printhead.
	Remove the printhead from the source of high temperature.
	Contact your local Linx distributor.

NOTE: Hot substrates should be printed on from the side to avoid heat convection to the printhead.

2.01 EHT Trip

Description: EHT output failure.

Cause(s): Excessive build-up of ink on the EHT deflector plate, shorting the plate to another item in the printhead.

Static discharge, high humidity, or vibration around the printhead.

Jet instability due to contaminated ink or debris in the nozzle.

Printhead too close to the substrate.

Solution: Clean the printhead and perform a Nozzle Flush. See Chapter 7, 'Diagnostics and Maintenance'.

Ensure that the distance between the printhead and the substrate is 12 mm. See Appendix A, 'Installation and Setup''.

If the failure persists, contact your local Linx distributor.

2.02 Phase Failure

Description: The printer failed to obtain a valid phase position after 48 attempts.

Cause(s): No ink jet.

Jet misalignment.

Very heavy ink build-up in printhead.

Solution: Clean the printhead; perform a Nozzle Flush and a Nozzle Clear. See Chapter 7, 'Diagnostics and Maintenance'.

If the failure persists, contact your local Linx distributor.

2.03 Time Of Flight Failure

Description: This failure occurs when the jet is started and the microprocessor fails to obtain a valid TOF reading within 40 minutes.

Cause(s):   Partly blocked nozzle.

Jet misalignment.

Build-up of ink on the deflector plates.

Solution: Clean the printhead; perform a Nozzle Flush and a Nozzle Clear. Chapter 7, 'Diagnostics and Maintenance'.

If the failure persists, contact your local Linx distributor.

2.04 300V Power Supply

Description: Power supply failure.

Cause(s):   High voltage power supply failure.

Solution: Contact your local Linx distributor.

2.05 Ink Tank Empty

Description: The ink in the ink tank has fallen below the minimum level.

Cause(s):   Ink-level sensor has been indicating low ("3.03 Ink Low" warning) for approximately 8 hours.

This time limit prevents the ink from running out completely and damaging the pump, if the user fails to refill the ink reservoir following a system warning "3.03 Ink Low". This failure occurs only when the jet is running since the jet cannot normally be started when the ink is low.

Solution: Refill with ink Chapter 7, 'Diagnostics and Maintenance'.

2.06 Solvent Tank Empty

Description: The solvent in the solvent tank has fallen below the minimum level.

Cause(s): Solvent-level sensor has been indicating low ("3.04 Solvent Low" warning) for approximately 12 hours.

This time limit prevents the solvent from running out completely, if the user fails to refill the solvent reservoir following a system warning "3.04 Solvent Low". This failure occurs only when the jet is running since the jet cannot normally be started when the solvent is low.

Solution: Refill with solvent. See Chapter 7, 'Diagnostics and Maintenance'.

2.07 Internal Spillage

Description: An internal spillage has occurred, causing the printer to stop and shut down the jet.

Cause(s): Overflow in ink or solvent reservoir due to incorrect refilling.

Leak within the ink or solvent system.

Solution: Switch off the printer, and contact your local Linx distributor.

2.09 Misaligned Ink Jet

Description: Under normal operating conditions, the gutter sense circuit detects the presence of ink flow in the gutter. If ink flow is not detected for any reason (for example, a misaligned jet), the jet will shut down. Absence of ink in the gutter is detected within approximately 10 seconds.

Cause(s): Partly blocked nozzle.

Blocked gutter.

Contaminated ink.

Mechanical misalignment of the nozzle.

Obstruction of the jet through the charge electrode.

Solution: Clean the printhead; perform the Nozzle Clear and Nozzle Flush functions. See Chapter 7, 'Diagnostics and Maintenance'.

If the failure persists, contact your local Linx distributor.

2.11 Pressure Limit Reached

Description: Pressure limit has been reached.

Cause(s):   Possible partly blocked nozzle.

Solution: Perform the Nozzle Clear function. See Chapter 7, 'Diagnostics and Maintenance'.

If the failure persists, contact your local Linx distributor.

2.12 Viscosity

Description: As ink viscosity increases (thickens) due to evaporation or temperature changes, the printer compensates by adding solvent to the ink. Solvent is added until the ink pressure falls below its operating limit. An error is generated when the maximum permitted number of solvent additions has been exceeded.

Cause(s):   Fault in the ink system.

Incorrect printhead set up (Head Height).

Solution: Contact your local Linx distributor.

2.13 Hardware Safety Trip

Description: The hardware safety trip has activated, locking out certain hardware functions.

Cause(s):   EHT trip, power supply failure, or printhead over temperature.

Solution: Contact your local Linx distributor.

D.4 System Warnings

3.00 Shutdown Incomplete

Description: The printer did not complete the shutdown sequence.

Cause(s): Printer was powered down before the shutdown sequence was completed.

Printer was switched off while the jet was still running.

A Print Failure occurred.

Solution: Clean the printhead. See Chapter 7, 'Diagnostics and Maintenance'.

1. Press the [start] key to start the jet
2. Press the [stop] key to stop the jet
3. Power down the printer
4. Power up the printer

3.02 Memory Corrupt

Description: Printer memory is corrupt.

Cause(s): Electrical disturbance.

Solution: Contact your local Linx distributor.

3.03 Ink Low

Description: The ink in the ink tank has fallen below the minimum level.

Cause(s): Low level of ink in the ink tank.

Solution: Refill the ink tank with ink. See Chapter 7, 'Diagnostics and Maintenance'.

3.04 Solvent Low

Description: The solvent in the solvent tank has fallen below the minimum level.

Cause(s): Low level of solvent in the solvent tank.

Solution: Refill the solvent tank with solvent. See Chapter 7, 'Diagnostics and Maintenance'.

3.05 Over Speed (Print Trigger)

Description: Print triggers are occurring faster than the printer can print; the printer received a second (or false) print trigger when it is currently printing a message.

Cause(s): Incorrect **Print Delay** value entered for the **Primary Trigger** options **High Level**, **Low Level** or **Off**. See Chapter 5, 'Changing the System Setup'.

Product sensor generating false triggers due to electrical disturbance.

Inadequate product sensor for the current application.

Solution: Contact your local Linx distributor.

3.06 Over Speed (Synchronous Data)

Description: A 'Print Go' signal occurred before the printer could generate the message data, therefore, printing could not take place. The printer may have missed printing at least one message.

This warning indicates that the printer cannot generate pixels fast enough.

Cause(s): The amount of variable data (such as sequential numbers) in the message is too high for the current rate of print triggers.

False trigger from the product sensor.

Solution: Contact your local Linx distributor.

3.07 Over Speed (Asynchronous Data)

Description: A 'Print Go' occurred before the printer could generate the message data in response to an asynchronous event (that is, an event other than that used to trigger print).

During printing, the printer may receive an asynchronous command, which attempts to change the current message. The printer may assume that the data has not arrived and ignore the command (depending on the software setting), in which case it will continue to print the unchanged message.

Cause(s): The printer has received a command to change the message during the delay time.

Solution: Contact your local Linx distributor.

3.11 Scheduled Maintenance Req'd

Description:	Printer requires scheduled maintenance.
Cause(s):	The remaining time interval until the next scheduled maintenance (shown in the **SYSTEM TIMES** menu), is zero or negative.
Solution:	Contact your local Linx distributor to arrange a scheduled maintenance visit.

3.12 Printhead Cover Off

Description:	Printhead cover tube is off.
Cause(s):	The printhead cover tube has been removed or is incorrectly fitted.
Solution:	Refit the printhead cover tube.
	If the failure persists, contact your local Linx distributor.

3.18 Low Pressure

Description:	The printer cannot achieve the correct pressure.
Cause(s):	Blockage in the ink system.
Solution:	Contact your local Linx distributor.

3.19 Valid UNIC Chip Not Found

Description:	The UNIC (Unique Number Identification Chip) located on the IPM board is either missing, unrecognised by the software, or faulty.
Cause(s):	Incorrect, missing, or faulty UNIC.
Solution:	Contact your local Linx distributor.

3.20 No Time Of Flight

Description: The printer failed to obtain a TOF reading over a 5-minute period after jet start. If this condition continues for a further 35 minutes, a "2.03 Time of Flight" failure occurs, and the printer shuts down.

Cause(s): Partly blocked nozzle.

Jet misalignment.

Shaft encoder wheel stopped turning.

Solution: Clean the printhead; perform a Nozzle Flush and a Nozzle Clear. See Chapter 7, 'Diagnostics and Maintenance'.

Restart production line.

If failure persists, contact your local Linx distributor.

3.26 User Data Corrupt—Contact your local Linx Service Centre

Description: Internal software error.

Cause(s): Invalid data in memory.

Solution: Contact your local Linx distributor.

3.29 No Message Stored

Description: The message store is empty. Printing cannot be started when there are no messages.

Cause(s): No messages currently exist in the message store.

Battery backup has failed.

Solution: Create a new message.

If failure persists, contact your local Linx distributor.

3.30 Message Name Exists

Description: A new message name has been entered that is the same as the name of an existing message.

Cause(s): Duplicate message name.

Solution: Enter a different (unused) message name.

3.31 Message Memory Full

Description: The message store has reached its maximum capacity.

Cause(s):   The maximum permissible number of messages has been created.

Solution: To create another new message, you must first delete an existing message from the message store.

3.32 Remote Error

Description: There is a problem with the remote communications interface.

Cause(s):   The printer has received the 'Set Remote Error' command (121) through the remote interface.

Solution: Contact your on-site remote communications administrator.

If failure persists, contact your local Linx distributor.

Appendix E: Extended Character Sets

Extended character sets allow you to type additional characters. The following extended character sets are available on the 4900 printer:

- European
- Greek
- Russian

NOTE: Availability of these extended character sets is determined by the language group, printer keyboard (European, Greek or Russian) and keyboard driver installed your printer. For further information, contact your local Linx distributor.

E.1 Typing Characters from Extended Character Sets

The Extended Character keys are denoted on the keyboard by red letters or characters.

To type characters from the extended character set, press the key showing the required character at the same time as pressing the [ctrl] key, or both the [shift] + [ctrl] keys.

Tip

Use the Keyboard Status Indicator in the bottom right corner of the Display (▄┐) as you press the control keys (the [shift] key and the [ctrl] key) to see which character will be displayed when you press a keyboard key.

The following example of the [3] key illustrates the four character positions on a keyboard key. It shows how to type each of the four characters and how the Keyboard Status Indicator changes according to the control keys pressed:
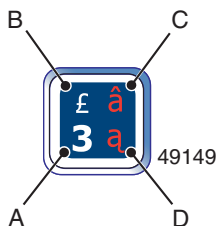
Figure E-1 Typing Keyboard Characters

A **Standard characters** (uppercase and numbers).
Simply press the key showing the required character on the bottom left of the key. This is the default position (mode).
To reset the keyboard to Standard characters, simply reverse the locking action (as described below) by repeating the same keystrokes.

B **Shifted characters** (lowercase)
Hold the [shift] key down and press the key showing the required character on the top left of the key.
To lock the keyboard in this mode, hold the [shift] key down and press the [lock] key. To unlock, repeat this locking action.

C **Control and Shifted characters**
Hold the [ctrl] key + the [shift] key down and press the required character on the top right of the key. To lock the keyboard in this mode, hold the [ctrl] key + [shift] key down and press the [lock] key. To unlock, repeat this locking action.

D **Control characters**
Hold the [ctrl] key down and press the key showing the required character on the bottom right of the key.
To lock the keyboard in this mode, hold the [ctrl] key down and press the [lock] key. To unlock, repeat this locking action.

NOTES:

1. It is not appropriate to print some characters from the extended character sets at the smaller font sizes, as the resolution provided by the number of drops is not sufficient to produce a good quality character. The following table (Figure E-2) specifies which characters from the extended character sets can be printed for each font size.

2. If you do enter a character that is not available, an asterisk (*) character appears in its place.

49322

Font size	Printable characters
5	€ character only
7	All characters
16	All characters

Figure E-2 Printable Characters (Extended Character Sets)

E.2 European Characters

European characters are available from the extended character set.

Prerequisites

- Euro1, Euro2 or Euro3 language group

- European keyboard (see Figure E-3 on page 213)

- European keyboard driver

Typing European Characters

To type European characters, use the method described in the section 'Typing Characters from Extended Character Sets' on page 210. See also 'Typing the Euro Currency Symbol' below.

Typing the Euro Currency Symbol

To type the euro symbol:

1. Hold the [ctrl] key down and press the [E] key.

Figure E-3 4900 European Keyboard

E.3 Greek Characters

Greek characters are available from the extended character set.

Prerequisites

- Greek language group
- Greek keyboard (see Figure E-4 on page 215)
- Greek keyboard driver

Typing Greek Characters

To type Greek characters, press the key showing the required character on the bottom left of the key.

Typing European (ASCII) Characters

European characters are available from the Extended Character set. To type these characters, use the method described in the section 'Typing Characters from Extended Character Sets' on page 210.

Figure E-4 4900 Greek Keyboard

E.4 Russian Characters

Russian characters are available from the extended character set.

Prerequisites

- Russian language group

- Russian keyboard (see Figure E-5 on page 217)

- Russian keyboard driver

Typing Russian Characters

To type Russian characters, use the method described in the section 'Typing Characters from Extended Character Sets' on page 210.

Figure E-5 4900 Russian Keyboard

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Appendix F:Technical Specification

F.1 Technical Data

F.1.1 Printer Configurations

49083

Speed:		Standard Speed (SS)	High Speed (HS)	Super High Speed (SHS)
Printheads:	**Ultima**	●	●	●
	Ultima *plus*	●	●	●

Figure F-1 Linx 4900 Printer Configurations

F.1.2 Cabinet

Construction

Base tray unit: Stainless steel

Top cover: Stainless steel

Dimensions

Height: 236 mm

Width: 483 mm

Depth: 645 mm

Weight

19.5 kg approximately (excluding ink, solvent, and packaging)

F.1.3 Power Requirements

Voltage:	Single phase, 100 V (3 A) to 230 V (1 A) a.c., 50/60 Hz
Power rating:	200 VA

This equipment is a Class 1 earthed appliance as defined by EN60950. Electrical connections at the rear of the cabinet comply with the extra low voltage safety requirements as defined by EN60950.

WARNING: THIS PRINTER MUST BE EARTHED/ GROUNDED.

The integrity of the insulation resistance between the live conductors and earth has been tested in accordance with the test defined in EN60950.

The integrity of the protective earthing conductors has been tested in accordance with the test defined in EN60950.

F.1.4 Environmental

Operating temperature:	+5 °C to +45 °C ambient
Humidity range:	Maximum of 90% relative humidity, non-condensing
Acoustic emission:	Less than 70 dBA
Water and dust:	Protected to IP55

F.1.5 Ink System

Construction

Ink system enclosure:	Stainless steel
Ink tank:	Natural polyethylene
Solvent tank:	Natural polyethylene

Capacity

Ink tank:	1440 ml approximately
Solvent tank:	1440 ml approximately

Pressure

Operating range:	Up to 4.49 bar (65 p.s.i.)
Maximum pressure:	6.21 bar (90 p.s.i.) under fault conditions

Level Control

Ink tank sense low:	Warning reported at approximately 740 ml
Solvent tank sense low:	Warning reported at approximately 740 ml

Performance

Solvent consumption:	Approximately 6 ml/h at 23° C ambient for Ethanol based inks
	Approximately 8 ml/h at 23° C ambient for MEK based inks
	Approximately 12 ml/h at 23° C ambient for Acetone based inks

F.1.6 Memory Capacity

Message storage:	Up to 50 (dynamic allocation)
Logo storage:	Up to 100

F.1.7 Printhead

Types

Ultima:	Mk 7 (62 µm nozzle)
Ultima *plus*:	Mk 7 (75 µm nozzle)

Construction

Printhead:	Thermoplastic polyester body
Cover tube:	Stainless steel
Conduit adaptor:	Stainless steel

Dimensions

Straight Printheads

Body length (all types):	225 mm
Body diameter (all types):	42 mm
Conduit length:	2 m or 4 m
Conduit diameter:	17 mm
Conduit minimum bend radius:	75 mm (static applications)
	150mm (dynamic applications)

Right-angled Printheads

Body length:	265 mm
Body diameter (all models):	42 mm
Conduit length:	2 m or 4 m
Conduit diameter:	22 mm
Conduit minimum bend radius:	75 mm (static applications only)

F.1.8 Printing Performance data

Ultima (62 μm)

Number of lines of print:	Up to two lines of 7 High characters
Number of message types:	Up to 9
Maximum speed:	6.25 m/s (one line of 5 High characters)
Minimum character height:	2.2 mm using *5 Wide* message type
Maximum character height:	7.4 mm using *16 Wide* message type

Ultima *plus* (75 μm)

Number of lines of print:	Up to two lines of 7 High characters
Number of message types:	Up to 7
Maximum speed:	7.28 m/s (one line of 5 High characters)
Minimum character height:	2.7 mm using *5 Wide* message type
Maximum character height:	8.8 mm using *16 Wide* message type

Printhead to Substrate Distance (recommended)

Ultima:	12.0 mm
Ultima *plus*:	12.0 mm

F.1.9 Regulatory Approvals

Safety

Approved in accordance with TÜV/GS requirements

Machinery Directive

98/37/EC

Low Voltage Directive

73/23/EEC as amended by 93/68/EEC

Applicable European Safety Standard

EN292–1: 1991	Safety of Machinery. Basic concepts, general principles for design. Basic terminology, methodology.
EN292–2: 1991	Safety of Machinery. Basic concepts, general principles for design. Technical principles and specifications.
EN60204–1: 1997	Safety of machinery. Electrical equipment of machines. Specification for general requirements.
EN60950: 1992	Safety of information technology equipment, including electrical business equipment.

Electromagnetic Compatibility

EMC Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC

Applicable European EMC Standards

EN61000–6–2: 2001	Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments.
EN61000–6–4: 2001	Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments.

Applicable USA EMC Standards

FCC 47CFR, Part 15. Class A Device.

Enclosure Protection

EN60529: 1992	Specification for degrees of protection provided by enclosures (IP code).

Appendix G: EC Declaration of Conformity Certificates

English

MP41067-01

L I N X

CE EU DECLARATION OF CONFORMITY

We hereby declare that the following equipment complies with the essential requirements of:

The Machinery Directive 98/37/EC
The Low Voltage Directive 73/23/EEC as amended by 93/68/EEC
The EMC Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC

Machine Description:	**Continuous Ink Jet Printer**
Type:	**4900**
Identification*:	**From serial number BJ744 onwards**
Manufactured by:	**Linx Printing Technologies plc**

This equipment has been designed and manufactured in accordance with the following harmonised European standards:

EN292-1, -2:1991	**Safety of Machinery**
EN61000-6-4:2001	**EMC Emissions**
EN61000-6-2:2001	**EMC Immunity**
EN60204-1:1997	**Electrical Safety – Machinery**
EN60950:1992	**Electrical Safety – IT Equipment**

A technical construction file for this machinery is retained at the manufacturer's address.

Signed: *Neil Bennett*   Date: 1 June 2003

Name: Neil Bennett   Position: Engineering Director

Being the responsible person appointed by the manufacturer established in the EU and employed by Linx Printing Technologies plc.

*Please note that the first character of the Serial Number identifies the equipment as a continuous ink jet printer. The next four characters form an alpha-numeric sequential number.

Czech

MP41067-01

CE PROHLÁŠENÍ EU O SHODĚ

Tímto prohlašujeme, že níže uvedené zařízení vyhovuje základním požadavkům následujících norem:

Směrnice pro strojní zařízení 98/37/EC
Směrnice pro nízkonapěťová zařízení 73/23/EEC ve znění pozdějších předpisů směrnice 93/68/EEC
Směrnice EMC 89/336/EEC ve znění pozdějších předpisů směrnic 92/31/EEC a 93/68/EEC

Popis zařízení:	Tiskárna typu inkjet s kontinuálním tiskem
Typ:	4900
Identifikace*:	Podle sériového čísla BJ744 dále
Výrobce:	Linx Printing Technologies plc

Toto zařízení bylo zkonstruováno a vyrobeno v souladu s následujícími harmonizovanými evropskými standardy:

EN292-1, -2:1991	Bezpečnost strojního zařízení
EN61000-6-4:2001	EMC – emise
EN61000-6-2:2001	EMC – odolnost
EN60204-1:1997	Bezpečnost elektrických zařízení – strojní
EN60950:1992	Bezpečnost elektrických zařízení – IT přístroje

Technická konstrukční dokumentace k tomuto zařízení je uchovávána na adrese výrobce.

Podepsáno:	*Neil Bennett*	Datum:	1. června 2003
Jméno:	Neil Bennett	Funkce:	Technický ředitel

Tato zodpovědná osoba byla určena výrobcem, ustanovena pro EU a je zaměstnancem společnosti Linx Printing Technologies plc.

*Všimněte si, že první znak sériového čísla označuje zařízení tiskárny typu inkjet s kontinuálním tiskem. Další čtyři znaky jsou alfanumerickým pořadovým číslem.

Danish

MP41067-01

CE   **EU OVERENSSTEMMELSESERKLÆRING**

Vi erklærer herved at nedenstående udstyr er i overensstemmelse med de væsentlige krav i:

Maskindirektivet 98/37/EF
Lavspændingsdirektivet 73/23/EØF som ændret ved 93/68/EØF
Direktiv 89/336/EØF om elektromagnetisk kompatibilitet, som ændret ved 92/31/EØF og 93/68/EØF

Beskrivelse af udstyret: **Kontinuerlig inkjet-printer**
Type: **4900**
Identifikation*:   **Fra og med serienummer BJ744**
Fremstillet af: **Linx Printing Technologies plc**

Udstyret er konstrueret og fremstillet i henhold til nedenstående harmoniserede europæiske standarder:

EN292-1, -2:1991	Maskinsikkerhed
EN61000-6-4:2001	Elektromagnetisk emission
EN61000-6-2:2001	Elektromagnetisk immunitet
EN60204-1:1997	Elektrisk sikkerhed – maskineri
EN60950:1992	Elektrisk sikkerhed – IT-udstyr

Et teknisk dossier for dette udstyr forefindes hos producenten.

Underskrift   *Neil Bennett*   Dato: 1.Juni 2003

Navn: Neil Bennett   Stilling: Teknisk direktør

Den ansvarlige person udpeget af producenten, der er etableret i EU, og ansat af Linx Printing Technologies plc.

*Bemærk at det første tegn i løbenummeret identificerer udstyret som en kontinuerlig inkjet-printer. De næste fire tegn danner et alfanumerisk, fortløbende nummer.

Dutch

MP41067-01

CE   **EU CONFORMITEITSVERKLARING**

Hierbij verklaren wij dat de volgende installatie voldoet aan de vereisten van:

De machinerichtlijn 98/37/EG
De laagspanningsrichtlijn 73/23/EEG gewijzigd door 93/68/EEG
De EMC-richtlijn 89/336/EEG gewijzigd door 92/31/EEG en 93/68/EEG

Omschrijving machine:	**Ononderbroken Ink Jet Printer**
Type:	**4900**
Serienummer*:	**Vanaf serienummer BJ744**
Fabrikant:	**Linx Printing Technologies plc**

Deze installatie is ontworpen en gefabriceerd conform de volgende Europese normen:

EN292–1, –2:1991	**Machineveiligheid**
EN61000-6-4:2001	**EMC - emissie**
EN61000-6-2:2001	**EMC - immuniteit**
EN60204–1:1997	**Elektrische veiligheid - Machines**
EN60950:1992	**Elektrische veiligheid - IT apparatuur**

Een technisch bouwbestand voor deze machine wordt bewaard op het adres van de fabrikant.

Handtekening: _Neil Bennett_   Datum: 1.juni 2003

Naam: Neil Bennett   Funktie: Technisch Directeur

Zijnde de door de fabrikant verantwoordelijk gestelde persoon in de EG en in dienst van Linx Printing Technologies plc.

*Let wel dat het eerste karakter van het serienummer het apparaat als een continu inktstraalprinter identificeert. De volgende vier karakters vormen een alfanumeriek volgnummer.

Estonian

MP41067-01

$\text{C}\epsilon$ **EL VASTAVUSDEKLARATSIOON**

Käesolevaga kinnitame, et alltoodud seadmed vastavad järgmiste direktiivide olulistele nõuetele:

Masinate direktiiv 98/37/EÜ
Madalpinge direktiiv 73/23/EEC, muudetuna direktiiviga 93/68/EEC
Elektromagnetilise ühilduvuse (EMC) direktiiv 89/336/EEC, muudetuna direktiividega 92/31/EEC ja 93/68/EEC

Masina kirjeldus:	pidevtoitega jugaprinter
Tüüp:	4900
Tähistus*:	alates seerianumbrist BJ744
Valmistaja:	Linx Printing Technologies plc

Need seadmed on konstrueeritud ja valmistatud kooskõlas järgmiste Euroopa Liidu ühtlustatud standarditega:

EN292-1, -2:1991	Masinate ohutus (Safety of Machinery)
EN61000-6-4:2001	Elektromagnetiline emissioon (EMC Emissions)
EN61000-6-2:2001	Elektromagnetiline häirekindlus (EMC Immunity)
EN60204-1:1997	Elektriohutus – masinad (Electrical Safety – Machinery)
EN60950:1992	Elektriohutus – IT-seadmed (Electrical Safety – IT Equipment)

Tehnilist dokumentatsiooni hoitakse valmistaja aadressil.

Allakirjutanu:	*Neil Bennett*	Kuupäev:	1 juuni 2003
Nimi:	Neil Bennett	Teenistuskoht:	Tehniline direktor

Valmistaja poolt määratud, ELis registreeritud ja ettevõttes Linx Printing Technologies ptc töötav vastutav isik.

*Palun pidage silmas, et seerianumbri esimene sümbol määrab seadme kui pidevtoitega jugaprinteri. Järgmised neli sümbolit moodustavad tähtnumbrilise järjenumbri.

Finnish

MP41067-01

CE EU:N YHDENMUKAISUUSILMOITUS

Täten vakuutamme, että seuraava laitteisto vastaa seuraavia perusvaatimuksia:

98/37/EC-konedirektiiviä
73/23/EEC-matalajännitedirektiiviä muutettu 93/68/EEC-direktiivillä
89/336/EEC-EMC-direktiiviä muutettu 92/31/EEC- ja 93/68/EEC-direktiiveillä

Laite: Jatkuva mustesuihkukirjoitin
Tyyppi: 4900
Tunnistus*:   Sarjanumerosta BJ744 eteenpäin
Valmistaja: Linx Printing Technologies plc

Tämä laitteisto on suunniteltu ja valmistettu seuraavien yhteensopivien eurooppalaisten standardien mukaisesti:

EN292–1, –2:1991   Koneiston turvallisuus
EN61000-6-4:2001   EMC - päästöt
EN61000-6-2:2001   EMC - immuniteetti
EN60204–1:1997   Sähköturvallisuus - koneisto
EN60950:1992   Sähköturvallisuus – tietotekninen laitteisto

Valmistajalla on hallussaan tätä koneistoa koskeva tekninen rakennetiedosto.

Allekirjoitus: *Neil Bennett*   Päiväys: 1.Kesäkuu 2003

Nimi: Neil Bennett   Asema: Teknillinen johtaja

EU:ssa toimivan valmistajan nimittämä sekä Linx Printing Technologies plc:n palveluksessa oleva vastuuhenkilö.

*Huomautamme, että sarjanumeron ensimmäinen merkki osoittaa, että laite on jatkuva mustesuihkukirjoitin. Sitä seuraavat neljä merkkiä muodostavat aakkosnumeerisen järjestysnumeron.

French

MP41067-01

CE DÉCLARATION DE CONFORMITÉ À LA NORME EU

Nous déclarons par la présente que l'équipement mentionné ci-dessous est conforme aux conditions essentielles requises aux termes de:

La directive sur les machines 98/37/CE
La directive sur les basses tensions 73/23/CEE dans sa version amendée par 93/68/CEE
La directive sur la compatibilité électromagnétique 89/336/CEE dans sa version amendée par 92/31/CEE et 93/68/CEE

Description de la machine: Imprimante à jet d'encre continu
Type: 4900
Identification*:   A partir du numéro de série BJ744 et après
Fabriqué par: Linx Printing Technologies plc

Cet équipement est conçu et fabriqué conformément aux normes européennes harmonisées suivantes:

EN292–1, –2:1991   Sécurité des machines
EN61000-6-4:2001   Emissions CEM
EN61000-6-2:2001   Immunité aux CEM
EN60204–1:1997   Sécurité électrique - Machinerie
EN60950:1992   Sécurité électrique - Equipement informatique

Un fichier de construction technique pour cette machine est conservé à l'adresse du fabricant.

Signature: Date: Le 1 juin 2003

Nom: Neil Bennett   Fonction: Directeur à l'ingénierie

Etant le responsable désigné par le fabricant établi dans la CE, et employé par Linx Printing Technologies plc.

*Veuillez noter que le premier caractère du numéro de série identifie que la machine est une imprimante à jet d'encre continu. Les quatre caractères suivants forme un numéro séquentiel alphanumérique.

German

MP41067-01

CE   EU ÜBEREINSTIMMUNGSERKLÄRUNG

Wir erklären hiermit die Übereinstimmung der folgend aufgeführten Maschine mit allen einschlägigen grundlegenden Anforderungen der:

Maschinenrichtlinie 98/37/EG
Niederspannungsrichtlinie 73/23/EWG und deren Änderungsrichtlinie 93/68/EWG
EMV-Richtlinie 89/336/EWG und deren Änderungsrichtlinien 92/31/EWG und 93/68/EWG

Beschreibung der Maschine: Dauertintenstrahdrucker
Typ: 4900
Identifikation*:   Ab Seriennummer BJ744
Hergestellt durch: Linx Printing Technologies plc

Diese Maschine wurde nach den folgenden harmonisierten europäischen Normen entworfen und hergestellt:

EN292–1, –2:1991   Sicherheit der Betriebsanlage
EN61000-6-4:2001   EMV Störaussendungen
EN61000-6-2:2001   EMV Störfestigkeit
EN60204–1:1997   Elektrische Sicherheit - Betriebsanlage
EN60950:1992   Elektrische Sicherheit - Informations-Technologie Geräte

Eine technische Konstruktionsakte für diese Betriebsanlage liegt beim Hersteller vor.

Unterschrift: Datum: 1.Juni 2003

Name: Neil Bennett   Stellung: Technischer Direktor

Die verantwortliche Person, die von dem Hersteller oder dessen in derEuropäischen Gemeinschaft niedergelassenen Bevollmächtigten zur Unterzeichnung berechtigt ist, und welche von Linx Printing Technologies plc angestellt ist.

*Bitte beachten Sie, dass das erste Zeichen der Seriennummer das Gerät als kontinuierlichen Tintenstrahldrucker kennzeichnet. Die nächsten vier Zeichen bilden eine alphanumerische laufende Nummer.

Greek

MP41067-01

CE   ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΤΗΣ ΕΕ

Δια της παρούσης δηλώνουμε ότι ο παρακάτω εξοπλισμός είναι σύμφωνος με τις απαραίτητες απαιτήσεις των παρακάτω αναφερομένων Οδηγιών:

Την περί μηχανημάτων Οδηγία 98/37/ΕΚ
Την περί χαμηλής τάσεως Οδηγία 73/23/ΕΟΚ όπως αυτή τροποποιήθηκε από την 93/68/ΕΟΚ
Την περί ηλεκτρομαγνητικής συμβατότητας Οδηγία 89/336/ΕΟΚ όπως αυτή τροποποιήθηκε από την 92/31/ΕΟΚ και 93/68/ΕΟΚ

Περιγραφή μηχανήματος:	Εκτυπωτής συνεχούς εκτόξευσης μελάνης (inkjet)
Μοντέλο:	4900
Διακριτικά*:	Από τον αύξοντα αριθμό BJ744 και μετά
Κατασκευαστής:	Linx Printing Technologies plc

Ο παρόν εξοπλισμός έχει σχεδιαστεί και κατασκευαστεί σύμφωνα με τα παρακάτω ενορμονισμένα ευρωπαϊκά πρότυπα:

EN292–1, –2:1991	Ασφάλεια μηχανημάτων
EN61000-6-4:2001	Εκπομπές ηλεκτρομαγνητικής συμβατότητας
EN61000-6-2:2001	Απαλλαγή ηλεκτρομαγνητικής συμβατότητας
EN60204–1:1997	Ηλεκτρική ασφάλεια–μηχανήματα
EN60950:1992	Ηλεκτρική ασφάλεια–μηχανογραφικός εξοπλισμός

Στη διεύθυνση του κατασκευαστή διατηρείται αρχείο τεχνικής κατασκευής για το παρόν μηχάνημα

Υπογραφή:	*Neil Bennett*	Ημερομηνία:	1η Ιουνίου 2003
Ονοματεπώνυμο:	Neil Bennett	Θέση:	Μηχανικός Διευθυντής

Υπεύθυνος, μετά από διορισμό του από τον κατασκευαστή ο οποίος εδρεύει εντός της ΕΕ και υπάγεται στο προσωπικό της Linx Printing Technologies plc,

*Ας σημειωθεί ότι ο πρώτος χαρακτήρας του σειριακού αριθμού χαρακτηρίζει τον εξοπλισμό ως εκτυπωτή τύπου inkjet. Οι επόμενοι τέσσερις χαρακτήρες σχηματίζουν έναν αλφαριθμητικό αύξοντα αριθμό.

Hungarian

MP41067-01

CE **EU MEGFELELŐSÉGI NYILATKOZAT**

Kijelentjük, hogy az alábbi berendezés megfelel a következő jogszabályi követelményeknek:

98/37/EK irányelv a gépekről
A 93/68/EGK irányelvvel módosított, 73/23/EGK irányelv a kisfeszültségről
A 92/31/EGK és 93/68/EGK irányelvvel módosított 89/339/EGK irányelv az elektromágneses összeférhetőségről

A gép megnevezése:	**Folyamatos tintasugaras nyomtató**
Típus:	**4900**
Azonosítás*:	**A BJ744 gyártási számtól kezdődően**
Gyártó:	**Linx Printing Technologies plc**

A berendezés tervezése és gyártása az alábbi összehangolt európai szabványok szerint történt:

EN292-1, -2:1991	**A gépek biztonsága**
EN61000-6-4:2001	**Elektromágneses összeférhetőségi emissziók**
EN61000-6-2:2001	**Elektromágneses összeférhetőségi védettség**
EN60204-1:1997	**Elektromos biztonság — Gépek**
EN60950:1992	**Elektromos biztonság — Informatikai berendezések**

A gép műszaki kiviteli tervei a gyártó címén találhatók.

Aláírás: Kelt: 2003. június 1.

Név: Neil Bennett   Beosztás: Tervezési igazgató

Az EU-beli székhellyel rendelkező gyártó által kijelölt és a Linx Printing Technologies plc alkalmazásában álló felelős személy.

*A gyártási szám első betűje folyamatos tintasugaras nyomtatóként azonosítja a berendezést. Az utána álló négy karakter alfanumerikus sorszámot alkot.

Italian

MP41067-01

CE   **DICHIARAZIONE DI CONFORMITÀ UE**

Con la presente si dichiara che la seguente apparecchiatura soddisfa i seguenti requisiti essenziali:

Direttiva Macchine 98/37/CE
Direttiva sulle basse tensioni 73/23/CEE emendata da 93/68/CEE
Direttiva sulla EMC 89/336/CEE emendata da 92/31/CEE e 93/68/CEE

Descrizione apparecchiatura:	**Stampante continua a getto d'inchiostro**
Tipo:	**4900**
Identificazione*:	**Dal n. di serie BJ744 in poi**
Costruttore:	**Linx Printing Technologies plc**

Questa apparecchiatura è stata progettata e fabbricata in conformità con le seguenti normative comunitarie europee:

EN292–1, –2:1991	**Sicurezza del macchinario**
EN61000-6-4:2001	**Emissioni EMC**
EN61000-6-2:2001	**Immunità EMC**
EN60204–1:1997	**Sicurezza elettrica: macchinari**
EN60950:1992	**Sicurezza elettrica: impianti tecnologia informatica**

All'indirizzo del costruttore viene conservato un dossier con i dati tecnici di costruzione dell'apparecchiatura.

Firma: *Neil Bennett*   Data: 1 giugno 2003

Nome: Neil Bennett   Posizione: Direttore tecnico

Il funzionario alle dipendenze della Linx Printing Technologies plc. incaricato dal fabbricante per le dichiarazioni di conformità per l'area UE.

*Notare che il primo carattere del Numero seriale identifica il tipo di apparecchiatura come un codificatore a getto continuo di inchiostro. I quattro caratteri successivi formano un numero progressivo alfanumerico.

Latvian

MP41067-01

$C\epsilon$ **ES ATBILSTĪBAS DEKLARĀCIJA**

Ar šo dokumentu mēs apliecinām, ka minētā tehniskā iekārta atbilst šādu Eiropas Parlamenta un Padomes direktīvu būtiskajām prasībām:

Mašīnu direktīva 98/37/EC,
Zemsprieguma iekārtu direktīva 73/23/EEC – grozīta ar direktīvu 93/68/EEC,
Elektromagnētiskās saderības direktīva 89/336/EEC – grozīta ar direktīvām
92/31/EEC un 93/68/EEC.

Mašīnas nosaukums:	Nepārtrauktas darbības strūklprinteris
Tips:	4900
Identifikācija*:	Iekārtu eksemplāru numuri – BJ744 un turpmākie
Izgatavotājfirma:	Linx Printing Technologies plc

Šī iekārta ir projektēta un ražota saskaņā ar šādiem harmonizētiem Eiropas Savienības standartiem:

EN292-1, -2:1991	Mašīnu drošība
EN61000-6-4:2001	Elektromagnētiskais starojums
EN61000-6-2:2001	Elektromagnētiskā neuzņēmība
EN60204-1:1997	Elektrodrošība – mašīnas
EN60950:1992	Elektrodrošība – IT iekārtas

Šīs ierīces tehniskās uzbūves apraksts tiek glabāts izgatavotājfirmas birojā.

Paraksts: *Neil Bennett*   Datums: 2003.g. 1.jūnijā

Uzvārds: Neils Benets   Amats: Galvenais inženieris

Esmu atbildīgā persona, kuru norīkojusi ražotājfirma, kura darbojas Eiropas Savienībā, kā arī esmu Linx Printing Technologies plc darbinieks.

*Lūdzu, ievērojiet, ka iekārtas eksemplāra numura (*serial number*) pirmā rakstzīme ļauj identificēt šo iekārtu kā nepārtrauktas darbības strūklprinteri. Nākamās četras rakstzīmes (burti un cipari) veido kārtas numuru.

Lithuanian

MP41067-01

CE **ES ATITIKTIES DEKLARACIJA**

Šiuo mes pareiškiame, kad toliau nurodytas įrenginys atitinka būtinus šių dokumentų reikalavimus:

> **Mechanizmų direktyva 98/37/EB**
> **Žemos įtampos direktyva 73/23/EEB, kurią pataisė 93/68/EEB**
> **EMC direktyva 89/336/EEB, kurią pataisė 92/31/EEB ir 93/68/EEB**

Įrenginio aprašymas:	**Nepertraukiamo veikimo rašalą purškiantis spausdintuvas**
Tipas:	**4900**
Identifikacija*:	**Nuo serijinio numerio BJ744 ir tolesni**
Gamintojas:	**Linx Printing Technologies plc**

Šis įrenginys suprojektuotas ir sukurtas pagal šiuos suderintus Europos standartus:

EN292-1, -2:1991	**Mechanizmų sauga**
EN61000-6-4:2001	**EMC emisija**
EN61000-6-2:2001	**EMC atsparumas**
EN60204-1:1997	**Elektros sauga - mechanizmai**
EN60950:1992	**Elektros sauga – IT įranga**

šio mechanizmo techninės konstrukcijos byla saugoma gamintojo adresu.

Pasirašė: *Neil Bennett* Data: 2003 m. birželio 1 d.

Vardas: Neil Bennett Pareigos: Technikos direktorius

Jis yra atsakingas asmuo, paskirtas gamintojo, kuris įsikūręs ES ir kurį pasamdė Linx Printing Technologies plc.

*Prašom atkreipti dėmesį, kad pirmas serijinio numerio rašmuo nurodo, kad šis įranginys yra nepertraukiamo veikimo rašalą purškiantis spausdintuvas. Kiti keturi rašmenys sudaro raidinį – skaitmeninį eiliškumo tvarka sudarytą numerį.

Maltese

MP41067-01

CE **STQARRIJA UE TA' KONFORMITÀ**

Aħna hawn nistqarru li t-tagħmir hawn taħt imsemmi jissodisfa r-rekwiżiti meħtieġa ta':

Id-Direttiva dwar makkinarju 98/37/KE
Id-Direttiva dwar vultaġġ baxx 73/23/KEE kif emendata permezz ta' 93/68/KEE
Id-Direttiva EMC 89/336/KEE kif emendata permezz ta' 92/31/KEE u 93/68/KEE

Deskrizzjoni tal-makna:	Continuous Ink Jet Printer
Tip:	4900
Jingħaraf*:	Minn numru tas-serje BJ744 'l-quddiem
Magħmul minn:	Linx Printing Technologies plc

Dan it-tagħmir ġie mfassal u magħmul skond *standards* ewropej kif ġej:

EN292-1, -2:1991	Sigurtà ta' Makkinarju
EN61000-6-4:2001	EMC Dħaħen
EN61000-6-2:2001	Immunità EMC
EN60204-1:1997	Sigurtà elettrika - Makkinarju
EN60950:1992	Sigurtà elettrika – Tagħmir IT

Fajl b'tagħrif tekniku dwar kif jinbena dan il-makkinarju jinżamm fl-indirizz tal-produttur.

Firma:	*[signature]*	Data:	1 Ġunju 2003
Isem:	Neil Bennett	Karika:	Direttur Inġenjerija

Hu l-persuna responsabbli, nominat mill-produttur stabilit fl-UE u mpjegat minn Linx Printing Technologies plc.

* Kun af li l-ewwel ittra tan-numru tas-serje turi li t-tagħmir huwa Continuous Ink Jet Printer. L-erba'ittri/numri ta' wara jiffurmaw numru sekwenzjali alfa-numeriku.

Norwegian

MP41067-01

CE   **EU SAMSVARSERKLÆRING**

Vi erklærer herved at følgende utstyr er i samsvar med viktige krav i:

**Maskineridirektivet 98/37/EC
Direktiv for lavspenning 73/23/EEC, med tilllegg 93/68/EEC
EMC-direktivet 89/336/EEC, med tilllegg 92/31/EEC og 93/68/EEC**

Maskinbeskrivelse:	**Kontinuerlig blekkstråleskriver**
Type:	**4900**
Identifikasjon*:	**Fra serie nummer BJ744 og videre**
Produsert av:	**Linx Printing Technologies plc**

Dette utstyret er utformet og produsert i samsvar med følgende harmonsierte europeiske standarder:

EN292–1, –2:1991	**Maskinsikkerhet**
EN61000-6-4:2001	**Elektromagnetisk utslipp**
EN61000-6-2:2001	**Elektromagnetisk immunitet**
EN60204–1:1997	**Elektrisk sikkerhet - maskin**
EN60950:1992	**Elektrisk sikkerhet - IT utstyr**

Produsenten er i besittelse av en oversikt over maskinens tekniske konstruksjon.

Signert: *Neil Bennett*   Dato: 1.juni 2003

Navn: Neil Bennett   Stilling: Teknisk direktør

Ansvarsavhende utnevnt av produsenten som er etablert innen EU, og ansatt av Linx Printing Technologies plc.

*Vennligst merk at det første tegnet i serienummeret identifiserer at utstyret er en kontinuerlig blekkstråleskriver. De neste fire tegnene danner et alfanummerisk sekvensnummer.

Polish

MP41067-01

$C\epsilon$ **DEKLARACJA ZGODNOŚCI UE**

Oświadczamy, że następujące urządzenia są zgodne z wymaganiami:

> **Dyrektywy maszyny 98/37/EC**
> **Dyrektywy niskie napięcia 73/23/EEC i 93/68/EEC**
> **Dyrektywy zgodność elektromagnetyczna 89/336/EEC i 92/31/EEC oraz 93/68/EEC**

Nazwa urządzenia:	**Drukarka atramentowa**
Typ:	**4900**
Identyfikacja:	**Od numeru seryjnego BJ744**
Producent:	**Linx Printing Technologies plc**

Urządzenie zostało zaprojektowane i wyprodukowane zgodnie z następującymi standardami europejskimi:

EN292-1, -2:1991	**bezpieczeństwo maszyn**
EN61000-6-4:2001	**emisja fal elektromagnetycznych**
EN61000-6-2:2001	**odporność na fale elektromagnetyczne**
EN60204-1:1997	**bezpieczeństwo elektryczne – maszyny**
EN60950:1992	**bezpieczeństwo elektryczne – urządzenia informatyczne**

Dokumentacja techniczna urządzenia jest dostępna u producenta.

Podpis: *Neil Bennett*   Data: 1 czerwca 2003

Nazwisko: Neil Bennett   Pozycja: Dyrektor inżynier

Osoba upoważniona, wyznaczona przez producenta w UE i zatrudniana przez Linx Printing Technologies plc.

*Pierwsza litera numeru seryjnego identyfikuje urządzenie jako drukarkę atramentową. Następne cztery znaki alfanumeryczne tworzą kolejny numer.

Portuguese

MP41067-01

CE **DECLARAÇÃO DE CONFORMIDADE DA CE**

Declaramos pela presente que o equipamento a seguir cumpre os requisitos essenciais da:

Directiva de Maquinaria 98/37/CE
Directiva de Baixa Tensão 73/23/CEE conforme modificada por 93/68/CEE
Directiva CEM 89/336/CEE conforme modificada por 92/31/CEE e 93/68/CEE

Descrição da Máquina:	**Impressora de Tinta a Jacto Contínuo**
Tipo:	**4900**
Identificação*:	**A partir do número de série BJ744 em diante**
Fabricada por:	**Linx Printing Technologies plc**

Este equipamento foi concebido e fabricado de acordo com os seguintes padrões Europeus harmonizados:

EN292–1, –2:1991	**Segurança da Maquinaria**
EN61000-6-4:2001	**Emissões CME**
EN61000-6-2:2001	**Imunidade CME**
EN60204–1:1997	**Segurança Eléctrica - Maquinaria**
EN60950:1992	**Segurança Eléctrica - Equipamento de Informática**

O fabricante mantém, nos seus escritórios, um ficheiro contendo as especificações da construção técnica deste maquinismo.

Assinado: _Neil Bennett_   Data: 1 de Junho de 2003

Nome: Neil Bennett   Cargo: Director de Engenharia

Sendo o responsável nomeado pelo fabricante, estabelecido na CE e empregado da Linx Printing Technologies plc

*É favor notar que o primeiro carácter do Número de Série identifica o equipamento como uma impressora a jato de tinta contínuo. Os quatro caracteres seguintes formam um número alfanumérico sequencial.

Slovak

MP41067-01

CE   EU VYHLÁSENIE O ZHODE

Týmto vyhlasujeme, že nasledujúce zariadenie vyhovuje podstatným požiadavkám nasledujúcich smerníc:

The Machinery Directive 98/37/EC (Stroje)
The Low Voltage Directive 73/23/EEC novelizovaná 93/68/EEC
(Nízkonapäťové zariadenia)
The EMC Directive 89/336/EEC novelizovaná 92/31/EEC a 93/68/EEC
(Elektromagnetická zhoda EMC)

Zariadenie:	Trysková tlačiareň s neprerušovaným tokom atramentu
Typ:	4900
Identifikácia*:	Zo sériového čísla BJ744 dopredu
Výrobca:	Linx Printing Technologies plc

Toto zariadenie bolo navrhnuté a vyrobené v súlade s nasledujúcimi harmonizovanými európskymi normami:

EN292-1, -2:1991	Safety of Machinery (Bezpečnosť strojov)
EN61000-6-4:2001	EMC Emissions (Vyžarovanie)
EN61000-6-2:2001	EMC Immunity (Odolnosť)
EN60204-1:1997	Electrical Safety – Machinery (Elektrická bezpečnosť – stroje)
EN60950:1992	Electrical Safety – IT Equipment (Elektrická bezpečnosť – IT zariadenia)

Súbor technickej konštrukcie tohto zariadenia sa nachádza na adrese výrobcu.

Podpísané:	*Neil Bennett*	Dátum:	1 jún 2003
Meno:	Neil Bennett	Prac. funkcia:	Technický riaditeľ

Zodpovedná osoba určená výrobcom zriadením v EÚ a zamestnaná spoločnosťou Linx Printing Technologies plc.

*Všimnite si prosím, že prvý znak sériového čísla identifikuje zariadenia ako tryskovú tlačiareň s neprerušovaným tokom atramentu. Ďalšie štyri znaky tvoria alfanumerickú postupnosť.

Slovenian

MP41067-01

CE   **IZJAVA O SKLADNOSTI**

S polno odgovornostjo izjavljamo, da so tipi naših izdelkov, podani na tej izjavi, skladni z:

Direktivo o strojih 98/37/EC
Direktivo o elekt. opremi, ki je namenjena uporabi pod določeno omejeno
napetostjo 73/23/EEC, ki jo dopolnjuje direktiva 93/68/EEC
Direktivo o elektromagnetni združljivosti 89/336/EEC, ki jo dopolnjujeta direktivi
92/31/EEC in 93/68/EEC

Opis naprave:	Tiskalnik s tehnologijo nepretrganega brizga črnila
Tip:	4900
Identifikacija*:	od serijske številke BJ744 dalje
Proizvajalec:	Linx Printing Technologies plc

Ta oprema je bila načrtovana in izdelana v skladu z naslednjimi harmoniziranimi evropskimi standardi:

EN292-1, -2:1991	Varnost strojev
EN61000-6-4:2001	EMC emisije
EN61000-6-2:2001	EMC imuniteta
EN60204-1:1997	Električna varnost strojev
EN60950:1992	Električna varnost opreme za informacijsko tehnologijo

Tehnična dokumentacija o opremi se nahaja na naslovu proizvajalca.

Podpis:	*Neil Bennett*	Datum:	1. junij 2003
Ime:	Neil Bennett	Položaj:	direktor inženiringa

Je odgovorna oseba, zaposlena v podjetju Linx Printing Technologies plc. s sedežem v Evropski Uniji.

*Prva črka serijske številke označuje opremo kot tiskalnik s tehnologijo nepretrganega brizga črnila. Naslednji štirje znaki tvorijo alfanumerično zaporedno številko.

Spanish

MP41067-01

$C\epsilon$ **DECLARACIÓN DE CONFORMIDAD CON LA UE**

Por lo presente declaramos que el equipo que se describe a continuación cumple con los requisitos esenciales de las siguientes disposiciones:

> **Directiva sobre maquinaria 98/37/CE**
> **Directiva sobre baja tensión 73/23/CEE según la enmienda 93/68/CEE**
> **Directiva sobre compatibilidad electromagnética (CEM) 89/336/CEE**
> **según las enmiendas 92/31/CEE y 93/68/CEE**

Descripción de la máquina:	**Impresora Continua de Inyección de Tinta**
Tipo:	**4900**
Identificación*:	**Desde el número de serie BJ744 en adelante**
Fabricada por:	**Linx Printing Technologies plc**

Este equipo está proyectado y fabricado con arreglo a las siguientes normas europeas armonizadas:

EN292–1, –2:1991	**Seguridad de la Máquina**
EN61000-6-4:2001	**Emisiones electromagnéticas**
EN61000-6-2:2001	**Inmunidad electromagnética**
EN60204–1:1997	**Seguridad Eléctrica - Maquinaria**
EN60950:1992	**Seguridad Eléctrica - Equipos de Tecnología Informática**

El fabricante dispone de un archivo de construcción técnica para esta maquinaría.

Firma: *Neil Bennett*   Fecha: 1 de junio de 2003

Nombre: Neil Bennett   Cargo: Director de Ingeniería

Que es la persona encargada por el fabricante; reside en la Unión Europea y es empleado de Linx Printing Technologies plc.

*Por favor, advierta que el primer carácter del Número de Serie identifica el equipo como impresora de chorro de tinta continuo. Los cuatro caracteres siguientes forman una cifra alfanumérica de serie.

Swedish

MP41067-01

CE **EU:s KONFORMITETSDEKLARATION**

Vi deklarerar härmed att följande utrustning uppfyller de nödvändiga kraven i:

Maskindirektiv 98/37/EC
Lågspänningsdirektiv 73/23/EEC, med ändringar I 93/68/EEC
EMC-direktiv 89/336/EEC, med ändringar i 92/31/EEC och 93/68/EEC

Maskinbeskrivning:	Kontinuerlig bläckstråleskrivare
Typ:	4900
Identifikation*:	Från serienummer BJ744 och uppåt
Tillverkad av:	Linx Printing Technologies plc

Denna utrustning har utformats och tillverkats i enlighet med följande europeiska standarder:

EN292–1, –2:1991	Maskinsäkerhet
EN61000-6-4:2001	EMC Utsläpp
EN61000-6-2:2001	EMC Immunitet
EN60204–1:1997	Elsäkerhet - maskineri
EN60950:1992	Elsäkerhet - IT - utrustning

En fil av maskineriets tekniska konstruktion finns hos tillverkaren.

Undertecknat: *Neil Bennett*   Datum: 1 juni 2003

Namn: Neil Bennett   Ställning: Chefsingenjör

Ovanstående är den ansvarige person som utsetts av tillverkaren som är etablerad i EG och anställd av Linx Printing Technologies Plc.

*Observera att det första tecknet i serienumret anger att utrustningen är en kontinuerlig bläckstråleskrivare. De fyra följande tecknen bildar ett alfanumeriskt löpnummer.

Appendix H: Training Documentation

H.1 Course One: Printer Operation (User Level A)

H.1.1 Course Overview

Purpose

This training course is intended for anyone who is required to operate a Linx 4900 printer on a production line.

It is designed to enable a line supervisor to train personnel in the necessary skills needed to maintain normal line operation of the printer on a day-to-day basis. To achieve this, the course makes use of the *Simply the Linx 4900* pocket guide.

The training provided here is for a printer that has been previously commissioned, and has a number of suitable messages already stored in it. The line supervisor should also ensure that the default options are correctly set for the application.

It is essential that the printer is set to the correct/appropriate password level prior to commencing this course.

Objectives

The course is designed to enable the trainee to use the printer safely on the production line. The trainee will be conversant with the safety implications, and be aware of the location of basic first aid instructions in the pocket guide.

This course is therefore suitable for Line Operators.

At the end of this course, the trainee will be able to do the following:

- Switch the printer on and prepare it for operation
- Recognize the display and the function keys
- Select a message to print
- Start printing the selected message
- Stop and restart printing
- Stop printing and shut down the printer
- Refill the printer with ink and solvent

Modules

1. Introduction
2. Getting Started
3. Printing
4. Navigating the Linx 4900
5. Stopping Print and Shutting Down
6. Looking After Your Printer
7. Review

Equipment List

Equipment	Quantity
Linx 4900 Printer	1
Simply the Linx 4900 pocket guide	1 per trainee
Magnifier or eyeglass	as required (optional)
Safety glasses	1 pair per trainee
Safety gloves	sufficient for course
Paper towels	sufficient for course
Hand cleanser	sufficient for course
Eyewash	1 bottle
Paper for printing onto	as required (optional)

Ensure that all local Health and Safety regulations are complied with.

H.2 Introduction

H.2.1 Aims

- To establish the credibility of the course, the trainer, and the course materials
- To establish a relaxed atmosphere in which to learn
- To make the trainees aware of the relevant health and safety aspects

H.2.2 Key Points

- Outline the course objectives
- Cover the health and safety aspects of working with a continuous ink jet (CIJ) printer, inks, and solvents

H.2.3 Activities

Introduce yourself and the training course to the trainees.

Explain domestic arrangements (timings, breaks, lunch, facilities etc.).

Distribute a copy of the *Simply the Linx 4900* pocket guide to each trainee, explaining its use.

Explain the objectives of the course using the 'Before you use the printer' page in the *Simply the Linx 4900* pocket guide.

Explain the warnings and cautions, using the *Simply the Linx 4900* pocket guide.

Explain the safety implications (hazards and their prevention, and accident management) for:

- Ink/solvent flammability
- Eye and skin contact
- Inhalation
- Ingestion

Stress the importance of keeping the printer covers fitted.

H.2.4 Equipment

Ink and solvent bottles

Personal safety equipment

Fire extinguisher

H.3 Getting Started

H.3.1 Aims

- To ensure that there is understanding as to what is required for the printer to be used on the production line

- To bring the printer to a state where it can be run on line

H.3.2 Key Points

- Powering up the printer

- Using the two power switches

- The keyboard and display

- Using the function keys

- Using the *Simply the Linx 4900* pocket guide

- Specific checks relevant to the application (optional)

H.3.3 Activities

Refer to 'Switching the printer on' in the *Simply the Linx 4900* pocket guide. Invite the trainees to find the two power switches, to switch the printer on, and observe the startup (splash) screen.

Explain the **CURRENT MESSAGE** screen.

Refer to 'Introducing the printer display' in the *Simply the Linx 4900* pocket guide, and explain the use and location of each of the items in the display.

Demonstrate the use of the function keys and explain how to access the printer functions.

H.4 Printing

H.4.1 Aims

- To demonstrate how a message can be selected from the message store and printed onto the product

- To show the status of the printer in the various operating modes

H.4.2 Key Points

- Selecting a message

- Using the function keys

- Status Line information

- Printing a message

- Print Status screen information

H.4.3 Activities

Invite the trainees to print the message displayed by pressing the [start] key. Explain that the current message on the **CURRENT MESSAGE** screen, when the printer is powered down, will be available for immediate printing the next time the printer is powered up.

Refer to 'Selecting a message to print' in the *Simply the Linx 4900* pocket guide. Indicate the [F1] function key.

Invite a trainee to select a message from the list of stored messages. Explain how the message selection can be made using the [F2] function key.

Demonstrate the use of the function keys.

Explain and demonstrate the use of the [esc] key.

Invite each trainee to repeat message selection. The final candidate should select the [F2] function key to actually select the desired message. Point out the message being loaded into the **CURRENT MESSAGE** screen. Point out where the message name is displayed in the **CURRENT MESSAGE** screen.

Demonstrate how the message selection can also be made using the cursor control keys.

Refer to 'When you want to start printing' in the *Simply the Linx 4900* pocket guide.

Point out when the options change to "F1 : Stop Printing" and "Status : Printing", and demonstrate printing onto a product.

Point out how the print count increments on the **PRINT STATUS** screen with each printed message.

Give some typical reasons why the printer might not print and when help should be sought.

H.5 Navigating the Linx 4900

H.5.1 Aims

- To ensure that the trainees become familiar with, and can confidently use, the cursor control keys

- To ensure that the trainees become familiar with the menu structure

H.5.2 Key Points

- Using the Up [△], Down [▽], Left[◁] and Right[▷] arrow keys

- Understanding the menu structure

H.5.3 Activities

Introduce the cursor control (arrow) keys.

Explain the principal menu options.

H.6 Stopping Print and Shutting Down

H.6.1 Aims

- To show the difference between stopping print and stopping the jet
- To emphasise that the 4900 printer is a completely automatic machine that requires minimum intervention

H.6.2 Key Points

- [F1] stops the printing, but the jet continues to run
- The [stop] key starts a full shutdown sequence
- The full shutdown sequence stops the jet, cleans the printhead, and leaves the printer in a condition ready for a clean startup next time
- The [stop] key is the recommended method for shutting down the printer
- The rear power switch must only be used in the event of an emergency

H.6.3 Activities

Refer to 'To stop printing' in the *Simply the Linx 4900* pocket guide.

Invite a trainee to demonstrate the [F1] function key to stop print, and the [start] key to restart the print.

Point out how the options change in the **CURRENT MESSAGE** screen when the [F1] key is pressed.

Demonstrate to the trainees that when printing is stopped, the jet continues to run. (Emphasise the importance of wearing safety glasses during this operation.)

Refer to 'To shutdown and switch off' in the *Simply the Linx 4900* pocket guide.

Invite a trainee to shut down the printer and note how the message changes in the Status Line. Observe the **AUTO POWER DOWN** screen.

Explain what is happening as the printer shuts down. Observe the printer powering itself off and explain that the whole operation is automatic with no user intervention required.

H.6.4 Equipment

Safety glasses

H.7 Looking After Your Printer

H.7.1 Aims

- To demonstrate to the trainees that minimum intervention is required for basic printer operation, and if a few simple rules are adhered to, the printer will give trouble-free operation

- To demonstrate the correct method of filling the printer with ink and solvent, as required

H.7.2 Key Points

- Warning messages and appropriate actions

- Ink and solvent low warnings

- Ink and solvent dos and don'ts

- Ink and solvent addition

H.7.3 Activities

Demonstrate a warning on the printer (a simple one is to remove the printhead from its cover tube), and point out the warning in the Status Line.

Explain that the Status Line should be examined whenever you are close to the printer to ensure that no attention is needed.

Explain that if the printer is reporting a "3.03 Ink Low" or "3.04 Solvent Low" warning, there will be an indication in the Status Line, indicating which tank needs refilling.

Refer to 'Ink and solvent precautions' in the *Simply the Linx 4900* pocket guide.

A 'Quick Quiz' can be given to cover all the relevant safety aspects of working with the printer.

Ensure there is complete understanding of all the points. In particular, point out the gloves and glasses symbols, reminding operators that protective equipment is to be worn when handling ink and solvents.

Point out the first aid instructions in the 'First aid for inks and solvents' section in the *Simply the Linx 4900* pocket guide.

Refer to 'Adding ink and solvent' in the *Simply the Linx 4900* pocket guide.

Point out the adhesive label on the solvent filler cap that shows the solvent type to be used. Point out that this must be similar to the markings on the solvent bottle. In addition, point out the 'Use-by' date on the bottle.

Repeat the above activity for the ink filler cap and ink bottle.

Demonstrate, using an empty bottle, how the bottle should be placed into the filler tube. Point out the serrated teeth, which are designed to pierce the foil on the bottle neck.

Emphasise:

- Never remove the bottle too early
- Only one bottle of ink or solvent is to be added at any one time

H.8 Review

H.8.1 Aims

- To answer any questions that arise
- To ensure all aims have been adequately met

H.8.2 Key points

- Agreement of aims
- Decide upon any future training requirements

H.8.3 Activities

Ask if there are any questions.

Review the objectives from Module 1, and get agreement from the trainees that they are happy that these have been met.

If there is any confusion, run through the particular points again.

If necessary, arrange a convenient time to cover again any areas where there is still confusion. These needs may only be relevant to individual trainees.

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