

DASCOM

Tally[®]

User guide

T2150 T2250 Matrix printer



Table of contents

Introduction	1
Printer features	1
Symbols used	1
Printer at a glance	2
Printer in tractor mode	3
Printer in single-sheet mode	3
Paperway	4
Installation	5
Unpacking the printer	5
Placing your printer	6
Checking the printer voltage	7
Connecting the printer	8
Switching on the printer	9
The control panel	10
The LC display	11
Online mode	12
Offline mode	12
Setup mode	13
Messages in the LC display	14
Key functions when turning on the printer	15
Changing the ribbon cassette	16
Printer drivers	19
Installing a printer driver in Windows 95/98/ME	19
Installing a printer driver in Windows 2000/2003/XP	19
Installing a printer driver in Windows 7	21
Installing a printer driver in Windows Vista	22
Other operating systems	23
Changing printer settings	24
Form settings (Windows 2000/2003/XP/Vista/Windows 7)	24
Loading optional firmware	25
Troubleshooting	25

Paper handling	27
Changing the paper type	27
Changing the paper type in the setup menu	28
Selecting character density and font	29
Loading paper	30
Fanfold paper	30
Single sheets	34
Paper transport	36
Moving the paper to the tear position	37
Removing paper	37
Settings	38
Setting the print head gap	38
Setting the tear position	39
Setting the first printing line (TOF)	40
The Menu	41
Programming via the control panel	41
Enabling access to menu mode	41
Calling up the menu	41
Menu configurations	42
Menu handling	43
Save settings	43
Selecting the LC display language	44
Terminating Setup mode	45
Menu structure	46
Menu parameters	47
Printing out menu configurations (Print)	47
Loading menu configurations (Menu)	47
Reset to default values (Reset)	48
Quietmode (Quietm.)	48
Selecting font (Font)	49
Setting character density (CPI)	50
Setting line spacing (LPI)	50
Skipping perforation (Skip)	51
Selecting start signal for escape sequence (ESCChar)	51
Selecting emulation (Emulate)	52

Bidirectional printing (Bidir)	52
Settings for interfaces (I/O)	53
Serial interface (Serial)	53
Data transmission rate (Baud)	53
Data format (Format)	54
Further Settings (Special)	55
Error handling (ErrMode)	55
Block end character (Blockend)	55
Signal feedback (Remote)	56
Transparence (Handthr)	56
Protocol (Protocol)	57
Signal Processing (DTR)	57
Selecting interface (Interf.)	58
Interface buffer (Buffer)	58
Ethernet interface (ETH-EXT) option	59
Selecting character set (CG-Tab)	59
IBM character set (CharSet)	59
National character set (Country)	60
Slashed zero (Sl.Zero)	60
Automatic carriage return (Auto-CR)	61
Automatic line feed (Auto-LF)	61
Menu lock (MenLock)	62
Language (Language)	62
Paper parameters (Paper)	63
Form length (Forml)	63
First printing position (FormAdj)	65
Printhead gap manually (Head)	66
View and tear position (AutoTear)	67
Line length (Width)	68
Barcode (Barcode)	68
Normal characters and barcode (Barmode)	69
Form feed mode (FFmode)	70
Setting and activating options (PapOpt)	71
Activation of tractors (AutoTra)	71
Activation of automatic sheet feeder (AutoASF)	72
Setting the left margin (LeftMrg)	72
Setting the right margin (RightMrg)	73

Local copy (screen print) from a Coax or Coax/IPDS (FFaftLC)	73
Enable/Disable Paper Handling Features (Paphand)	74
Menu settings (example)	75
Advanced menu	77
Test functions	77
Printer self-test (Rolling ASCII)	78
Exiting Rolling ASCII test mode	79
Interface test (Hex-Dump)	80
Printout in Hex-Dump	80
Terminating Hex-Dump	81
Advanced settings	82
Form length (Forml)	84
Automatic gap adjustment (AGA)	85
Paper handling (Paphand)	85
Increasing the printhead gap (Head up)	86
Paper width (Pagewid)	86
Left-hand area (Leftzon)	87
Right-hand area (Rightzo)	87
Physical left margin (Physlm)	88
Bidirectional parallel interface (CX-bid)	88
Line wrap (Wrap)	89
Beep at paper end (Sound)	89
Deactivate single sheet feeder (Single)	90
Settings for paper with dark back (Pap.back)	90
Setting for printing copy paper (HvyForm)	91
Power save mode (Sleepmod)	91
Serial number (SerialN)	92
Asset number (AssetN)	92
Graphic Print Speed (GrSpeed)	93
Improvement of graphic and barcode print quality (GrFreq)	93
Activate PJL language (Jobcntl)	94
Increased print speed for 17.1 and 20 cpi (HS-Draft)	94
Troubleshooting	95
General print problems	96
The display remains dark	96
The display is lit, but the printer does not print	96
Problems with the paper feed	97

Paper jam (fanfold paper)	97
Paper jam (single sheets)	98
Paper does not move to tear off position	98
Problems with the print quality	99
Print is too pale	99
Smudged print	99
Prints undefined characters	99
The first line is not completely printed out at the top	99
Dots within characters are missing	99
Error messages via the display	100
Additional display messages	103
Care and maintenance	105
Replacing the fuse	105
Cleaning the housing	106
Cleaning the interior	106
Cleaning the platen	107
Ribbon	107
Cleaning the upper friction	108
Carriage shafts	108
Specifications	109
Printer specifications	109
Interface specifications	113
Paper specifications	114
Character sets	117
MTPL standard character set	118
MTPL, international substitution characters	119
OCR-A character set	120
OCR-B character set	121
Available character sets and fonts	122
Emulations	125
General	125
Escape sequences	125
What are escape sequences?	126
MTPL sequences	126

Control codes	126
The \$\$ procedure	126
Example:	126
How are escape sequences used?	127
MTPL	127
Example in BASIC	127
Example in Pascal	127
Printout	127
List of available control codes	128
PJM commands	138
Barcode	139
List of available barcodes	139
US Postnet barcode	140
Royal Mail Customer barcode	140
KIX barcode	141
USPS Intelligent Mail barcode	141
LC printing	142
List of additional control codes	143
Interfaces	145
Parallel interface	146
Connector assignment	146
Serial interface V.24/RS232C	147
Connector assignment	147
Interface cable (serial interface)	148
Input signals	148
Output signals	148
Protocols	149
Memory mode XON/XOFF	149
Memory mode Robust XON/XOFF	149
Extended menu functions with the ENQ/STX and ETX/ACK protocols selected	149
ENQ/STX protocol	150
ETX/ACK protocol	150
Options and accessories	151
Options	151
Automatic cut sheet feeder, front (ASF-F)	151
Automatic cut sheet feeder, rear (ASF-R)	151
Tractor 2, front	151

Tractor 3, rear	151
Serial interface adapter	151
Optional paper support	151
Pocket Ethernet interface	151
Serial interface RS232/TTY	151
Others	151
Accessories	152
Ribbon cassettes	152
Programmer's application manuals	152
Index	153

Introduction

Printer features

Your printer has outstanding product features, e.g. high printing speed and print quality plus flexible paper management, making it a highly professional solution for many industrial sectors – particularly those which use continuous paper and generate large volumes of print on a daily basis.

Symbols used

Important information is highlighted in this manual by two symbols.

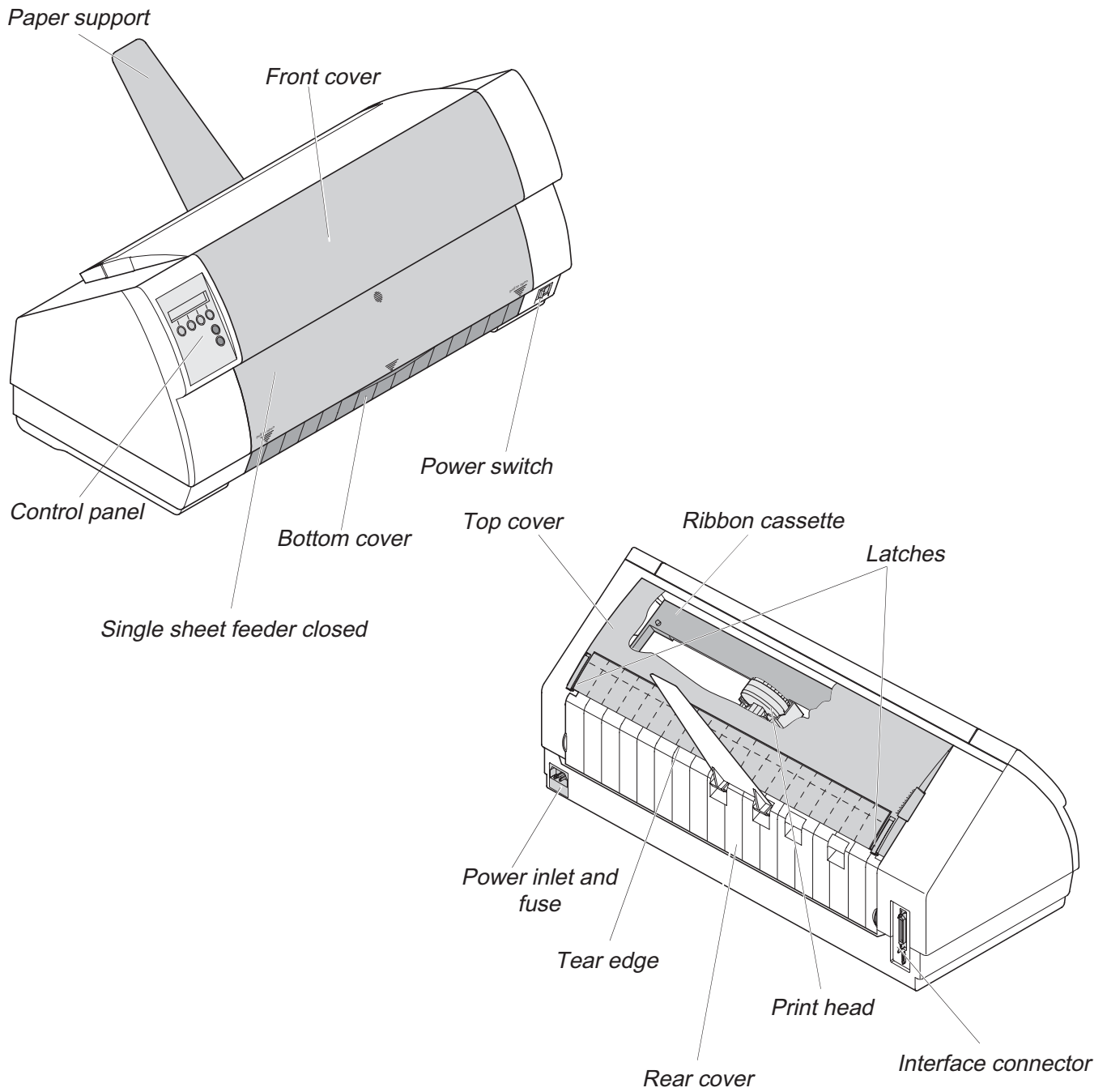


CAUTION highlights information which must be observed in order to prevent injuries to the user and damage to the printer.

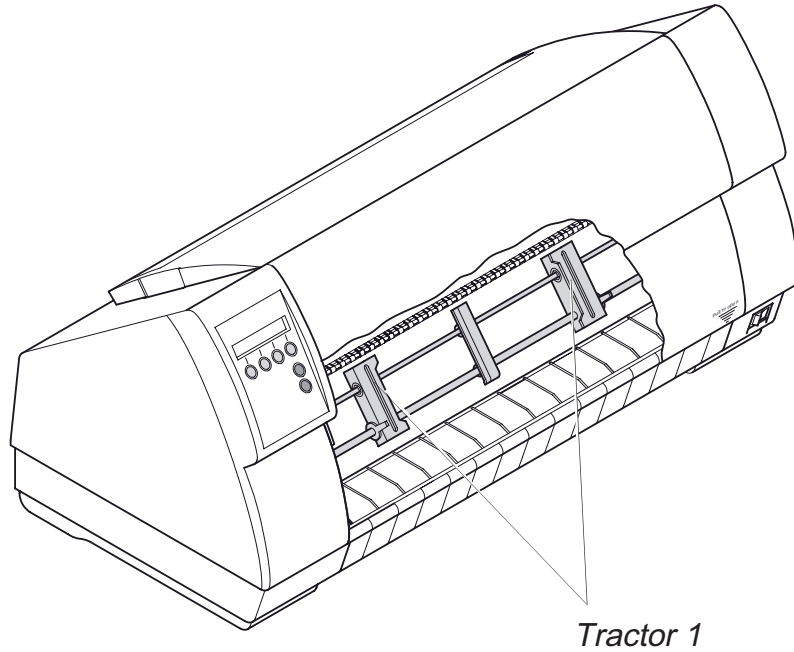


NOTE highlights general or additional information about a specific topic.

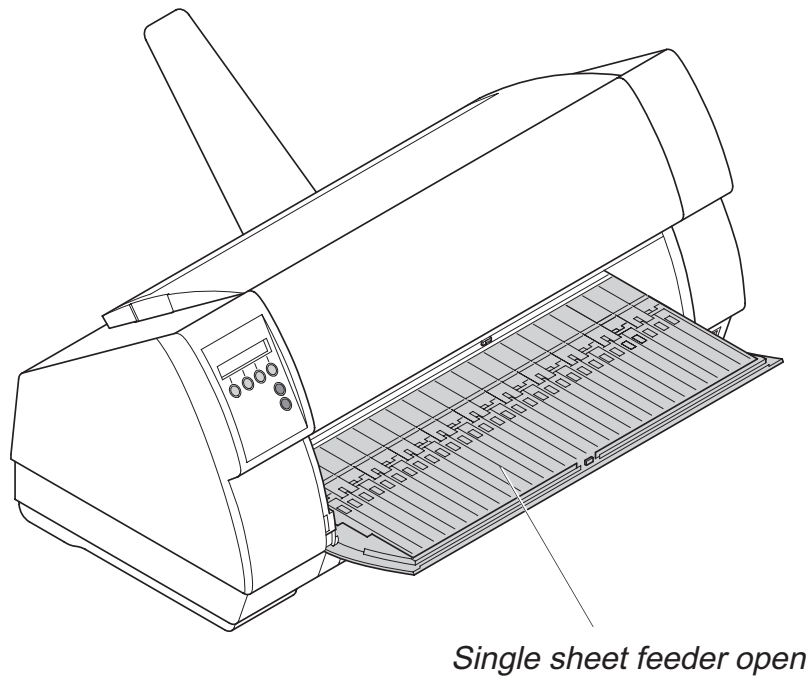
1 Printer at a glance



Printer in tractor mode

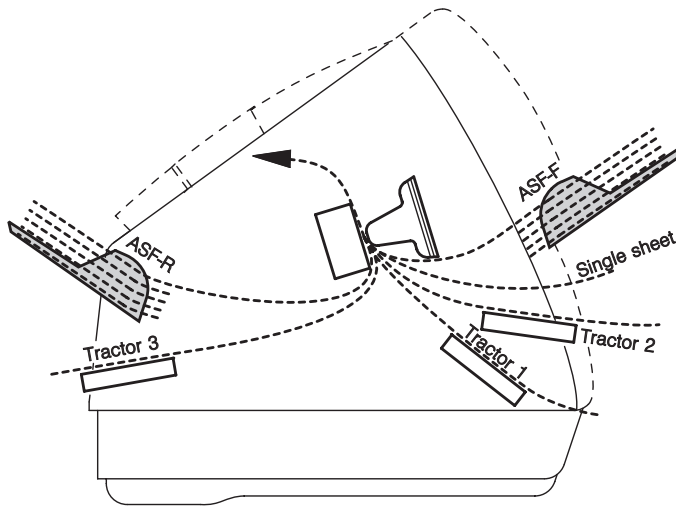


Printer in single-sheet mode



Paperway

► Fanfold paper mode



Standard printer: Tractor 1
Single sheet

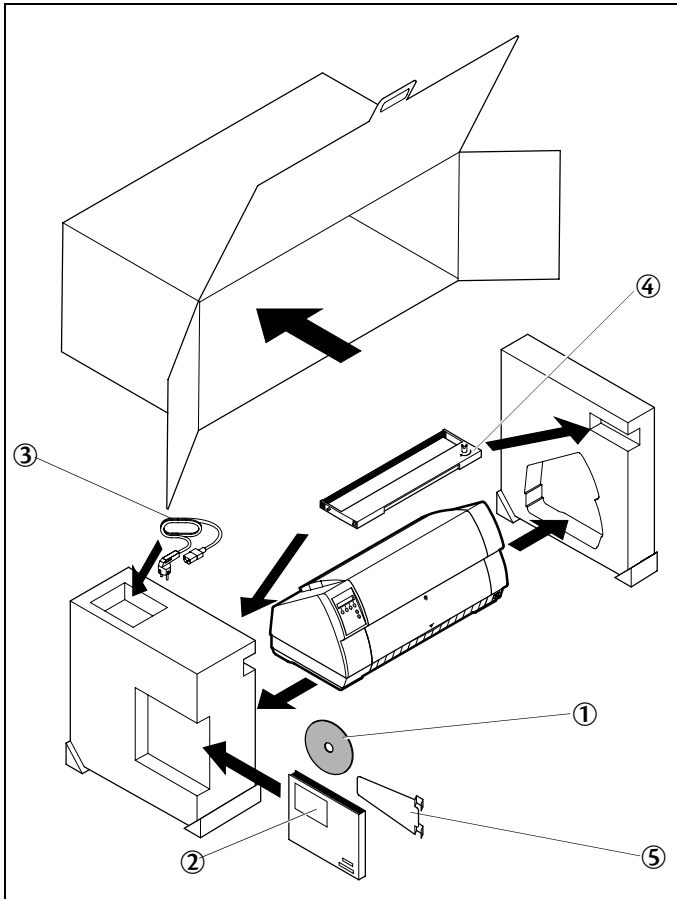
Options: Tractor 2
Tractor 3
ASF-F
ASF-R

i If you install the ASF-Ffeeder, the paper sources Trac2 and Single are omitted.

Tractor 2 and tractor 3: option, modular

2 Installation

Unpacking the printer



Place your printer on a solid surface (*see [Placing your printer, page 6](#)*).

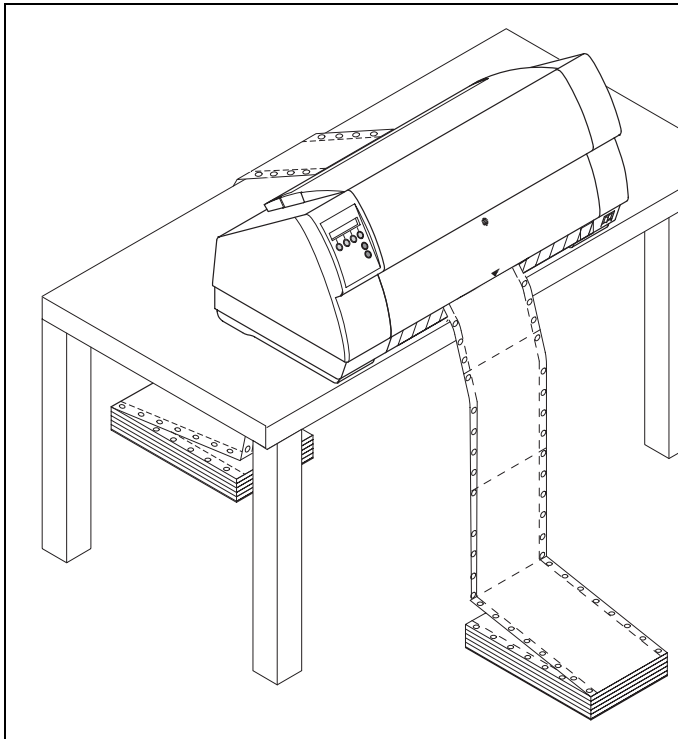
Make sure that the “Up” symbols point in the correct direction.

Open the packaging, take out the accessory cassette and unpack it. Pull the printer out of the cardboard box towards you and remove the remaining packaging material.

Check the printer for any visible transport damage and completeness. Apart from this CD-ROM (①) the Quick start guide (②), the power cable (③), the ribbon (④) and the paper support (⑤) must be included.

If you find any transport damage or if any accessories are missing, please contact your dealer.

Placing your printer



Place the printer on a solid, flat, surface, ensuring that the printer is positioned in such a way that it can not topple, and that there is easy access to the control panel and paper input devices. Also ensure that there is sufficient space for the printed output.

If you expect that frequent forward and reverse feeds will occur, you should place the printer as shown in the figure, if possible.



The power supply cable may be damaged if the paper edges constantly chafe the insulating sheath. The user must always ensure that there is sufficient distance between the power supply cable and the paper.

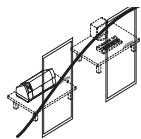
When selecting the printer location, observe the following additional instructions:



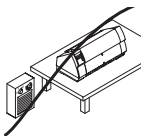
Never place the printer in the vicinity of inflammable gas or explosive substances.



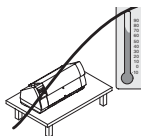
Do not expose the printer to direct sunlight. If you cannot avoid placing the printer near a window, protect it from the sunlight with a curtain.



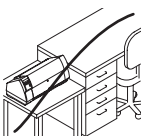
When connecting the computer with the printer, make sure not to exceed the permitted cable length (*see [Interface specifications, page 113](#)*).



Ensure sufficient distance between the printer and any heating radiators.



Avoid exposing the printer to extreme temperature or air humidity fluctuations. Above all take care to avoid the influence of dust.



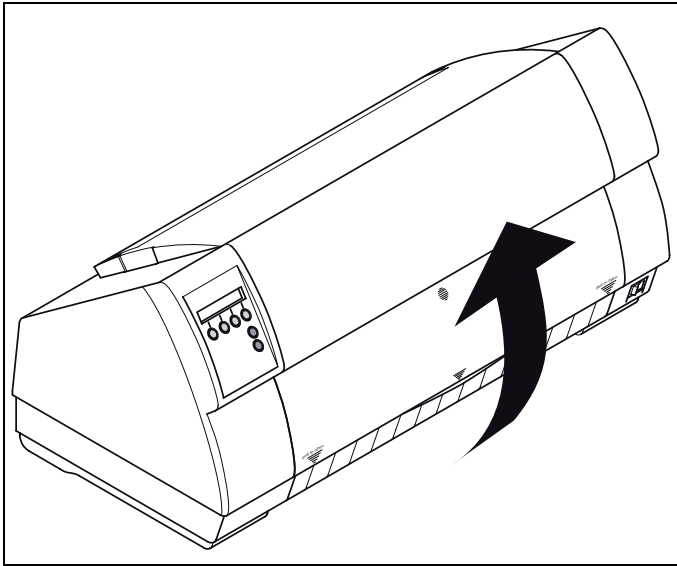
It is recommended to install the printer in a place which is acoustically isolated from the workplace because of the noise it may produce.

Checking the printer voltage

Make sure that the device has been set to the correct voltage (e.g. 230 V in Europe, 120 V in the USA). To do this, check the type plate above the power inlet at the back of the printer. Contact your dealer if the setting is incorrect.



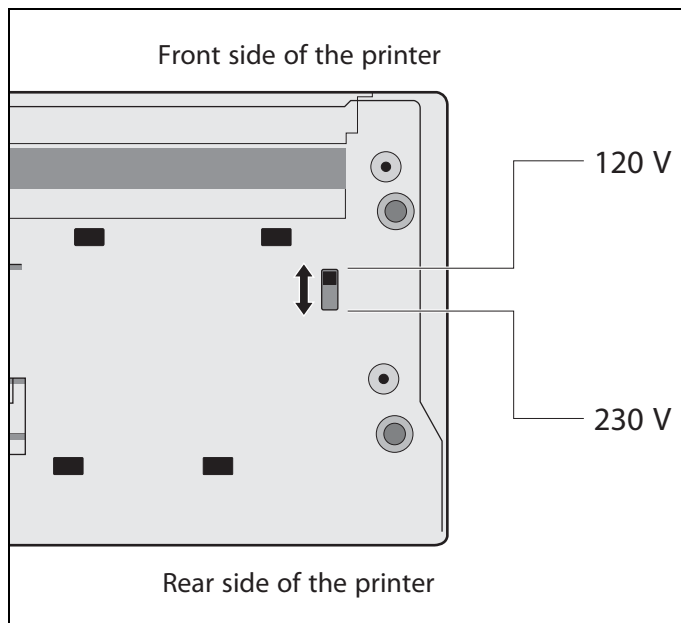
Never switch on the printer if the voltage setting is incorrect, since this may result in severe damage.



You can set the printer to the correct mains voltage yourself. To do this, cautiously tilt the printer to the rear.

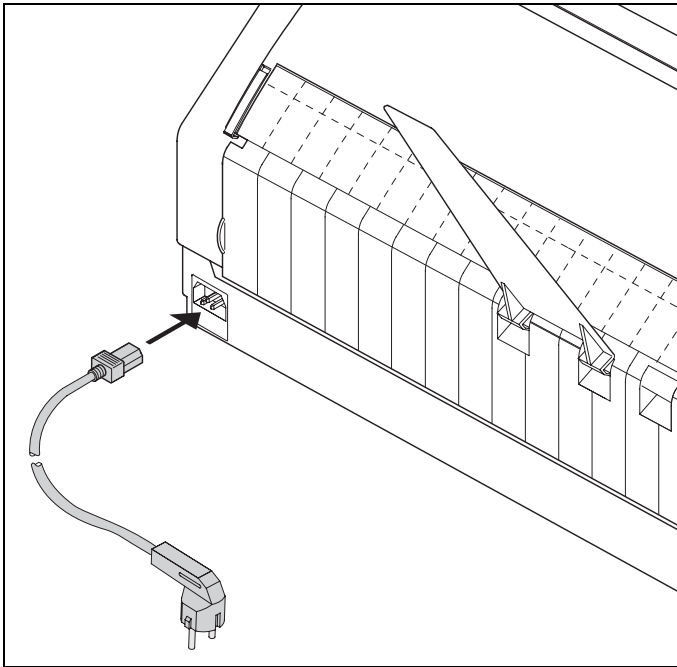


Make sure that the fixing clips of the parallel connection are not bent.

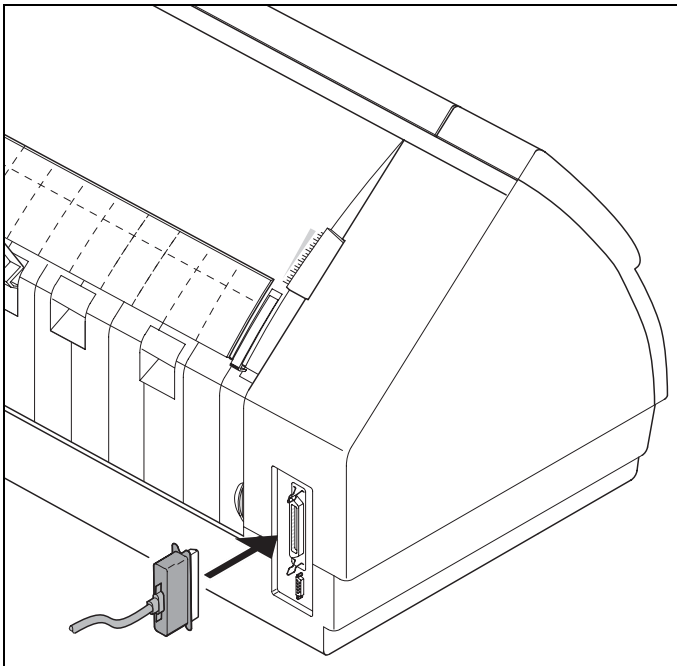


Use a suitable object (e.g. a screwdriver, but never a pencil) to set the slide switch on the left at the bottom of the printer to the correct voltage.

Connecting the printer



Connect the power cable to the power inlet of the printer. Connect the power cable plug to a mains socket.

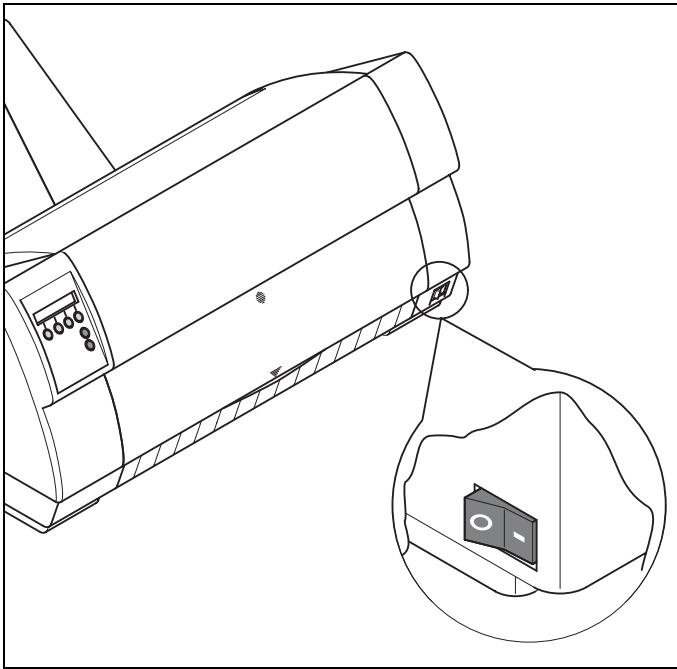


Make sure that the printer and the computer are switched off and connect the data cable between the printer and the computer.



The printer by default is provided with a parallel interface. For further information about the interfaces, refer to the section [Interfaces](#), page 145.

Switching on the printer



The power switch for switching on the printer is located at the bottom right at the front of the printer when viewed from the front.

3 The control panel

The control panel keys are used for controlling your work with the printer. The control panel is located on the front right side of your printer and consists of a two-line LC display and six keys.

The functions of the keys depend on the printer's current mode (status). There are four basic modes.

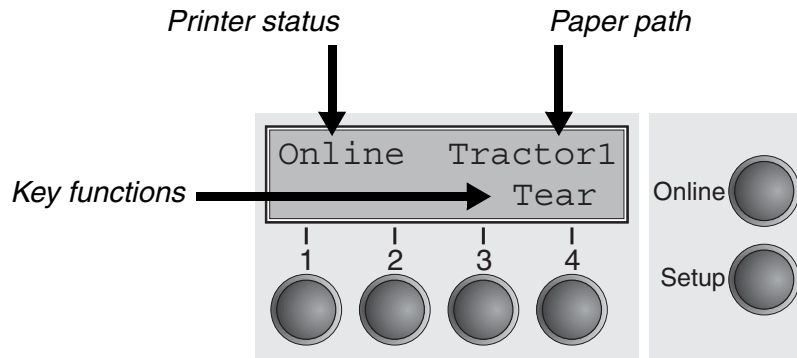
- ▶ The *Online* mode is the printer's normal operating mode. Data from your computer can be received and printed.
- ▶ In the *Offline* mode the link between printer and computer is interrupted, i.e. no data can be received and printed.
- ▶ In the *Setup* mode you can either select the printer menu or carry out the so-called quick-switch function. The quick-switch option was included so that you can change the most important parameters (for example adjustments, character density, font, paper path, adjustments i.e. head gap) directly without having to enter them via the menu. The settings for the parameters character density and font are lost when the printer is switched off. They can be selected permanently in the menu mode of the printer.
- ▶ In the *Menu* mode further printer settings (line spacing, size of the interface buffer etc.) can be altered and saved permanently.

The LC display

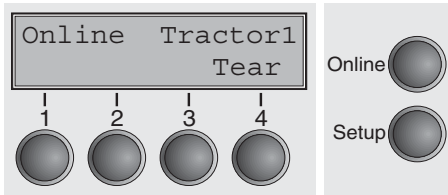
The LC display tells you all the important printer settings and informs you which functions are currently assigned to which keys.

The upper line informs you that the printer is either in online or offline mode (in the example below the printer is in the Online mode), and the selected paperpath (below: **Tractor1** = tractor mode).

Example:



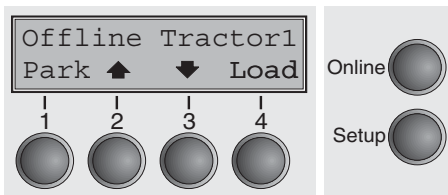
Online mode



After switching on, the printer is automatically set to online mode. Only in this mode can it receive data from the computer.

- ▶ **Tear** key (4): Activates the tear function when fanfold paper is loaded, see [\(see Moving the paper to the tear position, page 37\)](#). If **Load** is displayed above this key, no paper is loaded in the printer or the printer is in park position. In this case the display switches between **Online** and **Park Position**. Press the key to feed paper to the printing position.
- ▶ **Setup** key: Sets the printer to setup mode.
- ▶ **Online** key: Sets the printer to offline mode.

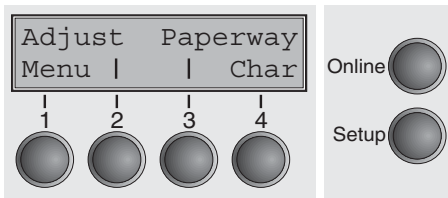
Offline mode



Only in this mode is it possible to perform step, line, or form feeds from the control panel, see [\(see Paper transport, page 36\)](#); however, data cannot be received.

- ▶ **Park** key (1): Clears the paper path with paper loaded and activates paper path quick selection, see [\(see Changing the paper type, page 27\)](#).
- ▶ Key ▲ (2): Short keypress: Microstep forward. Long keypress: Continuous paper feed.
- ▶ Key ▼ (3): Short keypress: Microstep reverse. Long keypress: Continuous paper reverse feed up to the park position.
- ▶ **Load** key (4): If no paper is loaded, see above. If paper is loaded: Loads paper from the selected paper source; the display changes to **LF/FF**. Short keypress: Line Feed (**LF**). Long keypress: Form Feed (**FF**).
- ▶ **Setup** key: Sets the printer to setup mode.
- ▶ **Online** key: Sets the printer to online mode.

Setup mode



In this mode, the following settings are available:

- ▶ **Setup** key: Sets the printer to setup mode, in which the following settings can be selected:
- ▶ **Menu** key (1): Other menu settings. Access may be disabled by the manufacturer (see note below).
- ▶ **Adjust** key (2): Sets the Tear position, first printing line and print head gap.
- ▶ **Paperway** key (3): Sets the Paper path.
- ▶ **Char** key (4): Sets the font and the number of characters per inch.



Access to the other menu settings (Menu) may be disabled by the manufacturer.

Proceed as follows to release this lock temporarily.

- 1 Switch off the printer for approx. 5 seconds.
- 2 Switch the printer on again keeping the **Setup** key pressed.



For information on how to enable access permanently and about the available settings, refer to the section [\(see Menu lock \(MenLock\), page 62\)](#) and (see [Menu parameters, page 47](#)).

Messages in the LC display

If the printer detects an internal fault or user error or if it expects you to do something, a message will appear in the LC display. It also displays the status during an operation (e.g. **Initializing**). Below you will find a list of messages with brief descriptions of each message. The messages are described in greater detail in the chapter ([see Error messages via the display, page 100](#)).

Message	Meaning
Eject error	The printer cannot eject the paper/ advance it to park position.
Hardware Alarm	Internal hardware error, contact your dealer or service technician.
Initializing	This message appears during the printer's initializing phase after switching on the printer.
Load error	The printer cannot draw in the loaded paper.
Load paper from	The printer has detected paper end during operation/printer was switched on with no paper loaded.
Loading default	Factory defined parameters will be reloaded in all available menus after switching on the printer.
Out of paper	The printer has detected paper end during operation / printer was switched on with no paper loaded.
Parity error	A parity error during data transmission is indicated.
Park position	Printer was switched on with no paper loaded.
Press any key	The user is requested to press any key.
Selftest	After power-on, the printer executes a short hardware self-test.
Tear Paper off	The user is requested to tear off paper which has been advanced to the tear edge.

Key functions when turning on the printer

If you keep one of the following keys pressed during power-on until the printer has completed initialisation, the corresponding function is activated:

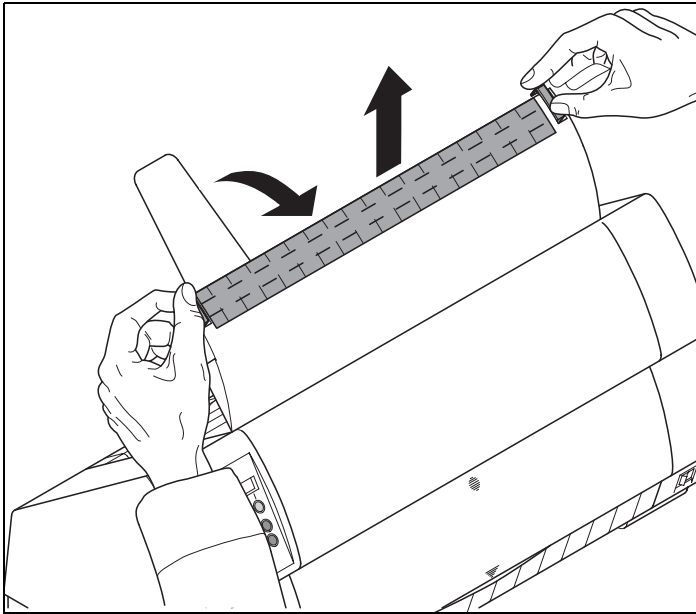
- ▶ If you keep the **Online** key depressed while turning on the printer, you enter the printer's advanced menu mode. The advanced menu mode is described in the section [\(see Advanced menu, page 77\)](#) of this manual.
- ▶ If you keep the **Setup** key depressed while turning on the printer, you regain access to the printer menu if you had locked it before with the help of the MenLock function. The **MenLock** function is described in the section [\(see Menu lock \(MenLock\), page 62\)](#).
- ▶ If the four **function** and **select** keys (keys 1 to 4) are depressed simultaneously while turning on the power, all printer settings are reset to the default values, except the **Forml** (Form length) and **Single** setting in advanced menu mode.



This causes all the user's previous settings to be lost.

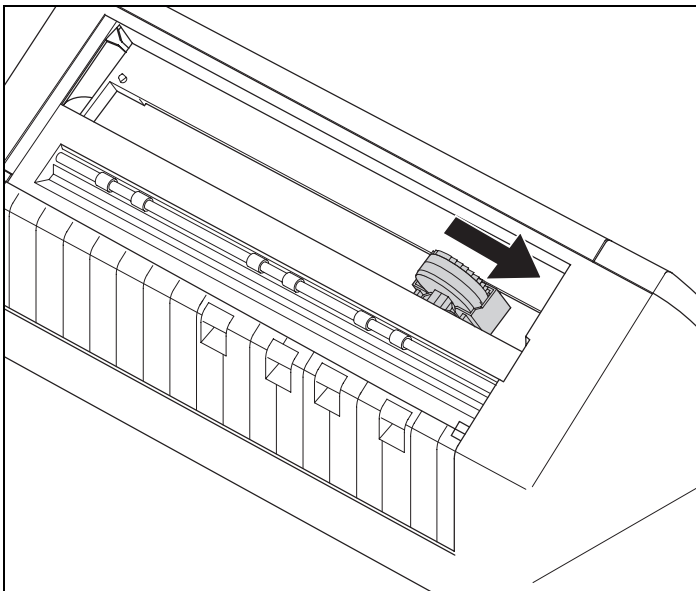
4 Changing the ribbon cassette

The ribbon consists of a dense synthetic fabric saturated with ink. When printing, the needles hit the ribbon and transfer the ink particles on to the paper. After printing several million characters, the ink is consumed and the fabric worn out.



Remove all the paper from the printer and make sure that the printer is switched off before opening the cover.

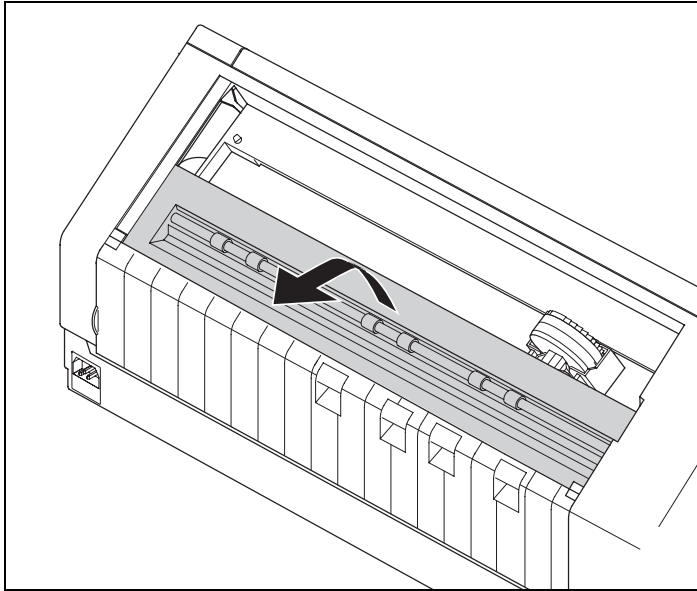
Press the two slide latches, raise the top cover to an angle of 90 degrees relative to the top cover of the printer and remove it.



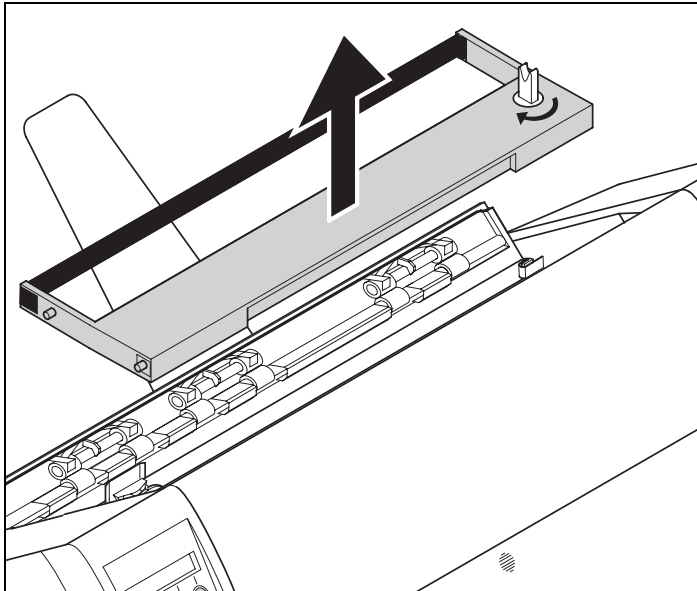
Cautiously slide the print head carriage to the left stop (viewed from the printer front).



The print head becomes hot during printing. You should therefore let it cool down for some time before touching it.



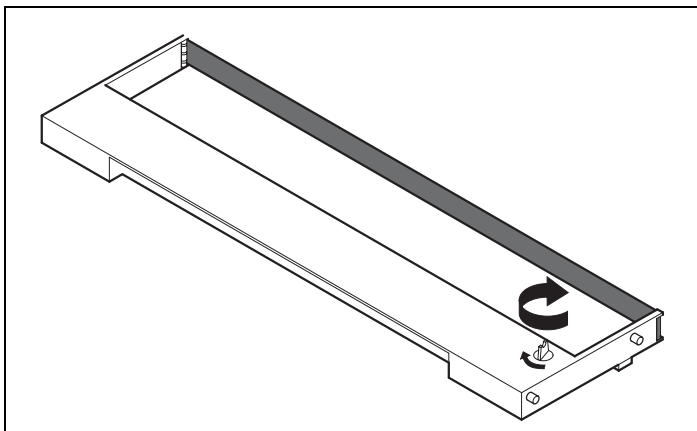
Raise the printer bar cover.



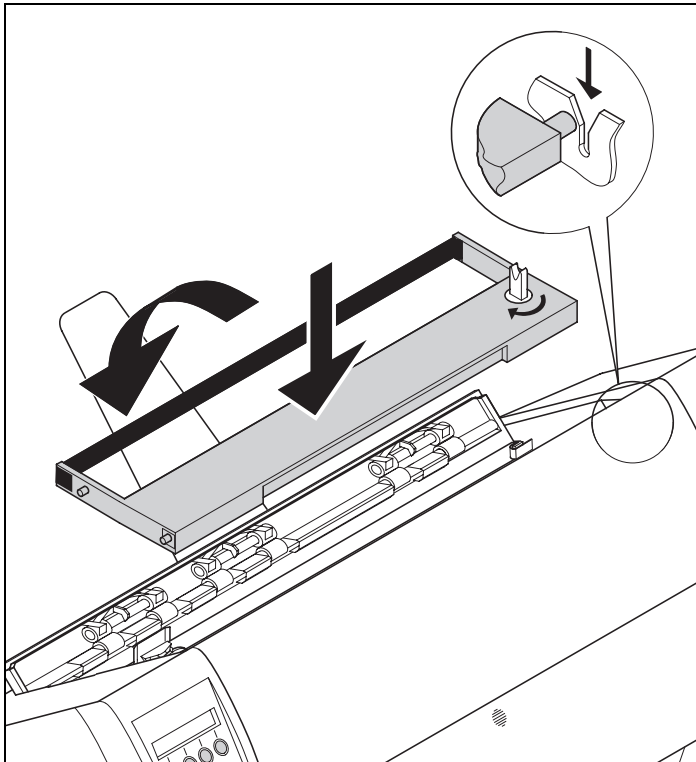
Remove the used cassette.



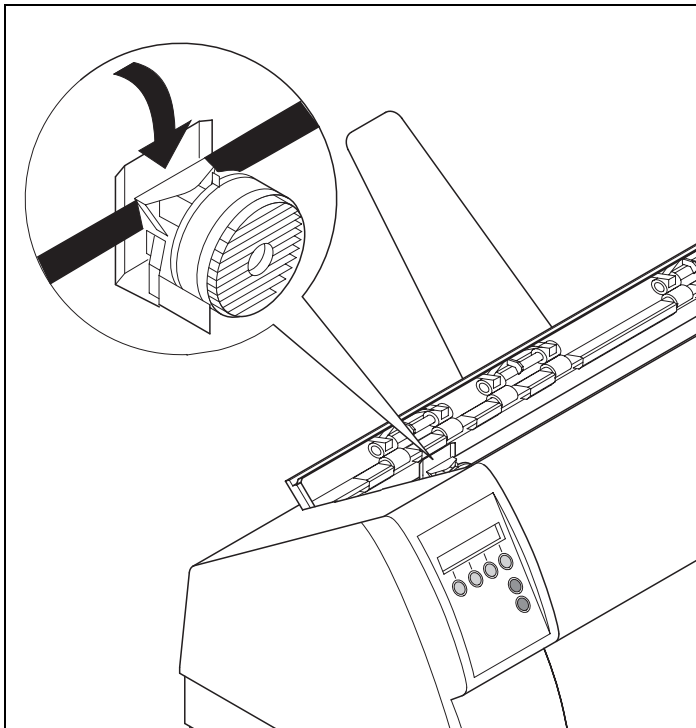
We recommend use of genuine ribbon cassettes only.



Turn the coloured ribbon feed knob at the right of the new ribbon cassette in the direction of the arrow in order to take up slack of the ribbon.



Slightly tilt the ribbon cassette forwards in such a way that it is parallel to the housing top and thread in the ribbon in front of the print head. Locate the two projections in the left and right guide rails of the printer and gently press down on both sides until it clicks into place. In this way, the cartridge is automatically positioned correctly.



Use the knob on the right side of the cassette to take up slack of the ribbon again. Thereby the ribbon will slide over the plastic noses on the left and right of the print head into the correct position.

Press the printer bar cover down until it clicks into place, remount the top cover, making sure that the projections on the cover are inserted correctly into the recesses of the printer housing, and close it.

5 Printer drivers

You need to install a printer driver so that the printer can process the data from your application programs.

An original driver offers the best conditions for optimal printing results. All available printer drivers can be found on the CD-ROM enclosed with the printer, as well as on our [Internet](#) site, from which you can also download updated versions as necessary.

Installing a printer driver in Windows 95/98/ME



In this operating system the compatible 2150 and 2250 driver can be used.

Installing a printer driver in Windows 2000/2003/XP

The online CD-ROM contains printer drivers for the most common Windows applications. To install the printer driver, proceed as follows.

- 1 Insert the supplied online CD-ROM in the CD-ROM drive.
- 2 Click on the **Start** button in the Windows taskbar.
- 3 Click on **Printers and Faxes** to open the printer folder.
- 4 Click on **File** and **Add Printer** in the menu bar.
- 5 Click on **Next** in the **Printer Installation Wizard**.
- 6 Specify whether you want to operate the printer as a **Local Printer or Network Printer** by clicking on the relevant option, then press **Next**.



For instructions on installing the printer as a network printer, please consult the documentation supplied with your network operating system and/or printer server, or contact the network administrator.

To install a network printer, you will need Administrator rights.

If you are using the printer locally, you can continue installing the driver in one of two possible ways:

- ▶ Manual installation of printer driver: in this case, continue with Step 7.
- ▶ Automatic installation of printer driver via Plug & Play function: in this case, continue with Step 12 once the printer installation wizard has determined the printer, port and printer name.

Then click on **Next**.

- 7 Select the port to which your printer is connected, then click on **Next**.
- 8 Click on **Data Carrier**, then click on **Browse**.
- 9 Select the CD-ROM drive and open the directory **n:\driver** (“n” stands for the letter of your PC drive).
- 10 Open the folder **32Bit** or **64Bit**.
- 11 Select the printer type. Click on **Next**.
- 12 If required, edit the name of the default printer and specify whether you wish to use the printer as a default printer by clicking on the relevant option. Then click on **Next**.
- 13 If you are using the printer as a network printer, you have the option of sharing it with other network users. In this case you must enter an access name which will be displayed to the other network users. Then click on **Next**.
- 14 Specify whether you wish to print out a test page (recommended) by selecting the relevant option and click on **Finish**. The printer driver will now be installed.

Installing a printer driver in Windows 7

The online CD-ROM contains printer drivers for the most common Windows applications. To install the printer driver, proceed as follows.

- 1 Insert the supplied online CD-ROM in the CD-ROM drive.
- 2 Click on the **Start** button in the Windows taskbar.
- 3 Click on **Devices and Printers** to open the printer folder.
- 4 Click on **Add a Printer** in the menu bar.
- 5 Specify whether you want to operate the printer as a **Local Printer or Network, wireless or Bluetooth printer** by clicking on the relevant option, then press **Next**.



For instructions on installing the printer as a network printer, please consult the documentation supplied with your network operating system and/or printer server, or contact the network administrator.

To install a network printer, you will need Administrator rights.

If you are using the printer locally, you can continue installing the driver in one of two possible ways:

- ▶ Manual installation of printer driver: in this case, continue with Step 6.
 - ▶ Automatic installation of printer driver via Plug & Play function: in this case, continue with Step 11 once the printer installation wizard has determined the printer, port and printer name.
- 6 Select the port to which your printer is connected, then click on **Next**.
 - 7 Click on **Have Disk**, then click on **Browse**.
 - 8 Select the CD-ROM drive and open the directory **n:\driver** (“n” stands for the letter of your PC drive).
 - 9 Open the folder **32Bit** or **64Bit**,
 - 10 Select the printer type. Click on **Next**.
 - 11 If you are using the printer as a network printer, you have the option of sharing it with other network users. In this case you must enter an access name which will be displayed to the other network users. Then click on **Next**.
 - 12 If required, edit the name of the default printer and specify whether you wish to use the printer as a default printer by clicking on the relevant option. Then click on **Next**.
 - 13 Specify whether you wish to print out a test page (recommended) by selecting the relevant option and click on **Finish**. The printer driver will now be installed.

Installing a printer driver in Windows Vista

The online CD-ROM contains printer drivers for the most common Windows applications. To install the printer driver, proceed as follows.

- 1 Insert the supplied online CD-ROM in the CD-ROM drive.
- 2 Click on the **Start** button in the Windows taskbar.
- 3 Click on **All Programs**.
- 4 Click on **Devices and Printers** to open the printer folder.
- 5 Click on **Printers** in the menu window.
- 6 Click on **Add a Printer** in the menu bar.
- 7 Specify whether you want to operate the printer as a **Local Printer or Network, wireless or Bluetooth printer** by clicking on the relevant option, then press **Next**.



For instructions on installing the printer as a network printer, please consult the documentation supplied with your network operating system and/or printer server, or contact the network administrator.

To install a network printer, you will need Administrator rights.

If you are using the printer locally, you can continue installing the driver in one of two possible ways:

- ▶ Manual installation of printer driver: in this case, continue with Step 8.
 - ▶ Automatic installation of printer driver via Plug & Play function: in this case, continue with Step 13 once the printer installation wizard has determined the printer, port and printer name.
- 8 Select the port to which your printer is connected, then click on **Next**.
 - 9 Click on **Have Disk**, then click on **Browse**.
 - 10 Select the CD-ROM drive and open the directory **n:\driver** ("n" stands for the letter of your PC drive).
 - 11 Open the folder **32Bit** or **64Bit**,
 - 12 Select the printer type. Click on **Next**.
 - 13 If you are using the printer as a network printer, you have the option of sharing it with other network users. In this case you must enter an access name which will be displayed to the other network users. Then click on **Next**.
 - 14 If required, edit the name of the default printer and specify whether you wish to use the printer as a default printer by clicking on the relevant option. Then click on **Next**.

- 15 Specify whether you wish to print out a test page (recommended) by selecting the relevant option and click on **Finish**. The printer driver will now be installed.

Other operating systems

The printer can also be used with other operating systems such as Linux or Unix. In this case, set the printer to one of the Epson emulations (LQ-2550/LQ-2170) or IBM emulations (Proprinter XL 24e/Proprinter XL 24e + AGM) for which default drivers are available in most operating systems.

Changing printer settings

You can make permanent changes to the printer settings using the control panel of the printer (see [The Menu](#), page 41). Various printer settings can also be entered in the operating system of your PC, however.

- 1 Click on the Start button in the Windows taskbar.
- 2 Windows 95/98/ME: move the mouse to Settings and click on Printers to open the printer folder.
Windows 2000/2003/XP: click on Printers and Faxes to open the printer folder.
- 3 Move the mouse pointer to the appropriate printer symbol, press the right mouse key and click on Properties.

Details of the settings available in this window can be found in the Windows documentation or help pages.



Settings entered in the printer driver via Windows have priority over settings entered via the printer menu. It is therefore possible that the former may overwrite the latter.

Form settings (Windows 2000/2003/XP/ Vista/Windows 7)

In contrast to Windows versions 95/98/ME, in which forms are defined in the printer driver itself, Windows versions 2000/2003/XP/Vista/Windows 7 have a central facility for managing form properties and assign one paper feed only.

If you want to set up a form not included in the Windows default settings, proceed as follows.



You will need Administrator rights to define new forms.

- 1 Click on the **Start** button in the Windows taskbar.
- 2 Click on **Printers and Faxes** to open the printer folder.
- 3 In the menu bar, click on **File** and **Server Properties**.
- 4 In the window **Printer Server Properties**, click on **Form** if necessary.
- 5 Either select an existing form from the **Forms** list or activate the option **New Form**.
- 6 Enter a form name and the desired values.
- 7 Click on **Save** to save the new form.

You can now assign this form to the paper feeds of your printer (see above).



The form cannot be assigned if its dimensions exceed the permissible paper sizes of the specified paper feed.

Loading optional firmware

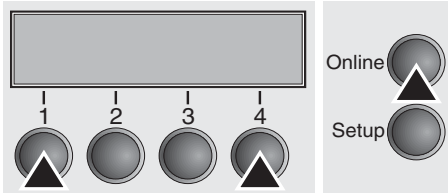


If you download new firmware as described below, all menu settings will be overwritten. For this reason you should print a menu dump in order to be able to reestablish the previous settings if necessary (see [Printing out menu configurations \(Print\)](#), page 47).

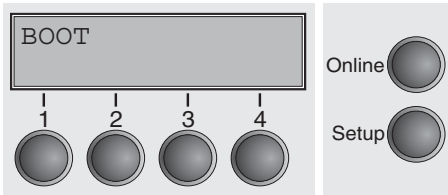
To load new firmware, proceed as follows.



The most current version of the firmware can be downloaded from our [internet](#) page.



- 1 Switch off the printer. Connect your DOS PC (LPT1:) to the parallel port on the printer.
- 2 Press keys **1**, **4** and **Online**. Hold the keys pressed.
- 3 Switch on your printer.

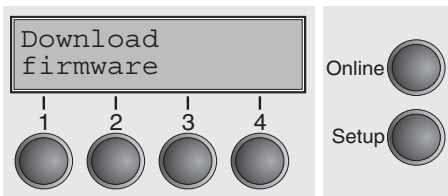


The printer is ready for the download when **BOOT** appears on its display.

- 4 In Windows open the MS-DOS window.
- 5 Copy the file, e.g. DOWNLOAD.FDF, to your printer:

```
COPY /B X:\path\DOWNLOAD.FDF PRN
```

(X:\path stands for the drive and the directory in which the file is located.)



A progress indicator (bar) and DOWNLOAD FIRMWARE appears on the display during the download; alternatively, an error message is displayed:

- PRG** = Firmware
- GEN** = Character set or font (character generator)
- P+G** = Firmware and character set
- BOO** = Firmware, character set and boot block

The number of the currently transferred data block (frame) is displayed in addition in the top line of the display on the right.

DOWNLOAD OK and **BOOTAREA SKIPPED** is displayed briefly when the procedure has been completed successfully. The printer then runs through its initialisation routine, after which it is ready for use. Repeated separate loading of firmware and character generators is possible.

Troubleshooting

It is necessary to repeat the entire procedure if an error occurs during the download. This is indicated by a corresponding message on the display. It may be that not all fault messages can be shown on the display. In this case, the operating system of your PC displays an error message such as "Write error on device".

6 Paper handling

Changing the paper type

This section describes how to set the paper type, load fanfold paper and single sheets, transport paper and move the paper to the tear position.

You can change the paper type either from an application program, by means of the paper path quick selection feature or in the Setup menu. In this section, the quick selection feature is described; for detailed information on how to make this setting via the Setup menu, refer to the section [The Menu \(page 41\)](#).

Make sure that the printer is in offline mode; press the **Online** key, if necessary.

Press the **Park** (1) key. If fanfold paper is loaded in the printer, it is fed to the tear position. The text **Tear paper off** appears in the display.

After having torn off the paper, press any key. If a single sheet is loaded in the printer, it is ejected.

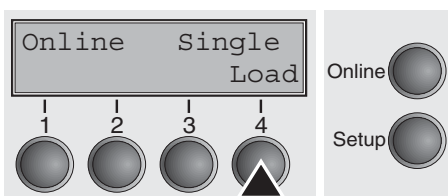
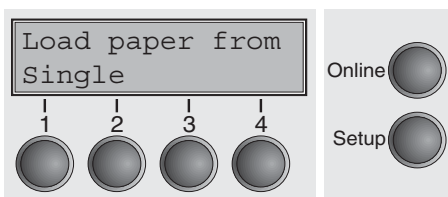
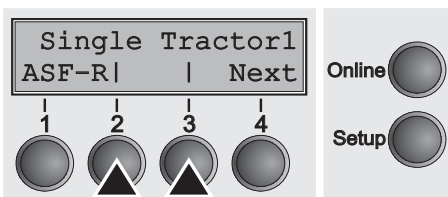
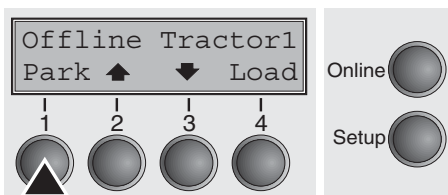
Use one of the marked keys to select the desired paper path, for example, **Single** (2).

i The display shown here may vary depending on which paper options you have installed.
If you do not make a selection within 5 seconds, the menu is closed.

The printer returns to offline mode. The display alternates between the basic menu and the menu in the following figure:

Insert a single sheet (for the procedure, see [Loading paper \(page 30\)](#)).

Press the **Online** key to set the printer to ready status. When the printer receives data from the computer, the single sheet is automatically loaded. Press the **Load** (4) key to load the single sheet before starting the printout.



Changing the paper type in the setup menu

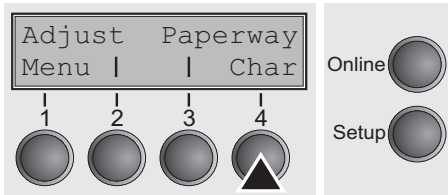
If you wish to change the paper type in the setup menu, proceed as follows.

- ▶ Press the Setup key followed by **Next** (4) and **Paperway** (3).
- ▶ Select the desired paper type with the key < (2) or > (3).
- ▶ Press the **Set** (1) key to confirm your selection.

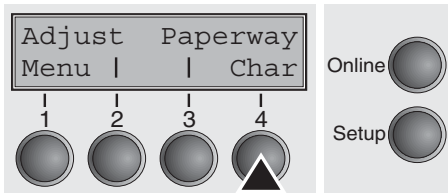
Selecting character density and font

You can use the **CPI** (Character Per Inch) key in setup mode to select the number of characters per inch to be printed. You can use the **Font** key to select resident fonts.

Press the **Setup** key, then the **Char** (4) key.

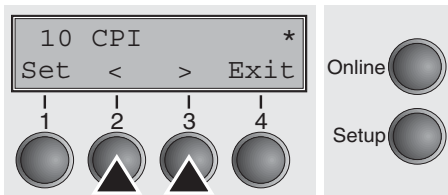


Press the **CPI** (4) or **Font** (1) key (in our example, press **CPI**).



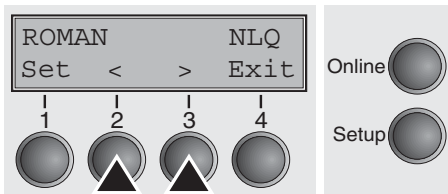
Use the < (2) or > (3) key to set the desired character density. Confirm the selection by pressing the **Set** (1) key.

You can cancel the selection and leave the setting unchanged by pressing the **Exit** (4) key.



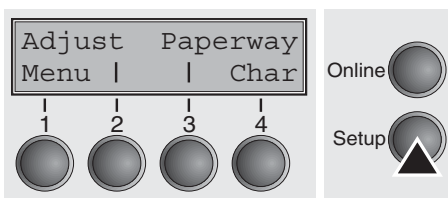
If you pressed the **Font** (1) key, use the < (2) or > (3) key to select the desired font. Confirm the selection by pressing the **Set** (1) key.

You can cancel the selection and leave the setting unchanged by pressing the **Exit** (4) key.



Press the **Setup** key. The printer returns to the initial status.

It is also possible to press the **Online** key. The printer then changes directly to online mode.



The selection made will not be retained after switching off the printer. For more details on how to set the character density and fonts permanently, please refer to the chapter [Setting character density \(CPI\)](#) (page 50) and [Selecting font \(Font\)](#) (page 49).

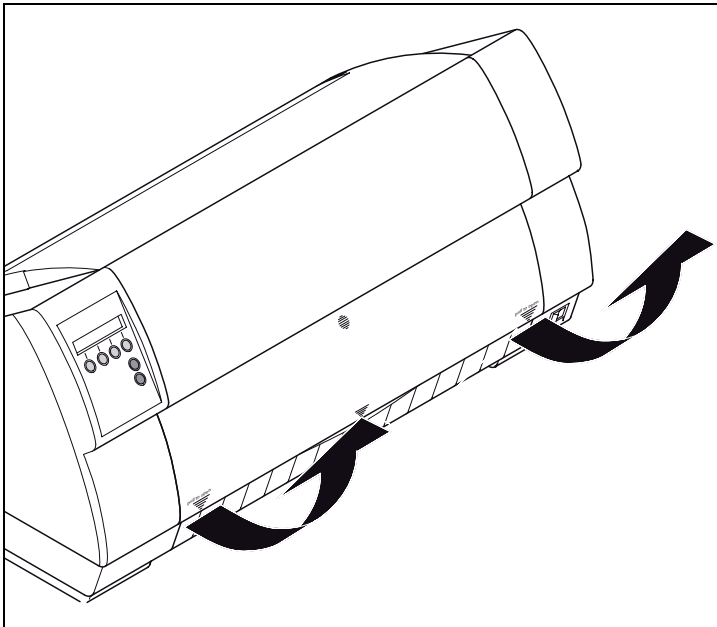
Loading paper

Your printer can process both fanfold paper and single sheets. For information on allowable paper formats, refer to the section [Paper specifications \(page 114\)](#).

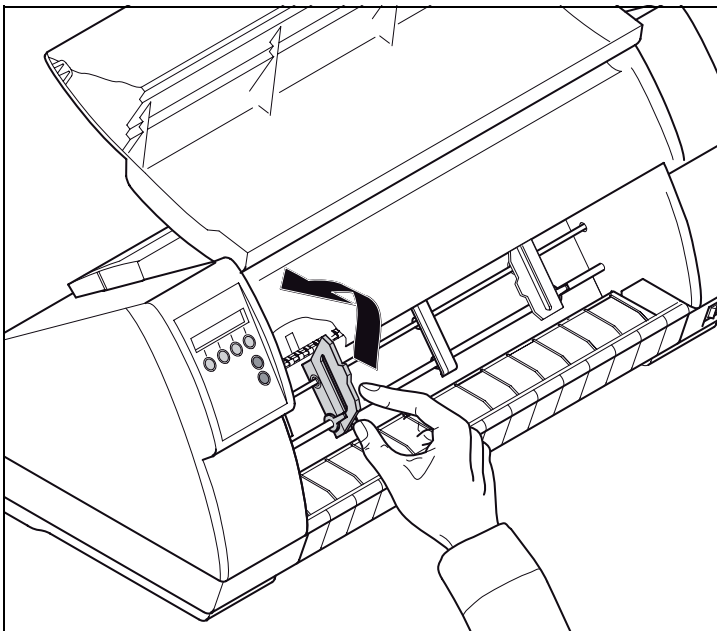


Only use dust-free or low-dust paper. Many paper qualities are suitable for this printer. For more information, please refer to the section [Paper specifications \(page 114\)](#).

Fanfold paper

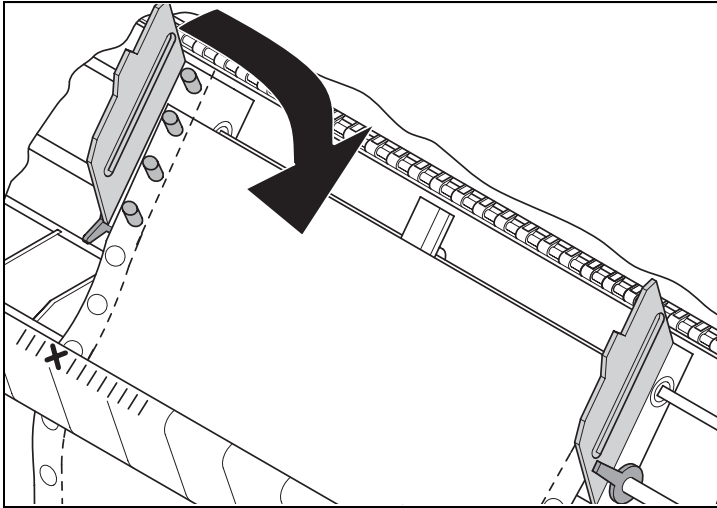


Remove the paper support for single sheets. Make sure that the printer is set for fanfold paper printing. If necessary, change the paper type (see [Changing the paper type \(page 27\)](#)).



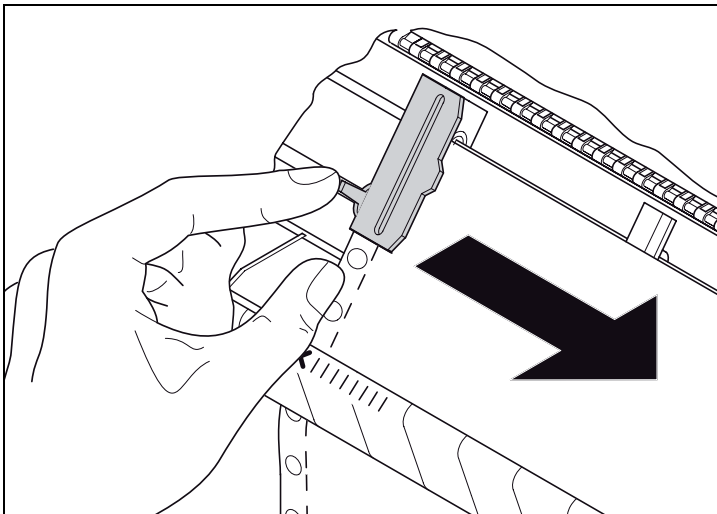
Open the right and left tractor flaps.

You may also want to remove the bottom cover in order to facilitate loading the fanfold paper. However, you can also feed paper to the tractor with the bottom cover mounted.



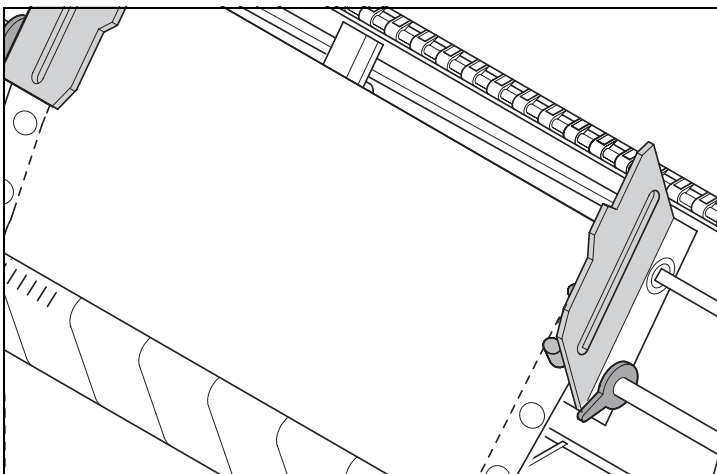
Insert fanfold paper into the left-hand tractor. Make sure that at least three paper transport holes are positioned on the tractor pins.

Close the tractor flap.



Open the coloured latch lever and align the tractor so that the first printing position on the paper matches the **X** mark on the printer housing.

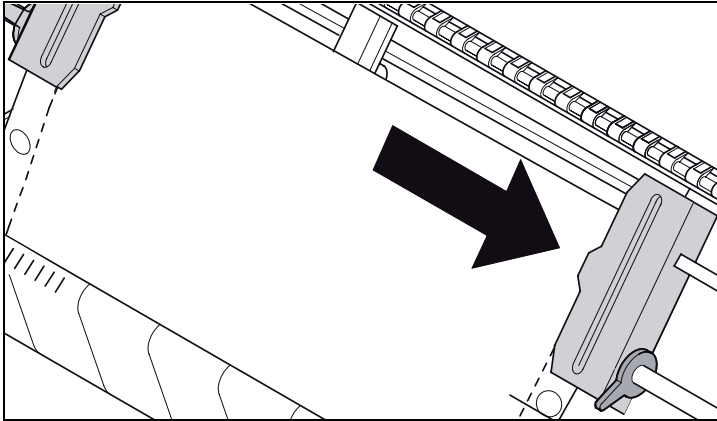
Lock the lever again.



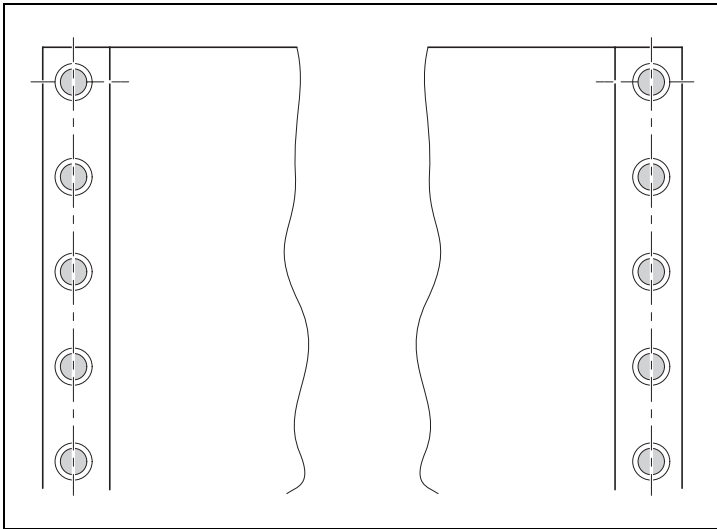
Align the right-hand tractor to the width of the paper and insert the paper.



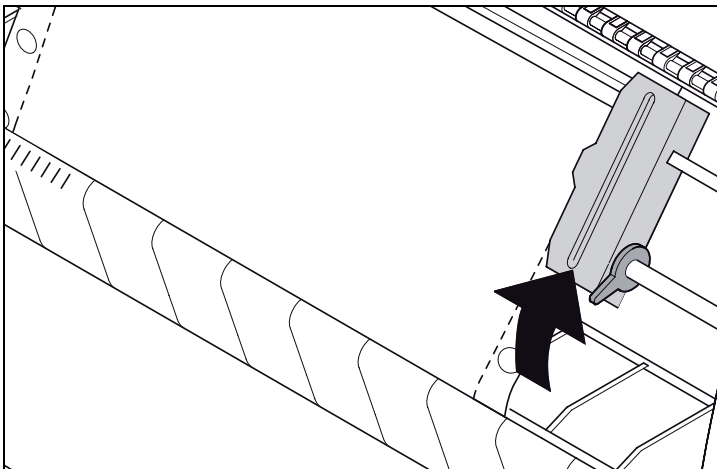
Make sure that it is inserted by the same length as on the left-hand tractor in order to avoid any paper jam.



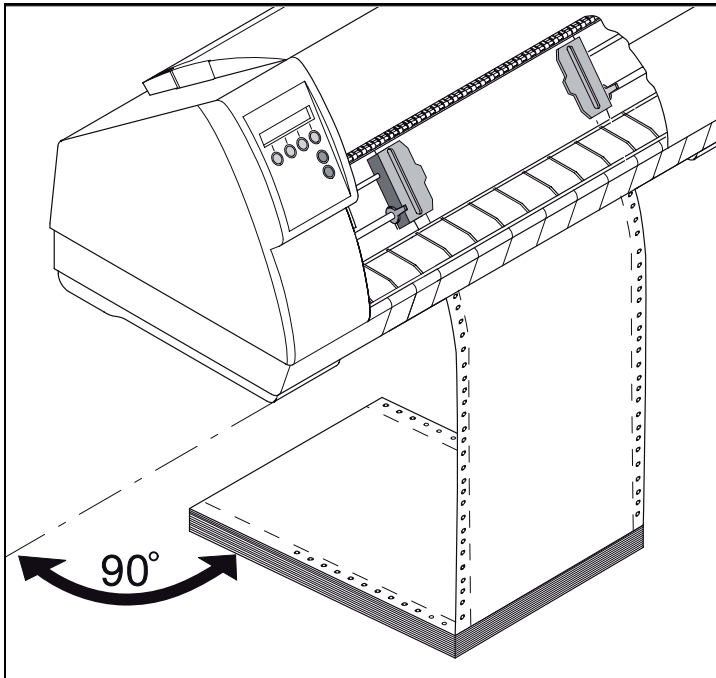
Close the tractor flap and slide the tractor to the right until the paper is slightly tensioned.



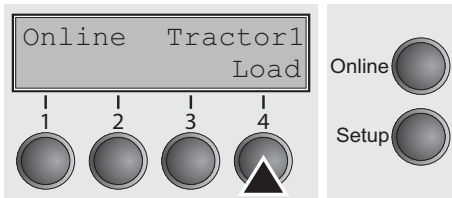
Do not tension the paper excessively to avoid tearing the perforation holes; do not allow excessive slack since in this case the paper will bulge and there may be problems in the feeding process.



Then lock the tractor.



Make sure that the paper stack is aligned in parallel to the printer and that the paper supply cannot be obstructed.



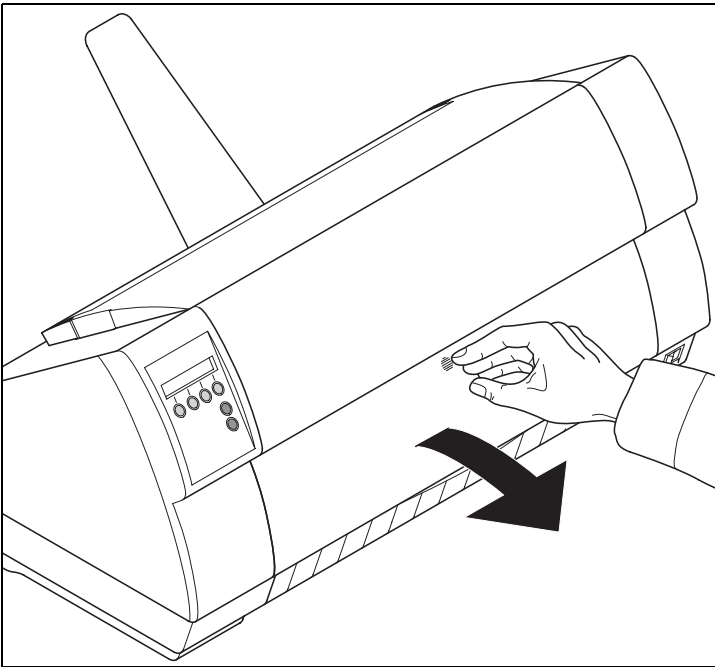
Lower the front cover.

Switch the printer on. The active paper source (**Tractor1**) appears in the display. The paper is automatically loaded when the printer is in online mode and receives data from the computer.



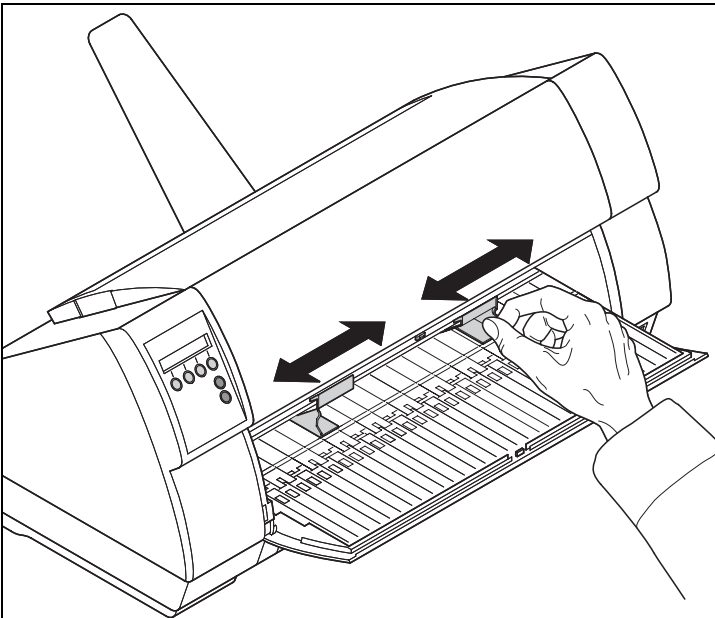
Press the Load (4) key only to load paper before starting the printout.

Single sheets



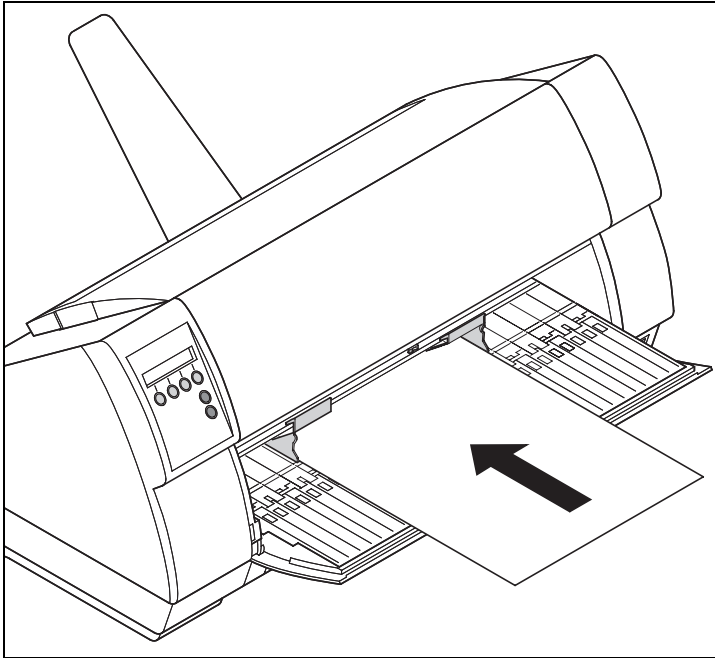
If required, install the paper support. Make sure that the printer is set to single sheet mode. If necessary, change the paper type, see [Changing the paper type](#) (page 27).

Press the latch at the middle of the front cover. The single sheet input tray opens downwards.

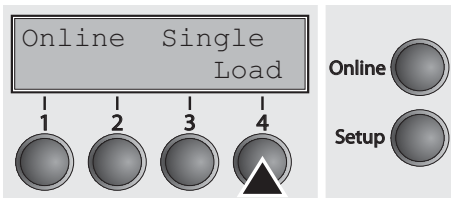


Align the left paper guide with the mark on the left of the single sheet input tray marking the first printing position.

Adjust the right paper guide to the width of the paper used.



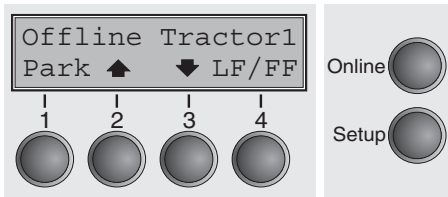
Insert the single sheet into the input tray as far as possible.



Press the Online key to set the printer to ready status. The sheet is automatically loaded when the printer is in online mode and receives data from the computer.

Press the **Load** (4) key only to load paper before starting the printout.

Paper transport



Loaded paper (fanfold paper/single sheets) can be transported in the printer in several ways.

Make sure that the printer is in offline mode; press the **Online** key, if necessary.

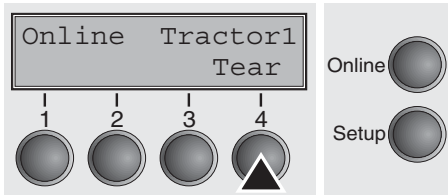
- ▶ **Key Park (1)**
If fanfold paper is loaded in the printer, it is fed to the park position or the tear position. If a single sheet is loaded, it is ejected.
- ▶ **Key ▲ (2)**
Short keypress: Paper is transported upwards step by step.
Long keypress: Continuous transport upwards.
- ▶ **Key ▼ (3)**
Short keypress: Paper is transported downwards step by step.
Long keypress: Continuous transport downwards.
- ▶ **LF/FF key (4):**
Short keypress: Line Feed (**LF**) is executed.
Long keypress: Form Feed (**FF**) is executed.



The maximum value of the paper return feed is 22 inches.

Moving the paper to the tear position

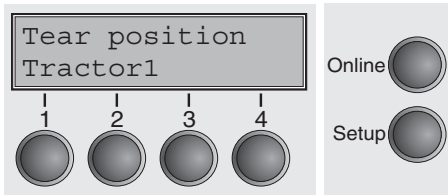
You can use the **Tear** key to move the paper to the tear position.



The tear edge is located at the front side of the paper output opening (see [Printer at a glance](#) (page 2)).

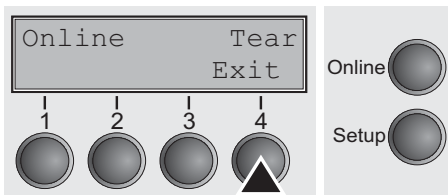
Make sure that the printer is in online mode. If necessary, press the **Online** key.

Press the **Tear** (4) key. The printer moves the perforation edge of the fanfold paper to the tear edge.



The display alternates between...

and...



After having torn off the paper, press the **Exit** key. The printer returns the paper to the printing position.

If a print job is active, the printer returns the paper automatically to the printing position.

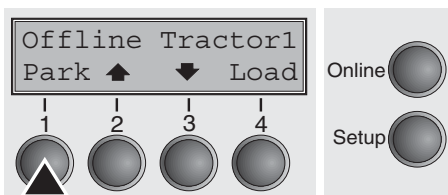


Make sure you tear the paper off straight, otherwise a paper jam may occur.

Removing paper



Never use force to remove the paper from the printer. Otherwise the mechanical components may be damaged.



Make sure that the printer is in offline mode; press the **Online** key, if necessary.

Press the **Park** (1) key. If fanfold paper is loaded in the printer, it is fed to the tear position. The text **Tear paper off** appears in the display.

Now remove the paper from the tractor. Then press any key. If a single sheet is loaded in the printer, it is ejected.

7 Settings

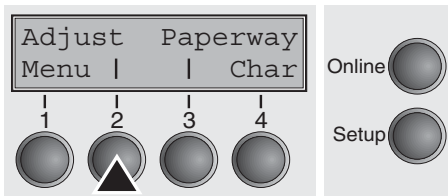
This section describes how to set the print head gap, the tear position and the first printing line.

Setting the print head gap

The printer features automatic print head gap adjustment to the thickness of the paper used. In setup mode, you can enter a correction value to modify the head gap determined automatically. This correction is useful for modifying the appearance of the type face.

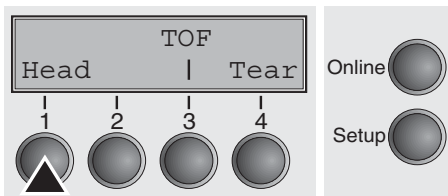


The AGA (automatic gap adjustment) function must be set to On. For more detailed information, refer to the section [Automatic gap adjustment \(AGA\) \(page 85\)](#).

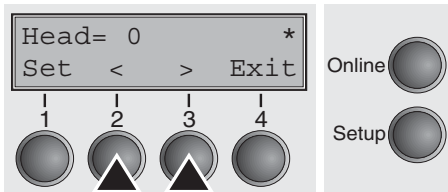


Press the **Setup** key. The printer changes to setup mode.

Press the **Adjust (2)** key.



Press the **Head (1)** key.



Use the **< (2)** or **> (3)** key to set the range within which the automatic gap adjustment is to be corrected. You can select values in the range from -10 to +10.

Confirm the input by pressing the **Set (1)** key.

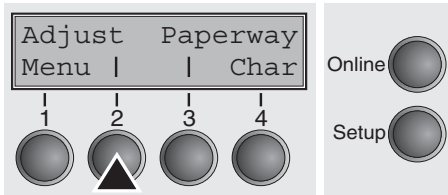
Press the **Setup** key. The printer returns to the initial status.



Negative values decrease the print head gap, positive values increase it. Changing the automatically determined value may have a strong effect on the printing quality.

The setting made will be retained after switching off the printer.

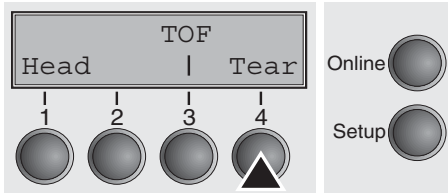
Setting the tear position



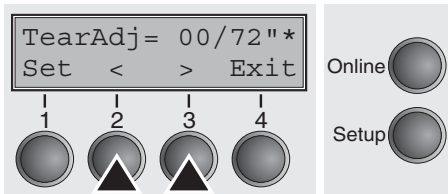
If the tear position of the paper is not aligned with the tear edge of the printer, you can adjust it. Inserted paper needs to be torn off if necessary and retracted to park position.

Press the **Setup** key. The printer changes to setup mode.

Press the **Adjust (2)** key.



Press the **Tear (4)** key.



The tear edge is located at the front side of the paper output opening (see [Printer at a glance](#) (page 2)).

Press the < (2) or > (3) key to move the perforation to the desired position. Confirm the input by pressing the **Set (1)** key. Confirm the input again by pressing the **Setup** key. The printer is reset to the initial status.



The correction made – a maximum of approx. 1" (2.5 cm) in each direction – will be retained after switching the printer off. It can be set separately for each paper path.

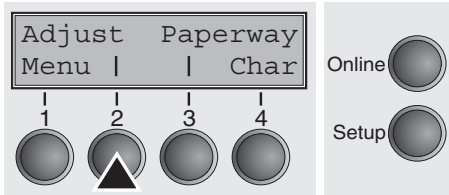
Make sure that the set form length corresponds to the actual length of the forms you are using.

Setting the first printing line (TOF)

You can use the TOF function for setting the position of the first printing line for each paper source and each menu individually.

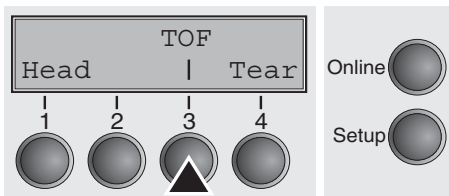


Before using the TOF function (if fanfold paper is used), you should first set the tear position; see [Setting the tear position \(page 39\)](#).

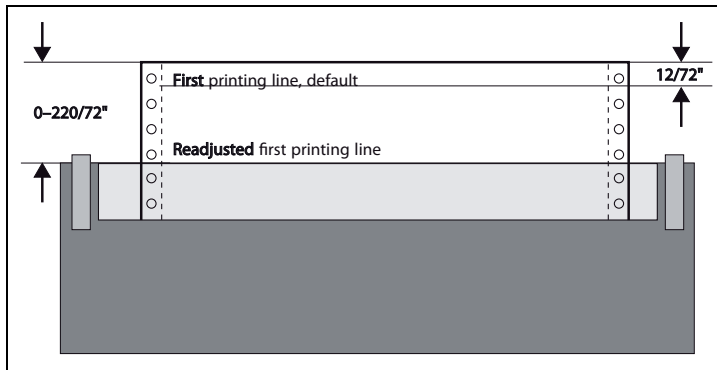


Press the **Setup** key. The printer changes to setup mode.

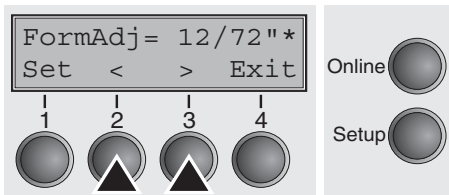
Press the **Adjust (2)** key.



Press the **TOF (3)** key.



The paper is fed to the position where the bottom edge of the first printing line is aligned with the tear edge of the printer. The factory setting for the first printing position (TOF) is 12/72" (4,23 mm). This is equivalent to the second line from the top.



Press the **< (2)** or **> (3)** key to move the first printing line to the desired position. You can set values from 0 to 220/72" for fanfold paper or for single sheets.

Confirm the input by pressing the **Set (1)** key. Press the **Setup** key. The printer returns to the initial status.



The selection made will be retained after switching off the printer.

8 The Menu

Programming via the control panel

Apart from being able to control your printer via the applications software you use, you can also program the printer directly. There are two programming options you can use:

- ▶ Programming via the control panel.
- ▶ Programming via the interface using Escape sequences or control codes.



Settings made by escape sequences have priority over settings made in menu mode; therefore they will override these. Informations on Escape sequences can be found in Appendix C, [Emulations](#) (page 125).

Programming via the interface gives you far greater freedom for designing your printed pages, however, it is also a more sophisticated method and requires some experience with programming languages and printer control systems.

All programming via the interface is lost after you turn off the printer, whereas the programming carried out using the control panel, is saved and stored even after you turn off the printer.

Enabling access to menu mode

The menu can be locked by default to protect it from accidental or unauthorised access.

Proceed as follows to release this lock temporarily.

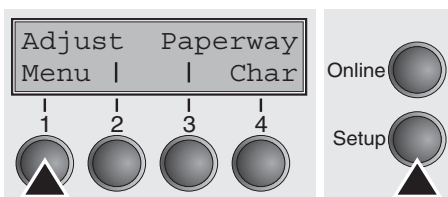
- 1 Switch off the printer for approx. 5 seconds.
- 2 Switch the printer on again keeping the **Setup** key pressed.



For information on how to enable access permanently and about the available settings, refer to the section [Menu lock \(MenLock\)](#) (page 62).

Calling up the menu

You can access the menu in the following way:



Press the **Setup** key. The printer switches to Setup mode. (The Setup mode can be selected both in the Online and Offline mode.)

To access the printer menu, press the key directly underneath the word **Menu** (1).

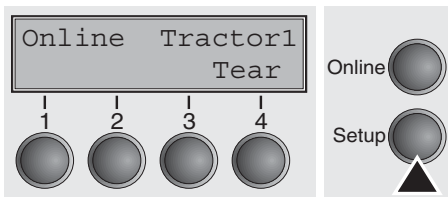
Menu configurations

Every printer is shipped with factory default settings. Basic settings such as emulation, character size, form length etc., which many applications make use of, are set. At the end of this chapter you will find a menu printout ([page 75](#)) which shows you the printer's default settings.

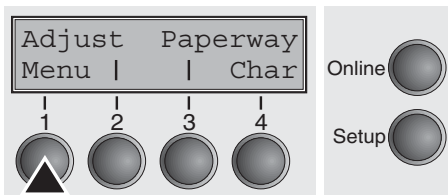
Your printer allows you to set and use five independent menu configurations. If one of your applications for example requires an IBM printer while another program works better with an EPSON printer, you can set an IBM emulation configuration with the desired settings, and set the second configuration as an EPSON emulation.

The active menu is always the one you used last. When you switch on the printer for the very first time, menu no. 1 is loaded. Menu no. 1 only remains active until you load another menu. The last active menu is stored even after the printer is switched off and is reloaded automatically when the printer is switched on again.

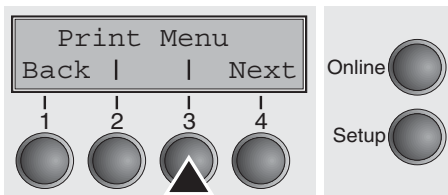
For example, to change from menu no. 1 to menu no. 3:



Press **Setup** key.

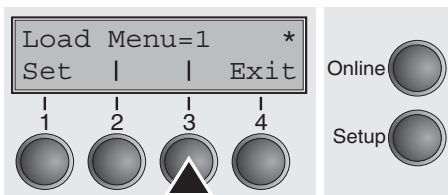


Press **Menu (1)** key.



Press **Menu (3)** key.

Now the following message appears in the LC display:



Now press the < (2) or > (3) key repeatedly until **Load Menu=3** appears.

Then select menu no. 3 as the current setting using the **Set** key (1).

The currently active setting is marked with an asterisk (*).



If changing menus it is possible that the printer initializes due to different emulation settings.

Menu handling

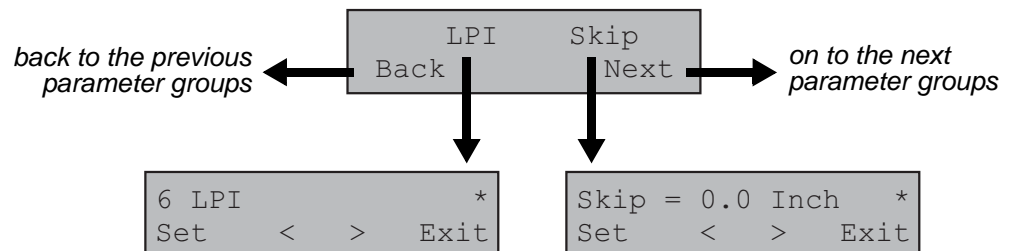
You can navigate in the current menu using the four function and selection keys arranged below the LC display field. Each function and parameter displayed in the LCD is executed or selected by the corresponding key below, respectively. Usually two parameter groups are combined at one level. In the following example, these are the **LPI** and **Skip** parameter groups.

If you do not wish to change one of the two parameters you can either press the **Next** key (to access the two following parameter groups in the menu), or you can press the **Back** key (to access the two previous parameter groups in the menu).

If you want to change a setting, (e.g. the line density), then press the **LPI** key (LPI = lines per inch) to access the actual parameter level.

The currently valid setting is marked by a * (in the example below the current setting is 6 lpi). With the < and > keys you can view the other parameters available for this setting.

Example:



Save settings

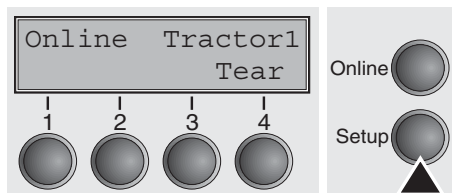
Once the desired parameter is displayed on the LC display, you can save it by pressing the **Set** key. The parameter is then set and the printer automatically displays the parameter groups again. With the **Exit** key you can leave the sublevel without saving your changes.

Selecting the LC display language

This section describes how to make settings in the menu, using the selection of the national language as an example.

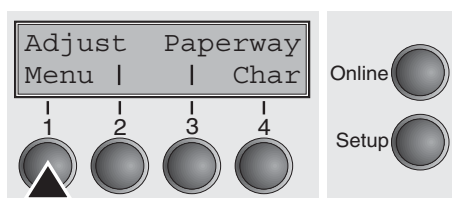
In this user guide all LC display messages are shown in English language. Your printer offers also the possibility to show the display messages in German, French, Italian, Spanish or Turkish language. This example shows how to change from the English language to the German language. The same procedure applies to the other languages (French, Italian, Spanish and Turkish).

Select the **Setup** mode by pressing the **Setup** key.

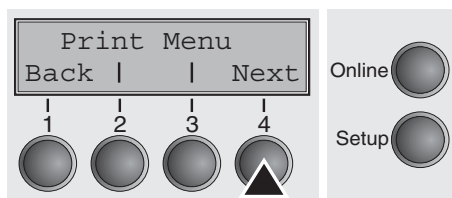


Press the **Menu** key (1).

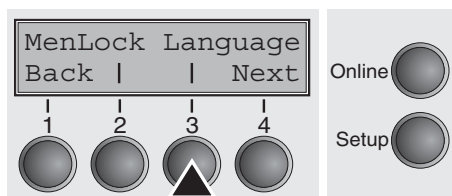
i **Setup mode and Menu mode may be disabled. Hold down the Setup key while switching on the printer to enable menu mode. If you want to enable access to this mode permanently, you need to change the appropriate setting in the menu; see [Menu lock \(MenLock\) \(page 62\)](#).**



Press the **Next** key (4) several times until the display indicates **Language**.

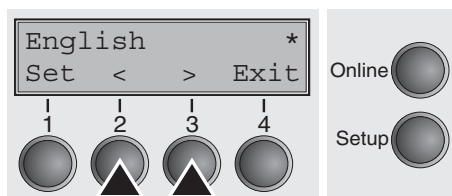


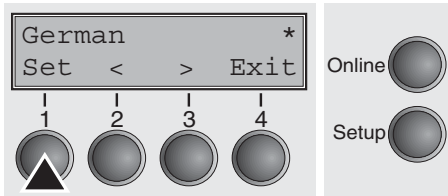
Press the **Language** key (3).



The display now changes to Parameter mode and indicates **English** in the top line.

The lower line displays **Set** and **Exit**. The two arrows < (2) and > (3) represent the symbols for parameter selection ("<" indicates descending and ">" ascending). Press the < (2) or > (3) key until the desired language is displayed, in our example **German**.

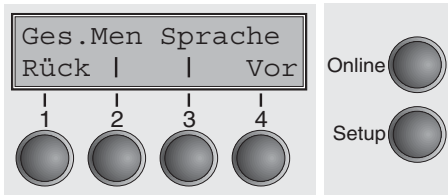




Save your selection by pressing the **Set** key (1). An acoustic signal verifies this action.

You can exit Parameter mode without saving a setting by pressing the **Exit** key (4), the old setting is retained.

After saving your setting (**Set**), the display in our example indicates the following text:



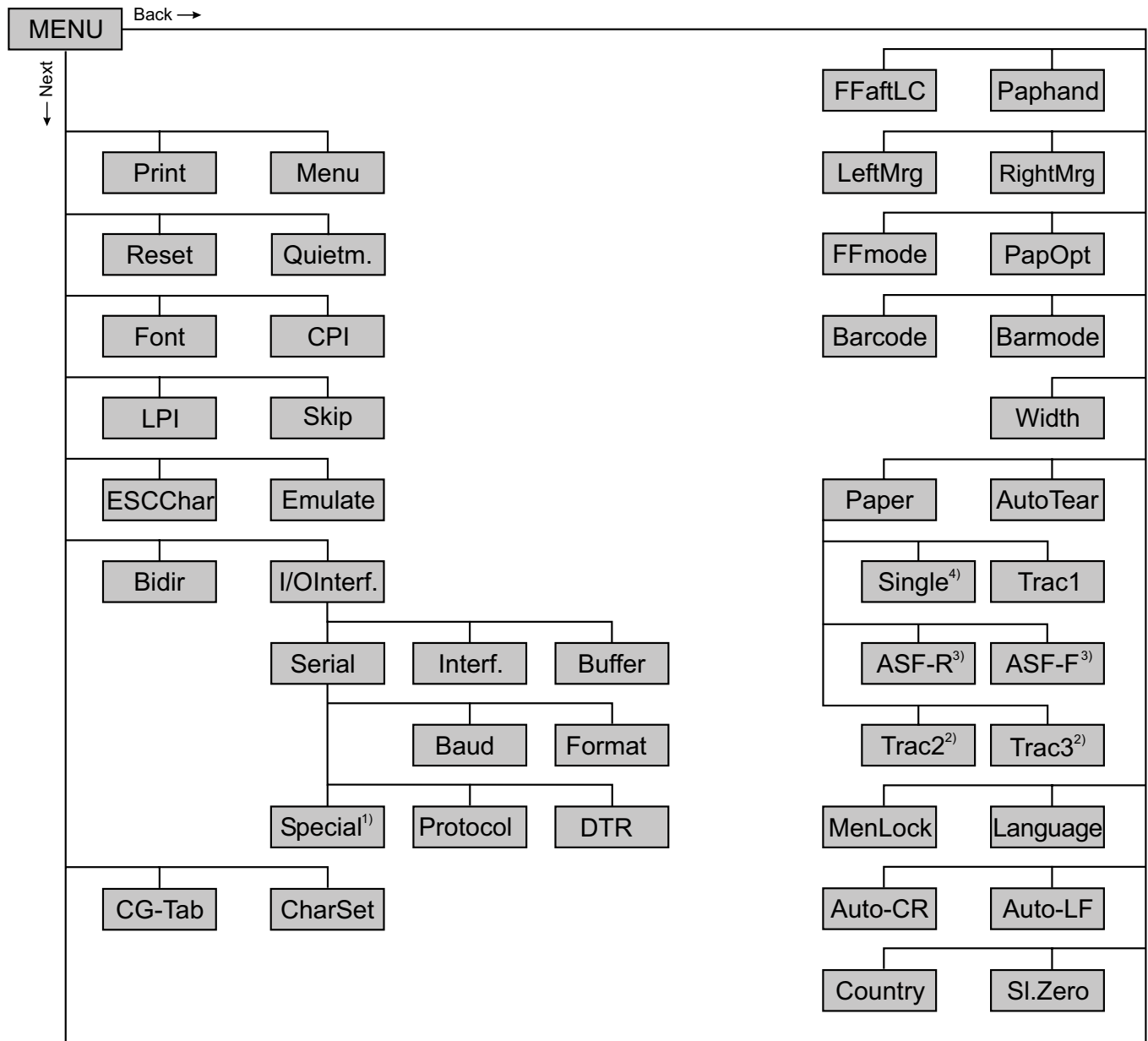
This setting is retained even after switching off your printer.

Terminating Setup mode

Press either the **Setup** key to change into Offline mode or the **Online** key to change to Online mode.

Menu structure

The menu structure of your printer may be slightly different from the example shown here, depending on the printer software.



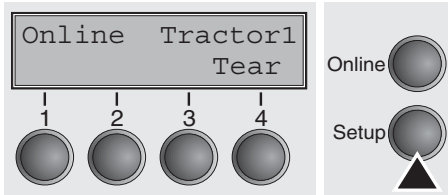
1) only if ENQ/STX, ETX/ACK or ACK/NAK protocol is selected

2) only with optional tractor

3) only with optional ASF (automatic single sheet feeder)

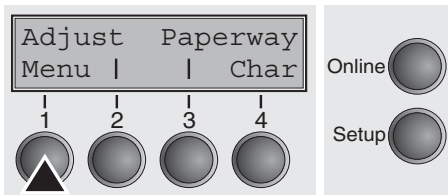
4) not installed on some models

Menu parameters



The following section introduces and explains all the possible menu settings.

Press **Setup** key.

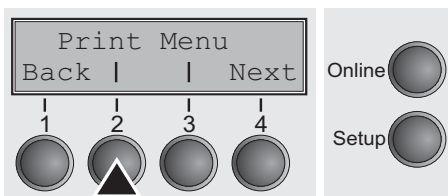


Press **Menu (1)** key.

i **Setup mode and Menu mode may be disabled. Hold down the Setup key while switching on the printer to enable menu mode. If you want to enable access to this mode permanently, you need to change the appropriate setting in the menu; see [Menu lock \(MenLock\) \(page 62\)](#).**

Printing out menu configurations (Print)

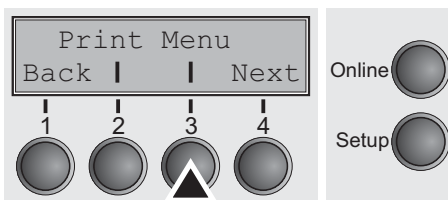
Prints the menu configurations using the active paper feed; see [Menu settings \(example\) \(page 75\)](#).



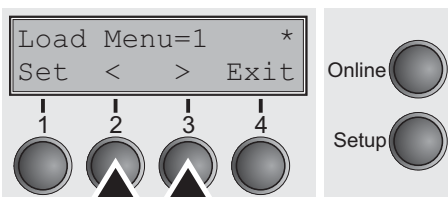
Press **Print (2)** key, to start the printout.

Loading menu configurations (Menu)

A menu is loaded, you can choose between five menus; see [Menu handling \(page 43\)](#).



Press **Menu (3)** key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Load Menu=1/2/3/4/5**

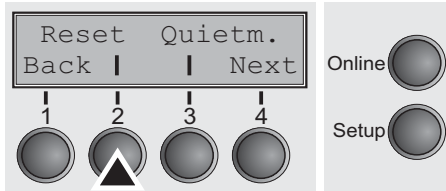
Default Setting: **Load Menu=1**

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

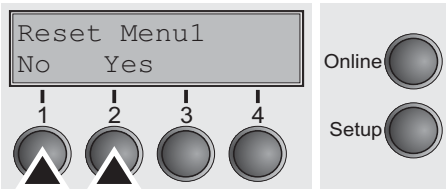
Reset to default values (Reset)

The current menu returns to the default values (factory settings).

Press **Reset** (2) key.



Press the **No** (1) or **Yes** (2) key to select the desired setting.



All manually altered settings in the current menu are lost when it is reset to the default settings.

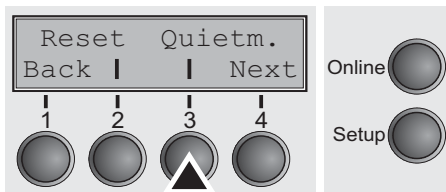
We therefore recommend that you print out the menu first.

Confirm the setting by pressing the **Set** key (1).

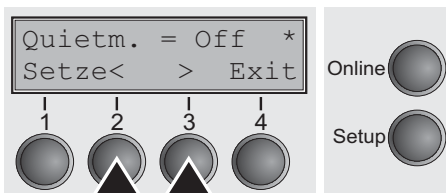
Quietmode (Quietm.)

Switches between normal and quiet mode printing. For all printing modes, the print-out is made with the bidirectional method in quiet mode printing. In the first step the first row of pins is activated, during the second step the second row is used.

Press **Quietm.** (3) key.



Use the < (2) or > (3) key to select the desired setting.



Setting Options: **Quietm. = On/Off**

Default Setting: **Off**

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

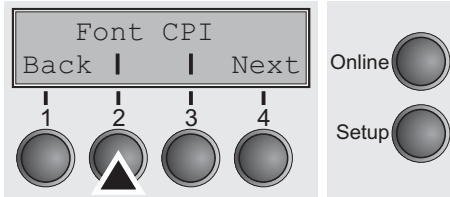


Please note that the activation of Quietmode decreases the throughput.

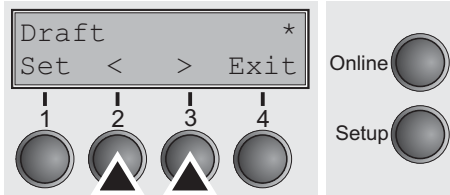
Selecting font (Font)

This parameter selects the character style and its quality permanently.

Press **Font** (2) key.



Use the < (2) or > (3) key to select the desired setting.



Setting Options: see table below

Default Setting: **Draft**

Character styles marked with an **I** (for example **Courier I LQ**) are IBM compatible fonts.

Fonts with the identifier **PS** in their name are proportional fonts which use only the space actually required for the character width.

Example:

Roman NLQ: **W i l l i i**

Roman PS NLQ: **W i l l i i**

The abbreviation NLQ stands for Near Letter print quality, which means that the printer works faster but with a slightly lower resolution. LQ stands for Letter Quality, which means that the resolution is higher at the expense of a slightly slower speed.

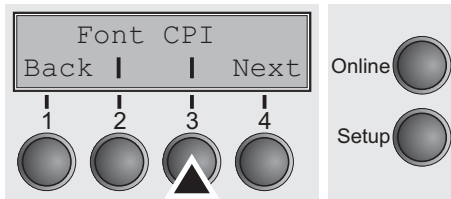
Available fonts		
HIGH SPEED	PRESTIGE LQ	COURIER I LQ
DRAFT*	SCRIPT NLQ	COUR I PS NLQ
DRAFT COPY	SCRIPT LQ	COUR I PS LQ
ROMAN NLQ	COURIER NLQ	LQ ORATOR
ROMAN LQ	COURIER LQ	NLQ ORATOR
ROMAN PS NLQ	OCRB NLQ	LQ GOTHIC NLQ
ROMAN PS LQ	OCRB LQ	GOTHIC LQ
SANS SERIF NLQ	OCRA NLQ	ROMAN/T NLQ*
SANS SERIF LQ	OCRA LQ	ROMAN/T LQ *
S SERIF PS NLQ	COURIER I NLQ	SANS SERIF/H NLQ*
S SERIF PS LQ	PRESTIGE NLQ	SANS SERIF/H LQ*

* scalable fonts (LQ2170 emulation)

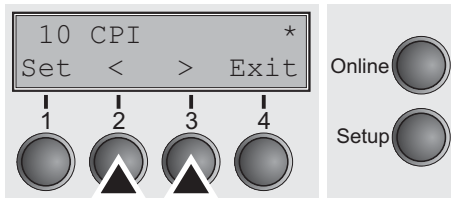
Confirm the setting by pressing the **Set** key (1).

Setting character density (CPI)

Sets the characters per inch (character pitch). The higher the parameter the smaller the character spacing.



Press **CPI (3)** key.



Use the < (2) or > (3) key to select the desired setting.

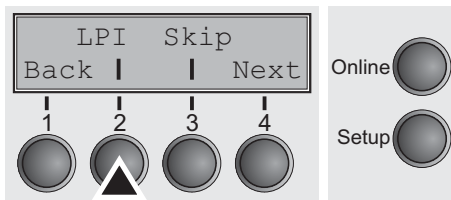
Setting Options: **5 CPI, 6 CPI, 7.5 CPI, 8.6 CPI, 10 CPI, 12 CPI, 15 CPI, 17.1 CPI, 20 CPI**

Default Setting: **10 CPI**

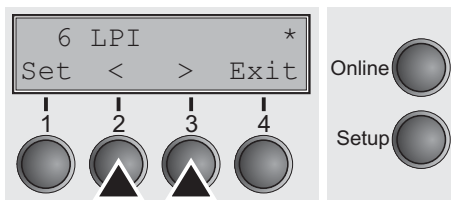
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Setting line spacing (LPI)

Sets the lines per inch (line density). The higher the parameter the smaller the line spacing (random LPI can be selected via the ESC sequences).



Press **LPI (2)** key.



Use the < (2) or > (3) key to select the desired setting.

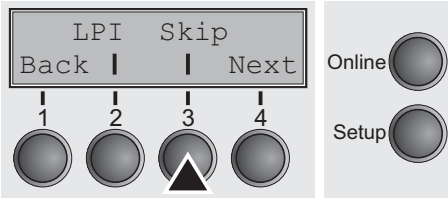
Setting Options: **2 LPI, 3 LPI, 4 LPI, 6 LPI*, 8 LPI, 12 LPI**

Default Setting: **6 LPI**

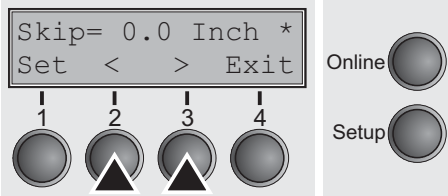
Confirm the setting by pressing the **Set** key (1).

Skipping perforation (Skip)

Skips the perforation; 7 different values (in inches) can be defined.



Press **Skip** (3) key.



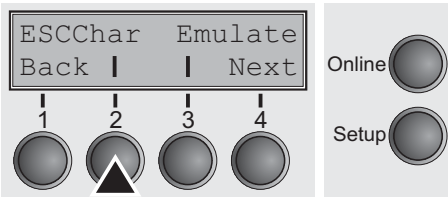
Use the < (2) or > (3) key to select the desired setting.

Setting Options: **0.0 to 3.5 Inch in steps of 0.5 inch**
Default Setting: **0.0 Inch**

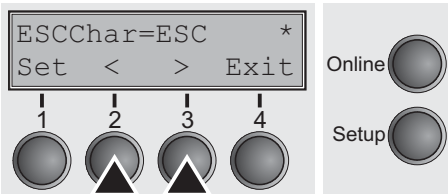
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Selecting start signal for escape sequence (ESCChar)

Selects the start signal for control sequences. Setting ESC: Only character Escape can be used. Setting ESC+\$\$: Character Escape or alternatively two \$ characters (\$\$) can be used. For more information see the section [The \\$\\$ procedure \(page 126\)](#).



Press **ESCChar** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **ESC/ESC+\$\$**
Default Setting: **ESC**

Confirm the setting by pressing the **Set** key (1).

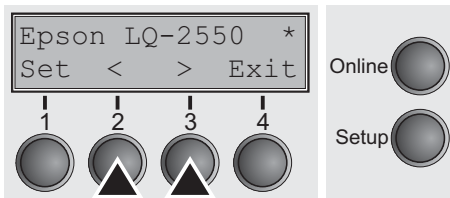
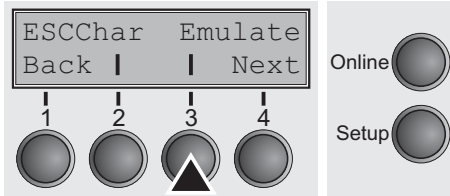
Selecting emulation (Emulate)



Selects the emulation. When a printer understands the control set written for another printer type, it is said to emulate the other printer.

MTPL is also active in IBM or Epson emulation mode.

Press **Emulate** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Epson LQ-2550, Epson LQ-2170, IBM Propr. XL24, IBM ProXL24+AGM, MTPL**

Default Setting: **Epson LQ-2550**

If the printer is switched to online mode after changing the emulation, it performs a reset.

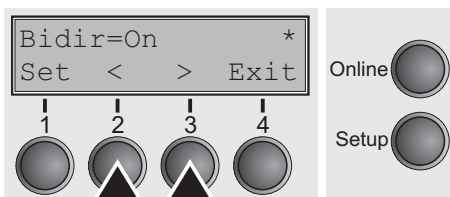
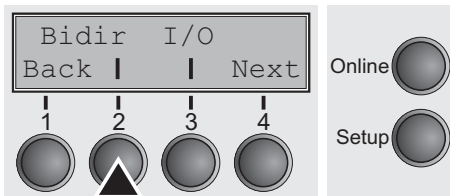
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Bidirectional printing (Bidir)

Setting **On**: Printer prints in both directions (bidirectional).

Setting **Off**: Printer prints only in one direction (from left to right).

Press **Bidir** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **On/Off**

Default Setting: **On**

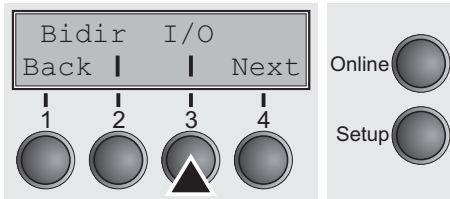
Confirm the setting by pressing the **Set** key (1).



The setting On will not be overwritten by ESC sequences.

Settings for interfaces (I/O)

In this parameter group, you can choose various settings for the printer interfaces. See also [Interfaces \(page 145\)](#).

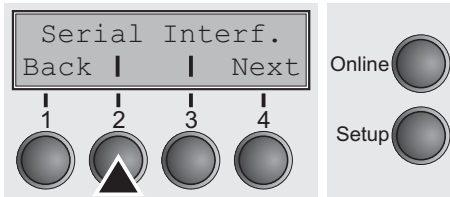


Press **I/O** (3) key.

Serial interface (Serial)

This parameter group only is valid, if an optional serial interface module is installed.

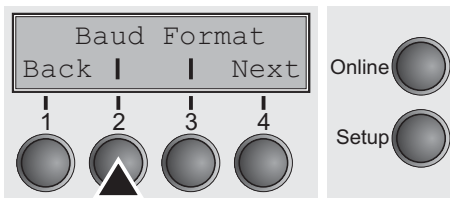
STOP To ensure the proper functioning of serial data transfers, the serial settings of the printer and computer (host) must coincide.



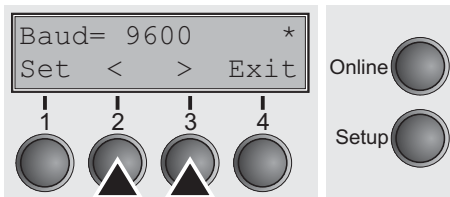
Press **Serial** (2) key.

Data transmission rate (Baud)

Selects the data transmission rate (baud rate) (baud = bit per second).



Press **Baud** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **600, 1200, 2400, 4800, 9600, 19200**

Default Setting: **9600**

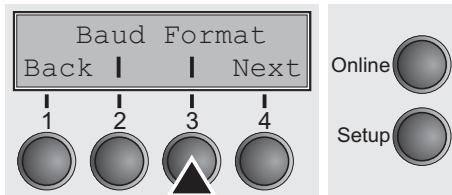
i Printer and computer must have the same baud rate.

Confirm the setting by pressing the **Set** key (1).

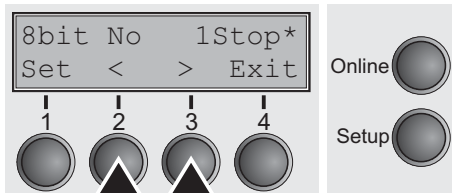
Data format (Format)

This parameter serves to define the number of data bits, the parity check for received data bytes and the number of stop bits per data byte.

Press **Format** (3) key.



Use the < (2) or > (3) key to select the desired setting.



Setting Options: see table below
Default Setting: **8 Bit No 1 Stop**

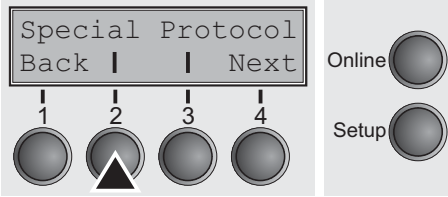
1 number of data bits	2 parity test	3 number of stop bits
7 Bit	No	2 Stop
7 Bit	Even	1 Stop
7 Bit	Odd	1 Stop
7 Bit	Even	2 Stop
7 Bit	Odd	2 Stop
7 Bit	Mark	1 Stop
7 Bit	Spc	1 Stop
7 Bit	Mark	2 Stop
7 Bit	Spc	2 Stop
8 Bit	No	1 Stop
8 Bit	No	2 Stop
8 Bit	Even	1 Stop
8 Bit	Odd	1 Stop
8 Bit	Mark	1 Stop
8 Bit	Spc	1 Stop

- 1 Sets the number of data bits: You can select 7 or 8.
- 2 The parity test for received data bytes can be selected. **NO** causes transmission in both directions without parity bit. If **EVEN** or **ODD** is selected, the bytes are checked if they have even or odd parity. The selection of **MARK** or **SPACE** causes a data byte transmission with parity bit, but without checking the received data. Transmission data with parity bit is always marked with **1 (MARK)** or **0 (SPACE)**.
- 3 Selects one or two stop bits per data byte.

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Further Settings (Special)

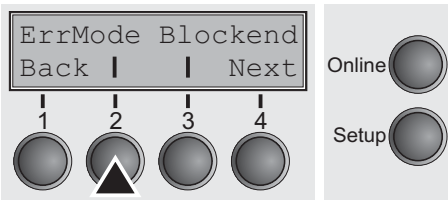
This parameter subgroup only appears if the serial port is used and the ENQ/STX, ETX/ACK or ACK/NAK protocol is activated.



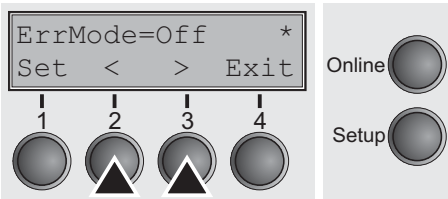
Press **Special** (2) key.

Error handling (ErrMode)

On replaces the incorrect character with ?, **Off** deletes the entire block.



Press **ErrMode** (2) key.



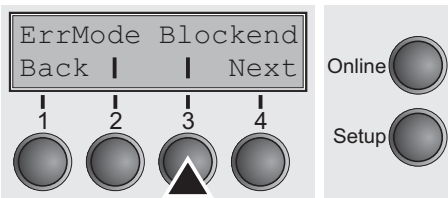
Use the < (2) or > (3) key to select the desired setting.

Setting Options: **On/Off**
Default Setting: **Off**

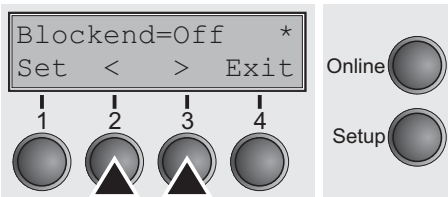
Confirm the setting by pressing the **Set** key (1).

Block end character (Blockend)

End-of-block character definition; **On**: LF, FF, CR, VT, ETX, DEL; **Off**: ETX, DEL.



Press **Blockend** (3) key.



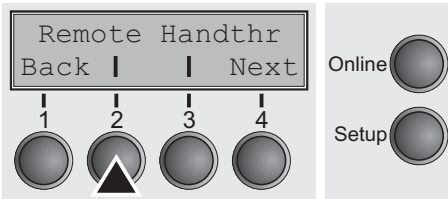
Use the < (2) or > (3) key to select the desired setting.

Setting Options: **On/Off**
Default Setting: **Off**

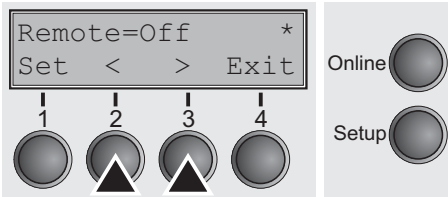
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Signal feedback (Remote)

Signal feedback; **On** = RDY/BUSY available, **Off** = No RDY/BUSY control.



Press **Remote** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **On/Off**

Default Setting: **Off**

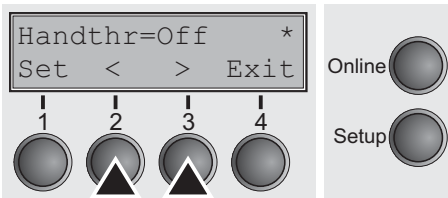
Confirm the setting by pressing the **Set** key (1).

Transparence (Handthr)

Affects the transparence of control sequences and block acknowledgement, depending on the selected protocol.



Press **Handthr** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **On/Off**

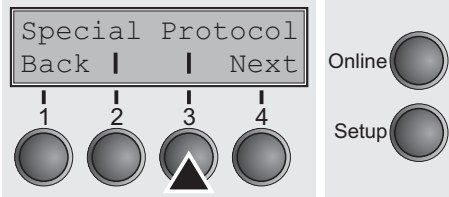
Default Setting: **Off**

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to leave the parameter subgroup **Special**.

Protocol (Protocol)

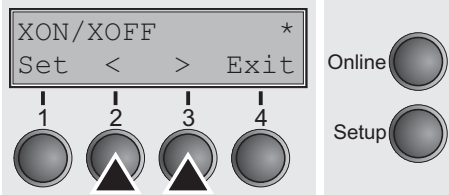
This parameter serves to select the type of protocol, i.e. a certain set of rules and procedures for ensuring error-free data exchanges between computer and printer.

Press **Protocol** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **XON/XOFF, Robust XON/XOFF, ENQ/STX, ETX/ACK, ACK/NAK**
 Default Setting: **XON/XOFF**

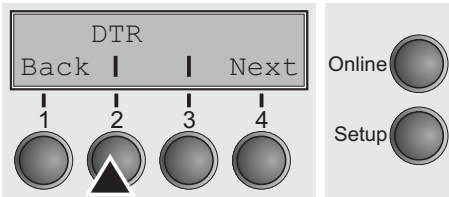


Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Signal Processing (DTR)

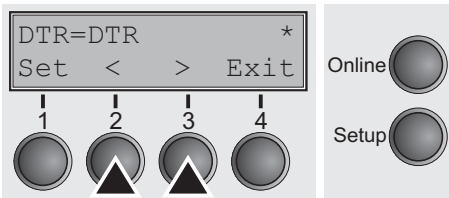
Defines the conductor to which the DTR signal is connected (DTR = **Data Terminal Ready**).

Press **DTR** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **DTR/READY**
 Default Setting: **DTR**



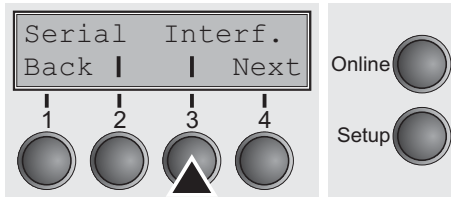
DTR=DTR: DTR signal is assigned to DTR line.
DTR=READY: READY signal is assigned to DTR line.

DTR = Pin 20 on 25-pin female RS232 connector.
 DTR = Pin 4 on 9-pin female RS232 connector.

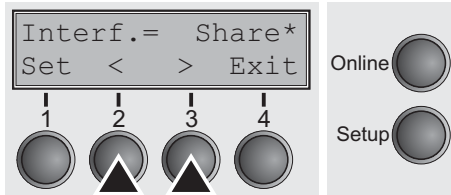
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Selecting interface (Interf.)

Selects the interface. Printer is configured either for parallel, Ethernet or optional serial connection or in automatic change for the parallel or the optional serial interface (**Shared**).



Press **Interf.** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Share, Parallel, Serial**

Default Setting: **Share**

Interf.=Share: Printer switches automatically between parallel and optional serial interface.

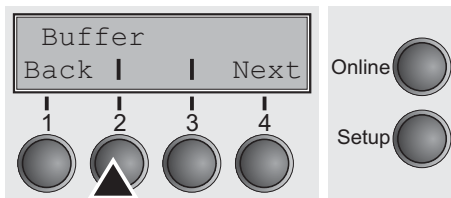
Interf.=Parallel: Printer using parallel interface.

Interf.=Serial: Printer using serial interface.

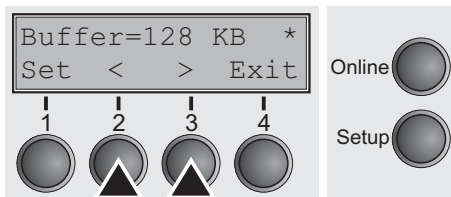
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Interface buffer (Buffer)

Selects the size of the interface buffer.



Press **Buffer** (2) key.



Use the < (2) or > (3) key to select the desired setting.

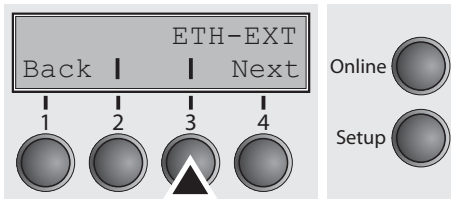
Setting Options: **0 – 128 KB**

Default Setting: **128 KB**

i If buffer = 0 KB and the serial interface is selected, or if the setting “Share” is active, the actual buffer size will be 512 bytes.

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to leave the parameter group **Interf.**. Press the **Next** key (4) again to access the next group of parameters.

Ethernet interface (ETH-EXT) option

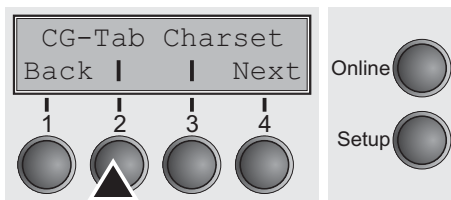


In this parameter group you can choose settings for the optional external Pocket Ethernet interface.

Press **ETH-EXT** (3) key.

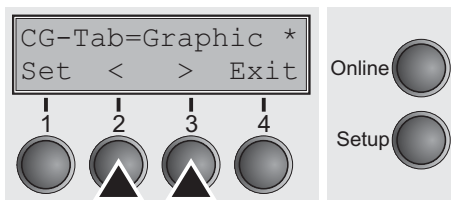
i For more informations refer to the Installation CD-ROM of the interface.

Selecting character set (CG-Tab)



Only available for Epson LQ 2550/LQ2170 emulation. Either the Epson character set Italics or the IBM graphics character set or a DLL (download) character set, as defined before, can be activated in the code range from hex. A0 to hex. FE.

Press **CG-Tab** (2) key.



Use the < (2) or > (3) key to select the desired setting.

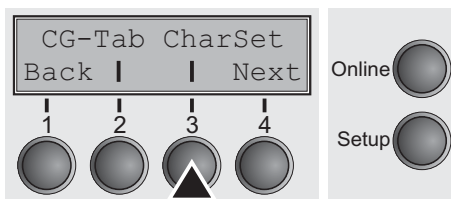
Setting Options: **Graphic, DLL, Italic**

Default Setting: **Graphic**

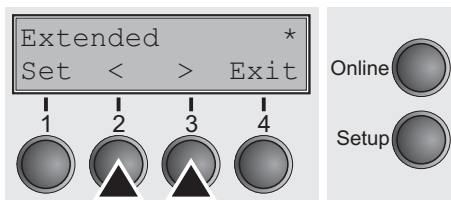
Confirm the setting by pressing the **Set** key (1).

IBM character set (CharSet)

Selects the IBM standard characters or the extended IBM characters.



Press **CharSet** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Standard/Extended**

Default Setting: **Extended**

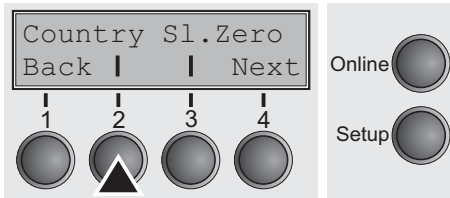
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

National character set (Country)

Selects the national character set. These character sets can be used according to the selected emulation.

The character sets are not necessarily available for all fonts; see also [Available character sets and fonts \(page 122\)](#).

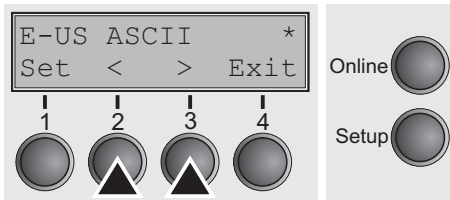
Press **Country** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **See [Available character sets and fonts \(page 122\)](#)**

Default Setting: **E-US ASCII**

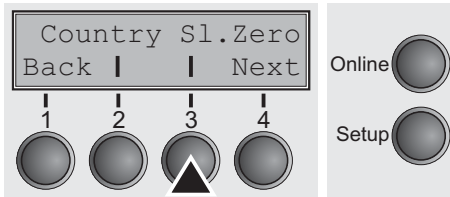


Confirm the setting by pressing the **Set** key (1).

Slashed zero (Sl.Zero)

Selects if normal zero (0) or the slashed zero (Ø) is printed.

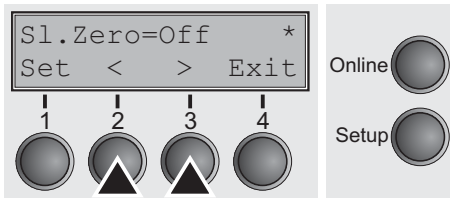
Press **Sl.Zero** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Off/On**

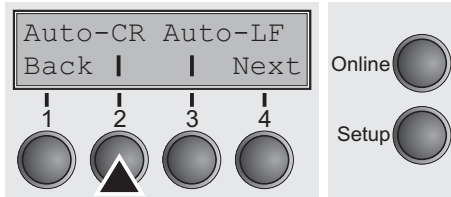
Default Setting: **Off**



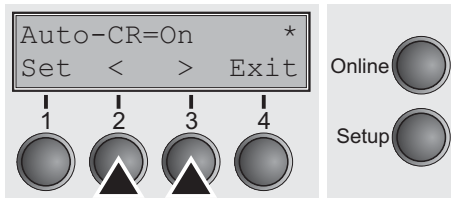
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Automatic carriage return (Auto-CR)

Switches the automatic carriage return on or off after receiving the signal LF (line feed).



Press **Auto-CR** (2) key.



Use the < (2) or > (3) key to select the desired setting.

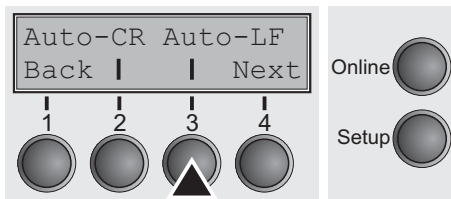
Setting Options: **Off/On**

Default Setting: **On**

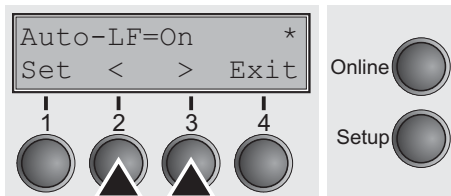
Confirm the setting by pressing the **Set** key (1).

Automatic line feed (Auto-LF)

Switches the automatic line feed (LF) on or off after receiving the signal CR (carriage return).



Press **Auto-LF** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Off/On**

Default Setting: **Off**

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

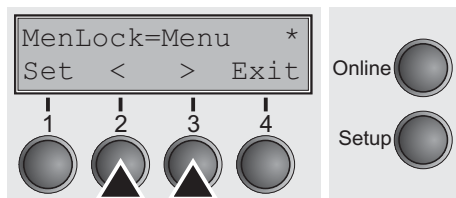
Menu lock (MenLock)

With **MenLock = Off**, all functions and settings are accessible without restriction in Online, Offline and Setup mode.

If **MenLock = Menu** is activated, all functions and settings are still accessible in Online and Offline mode, however, in Setup mode you can only access the parameter groups **Adjust** (setting the print head gap [Head], top of form [TOF] and tear position [Tear]), **Paperway** (setting the paper path), **Font** (setting the font) and the character spacing (CPI), while access to Menu mode (**Menu** key) is disabled. If you select **MenLock = All**, you can access the Online/Offline, Load/Park, Paper and Paper Feed (LineFeed/Form Feed, ▲/▼) functions in Online and Offline mode while Setup mode is disabled. In this case, the Setup menu can only be called up by holding the key **Setup** while switching on the printer.



Press **MenLock** (2) key.



Use the < (2) or > (3) key to select the desired setting.

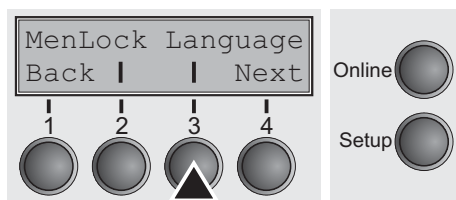
Setting Options: **Off, Menu, All**

Default Setting: **Menu**

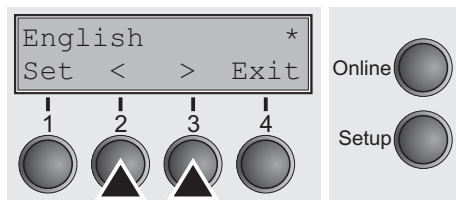
Confirm the setting by pressing the **Set** key (1).

Language (Language)

The menu can be shown in six languages on the LC display.



Press **Language** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **English, German, French, Italian, Spanish, Turkish**

Default Setting: **English**

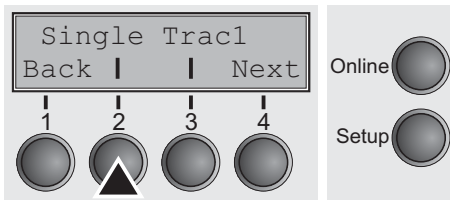
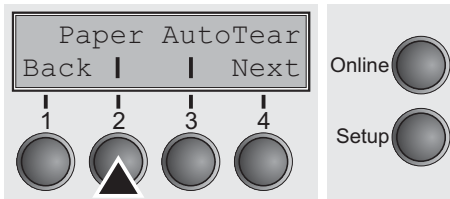
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Paper parameters (Paper)

Selects the paper parameters **Formlen** (form length), **FormAdj** (first printing position) and **Head** (printhead gap, only if **AGA=Off**) separately for each paper source in the current menu.

Non-installed and with the parameter **PapOpt** activated options cannot be selected.

Press **Paper (2)** key.



You can now choose between the following paper options:

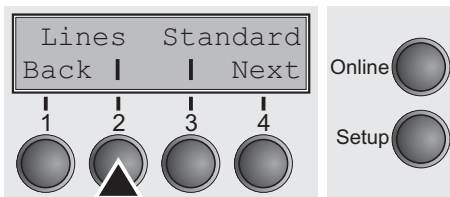
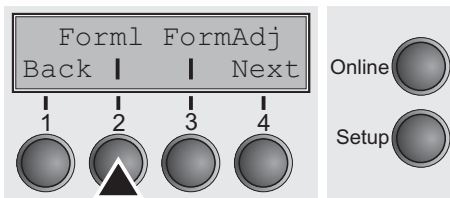
- ▶ Single
- ▶ Tractor 1
- ▶ ASF-F (Single sheet feeder front, option)
- ▶ ASF-R (Single sheet feeder rear, option)
- ▶ Tractor 2 (front, option)
- ▶ Tractor 3 (rear, option)

Select the desired paperway, in our example **Single (2)**. Press **Next (4)** key, to proceed to the installed optional paperways.

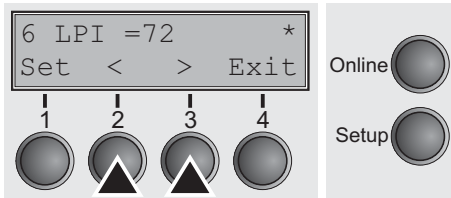
Form length (Forml)

You can define the form length in one of two ways: via the number of lines or via standard formats (e.g. DIN A4).

Press **Forml (2)** key.



If you wish to define the form length via a line format, press **Line (2)** key.



Use the < (2) or > (3) key to select the desired setting.

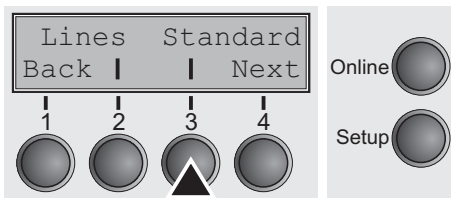
Setting Options: **6 bis 144**

Default Setting: **72**

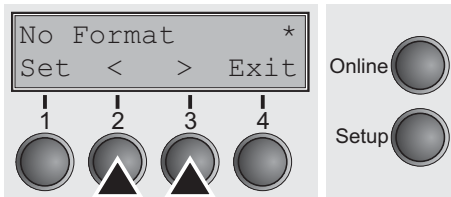
Sets the form length via line formats. Please note that the adjustment in **Lines** depends on the selected LPI. For example 8 LPI at a selected line number of 96 lines results in a formlength of 12 inches (96 lines/[8lines/inch]) = 12 inches). The selectable range is between 3 and 21 inches, i.e. for 2 LPI from 6 to 42 lines and for 12 LPI from 24 to 262 lines.

If the form length is set it will not be changed by changing the LPI later on.

Confirm the setting by pressing the **Set** key (1).



If you wish to define the form length via standard formats, press **Standard** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **DIN A3, DIN A4, DIN A5, DIN B5, DIN B6, Exective 10.5", Letter 11", Legal 14", No Format**

Default Setting: **No Format**

Selects the form length by standard formats. Using **Standard**, different paper formats can be selected directly, e.g. DIN A4, Legal, Letter.

The LC display indicates **No format** if a value is selected by the **Line** function or ESC sequences, which does not correspond to a standard format.

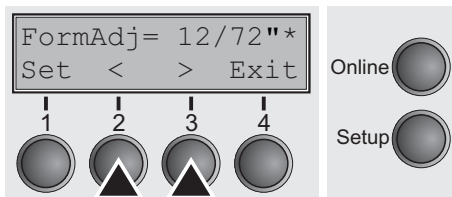
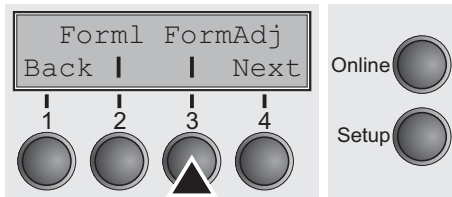
Confirm the setting by pressing the **Set** key (1).

First printing position (FormAdj)

Sets the first print position of a form in n/72 inch, separately adjustable for each paper path.

The settings made here reduce the height of the printable area.

Press **FormAdj** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **0/72" bis 220/72"**

Default Setting: **12/72"**

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

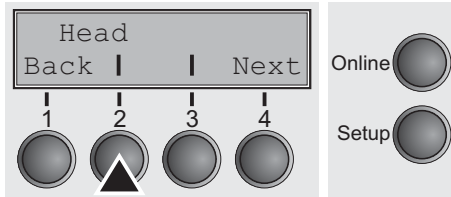


An alternative notation for FormAdj is TOF (Top Of Form).

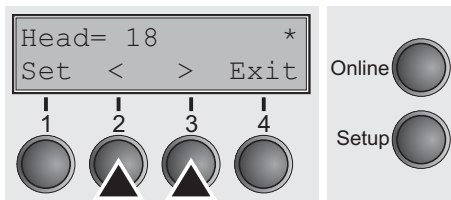
Printhead gap manually (Head)

This parameter is ignored if the automatic gap adjustment (AGA) is activated; see [Automatic gap adjustment \(AGA\) \(page 85\)](#).

Adjusts the printhead gap manually; separately adjustable for each paper path.



Press **Head** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **0 to 100**

Default Setting: **18**

Select the **Head = 18** parameter for normal paper. Use a greater distance for thicker paper.

Recommended values for the print head gap:

thin					thick
18	26	34	42	50	58



If you change this value, this may affect the print quality. If the printout shows signs of smudging, we recommend that you increase the print head gap.

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

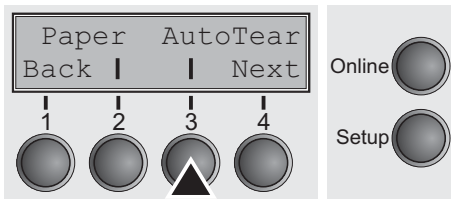
View and tear position (AutoTear)

The auto tear function or the auto view function can be selected as desired.

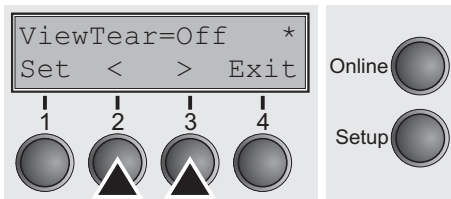
When auto view is switched on, the last printed text is visible. As soon as data is received the paper moves to the “normal” print position. After printing the printer waits for the given interval to bring the paper once more to the auto view position.

The paper is in the tear off position when auto tear is switched on, the perforation of the paper is positioned at the tear off edge of the printer. If data is received, the paper returns to the normal print position. After printing, the printer waits for the given interval to bring the paper once more to the tear off position. If the tear off edge does not align with the perforation of the paper then this can be corrected.

Press **AutoTear** (3) key.



Use the < (2) or > (3) key to select the desired setting.



Setting Options: **ViewTear=Off**,
View=1s/3s/6s
Tear=1s/3s/6s
Tear at TOF

Default Setting: **ViewTear=Off**

If the parameter **View Tear = Off** is set, the paper can still be brought into a View or Tear position via a specific sequence (see [page 133](#)) or the **Tear** key.

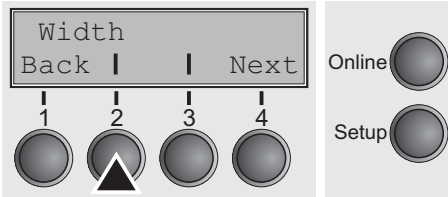
If the parameter **Tear at TOF** is set, the paper perforation is automatically positioned at the tear off edge as long as the current print position TOF is activated. Feeding takes place after approx. 1.5 seconds (hold time). If any data is received during this period of time the paper is not positioned at the tear off edge. With this function it must be noted that the printer may only be switched off when the print position is at TOF.

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Line length (Width)

Selects the line length in inches. With the setting of **8 Inch**, the printer operates like a printer with a width of only 8 inches.

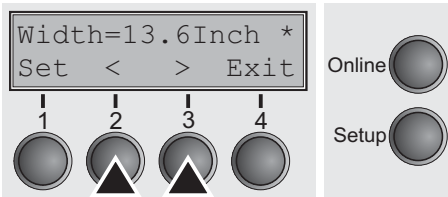
Press **Width** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **8 Inch, 13.2 Inch, 13.6 Inch**

Default Setting: **8 Inch** (narrow printer)
13.6 Inch (wide printer)

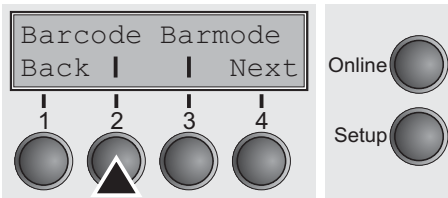


Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Barcode (Barcode)

With this function selected it is possible to print different barcodes and LCP (Large Character Printing).

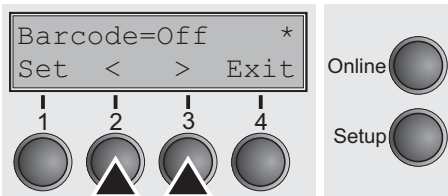
Press **Barcode** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **On/Off**

Default Setting: **Off**

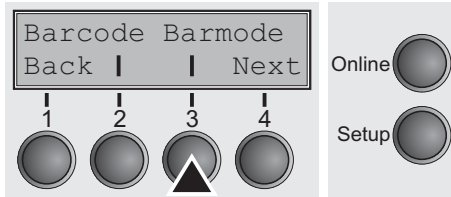


The definition and activation is performed by special sequences through the interface. Since this selection is possible for all emulations it must be noted that conflicts in sequence conformity with the selected emulation may occur. For this reason the barcode function can also be switched on and off by MTPL sequences. (The possible barcodes, LCP characters and the operation of these functions are described in the [Barcode Programmer's Application Manual](#)).

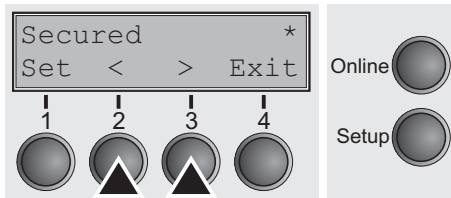
Confirm the setting by pressing the **Set** key (1).

Normal characters and barcode (Barmode)

Allows printing of normal characters on the left and right of the barcode.



Press **Barmode** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Secured/Unsecured**

Default Setting: **Unsecured**

In **secured** mode, the space which the barcode characters require is “protected”. In each line, other barcode or normal characters can also be printed. These additional characters are printed in the line currently being printed and in the subsequent lines, without affecting the barcode which is already being printed. Consequently, normal characters can be printed in every line to the right or left of the barcode.

In **unsecured** mode, the required paper transport for printing barcodes and LCP is carried out automatically, it is not possible to print more than one line of normal characters in the barcode line. All characters in the mixed line are printed such that their bottom edges are in a straight line. This function may be switched on and off by sequences.



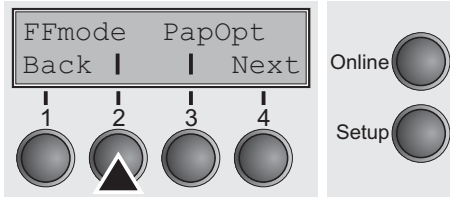
This function can be activated/deactivated by sequences.

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

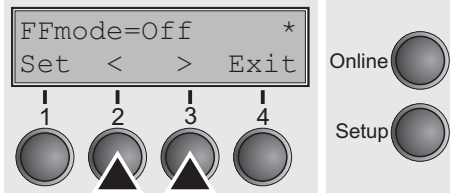
Form feed mode (FFmode)

Specifies whether a form feed is to be performed when the paper reaches the top print line.

Press **FFmode** (2) key.



Use the < (2) or > (3) key to select the desired setting.



Setting Options: **On/Off**

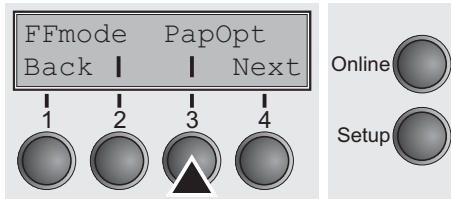
Default Setting: **Off**

FFmode = On: If the paper is positioned in the first printing line (TOF), form feeds will be ignored.

FFmode = Off: Form feed will be performed in all cases.

Confirm the setting by pressing the **Set** key (1).

Setting and activating options (PapOpt)

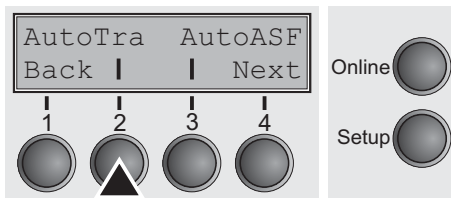


For setting the optional automatic sheet feeders (ASFs) and optional tractors; see [Paperway](#) (page 4). Also regulates the activation of ASFs and/or optional tractors.

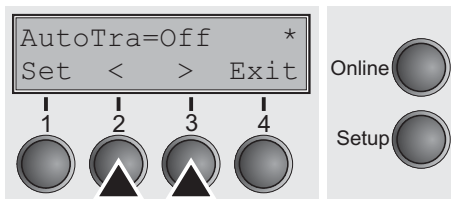
Press **PapOpt** (3) key.

Activation of tractors (AutoTra)

This parameter only appears if at least one optional tractor is installed. It regulates the activation of tractors when there is no more paper left in one of them.



Press **AutoTra** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Off/T1=T2**

Default Setting: **Off**

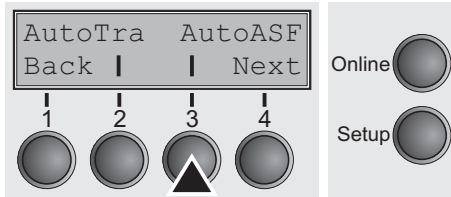
If an optional tractor is not installed, **Off** is displayed (factory default). If an optional tractor is installed and the **Off** parameter is activated, only the selected tractor is supported (either via the menu or an ESC sequence). If the selected tractor is out of paper, printing stops.

If an optional tractor is installed and you select **T1=T2**, the printer will load paper from the other tractor if the selected one is empty.

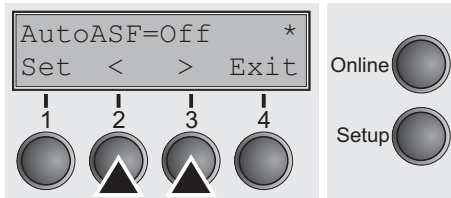
Confirm the setting by pressing the **Set** key (1).

Activation of automatic sheet feeder (AutoASF)

This parameter only appears if an optional automatic sheet feeder is installed. This feature is only available for the option ASF-R. It regulates the activation of automatic sheet feeders when there is no more paper left in one of them.



Press **AutoASF** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Off/On**

Default Setting: **Off**

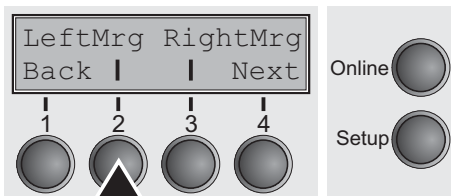
If an ASF is installed and the **Off** parameter is activated, only the selected source is supported (either via the menu or an ESC sequence). If the selected paper source is empty, printing stops.

If an ASF is installed and you select **On**, the printer will load paper from the other source if the selected one is empty.

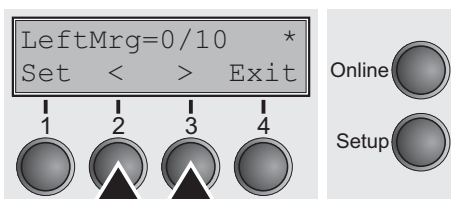
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Setting the left margin (LeftMrg)

The left print margin can be set to a fixed value.



Press **LeftMrg** (2) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **0–78/10"** (narrow printer)

0–134/10" (wide printer)

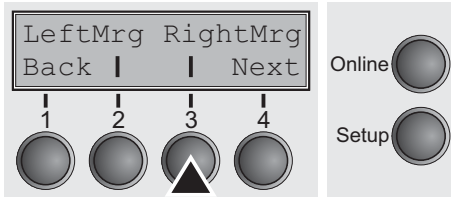
Default Setting: **0/10"**

The value may not exceed the RightMrg value.

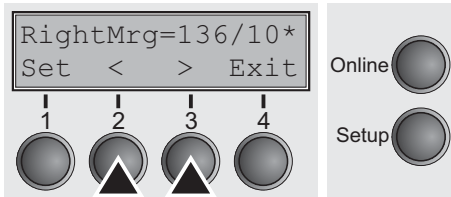
Confirm the setting by pressing the **Set** key (1).

Setting the right margin (RightMrg)

The right print margin can be set to a fixed value.



Press **RightMrg** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **2–80/10"** (narrow printer)
2–136/10" (wide printer)

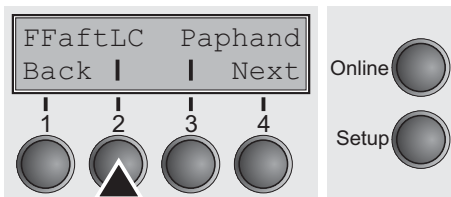
Default Setting: **80/10"** or **136/10"**

The value may not fall below the LeftMrg value.

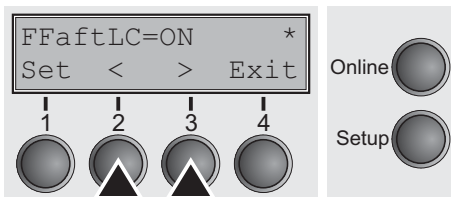
Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.

Local copy (screen print) from a Coax or Coax/IPDS (FFaftLC)

This is a feature of the IBM compatible Coax/Twinax and IPDS Interface (option). Local Copy is a Screen Print from an AS400 or Mainframe. This is to ensure maximum compatibility.



Press **FFaftLC** (2) key.



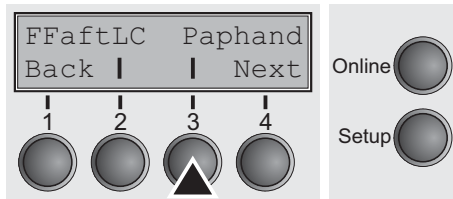
Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Off/On**

Default Setting: **On**

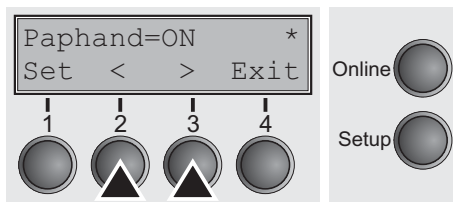
Confirm the setting by pressing the **Set** key (1).

Enable/Disable Paper Handling Features (Paphand)



In the advanced menu, *Paper handling (Paphand)*, are several possibilities to improve the paper handling of the printer even with critical paper and forms. This menu parameter enables or disables the set features in the current active menu.

Press **Paphand** (3) key.



Use the < (2) or > (3) key to select the desired setting.

Setting Options: **Off/On**

Default Setting: **On**

Confirm the setting by pressing the **Set** key (1).

Menu settings (example)

Current settings					
Fb.No.	926F67762				
Serial No.	7AH7				
Asset No.	BA				
ID:70338v4	PRG				
ID:70235v1	BOOY				
ID:070246-v4	FPGA				
ID:48217E	Gen				
ID:48149B	Gen				
	Menu 1	Menu 2	Menu 3	Menu 4	Menu 5
Font	Draft	Draft	Draft	Draft	Draft
CPI	10 CPI	10 CPI	10 CPI	10 CPI	10 CPI
LPI	6 LPI	6 LPI	6 LPI	6 LPI	6 LPI
Skip	0.0Inch	0.0Inch	0.0Inch	0.0Inch	0.0Inch
ESCChar	ESC	ESC	ESC	ESC	ESC
Emulate	Epson LQ-2550	IBM Propr. XL24	Epson LQ-2550	Epson LQ-2550	Epson LQ-2550
Bidir	On	On	On	On	On
CG-Tab	Graphic	Graphic	Graphic	Graphic	Graphic
CharSet	Extended	Extended	Extended	Extended	Extended
Country	E-US ASCII	Table 437	E-US ASCII	E-US ASCII	E-US ASCII
Sl.Zero	Off	Off	Off	Off	Off
Auto-CR	On	On	On	On	On
Auto-LF	Off	Off	Off	Off	Off
AutoCut	ViewCut=Off	ViewCut=Off	ViewCut=Off	ViewCut=Off	ViewCut=Off
Width	8Inch	8Inch	8Inch	8Inch	8Inch
LeftMrg	0/10"	0/10"	0/10"	0/10"	0/10"
RightMrg	80/10"	80/10"	80/10"	80/10"	80/10"
Paphand	On	On	On	On	On
Barcode	On	Off	Off	Off	Off
Barmode	Unsecured	Unsecured	Unsecured	Unsecured	Unsecured
Single	*				
Formlen	Fanfold 12"	Fanfold 12"	Fanfold 12"	Fanfold 12"	Fanfold 12"
Head	18	18	18	18	18
FormAdj	12/72"	12/72"	12/72"	12/72"	12/72"
Tractor1		*	*	*	*
Formlen	Fanfold 12"	Fanfold 12"	Fanfold 12"	Fanfold 12"	Fanfold 12"
Head	18	18	18	18	18
FormAdj	12/72"	12/72"	12/72"	12/72"	12/72"

```
Interf.      Shared
Buffer      128 KB
CX-bid      On
Menu        1
ASF-R      Not installed
ASF-F      Not installed
Trac2      Not installed
Trac3      Not installed
CutAdj Trac1 0/72"
AutoASF     Off
AutoTRA     Off
Quietm.     Off
AGA         always
AGA offset  0
Pap.back    normal
Sound       On
Single      On
FFmode      Off
Wrap        On
Rightzo     Off
Leftzon     Off
Head up     Off
Pagewid     80/10"
Physlm      0/10"
Hvy Form    Off
Sleepmod    On
GrSpeed     high
Cutpos      Eject-R
Serial
Baud        9600
Format      8Bit No 1Stop
Protocol     XON/XOFF
DTR         DTR
```

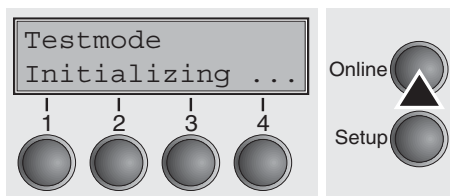
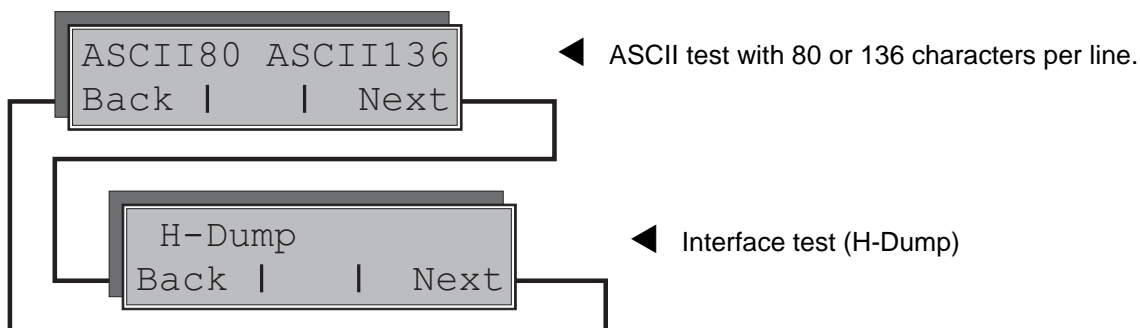
9 Advanced menu

The advanced menu consists of test functions and advanced settings.

Test functions

Various tests to check proper operation of the printer are available at any time. With these tests it is possible to check the print quality, proper operation of the printhead and the mechanics, as well as efficient data transmission from the computer to the printer.

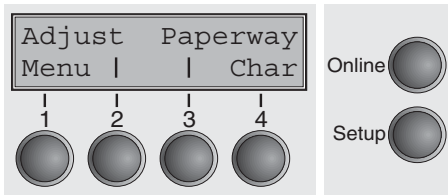
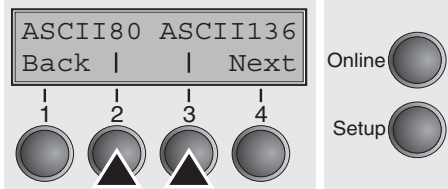
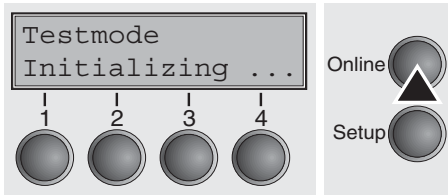
The extended menu contains three test functions (**ASCII 80**, **ASCII 136** (only wide printer), **H-Dump**).



Enter advanced menu mode by pressing the key **Online** while switching on the printer.

The display shows **Test mode** for approx. 1 second and then automatically changes to display **ASCII 80 ASCII 136**.

Printer self-test (Rolling ASCII)



To check operational readiness, your printer contains a self-test routine which allows testing of the printer configuration, the print quality and correct operation of your printer.

Before performing a self-test, your printer must be switched off. Ensure that paper is inserted. Keep the key **Online** pressed while switching on the printer, until **Testmode** appears on the display.

Press the soft key for the ASCII 80 format (corresponds to Legal Portrait) or for ASCII 136 (Double or Legal Landscape). The display will indicate **Test mode Off**.

Press the **Online** key, to start the test.

It is also possible to change to Setup mode when you are in Rolling test mode if you want to change the configuration for the test print-out.

To do this, press the key **Setup**. The printer then changes to Setup mode and the first of the main levels is then displayed.

Program your printer in the usual way for the test printout to change the parameters. See section [Programming via the control panel](#) (page 41).

Some changes in menu mode may cOffe the printer to rOnitalize; in this case the Rolling ASCII test is aborted.



By pressing the key Setup you exit Setup mode and the printer once again returns to Rolling ASCII test mode test mode.

Testmode Off is displayed. Press the key **Online**, the test printout starts.

The self-test can be interrupted by pressing the key **Online** which will stop printing and put the printer into Offline status.

Before you begin printing, you can adjust the paper for the printout with soft keys **▲** and **▼**.


```

3456789:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]^
456789:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
56789:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
6789:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
789:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
89:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
9:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]
<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\ ]

```

Example of an ASCII test printout



If you selected a proportional font (PS font) , the printed length of the lines varies.



This test can also be used to determine and set the optimal printhead gap (see the section [Setting the print head gap](#) (page 38)).

Exiting Rolling ASCII test mode

The self-Rolling ASCII test mode test mode can only be terminated by switching off your printer. For this operation the printer must be Offline.



If you want to stop the test printout before switching off the printer, press the key Online.

Interface test (Hex-Dump)

With the interface test (Hex-Dump/H-Dump) you can test data transmission from the computer to the printer. During this test, the data from the computer is printed out in two columns. The text in the left column is printed in hexadecimal format and in the right column in ASCII format.

Printout in Hex-Dump

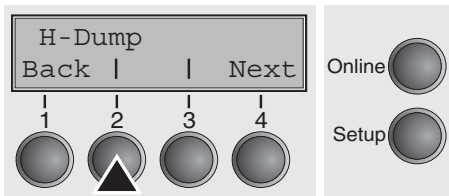
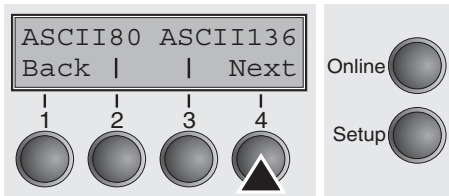
Put the printer into advanced menu mode by pressing the key **Online** while switching on the printer.



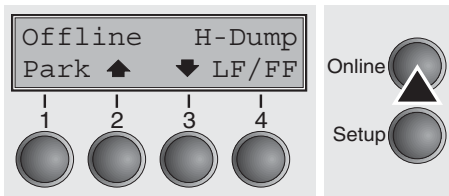
Press the key Online until Test mode is shown on the display.

The display shows **Test mode** for approx. 1 second and then automatically changes to display **ASCII 80 ASCII 136** (only wide printer).

Press the key **Next** (4), the display shows the next menu level.



If you press the key **H-Dump** (2) you select the H-Dump mode and **Offline H-Dump** is shown on the display.



Put the printer into **Online H-Dump** mode by pressing the key **Online**. The printer is now ready to receive data from the computer and to print it out in hexadecimal format. The printed data can now be analyzed and evaluated.

```

3F 36 7E 1B 74 01 1B 36 1B 28 72 1B 5B 31 31 68      1B 5B 36 7E 1B 5B      .[6~.[
1B 5B 30 3B 30 20 44 1B 5B 31 3B 31 20 44 1B 5B    ?6~.t..6.(r.[11h
32 3B 32 20 44 1B 5B 33 3B 33 20 44 1B 5B 34 3B    .[0;0.D.[1;l.D.[
34 20 44 1B 5B 35 3B 35 20 44 1B 5B 36 3B 36 20    2;2.D.[3;3.D.[4;
44 1B 5B 3F 35 32 68 1B 5B 35 3B 3B 30 7B 1B 32    4.D.[5;5.D.[6;6.
1B 5B 38 34 31 38 74 1B 5B 37 32 38 20 68 0A 1B    D.[?52h.[5;;0{.2
5B 31 32 30 20 68 1B 5B 37 31 32 60 1B 5B 31 30    .[8418t.[728.h..
6D 1B 5B 34 79 1B 5B 34 77 54 68 69 73 20 69 73    [120.h.[712'.[10
20 61 20 73 61 6D 70 6C 65 20 74 65 78 74 20 73    m.[4y.[4wThis.is
68 6F 77 69 6E 67 20 74 68 65 20 66 75 6E 63 74    .a.sample.text.s
69 6F 6E 61 6C 69 74 79 20 6F 66 20 74 68 65 20    howing.the.funct
68 65 78 2D 64 75 6D 70 20 0D 1B 5B 31 32 30 20    ionality.of.the
68 0A 1B 5B 31 32 30 20 68 1B 5B 37 31 32 60 66    hex-dump...[120.
65 61 74 75 72 65 2E 20 69 74 20 69 73 20 69 6E    h..[120.h.[712'f
74 65 6E 64 65 64 20 74 6F 20 61 6E 61 6C 79 73    eature..it.is.in
65 20 74 68 65 20 69 6E 63 6F 6D 69 6E 67 20 64    tended.to.analys
61 74 61 20 73 74 72 65 61 6D 2E 20 20 0C 1B 5B    e.the.incoming.d
35 34 7B 1B 5B 36 7E                                ata.stream.....[
                                                    54{.[6~

```

Example of a Hex-Dump printout



After the transmission you must switch the printer to Offline. Any remaining data left in the interface buffer is then printed.

Terminating Hex-Dump

Hex-Dump mode can only be terminated by switching off the printer.

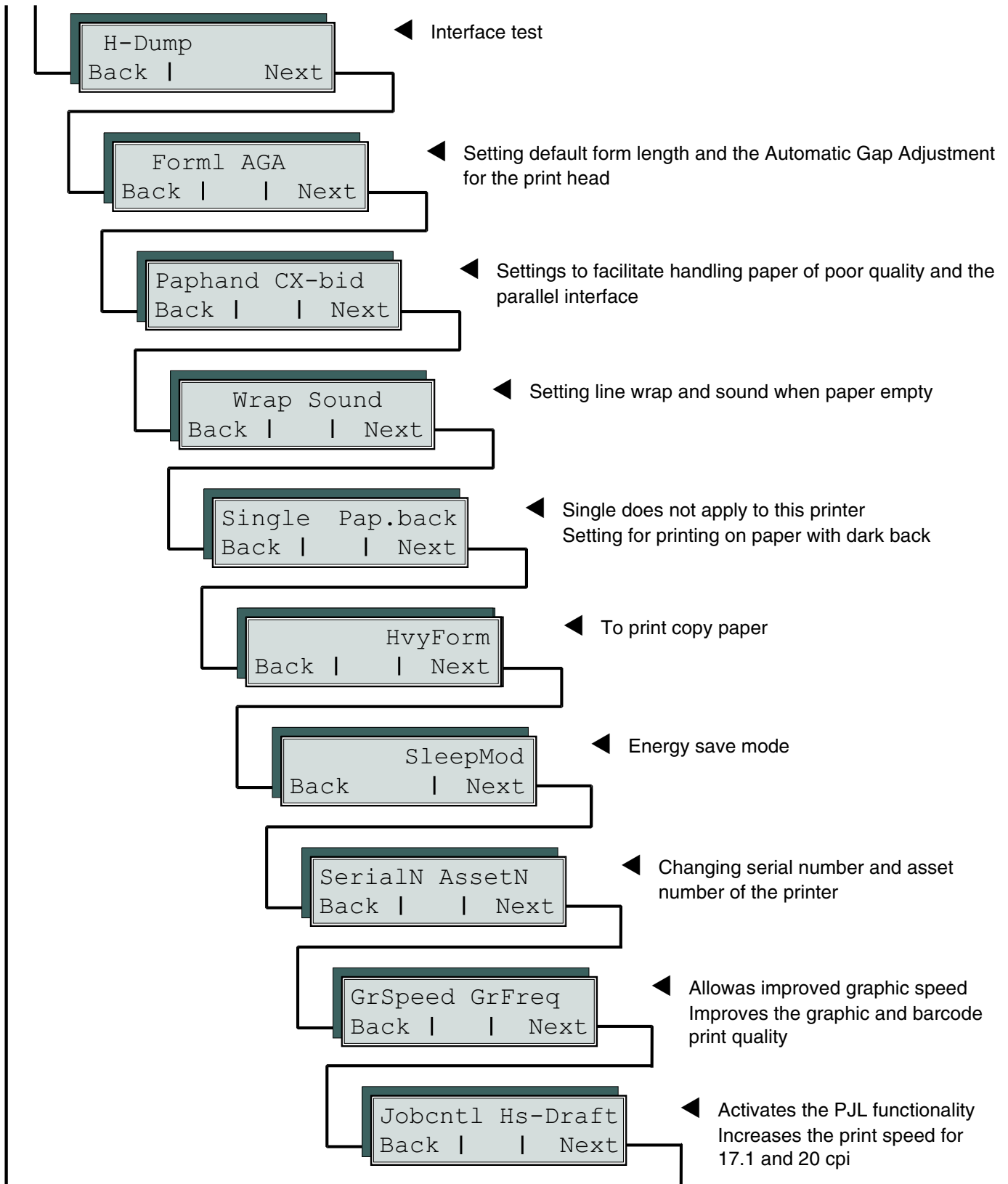


If you want to stop the Hex-Dump printout before switching off the printer, press the key Online and then the key LF/FF (4) once.

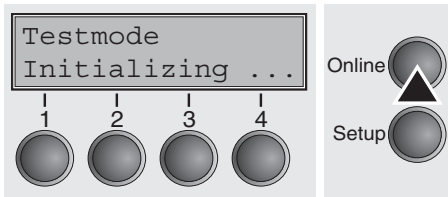
Advanced settings

In the advanced menu, there are other settings available besides the test functions.

- ▶ With the function **PMS** you have the possibility of activating the automatic paper motion sensor (**PMS**) in case of a paper jam.
- ▶ With the function **Forml** you can adjust the form length.
- ▶ The function **AGA** switches the automatic printhead gap function on or off.
- ▶ You can also select adjustments which facilitate handling paper which may cause problems in printing due to its structure (**Paphand**).
- ▶ The **CX-bid** menu option controls the bidirectionality of the parallel interface.
- ▶ With the function **Wrap**, you can set line wrap and with the function **Sound** beep at paper end.
- ▶ The **Single** menu option can be used to deactivate the single sheet function (for printers without single sheet feeder).
- ▶ The function **Pap.back** allows printing on paper with a dark back.
- ▶ You can use the **HvyForm** function to set the print head to print the same line twice at double strike force in order to ensure that copy paper produces optimum results even if it has a faint copying effect.
- ▶ If the parameter **Sleepmod** is activated, the printer switches to energy-saving mode after 30 seconds of inactivity.
- ▶ With the **SerialN** function you have the possibility to change the serial number of the printer.
- ▶ With the **AssetN** function you have the possibility to change the asset number of the printer.
- ▶ The **GrSpeed** function allows improved graphic speed.
- ▶ The function **GrFreq** has an effect on graphic and barcode print. A lower print speed may affect the printout quality positively.
- ▶ With **Jobcntl** you can activate the PJI functionality. Therefore a TallyCom III Ethernet Interface (or compatible) must be installed.
- ▶ **HS-Draft** allows a higher print speed for 17.1 and 20 cpi with a lower print density.



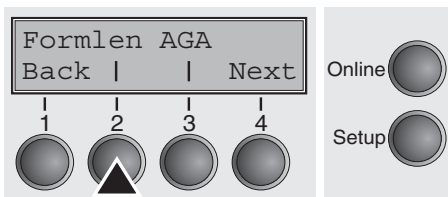
Enter Extended menu mode by pressing the key **Online** while switching on the printer.



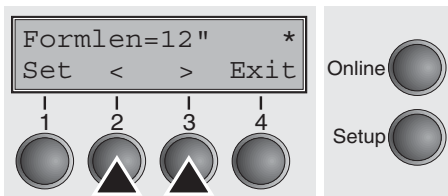
The display shows **Test mode** for approx. 1 second and then automatically changes to display **ASCII 80 ASCII 136** (only wide printer).

Form length (Forml)

The **Formlen** function allows you to set the basic form length to meet your requirements. 11 inches are usual in the USA, as opposed to 12 inches in Europe.



Select the **Forml** menu (2).



Setting options: **12** oder **11** Inch

Default setting: **12 inches** for 220–240 V printers
11 inches for 120 V printers

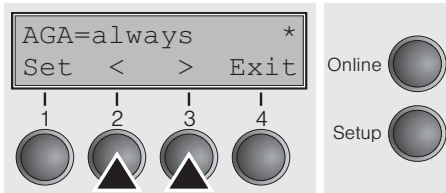
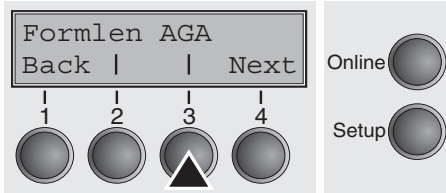
The value defined here is set in all five menus and for all paper paths. The setting made here is not changed by loading the default (factory) settings by pressing all four function keys; see section [Key functions when turning on the printer](#) (page 15).

Confirm the setting by pressing the **Set** (1) key.

Automatic gap adjustment (AGA)

This function allows you to switch the Automatic Gap Adjustment (AGA) off or on.

Select the **AGA** menu (3).



Setting options: **Off/once/always**

Default setting: **always**

AGA=always: The printer checks the paper thickness:

- after power-on
- in single-sheet mode: every sheet
- in fanfold paper mode: each time the paper path is changed and at paper end.

AGA=once: The printer checks the paper thickness only once after power-on for each selected paper path and after paper end.

AGA=Off: selects manual gap adjustment; the value can be set for each paper source and each of the 3 menus available.

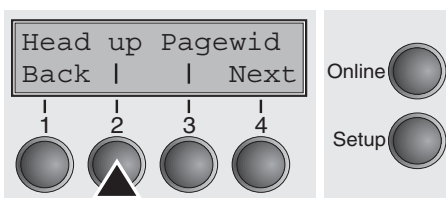
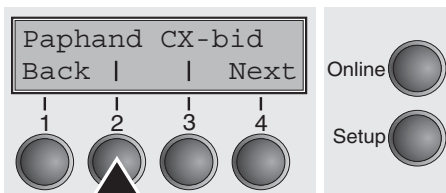
Confirm the setting by pressing the **Set** (1) key. The printer automatically leaves test mode and assumes online mode.

Paper handling (Paphand)

The **Paphand** group of menus improves the possibilities for the troublefree printing of paper with properties likely to cause problems (perforations etc.) or paper of poor finish.

Put the printer into Test mode by pressing the key **Online** while switching on the printer. The display shows **ASCII80 ASCII136**. Change to the parameter group **Formlen AGA** by pressing the key **Next** three times.

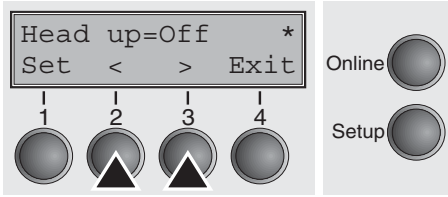
Select the **Paphand** menu (2).



Select the **Head up** menu (2).

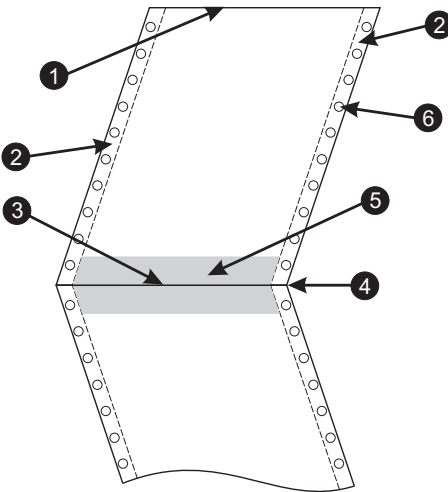
Increasing the printhead gap (Head up)

With this function you can increase the printhead gap before and after the perforation of the form.



Setting options: **On/Off**
 Default setting: **Off**

If the parameter is set to **On**, the printhead gap increases during form feed and line feed four lines before and after the perforation on the form (= protected zone). The printhead gap is always increased during form feeding past the perforation even when feeding takes place outside the protected zone.



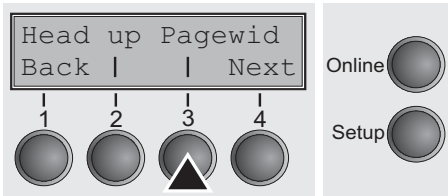
i **Printing is possible in the protected area.**

Confirm the setting by pressing the **Set** (1) key.

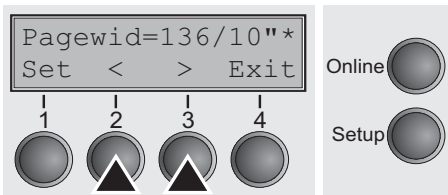
- 1 Top edge of form
- 2 Paper transport strip
- 3 Bottom edge of form
- 4 Form separation perforation
- 5 Protected zone
- 6 Transport holes

Paper width (Pagewid)

This parameter determines the actual paper width.



Select the **Pagewid** menu (3)



Setting options: From **20** to **80** in 1/10 inch steps (narrow printer)
 From **20** to **136** in 1/10 inch steps (wide printer)
 Default setting: **80** or **136/10** inch
 (80/136 characters at 10 characters/inch)

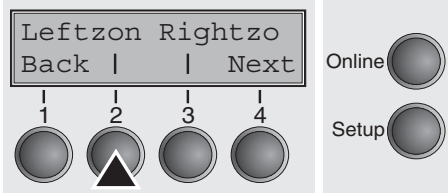
If **Head up = On**, the printhead moves to the calculated centre of the paper during the time the paper is moving in the protected zone. If **Rightzo = On** (see below), the printhead moves out of the perforation zone on the right as long as the paper is bOng transported.

i **Set the printing width rather than the actual paper width.**

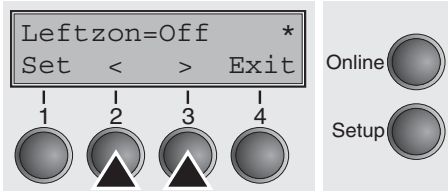
Confirm your settings with the **Set** key (1) and press the **Next** key (4) to access the next group of parameters.

Left-hand area (Leftzon)

If the parameter is On, the printhead moves out of the perforation zone (area) on the left as long as the paper is being transported. The Pagewid setting has no influence (see above).



Select the **Leftzon** menu (2) (stands for left zone).

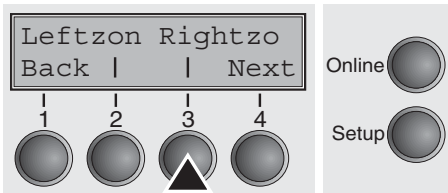


Setting options: **On/Off**
Default setting: **Off**

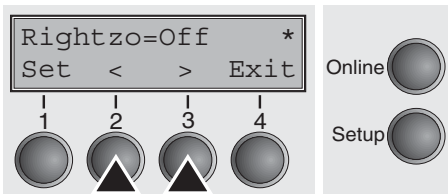
Confirm your settings with the Set key (1).

Right-hand area (Rightzo)

If the parameter is On, the print head travels from the right-hand perforation area towards the centre of the paper while the paper is moving. The Pagewid option must be correctly set in this case, see [Paper width \(Pagewid\)](#) (page 86).



Select the **Rightzo** menu (3).

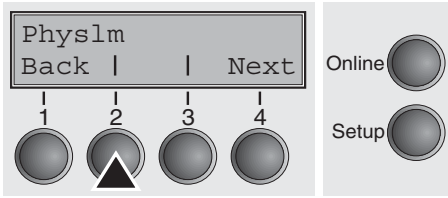


Setting options: **On/Off**
Default setting: **Off**

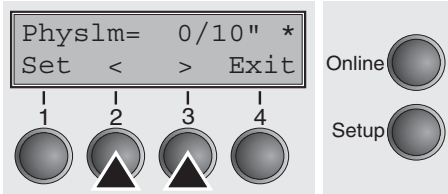
i If this parameter is On, the print head carriage travels to the centre of the form while the paper is loaded.

Confirm your setting with the **Set** key (1) and press the **Next** key (4) to access the next group of parameters.

Physical left margin (Physlm)



Select the **Physlm** menu (2).



Setting options: **0** to **30** in 1/10 inch steps

Default setting: **0/10** Inch

Permanent (physical) setting of the left margin. This parameter cannot be changed by emulation-dependent margin settings. Margin setting values entered by ESC sequences are added to the **Physlm**.



Note that this value is subtracted from the maximum printing width of 8 Inches (narrow printer) or 13.6 inches (wide printer).

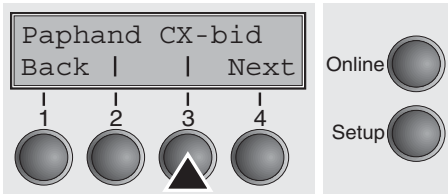
Confirm the setting by pressing the **Set** (1) key.



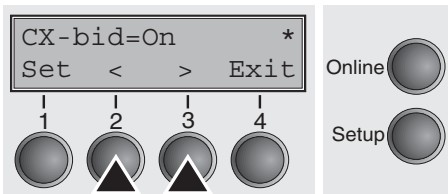
All parameters described in the Paphand group may also be defined via an ESC sequence (see [Emulations](#) (page 125) or [Programmer's Application Manual](#)).

Press the **Next** key (4) to access the next group of parameters.

Bidirectional parallel interface (CX-bid)



Select the **CX-bid** menu (3).



Setting options: **On/Off**

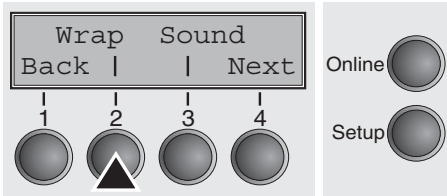
Default setting: **On**

CX-bid = ON sets the parallel interface of the printer to bidirectional mode (IEEE 1284, Nibble mode), e.g. for Windows Plug & Play.

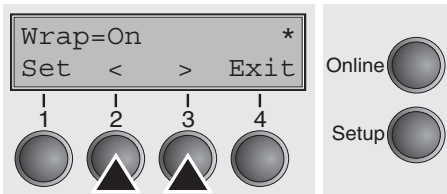
CX-bid = OFF sets the interface to compatibility mode in order to ensure reliable operation with special external boxes.

Confirm the setting by pressing the **Set** (1) key. Change to the next parameter group with the **Next** key (4).

Line wrap (Wrap)



Select the **Wrap** menu (2).



Setting options: **On/Off**

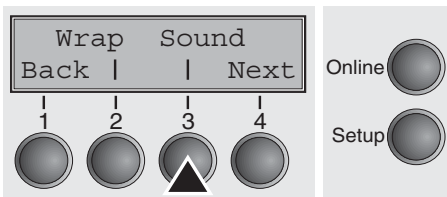
Default setting: **On**

Wrap = On: If more characters than can be printed are transmitted per line, the characters which cannot be printed on this line are printed at the beginning of next line.

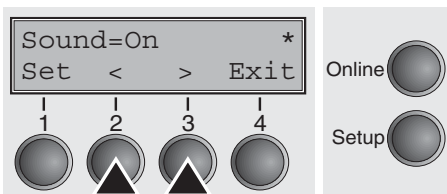
Wrap = Off: If more characters than can be printed are transmitted per line, the characters which cannot be printed on this line are cut off.

Confirm the setting by pressing the **Set** (1) key.

Beep at paper end (Sound)



Select the **Sound** menu (3).



Setting options: **On/Off**

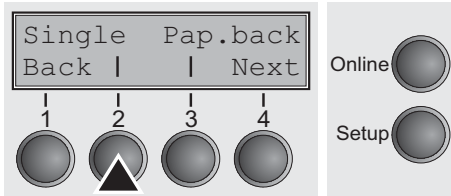
Default setting: **On**

When **Sound = On**, a beep is generated every second to notify that paper is empty.

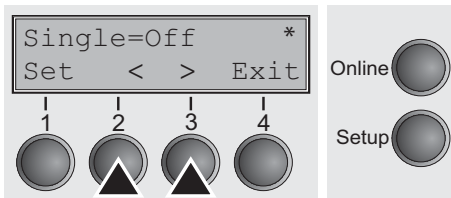
Confirm the setting by pressing the **Set** (1) key. Change to the next parameter group with the **Next** key (4).

Deactivate single sheet feeder (Single)

Some printer models are designed for fanfold paper operation only and therefore do not feature a single sheet feeder. To prevent erroneous selection of the single sheet paper source, all sequences referring to the single sheet feeder can be deactivated by setting the Single menu option to **Off**.



Select the **Single** menu (2).



Setting options: **On/Off**

Default setting: **Off**

Single = On is the default setting for printer models with single sheet function.

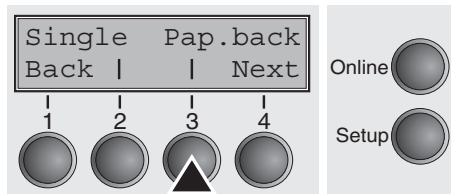
Single = Off must be selected for printer models without single sheet function.



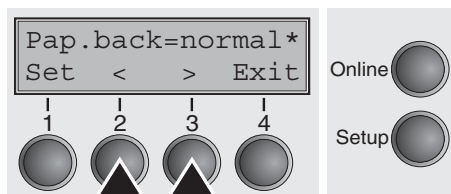
This setting is not reset by loading the default factory settings.

Confirm the setting by pressing the **Set** (1) key.

Settings for paper with dark back (Pap.back)



Select the **Pap.back** (3) menu.



Setting options: **normal/dark**

Default setting: **normal**

Pap.back = normal is the standard for normal paper.

Pap.back = dark can be set to process paper with a grey back.



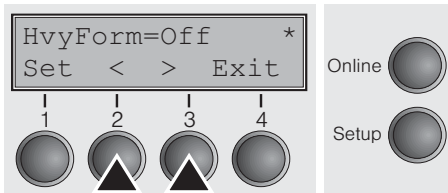
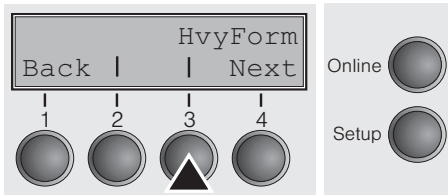
Paper with a completely black back side cannot be used if the ink is carbon-based. However, the printer can handle aniline-based black paper (undefined colors).

Confirm the setting by pressing the **Set** (1) key. Change to the next parameter group with the **Next** key (4).

Setting for printing copy paper (HvyForm)

If you set **HvyForm = ON**, the printer prints the same line twice at double strike. This setting ensures that copy paper produces optimum results.

Select the HvyForm menu (3).



Setting options: **On/Off**
Default setting: **Off**

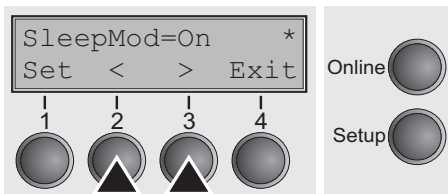
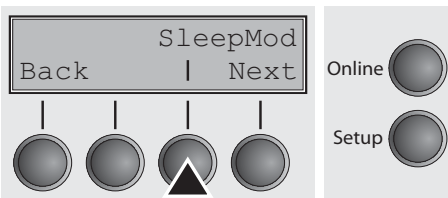
i With the Copy Draft, NLQ and LQ print qualities, the line is printed twice, however, at single strike.

Confirm the setting by pressing the **Set** (1) key. Change to the next parameter group with the **Next** key (4).

Power save mode (Sleepmod)

If the parameter **Sleepmod** is activated, the printer switches to energy-saving mode after 10 minutes of inactivity (<20 W).

Select the **Sleepmod** (3) menu.



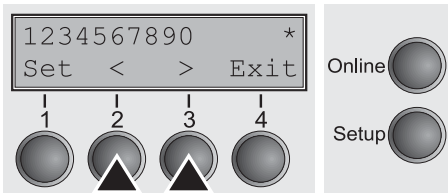
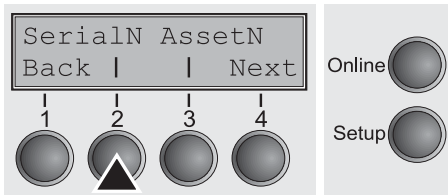
Setting options: **On/Off**
Default setting: **On**

Confirm the setting by pressing the **Set** (1) key. Change to the next parameter group with the **Next** key (4).

Serial number (SerialN)

With the SerialN function you have the possibility to change the 10 digit serial number of the printer. The number can be written with any ASCII character between hex 20 and hex 7E.

Select the **SerialN (2)** menu.



Setting options: **10 digits of all ASCII characters (hex 20 to 7E)**
 Default setting: **factory set**

To change a digit select one character with the > or < key and press the **Set (1)** key. Press < or > key to decrement or increment the selected character. When the desired character appears press **Set (1)** key and the new character is stored.

After you have changed all desired digits leave the menu by pressing the **Exit (4)** key.

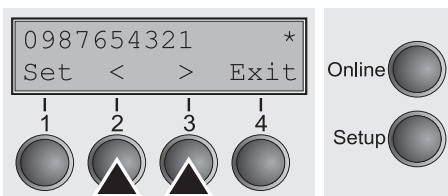
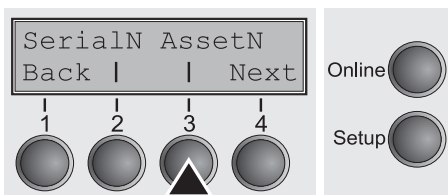


This setting is not reset by loading the default factory settings.

Asset number (AssetN)

With the AssetN function you have the possibility to change the 10 digit asset number of the printer. The number can be written with any ASCII character between hex 20 and hex 7E.

Select the **AssetN (3)** menu.



Setting options: **10 digits of all ASCII characters (hex 20 to 7E)**
 Default setting: **factory set**

To change a digit select one character with the > or < key and press the **Set (1)** key. Press < or > key to decrement or increment the selected character. When the desired character appears press **Set (1)** key and the new character is stored.

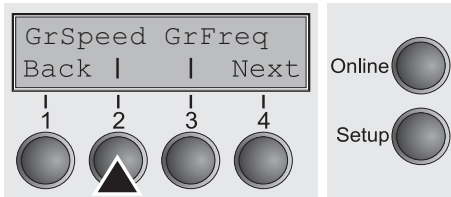
After you have changed all desired digits leave the menu by pressing the **Exit (4)** key.



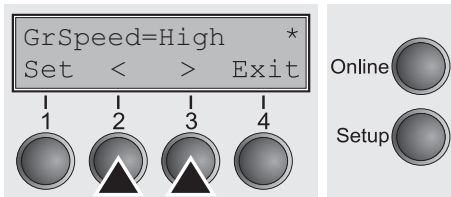
This setting is not reset by loading the default factory settings.

Graphic Print Speed (GrSpeed)

This parameter allows improved Graphic Speed independently to the driver. It affects only the print speed of graphic printouts at 180 x 180 dpi.



Select the **GrSpeed** (2) menu.



Setting options: **Normal/High**

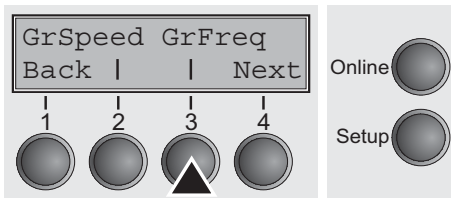
Default setting: **High**

Normal means 180 dpi normal print speed (full space) and **High** means 180 dpi double speed (half space).

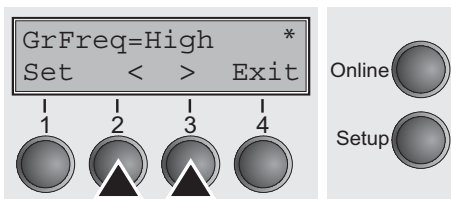
Confirm the setting by pressing the **Set** (1) key.

Improvement of graphic and barcode print quality (GrFreq)

This parameter has an impact on the print quality of graphics and barcodes.



Select the **GrFreq** (3) menu.



Setting options: **High/Normal**

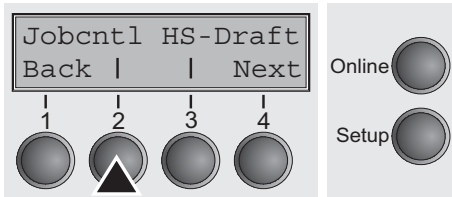
Default setting: **High**

Normal improves the print quality of graphics and barcodes.

High prints graphics and barcodes in a higher speed.

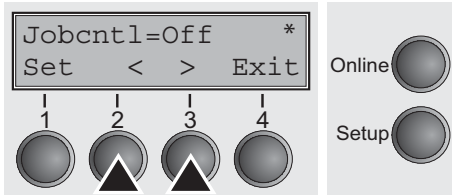
Confirm the setting by pressing the **Set** (1) key. Change to the next parameter group with the **Next** key (4).

Activate PJL language (Jobcntl)



This parameter activates the printer language PJL (Printer Job Language). Mandatory prerequisite therefore is that a TallyComm III Ethernet (or compatible) interface is installed.

Select the **Jobcntl** (2) menu.

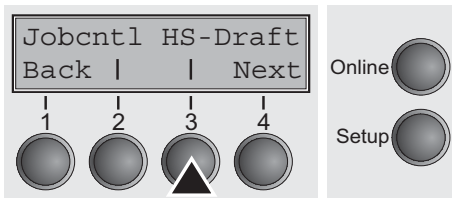


Setting options: **Off/On**
Default setting: **Off**

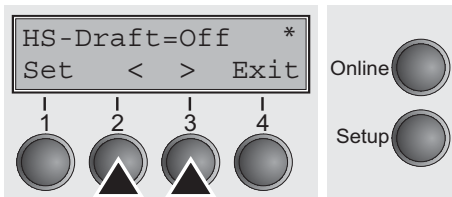
On activates the PJL printer language (see [PJL commands](#) (page 138)).

Confirm the setting by pressing the **Set** (1) key.

Increased print speed for 17.1 and 20 cpi (HS-Draft)



Select the **HS-Draft** (3) menu.



Setting options: **Off/On**
Default setting: **Off**

Character matrix if **On** is selected:
7 x 12 for 17,1 cpi, 6 x 12 for 20 cpi.

Confirm the setting by pressing the **Set** (1) key. Change to the next parameter group with the **Next** key (4).

10 Troubleshooting

Many of the faults and problems which may occur while using the printer are minor problems which you can solve yourself. The following chapter should help you to distinguish between a simple operating error and a major malfunction.


This chapter provides information on the rectification of faults without the assistance of specially trained personnel. Follow the advice and tips in this chapter if your printer is not working correctly.

Important notes on the care and maintenance of your printer can be found at the end of this chapter.



Repairs should only be performed by authorised service personnel.


General print problems

Problem	Corrective action
<p>The display remains dark The printer is switched on, but nothing happens (nothing is displayed, no noise).</p>	<p>Switch off the printer and proceed as follows:</p> <ol style="list-style-type: none"> 1 Check that the power plug is correctly connected to the socket on the printer. 2 Check that the power plug is seated properly in the wall socket. 3 Switch on the printer again. If the printer is now connected correctly, the printer initializes and text is shown on the display. <p>If these steps do not eliminate the fault:</p> <ul style="list-style-type: none"> ▶ Replace the power cord and repeat step 3. ▶ Check whether the fuse is faulty and if so exchange it:; see Replacing the fuse, (page 105). ▶ Check that power flows at the socket e.g. using a desk lamp, if necessary use a different socket and repeat step 3. ▶ Contact your dealer if the printer cannot be powered up. <p> Do not attempt to open the printer. You might suffer an electric shock.</p>
<p>The display is lit, but the printer does not print</p>	<ol style="list-style-type: none"> 1 Check that the printer is Online. If the displays shows Offline, then press the key Online. Try to print again. 2 Check the connection from the printer to the computer (interface cable): <ul style="list-style-type: none"> ▶ Check that the interface cable is properly connected to the computer and to the printer. ▶ Check that it is the correct interface cable for your printer. Information on the interface is located in the section Connecting the printer, (page 8) and in chapter Interfaces, (page 145). ▶ Check that the printer is properly adapted to the computer (configured). Refer to section The control panel, (page 10). Check the parameter set in the Setup menu under Settings for interfaces (I/O), (page 53) and if necessary correct it. 3 Check whether the printer is working properly. To do this, print out a copy of the menu; siehe Printing out menu configurations (Print), (page 47) 4 Check that the top cover is closed. 5 Check that paper is inserted and loaded. Refer to the section Loading paper, (page 30)

Problem	Corrective action
<p>Problems with the paper feed The paper is not fed in</p>	<ol style="list-style-type: none"> 1 Check that the display shows the correct paperway, if necessary select the correct paperway (single sheet or fanfold) with the key Park. See Changing the paper type, (page 27). If you wish to use optional paper types, make sure they are correctly installed. 2 Make sure that the paper guide is correctly adjusted at the side. 3 When using single sheets, push the paper fully into the paper feed. <p>i When having torn off the fanfold paper and after switching over from fanfold paper to single sheets, the fanfold paper moves to the park position.</p> <ol style="list-style-type: none"> 4 Check that the fanfold paper is in the park position when you insert a single sheet. This means the fanfold paper should not be loaded (pulled in). To check this, raise the guide of the single sheet feeder. <p>i If necessary, drive the remaining paper manually to the park position with the ▼ key.</p>
<p>Paper jam (fanfold paper)</p>	<ol style="list-style-type: none"> 1 Open the top cover. If a paper jam should occur, then remove the jammed paper by tearing it off at the tear off edge (the tear off edge is located at the outfeed for the fanfold paper). 2 Press the ▼ key to transport the paper backwards. 3 You may support the paper return feed by cautiously pulling the paper in the correct direction. <p>Before you replace the fanfold paper, refer to the instructions in the section Loading paper, (page 30).</p> <p>You should pay special attention to the following points:</p> <ul style="list-style-type: none"> ▶ Insert the paper straight. ▶ After inserting the paper, close the tractors. ▶ Adjust the tractors, the paper should be positioned in the tractors straight but without tension. ▶ Adjust the printhead gap to the paper thickness (if AGA=Off). ▶ Set the parameter Head-up to On, see section Increasing the printhead gap (Head up), (page 86). ▶ Clean upper friction, see section Cleaning the upper friction, (page 108).

Problem	Corrective action
<p><i>Paper jam (single sheets)</i></p>	<p>Open the top cover and remove the paper manually or with the functions LF (line feed)/FF (form feed) in Offline mode from the printer.</p> <p>Before you replace the single sheet, refer to the instructions in the section <i>Single sheets</i>, (page 34).</p> <p>Pay attention to the following points:</p> <ul style="list-style-type: none"> ▶ Set single sheet feed to the corresponding paper width. ▶ Insert the paper straight as far as possible. ▶ Adjust the printhead gap to the paper thickness (card-like paper etc.) (if AGA=Off).
<p><i>Paper does not move to tear off position</i> Single sheet inserted</p>	<p>It is only possible to tear off when fanfold paper is used, refer to the section <i>Moving the paper to the tear position</i>, (page 37).</p>

Problems with the print quality

Problem	Corrective action
Print is too pale	<ol style="list-style-type: none"> 1 The ribbon is used up or the ribbon cassette is not correctly fitted. Refer to the section Changing the ribbon cassette, (page 16). 2 The printhead to platen gap is not correctly set, refer to the section Setting the print head gap, (page 38). 3 For printers with the AGA = ON: Enter a correction value <0. See the section Setting the print head gap, (page 38).
Smudged print	<ol style="list-style-type: none"> 1 The ribbon is damaged (e.g. frayed). Change the ribbon as described in the section Changing the ribbon cassette, (page 16) 2 The printhead gap is too small, increase the gap. See the section Setting the print head gap, (page 38). 3 For printers with the AGA = ON: Enter a correction value >0 (correction value 0 to +10). See the section Setting the print head gap, (page 38).
Prints undefined characters	<ol style="list-style-type: none"> 1 Check that the interface plug is correctly connected to the computer and to the printer. 2 Check that the proper emulation and the correct character set (country, CG table or character set) is selected in the Setup menu. 3 Check the length of the interface cable, see section Interface specifications, (page 113). 4 Set CX-bid in the advanced menu to Off, see section Bidirectional parallel interface (CX-bid), (page 88). 5 Check that the printer is properly adapted to the computer (configured). Refer to section The control panel, (page 10). Check the parameter set in the Setup menu under Settings for interfaces (I/O), (page 53) and if necessary correct it.
The first line is not completely printed out at the top	<p>Check the function FormAdj. Refer to the section First printing position (FormAdj), (page 65).</p>
Dots within characters are missing	<ol style="list-style-type: none"> 1 Check whether the ribbon is damaged, if necessary replace it; see the section Changing the ribbon cassette, (page 16). 2 Set the correct printhead gap. 3 Check whether the platen is damaged. 4 Check whether the printhead is damaged. <p> Only use genuine ribbon cassettes. In case of points 3 or 4, please contact your dealer.</p>

Error messages via the display

Message	Possible cause	Corrective action
<div data-bbox="137 318 499 419" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Eject Error</div>	<p>The printer cannot eject the paper or cannot place the paper in the park position.</p>	<p>Check the following:</p> <ul style="list-style-type: none"> ▶ Whether the paper path is blocked by a foreign object. ▶ Whether the paper is damaged. ▶ Whether the upper friction is down and clicked into place. ▶ Whether the printhead gap is too small; see section Setting the print head gap, (page 38).
<div data-bbox="137 727 499 828" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Load Error</div>	<p>The printer cannot feed in the loaded paper.</p>	<p>Check the following:</p> <ul style="list-style-type: none"> ▶ Whether the paper path is blocked by a foreign object. ▶ Whether the paper is damaged. ▶ Whether the tractors are closed and locked. ▶ Whether the paper is too tight or loose. ▶ Whether the paper is within the specified range. <p>Details see section Loading paper, (page 30)</p>
<div data-bbox="137 1268 499 1368" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Load paper from ...</div> <p>alternating with</p> <div data-bbox="137 1459 499 1560" style="border: 1px solid black; padding: 5px;">Printing</div>	<p>The paper has run out during operation.</p> <ol style="list-style-type: none"> 1 Printer is switched on but no paper is loaded in the displayed (active) paper compartment. 2 The paper is not fed past the light barrier. 	<ul style="list-style-type: none"> ▶ Insert paper in the active sheet feeder. ▶ Place the paper more to the left. <p>If the display shows Online or Offline instead of Print, the printer has loaded no paper and there is no print job. It is no error message in this case, actions are not required.</p>

Message	Possible cause	Corrective action
Paper Jam	Paper jam.	<ul style="list-style-type: none"> ▶ Eliminate the paper jam detected by the paper motion sensor. For the procedure, see Paper jam (fanfold paper), (page 97) or Paper jam (single sheets), (page 98).
Hardware Alarm	Internal hardware error.	<ul style="list-style-type: none"> ▶ Try switching off and on. ▶ Check if changes to options have been previously carried out. ▶ Note down the display message. Contact your dealer.
Parity Error	Transmission error from computer to printer via the optional serial interface.	<ul style="list-style-type: none"> ▶ Compare the interface configuration of your printer with the settings of your computer (protocol), see Interfaces. (page 145). ▶ Check the cable, if necessary replace it. ▶ The cable exceeds the maximum allowed length, see Interface specifications, (page 113).
Frame Error	Transmission error (serial interface).	<ul style="list-style-type: none"> ▶ Compare the format setting of your printer with the setting of your computer. ▶ Check the permissible cable length, see Interface specifications, (page 113). ▶ See parity error.
Overrun Error	Received data which has not yet been printed is overwritten with new data.	<ul style="list-style-type: none"> ▶ If an optional serial interface is installed: Check that the correct busy protocol (e.g. XON XOFF) is set in the menu Serial interface, protocol, see Protocol (Protocol), (page 57). ▶ Check the interface cable, see section Connecting the printer, (page 8) and Interfaces. (page 145).

Message	Possible cause	Corrective action
<div style="border: 1px solid black; padding: 5px; width: fit-content;">Head Hot</div>	<p>The printer prints at lower speed.</p>	<ul style="list-style-type: none"> ▶ No action required. <p>When this message comes up even in a “cold” printer, please contact your technical service.</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;">Check Ribbon</div>	<p>The ribbon misses, is damaged and blocked or a non-genuine ribbon is installed.</p>	<ul style="list-style-type: none"> ▶ Only use genuine ribbon cassettes of the manufacturer. ▶ Replace the ribbon. ▶ Check that the print head carriage moves easily.

Additional display messages

These are not error messages, they give operating instructions and information from the printer to the user.

Message	Possible cause	Corrective action
Press any key	—	▶ To proceed press any key.
Loading Default	The factory-set parameters are loaded and are written into all menus.	▶ No action required.
Only available in Epson Mode	Functions which have no meaning in this emulation have been selected.	▶ For this function please switch to the appropriate emulation in the menu, see Selecting emulation (Emulate) , (page 52).
Park position	You are informed when the fanfold paper is in the park position.	▶ No action required.
Tear paper off	Note for the operator to tear off the paper automatically positioned at the tear off edge.	▶ Tear paper off.
Load paper from ...	Paper is not available in the selected paper path (... indicates the active paper path). Data is in the interface receiver buffer.	▶ Load paper, see section Loading paper , (page 30)



If messages appear which are not described here, please contact your customer service representative with exact details of the message.

11 Care and maintenance

The printer is designed to operate with minimal maintenance. It is advisable to clean the inside of the printer from time to time with a vacuum cleaner.

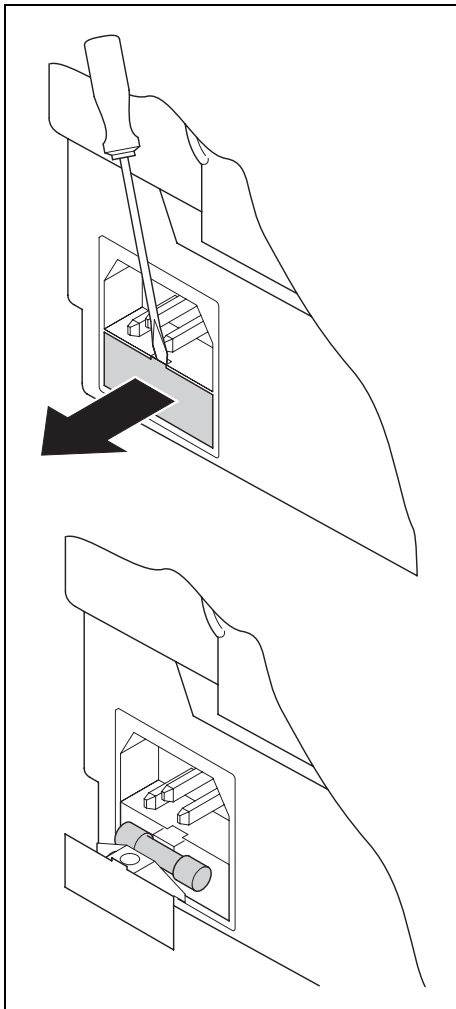


Before cleaning, turn off the printer, wait 5 to 10 seconds and disconnect the power cable.



Do not oil or grease the printer, especially the sliderails and shafts.

Replacing the fuse



The printer is provided with a power supply fuse which is accessible directly from the outside.

Open the small compartment below the power supply connector with a screwdriver and pull out the compartment completely. Remove the defective fuse and replace it by a new fuse of the same type.

The fuse ratings are specified on the printer type plate which is mounted above the power connector on the rear:

T2,5AH/250V

Cleaning the housing

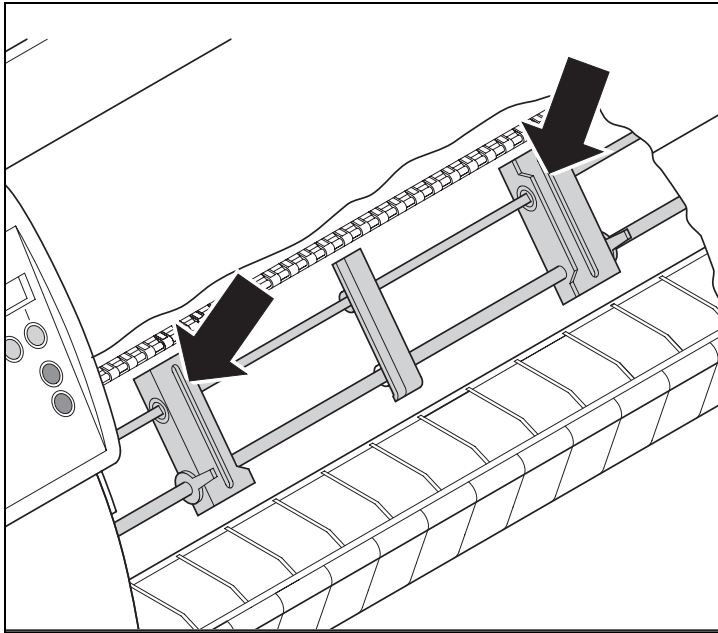
Clean the printer housing with mild detergent (use a dishwashing agent, if necessary, or a plastic cleaning agent) and a soft lint-free cloth.



Do not use abrasive cleaners. Never use solvents.

Cleaning the interior

Remove paper and dust with a soft brush.

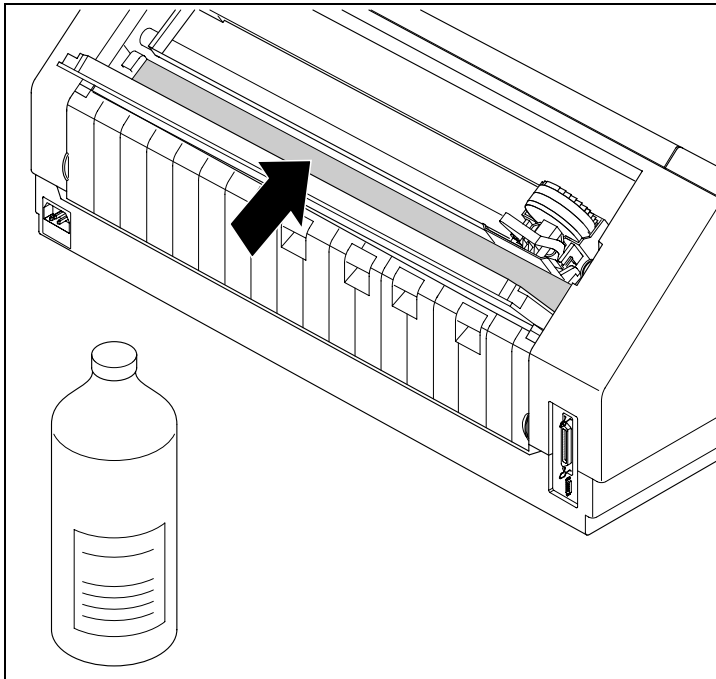


Check that any paper has been removed from the tractors.



For optimal function of the print head the interior of the printer has to be as dust free as possible. Clean the interior with a vacuum cleaner if necessary.

Cleaning the platen



Switch off the printer and open the upper cover after 4 to 5 seconds.

Remove the ribbon. Carefully clean the platen with platen roller cleaner (available from dealers).



Avoid touching parts and components in the printer interior.

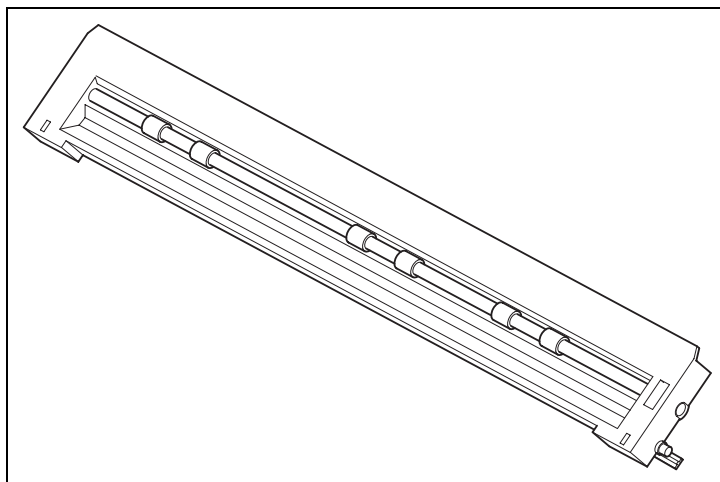
Ribbon

Check whether the ribbon is worn or damaged. The ribbon must be replaced if it is frayed, see [Changing the ribbon cassette](#), (page 16) and [Error messages via the display](#), (page 100).



The service life of the ribbon is 3,5 million characters for the narrow printer and 5 million characters for the broad printer.

Cleaning the upper friction



Clean the rollers of the upper friction as necessary with a mild cleaning agent and a soft, lint-free cloth.

Carriage shafts



Carriage shafts must not be oiled or greased; otherwise damage will occur on the printer.

A Specifications

Printer specifications

Printer system	Serial impact matrix printer Printhead with 24 needles (2 x 12; parallel) 0.25 mm bidirectional printing
Print speed and character matrices	
DPQ = Draft (Data Print Quality)	600 cps / 10.0 cpi 12 x 12 720 cps / 12.0 cpi 12 x 10 900 cps / 15.0 cpi 08 x 08* 900 cps / 15.0 cpi 12 x 08 514 cps / 17.1 cpi 12 x 12 1030 cps / 17.1 cpi 12 x 07** 600 cps / 20.0 cpi 12 x 10 1200 cps / 20.0 cpi 12 x 06**
CPQ = Copy (Copy Print Quality)	270 cps / 10.0 cpi 24 x 12 325 cps / 12.0 cpi 24 x 10 405 cps / 15.0 cpi 16 x 08* 405 cps / 15.0 cpi 24 x 08 230 cps / 17.1 cpi 24 x 12 270 cps / 20.0 cpi 24 x 10
NLQ (Near Letter Quality)	180 cps / 10.0 cpi 24 x 18 220 cps / 12.0 cpi 24 x 15 270 cps / 15.0 cpi 16 x 12* 135 cps / 15.0 cpi 24 x 18 155 cps / 17.1 cpi 24 x 18 180 cps / 20.0 cpi 24 x 15
LQ (Letter Quality)	90 cps / 10.0 cpi 24 x 36 110 cps / 12.0 cpi 24 x 30 135 cps / 15.0 cpi 16 x 24* 135 cps / 15.0 cpi 24 x 18 155 cps / 17.1 cpi 24 x 18 180 cps / 20.0 cpi 24 x 15
	* Epson emulation only (15 cpi, superscript, subscript) and MTPL microscript ** HS-Draft = On
Tab speed	50 inch/sec
Print width	<i>Narrow printer:</i> 80 characters at 10 cpi <i>Wide printer:</i> 136 characters at 10 cpi

Character pitch	5 / 6 / 7.5 / 8.6 / 10 / 12 / 15 / 17.1 / 20 cpi
Character size	
Height	3.32 mm (incl. descenders)
Width	2.19 mm, max. 2.43 mm
Fonts	
Standard	Print qualities: HS-Draft Print Quality, Data Print Quality, Copy Draft Quality, Near Letter Quality, Letter Quality Fonts: Courier, Roman, Sans Serif, OCR-A, OCR-B (all resident in NLQ und LQ); Roman scalable, Sans Serif scalable (only in LQ-2170 emulation); DLL is standard
Barcodes (standard)	23 + Large Character Printing (LCP) (see Barcode (page 139))
Emulations	
Standard	– MTPL (Tally Printer Language) – Epson LQ-2550/LQ-2170 – IBM Proprinter XL24e / IBM XL24e + AGM – PjL, only with TallCom III Ethernet interface
Optional	on request
Resolution	60 to 360 dpi horizontal 90 to 360 dpi vertical
Print attributes in all character pitches	Double width, italics, right justification, shadowed, auto centered, double height, bold, proportionally spaced, underlined, overlined, superscript, subscript; scalable with special LQ-2170 fonts
Self test	– ASCII test – Hex-dump – Fault display – Ribbon test
Printer buffer	128 KB max.
Panel	LCD display, 2 x 16 digits – Online – Setup – 4 softkeys
Noise	
Sound pressure level	L _{PAm} = ≤53 dB(A) in LQ with EN 27779
Sound power level	L _{AWd} = ≤6,9 B(A) EN 27779 (ISO 9296)

Continuous operation Throughput (ECMA 132) MTBF	>14 000 pages/month DPQ 482 pages/hour >10 000 h; 25% DC	
Mains voltage	120 V \pm 10% oder 220–240 V -10%, +15% 50/60 Hz, depending on the printer version	
Power consumption with Sleepmode = On	40 VA _{max} \leq 10 W	
Fuse	T 2,5 AH/250 V	
Approvals	cULus certification, CE certification, FCC Class B certification, VDE-GS certification	
Dimensions	<i>Narrow printer</i>	<i>Wide printer</i>
Width	424 mm	600 mm
Height	300 mm	300 mm
Depth	399 mm	399 mm
Weight	<i>Narrow printer:</i> 10.5 kg	<i>Wide printer:</i> 13.2 kg
Paper feed		
Feed speed	3.8 ips	
Feed first line (6 lpi)	48 ms	
View position	3.8 ips	
Reverse motion	Up to max. form length (22 inch) max. 1 inch for automatic single sheet feeder	
Printhead gap		
Standard	Automatic gap adjustment	
Paper transport		
Standard	<ul style="list-style-type: none"> – Tractor with parking position – Manual single sheet feeder, front insertion (friction rollers) 	
Optional	<ul style="list-style-type: none"> – Automatic single sheet feeder front and rear – Tractor 2 (front) and 3 (rear) 	
Service life		
Printhead	250 million/DPQ 12 x 12 Matrix	
Ribbon	<i>Narrow printer:</i> 3.5 million characters/10 cpi Draft <i>Wide printer:</i> 5.0 million characters/10 cpi Draft	

Environmental conditions	
Operation Temperature	+10° to +35°C
Rel. humidity	16 to 73%
Climate	IEC 721-3-7, Class 7K1
Storage	
Temperature	-5° to +45°C
Rel. humidity	5 to 95%
Climate	IEC 721-3-1, Class 1K3
Transport	
Temperature	-40° to +70°C
Rel. humidity	5 to 95%
Climate	IEC 721-3-2, Class 2K4

Interface specifications

<p>Parallel interface</p> <p>Type of data transmission</p> <p>Transmission rate</p> <p>Signal status</p> <p>Connection cable</p> <p>Voltage supply of external devices on pin 18</p> <p>Interface connections</p>	<p>bidirectional</p> <p>8-bit parallel interface (Centronics compatible) IEEE-1284; Nibble mode</p> <p>Max. 30 KHz</p> <p>Low: 0.0 V to +0.4 V</p> <p>High: +2.4 V to +5.0 V</p> <p>Material: AWG 28 at least</p> <p>Length: up to 2.0 m</p> <p>Twisted-pair cable with double-shield, acc. IEEE Std 1284 – 1294</p> <p>$U = +5\text{ V} \pm 10\%$</p> <p>$I = 0.5\text{ A}_{\text{max}}$</p> <p>Printer side: Amphenol 57-40360, 36-pin (or compatible)</p> <p>Cable side: Amphenol 57-30360, 25-pin (or compatible)</p>
<p>Serial interface</p> <p>Type</p> <p>Synchronization</p> <p>Transmission rate</p> <p>Signal status</p> <p>Connection cable</p> <p>Interface connections</p> <p>Transmission protocol</p> <p>Capacity of data buffer</p>	<p>RS232C interface</p> <p>Asynchronous</p> <p>600 bauds to 19,200 bauds</p> <p>OFF = Mark = log. 1 = -3 V to -15 V</p> <p>ON = Space = log. 0 = +3 V to +15 V</p> <p>Length up to 15 m</p> <p>ITT Cannon connector, series DB-25 S</p> <p>XON/XOFF, ENQ/STX, READY/BUSY, Robust XON/XOFF, ACK/NAK, ETX/ACK</p> <p>128 KB max.</p>

Paper specifications

Maximum printing width for all paper paths	<i>narrow printer:</i> 203,20 mm <i>wide printer:</i> 345,44 mm
Continuous paper tractor 1, single-layer	
Weight	60 to 120 g/m ²
Paper width	76 to 278 mm (<i>narrow printer</i>) 76 to 420 mm (<i>wide printer</i>)
Form length	76 to 559 mm
Continuous paper tractor 1, multi-layer (to be tested individually)	
Copies	1 + 5
Weight of original	45 to 65 g/m ²
Weight of copies	45 to 56 g/m ²
Weight of last sheet	45 to 65 g/m ²
Thickness (max.)	0.6 mm
Paper width	76 to 278 mm (<i>narrow printer</i>) 76 to 420 mm (<i>wide printer</i>)
Form length	76 to 559 mm
Single sheet, manual single sheet feeder, single-layer	
Weight	80 to 120 g/m ²
Paper width	76 to 278 mm (<i>narrow printer</i>) 76 to 420 mm (<i>wide printer</i>)
Form length	76 to 305 mm
Single sheet, manual single sheet feeder, multi-layer (to be tested individually)	
Copies	1 + 5
Weight of original	50 to 60 g/m ²
Weight of copies	45 to 56 g/m ²
Weight of last sheet	50 to 60 g/m ²
Thickness (max.)	0.6 mm
Paper width	76 to 278 mm (<i>narrow printer</i>) 76 to 420 mm (<i>wide printer</i>)
Form length	76 to 305 mm

Envelopes Width Length Thickness	76 to 420 mm 76 to 305 mm 0.32 mm
Printing paper	Recycling paper made of 100% waste paper (to DIN 19 309) can be processed
Set of forms	Sets of forms may be used only if the top edge is bound. The binding edge should be as soft as possible. A wavy binding edge may hamper the smooth feeding of these sets. Multi-part forms have to be inserted with the glued top facing down. Multi-part forms should be tested for suitability.
Paper quality	Light pulp paper of medium fine quality, paper bearing the quality mark SM Post and photocopy paper are suitable for use. Unsuitable are: satin-finisch or coated papers, imitation art papers, and embossed papers. Since paper as natural material reacts strongly to environmental influences (e.g. humidity, temperature), the place of storage should be selected carefully. We recommend that this kind of paper should be tested extensively before larger quantities are acquired. Should papers with a dark reverse side be used, these should also be tested for their functionality. Please pay attention to the use of infrared reflecting colors, when acquiring these papers.

B Character sets

This chapter shows the MTPL character sets and contains a list of all available character sets which can be selected via control panel or by escape sequences.

Note that MTPL sequences are available in all emulation modes.

The following example shows you how to find the hexadecimal value for a character from the symbol set tables.

hex	0	1	2	3	4
dec					
0	NUL 0		SP 32	0 48	@ 64
1			! 33	1 49	A 65
2			" 34	2 50	B 66
:			# 35	3 51	C 67

ASCII „B“ = hex.42 = dez 66

MTPL standard character set

hex dec	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL 0		SP 32	0 48	@ 64	P 80	` 96	p 112			á 160	█ 176	L 192	⊥ 208	α 224	≡ 240
1		DC1 17	! 33	1 49	A 65	Q 81	a 97	q 113			í 161	█ 177	⊥ 193	⊥ 209	β 225	± 241
2	STX 2		" 34	2 50	B 66	R 82	b 98	r 114			ó 162	█ 178	⊥ 194	⊥ 210	Γ 226	≥ 242
3	ETX 3	DC3 19	# 35	3 51	C 67	S 83	c 99	s 115			ú 163	| 179	⊥ 195	⊥ 211	π 227	≤ 243
4			\$ 36	4 52	D 68	T 84	d 100	t 116	IND 132		ñ 164	⊥ 180	- 196	⊥ 212	Σ 228	∫ 244
5	ENQ 5	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117	NEL 133		Ñ 165	⊥ 181	⊥ 197	⊥ 213	σ 229	J 245
6	ACK 6		& 38	6 54	F 70	V 86	f 102	v 118			ª 166	⊥ 182	⊥ 198	⊥ 214	μ 230	÷ 246
7	BEL 7		' 39	7 55	G 71	W 87	g 103	w 119			º 167	⊥ 183	⊥ 199	⊥ 215	τ 231	≈ 247
8	BS 8		(40	8 56	H 72	X 88	h 104	x 120	HTS 136		¿ 168	⊥ 184	⊥ 200	⊥ 216	Φ 232	° 248
9	HT 9		) 41	9 57	I 73	Y 89	i 105	y 121			⌈ 169	⊥ 185	⊥ 201	⊥ 217	Θ 233	· 249
A	LF 10		* 42	: 58	J 74	Z 90	j 106	z 122	VTS 138		¬ 170	⊥ 186	⊥ 202	⊥ 218	Ω 234	· 250
B	VT 11	ESC 27	+ 43	; 59	K 75	[91	k 107	{ 123	PLD 139	CSI 155	½ 171	⊥ 187	⊥ 203	█ 219	δ 235	√ 251
C	FF 12		, 44	< 60	L 76	\ 92	l 108	| 124	PLU 140		¼ 172	⊥ 188	⊥ 204	█ 220	∞ 236	η 252
D	CR 13		- 45	= 61	M 77	] 93	m 109	} 125	RI 141		¡ 173	⊥ 189	= 205	█ 221	φ 237	² 253
E	SO 14		. 46	> 62	N 78	^ 94	n 110	~ 126	SS2 142		« 174	⊥ 190	⊥ 206	█ 222	ε 238	· 254
F	SI 15		/ 47	? 63	O 79	_ 95	o 111	DEL 127	SS3 143		» 175	⊥ 191	⊥ 207	█ 223	∩ 239	DEL 255

MTPL, international substitution characters

	dec	35	36	64	91	92	93	94	96	123	124	125	126
	hex	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
US ASCII		#	\$	@	[	\	\]	^	`	{	|	}	~
UK ASCII		£	\$	@	[	\	\]	^	`	{	|	}	—
Swedish		#	¤	é	ä	ö	Å	Ü	é	ä	ö	å	ü
German		#	\$	§	ä	ö	ü	^	`	ä	ö	ü	ß
Portuguese		#	\$	§	ã	ç	õ	^	`	ã	ç	õ	°
French		£	\$	à	°	ç	§	^	`	é	ù	è	¨
Italian		£	\$	§	°	ç	é	^	ù	à	ò	è	ì
Spanish		£	\$	§	i	ñ	¿	^	`	°	ñ	ç	~
Norwegian		#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	—

OCR-A character set

hex dec	0	1	2	3	4	5	6	7
0	NUL 0		SP 32	0 48	@ 64	P 80	H 96	p 112
1		DC1 17	! 33	1 49	A 65	Q 81	a 97	q 113
2	STX 2		" 34	2 50	B 66	R 82	b 98	r 114
3	ETX 3	DC3 19	# 35	3 51	C 67	S 83	c 99	s 115
4			\$ 36	4 52	D 68	T 84	d 100	t 116
5	ENQ 5	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117
6	ACK 6		& 38	6 54	F 70	V 86	f 102	v 118
7	BEL 7		' 39	7 55	G 71	W 87	g 103	w 119
8	BS 8		(40	8 56	H 72	X 88	h 104	x 120
9	HT 9		) 41	9 57	I 73	Y 89	i 105	y 121
A	LF 10		* 42	: 58	J 74	Z 90	j 106	z 122
B	VT 11	ESC 27	+ 43	; 59	K 75	[91	k 107	{ 123
C	FF 12		, 44	< 60	L 76	\ 92	l 108	| 124
D	CR 13		- 45	= 61	M 77	] 93	m 109	} 125
E	SO 14		. 46	> 62	N 78	^ 94	n 110	~ 126
F	SI 15		/ 47	? 63	O 79	_ 95	o 111	

OCR-B character set

hex dec	0	1	2	3	4	5	6	7
0 0	NUL 16		SP 32	0 48	@ 64	P 80	H 96	p 112
1 1		DC1 17	! 33	1 49	A 65	Q 81	a 97	q 113
2 2	STX 2		" 34	2 50	B 66	R 82	b 98	r 114
3 3	ETX 3	DC3 19	# 35	3 51	C 67	S 83	c 99	s 115
4 4			\$ 36	4 52	D 68	T 84	d 100	t 116
5 5	ENQ 5	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117
6 6	ACK 6		& 38	6 54	F 70	V 86	f 102	v 118
7 7	BEL 7		' 39	7 55	G 71	W 87	g 103	w 119
8 8	BS 8		(40	8 56	H 72	X 88	h 104	x 120
9 9	HT 9		) 41	9 57	I 73	Y 89	i 105	y 121
A 10	LF 10		* 42	: 58	J 74	Z 90	j 106	z 122
B 11	VT 11	ESC 27	+ 43	; 59	K 75	[91	k 107	{ 123
C 12	FF 12		, 44	< 60	L 76	\ 92	l 108	| 124
D 13	CR 13		- 45	= 61	M 77	] 93	m 109	} 125
E 14	SO 14		. 46	> 62	N 78	^ 94	n 110	~ 126
F 15	SI 15		/ 47	? 63	O 79	_ 95	o 111	 127

Available character sets and fonts

The following list includes all the character sets you can select from the control panel or via ESC sequences and specifies the fonts in which they are available.

	ID for ESC R/ESC (	Draft	Draft Copy	Roman	Sans Serif	Courier (incl. Courier IBM)	OCR-B	OCR-A	Prestige	Script	Orator	Gothic	Souvenir
ISO USA	42	X	X	X	X	X	X	X	X	X	X	X	X
ISO UK	41	X	X	X	X	X	X	X	X	X	X	X	X
ISO France	52	X	X	X	X	X	X	X	X	X	X	X	X
ISO Germany	4B	X	X	X	X	X	X	X	X	X	X	X	X
ISO Italy	59	X	X	X	X	X	X	X	X	X	X	X	X
ISO Sweden	48	X	X	X	X	X	X	X	X	X	X	X	X
ISO Norway	60	X	X	X	X	X	X	X	X	X	X	X	X
ISO Spain	5A	X	X	X	X	X	X	X	X	X	X	X	X
ISO Portugal	4C	X	X	X	X	X	X	X	X	X	X	X	X
Epson USA	00	X	X	X	X	X	X	X	X	X	X	X	X
Epson France	01	X	X	X	X	X	X	X	X	X	X	X	X
Epson Germany	02	X	X	X	X	X	X	X	X	X	X	X	X
Epson UK	03	X	X	X	X	X	X	X	X	X	X	X	X
Epson Denmark	04	X	X	X	X	X	X	X	X	X	X	X	X
Epson Sweden	05	X	X	X	X	X	X	X	X	X	X	X	X
Epson Italy	06	X	X	X	X	X	X	X	X	X	X	X	X
Epson Spain	07	X	X	X	X	X	X	X	X	X	X	X	X
Epson Japan	08	X	X	X	X	X	X	X	X	X	X	X	X
Epson Norway	09	X	X	X	X	X	X	X	X	X	X	X	X
Epson Denmark II	0A	X	X	X	X	X	X	X	X	X	X	X	X
Epson Spain II	0B	X	X	X	X	X	X	X	X	X	X	X	X
Epson Latin America	0C	X	X	X	X	X	X	X	X	X	X	X	X
Epson Korea	0D	X	X	X	X	X	X	X	X	X	X	X	X
Epson Legal	40	X	X	X	X	X	X	X	X	X	X	X	X
CRO-ASCII	3C	X	X	-	X	X	-	-	-	-	-	-	-
Arabic Farsi	96	-	-	*1	*1	*1	*1	-	-	-	-	-	-

	ID for ESC R/ESC (	Draft	Draft Copy	Roman	Sans Serif	Courier (incl. Courier IBM)	OCR-B	OCR-A	Prestige	Script	Orator	Gothic	Souvenir
Arabic Urdu	97	-	-	*1	*1	*1	*1	-	-	-	-	-	-
Greek DEC	46	X	X	-		-	-	-	-	-	-	-	-
Greek ELOT 928	6C	X	X	-	X	-	-	-	-	-	-	-	-
CP437 Latin US	80	X	X	X	X	X	X	X	X	X	X	X	X
CP737 Greek	93	X	X	-	X	-	-	-	-	-	-	-	-
CP850 Latin 1	82	X	X	X	X	X	X	X	X	X	X	X	X
CP851 Greek	88	X	X	-	X	-	-	-	-	-	-	-	-
CP852 Latin 2	87	X	X	-	X	X	-	-	-	-	-	-	-
CP857 Turkish	8D	X	X	-	X	X	-	-	-	-	-	-	-
CP858 (IBM with €)	9E	X	X	X	X	X	X	X	X	X	X	X	X
CP860 Portugal	84	X	X	X	X	X	X	X	X	X	X	X	X
CP861 Icelandic	94	X	X	X	X	X	X	X	-	-	-	-	-
CP863 French Canada	85	X	X	X	X	X	X	X	X	X	X	X	X
CP864 Arabic	8C	-	-	*1	*1	*1	*1	-	-	-	-	-	-
CP864 Arab. Extended	95	-	-	*1	*1	*1	*1	-	-	-	-	-	-
CP865 Nordic	86	X	X	X	X	X	X	X	X	X	X	X	X
CP866 Cyrillic	8E	X	X	-	X	X	-	-	-	-	-	-	-
CP866 Bulgaria	9D	X	X	-	X	X	-	-	-	-	-	-	-
Siemens Turkish	9B	X	X	-	X	X	-	-	-	-	-	-	-
DEC Turkish	9C	X	X	-	X	X	-	-	-	-	-	-	-
CP1250 Win Latin 2	70	X	X	-	X	X	-	-	-	-	-	-	-
CP1251 Win Cyrillic	71	X	X	-	X	X	-	-	-	-	-	-	-
CP1252 Win Latin 1	72	X	X	X	X	X	X	X	-	-	-	-	-
CP1253 Win Greek	73	X	X	-	X	-	-	-	-	-	-	-	-
CP1254 Win Turkish	74	X	X	-	X	X	-	-	-	-	-	-	-
8859-1 Latin 1	25	X	X	X	X	X	X	X	X	X	X	X	X
8859-1 Latin 1 (SAP)	2B	X	X	X	X	X	X	X	X	X	-	-	-
8859-2 Latin 2	26	X	X	-	X	X	-	-	-	-	-	-	-
8859-5 Cyrillic	2A	X	X	-	X	X	-	-	-	-	-	-	-

	ID for ESC R/ESC (	Draft	Draft Copy	Roman	Sans Serif	Courier (incl. Courier IBM)	OCR-B	OCR-A	Prestige	Script	Orator	Gothic	Souvenir
8859-7 Greek	2D	X	X	-	X	-	-	-	-	-	-	-	-
8859-9 Turkish	2E	X	X	-	X	X	-	-	-	-	-	-	-
8859-15 Latin 9 (Euro)	2F	X	X	X	X	X	X	X	X	X	-	-	-
BRASCII	6D	X	X	X	X	X	X	X	-	-	-	-	-
Abicomp	6E	X	X	X	X	X	X	X	-	-	-	-	-
Roman 8	4D	X	X	X	X	X	X	X	-	-	-	-	-
Coax/Twinax(Hebrew)	4F	X	X	X	X	*2	-	-	*3	*4	-	-	-
New-437 (Hebrew)	81	X	X	X	X	*2	-	-	*3	*4	-	-	-
New-DIG 850 (Hebr.)	83	X	X	X	X	*2	-	-	*3	*4	-	-	-
Old-Code 860 (Hebr.)	98	X	X	X	X	*2	-	-	*3	*4	-	-	-
Flarro 863 (Hebrew)	99	X	X	X	X	*2	-	-	*3	*4	-	-	-
Table 865 (Hebrew)	9A	X	X	X	X	*2	-	-	*3	*4	-	-	-
CP775 Baltic	A6	X	X	-	X	X	-	-	-	-	-	-	-
CP1257 Baltic	77	X	X	-	X	X	-	-	-	-	-	-	-
Mazovia (Poland)	92	X	X	-	X	X	-	-	-	-	-	-	-
Kamenicky (Czech)	91	X	X	-	X	X	-	-	-	-	-	-	-
CP866 Ukraine	8F	X	X	-	X	X	-	-	-	-	-	-	-
CP866 Kazakhstan	90	X	X	-	X	X	-	-	-	-	-	-	-
8859-6 Arabic	24	-	-	*1	*1	*1	*1	-	-	-	-	-	-
CP1256 Arabic	76	-	-	*1	*1	*1	*1	-	-	-	-	-	-

*1: only in 10 and 12 cpi, *2 : same as Sans Serif, *3 : same as Roman,
*4 only in 10 cpi

Emulations

General

When a printer understands the control set written for another printer type, it is said to emulate the other printer. Your printer emulates, i.e. “understands” the Epson LQ-2550 in its standard version.

Escape sequences

Escape sequences or control codes tell the printer that the following transmitted code is a printer command and not a printable character.

They allow the selection of printer functions or the changing of printer parameters from the computer. By transmitting an escape sequence, you are able to change the previously set configuration of the printer (e.g. character set).

This chapter contains an introduction into the sequences and control codes which are used by your printer.



The settings made by escape sequences have priority over the settings made in menu mode; therefore they override these.

What are escape sequences?

An escape sequence consists of an ESCape control character (ESC = decimal 27 or hexadecimal 1B) followed by one or more characters, which represent commands to the printer. Please note that this escape character has nothing to do with the ESC key on your computer keyboard.

For example, the control character ESC followed by the character “4” tells your printer to print the subsequent text in italics.

MTPL sequences

Apart from the Escape sequences and control codes your printer is equipped with MTPL sequences. These sequences provide a large number of additional ways to control your printer. Many functions can only be carried out using the MTPL sequences as you will see when you look at the list of available command codes.

Control codes

Control codes give simple instructions to the printer to do a specific function. Unlike escape sequences, control codes do not begin with the ESC control code. Instead, they consist of special single-character non-printing commands (e.g. LF, FF, DC2).

The \$\$ procedure

Most of the printer functions can be selected with control sequences (ESC sequences). For this purpose, the signal character ESC, followed by the specific sequence must be transmitted from the computer to the printer.

The printer replaces \$\$ characters in the data stream with ESC (hex. 1B) if the parameter **Escape=ESC+\$\$** is selected in the printer menu.

Example:

In the MTPL + IBM Proprinter emulation, bold print can be switched on by the sequence <ESC>E and can be switched off with the sequence <ESC>F.

Input	Highlight the word \$\$E Printer \$\$F with bold print
Output	Highlight the word Printer with bold print



This procedure is significant when you are working with older text programs that do not have any or an inadequate printer driver. It is also possible to insert ESC sequences in normal ASCII texts (e.g. program listings) with this procedure. The function of the ESC character remains unaffected.

How are escape sequences used?

Escape sequences are transmitted to the printer by your computer software via the printer driver. Experienced users and programmers can also control the printer directly via control sequences, however before you start working with escape sequences and control codes, we recommend that you study the computer software manual.

To enter control codes the Ctrl key and an ASCII character must be pressed simultaneously. For instance, by pressing Ctrl and J a line feed is accomplished (it is required to output the character string on the printer). More information concerning this topic is contained in your computer software manual and the corresponding Programmer's Application Manuals (see section [Programmer's application manuals](#) on page 152).



The selected emulation must correspond to the printer driver of your application program. Settings caused by ESC sequences remain valid, until they are switched off by another control code. All settings are reset to the original menu, when the printer is switched off.

MTPL

As the emulations do not cover the entire scope of your printer, a new printer language, which is adapted to this printer model, has been created. Using MTPL you are able to optimize operation and handling.

MTPL can be used in connection with other emulations or can be used alone.

Example in BASIC

```
open "LPT1:" as #1
width #1,255
Text1$ = "10 characters/inch"
Text2$ = "15 characters/inch"
ESC$ = chr$(27)
print
#1,ESC$;" [4w";Text1$;ESC$;" [6w";Text2$;ESC$;" [4w";Text1$
end
```

Example in Pascal

```
program cpi_example;
uses printer;
const ESC = #27;
      Text1 = "10 characters/inch";
      Text2 = "15 characters/inch";
begin
writeln(1st,Esc," [4w",Text1,ESC," [6w",Text2,Esc," [4w",Text1);
end.
```

Printout

After the program has been completed the following text will be printed out:

10 characters/inch 15 characters/inch 10 characters/inch

List of available control codes

The following table shows sequences marked by a ✓ if they are available in the various emulations. The MTPL sequences can be used within all emulation modes. The corresponding sequences are marked by a *.



If you want to know more about control codes, we recommend our ***Programmer's Application Manual*** on this CD-ROM.

MTPL	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
✓	✓		✓	✓	<BEL>	Signal tone
✓	✓	✓	✓	✓	<BS>	Control character BS (Backspace)
			✓	✓	<CAN>	Deleting a data line
✓	✓	✓	✓	✓	<CR>	Control character CR (Carriage return)
✓					<CSI>	Start character for MTPL sequences, corr. ESC [
			✓	✓	<DC1>	Selecting the printer
			✓	✓	<DC2>	Condensed printing OFF (set by <SI> or <ESC><SI>)
			✓	✓	<DC3>	Deselecting the printer
			✓	✓	<DC4>	Double-wide printing OFF (set by <SO> or <ESC><SO>)
✓	✓	*	✓	✓	<DEL>	Delete line. Epson: Delete last character
✓	✓	✓	✓	✓	<ESC>	Start character for programming sequence
	✓	✓	✓	✓	<ESC>!<n>	Print mode selection
		✓	✓	✓	<ESC>#	Bit 8 = unchanged
			✓	✓	<ESC>\${<n1><n2>	Perform absolute horizontal step
			✓	✓	<ESC>%<0><0>	Select ROM character generator
			✓	✓	<ESC>%<1><0>	Select download generator
✓	*	*	*	*	<ESC>%1<n1><n2>	Graphics print with 180 dpi/HQ
✓	*	*	*	*	<ESC>%2<n1><n2>	Graphics print with 360 dpi/HQ
✓	*	*	*	*	<ESC>%3<n1> <n2>	Graphics print with 60 dpi
✓	*	*	*	*	<ESC>%4<n1> <n2>	Graphics print with 120 dpi
✓	*	*	*	*	<ESC>%5<n1> <n2>	Graphics print with 80 dpi
✓	*	*	*	*	<ESC>%7<n1> <n2>	Graphics print with 240 dpi
✓	*	*	*	*	<ESC>%8<n1> <n2>	Graphics print with 72 dpi
✓	*	*	*	*	<ESC>%9<n1><n2>	Graphics print with 90 dpi
			✓	✓	<ESC>&<s><x><y>..	Define download character
✓	*	*	*	*	<ESC>(&	Character set ISO 8859-2
✓	*	*	*	*	<ESC>(*	Character set ISO 8859-5
✓	*	*	*	*	<ESC>(+	Character set ISO 8859-1 SAP

MTP/L	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
✓	*	*	*	*	<ESC>(.	Character set ISO 8859-9
✓	*	*	*	*	<ESC>/	Character set ISO 8859-15
✓	*	*	*	*	<ESC><	Character set Cro ASCII
				✓	<ESC>(c	Defining the page format
				✓	<ESC>(v	Relative vertical printing position
				✓	<ESC>(t	Assigning a character table
✓	*	*	*	*	<ESC>(m	Character set BRASCII
✓	*	*	*	*	<ESC>(n	Character set Abicomp
✓	*	*	*	*	<ESC>(p	Windows character set 1250 (Latin2)
✓	*	*	*	*	<ESC>(q	Windows character set 1251 (Cyrillic)
✓	*	*	*	*	<ESC>(r	Windows character set 1252 (Latin1)
✓	*	*	*	*	<ESC>(t	Windows character set 1254 (Turkish)
✓	*	*	*	*	<ESC>(	Character set Norwegian
				✓	<ESC>(^<n1><n2><d1><dn>	Print data as characters
✓	*	*	*	*	<ESC>(A	Character set UK-ASCII
✓	*	*	*	*	<ESC>(B	Character set US-ASCII
				✓	<ESC>(C	Defining the page length
✓	*	*	*	*	<ESC>(MI>F	Assign character set G0
				✓	<ESC>(G	Selecting graphics mode
✓	*	*	*	*	<ESC>(H	Character set Swedish-Finnish
✓	*	*	*	*	<ESC>(K	Character set German
✓	*	*	*	*	<ESC>(L	Character set Portuguese
✓	*	*	*	*	<ESC>(R	Character set French
				✓	<ESC>(U	Setting positioning units in n/3600 inch
				✓	<ESC>(V	Absolute vertical printing position
✓	*	*	*	*	<ESC>(Y	Character set Italian
✓	*	*	*	*	<ESC>(Z	Character set Spanish
✓	*	*	*	*	<ESC>MI>F	Assign character set G1
		✓	✓	✓	<ESC>*<0><n1> <n2>	Set graphics print to 60 dpi
		✓	✓	✓	<ESC>*<1><n1> <n2>	Set graphics print to 120 dpi
		✓	✓	✓	<ESC>*<2><n1> <n2>	Set graphics print to 120 dpi
		✓	✓	✓	<ESC>*<3><n1> <n2>	Set graphics print to 240 dpi
		✓	✓	✓	<ESC>*<32><n1> <n2>	Set graphics print to 60 dpi
		✓	✓	✓	<ESC>*<33><n1> <n2>	Set graphics print to 120 dpi
		✓	✓	✓	<ESC>*<38><n1> <n2>	Set graphics print to 90 dpi
		✓	✓	✓	<ESC>*<39><n1> <n2>	Set graphics print to 180 dpi

MTPL	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
		✓	✓	✓	<ESC>*4<n1> <n2>	Set graphics print to 80 dpi
		✓	✓	✓	<ESC>*40<n1> <n2>	Set graphics print to 360 dpi
✓	*	*	*	*	<ESC>*MI>F	Assign character set G2
	✓	✓	✓		<ESC>-<n>	Underlining ON/OFF
			✓		<ESC>/<m>	Select vertical tab channels
				✓	<ESC>.	Printing raster graphics
	✓	✓			<ESC>:	Condensed printing 12 cpi ON
			✓	✓	<ESC>:<0><n><m>	Copy ROM character set
			✓	✓	<ESC><	Unidirectional printing for 1 line
			✓	✓	<ESC>=	Set bit 8 = 0
	✓	✓			<ESC>=<C1><C2>...	Load font/character set
			✓	✓	<ESC>>	Set bit 8 = 1
			✓	✓	<ESC>?<s><n>	Reload a graphics mode
			✓	✓	<ESC>@	Initialize printer
✓	*	*	*	*	<ESC>[	MTPL start character for programming sequence
✓	✓	✓	✓	✓	<ESC>[\$A<n1><n2>	Fast graphic print with 90 dpi
✓	✓	✓	✓	✓	<ESC>[\$B<n1><n2>	Fast graphic print with 180 dpi
✓	*	*	*	*	<ESC>[+0<u>	Compmode = On
✓	*	*	*	*	<ESC>[+1<u>	Compmpde = Off
✓	*	*	*	*	<ESC>[:y	Right justification and centering OFF
✓	*	*	*	*	<ESC>[=z	Bold ON
✓	*	*	*	*	<ESC>[>z	Bold OFF
✓	*	*	*	*	<ESC>[?1~	MTPL command set
✓	*	*	*	*	<ESC>[?10~	Barcode interpretation OFF
✓	*	*	*	*	<ESC>[?11~	Start barcode interpretation
✓	*	*	*	*	<ESC>[?4~	MTPL + IBM Proprinter-24 command set
✓	*	*	*	*	<ESC>[?50h	Selecting character sets with 256 characters
✓	*	*	*	*	<ESC>[?50l	Selecting character sets with 94 characters
✓	*		*	*	<ESC>[?51h	Proportional fonts automatic NLQ and LQ
✓	*		*	*	<ESC>[?51l	Proportional fonts in draft mode possible (default)
✓	*	*	*	*	<ESC>[?52h	Font selection (ESC[10...19m) possible only for NLQ and LQ
✓	*	*	*	*	<ESC>[?52l	Font selection (ESC[10...19m) Draft possible (default)
✓	*	*	*	*	<ESC>[?53h	Extended character set
✓	*	*	*	*	<ESC>[?53l	Standard character set
✓	*	*	*	*	<ESC>[?6~	MTPL + EPSON LQ command set
✓	*	*	*	*	<ESC>[?7h	Line overrun = CR + LF

MTP/L	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
✓	*	*	*	*	<ESC>[?7I	Line overrun = Truncating data outside of the printing area
✓	*	*	*	*	<ESC>[?<n>-	Change emulation
	✓	✓			<ESC>[@<n1> <n2>...	Set double height
	✓	✓			<ESC>[\<n1> <n2>...	Change vertical base units
✓	*	*	*	*	<ESC>[0;n{	Select single sheet operation
✓	*	*	*	*	<ESC>[0;0r	Clear top and bottom margin
✓	*	*	*	*	<ESC>[0;0s	Clear left and right margin
✓	*	*	*	*	<ESC>[0g	Clear horizontal tab at the current printhead position
✓	*	*	*	*	<ESC>[0m	Clear all selected fonts
✓	*	*	*	*	<ESC>[0m	Reset colour (reserved)
✓	*	*	*	*	<ESC>[0 SP I	Measuring unit decipoint
✓	*	*	*	*	<ESC>[0 SP K	Set horizontal pitch to 10 cpi
✓	*	*	*	*	<ESC>[0 SP L	Set vertical spacing to 6 lpi
✓	*	*	*	*	<ESC>[0 SP X	High print quality
✓	*	*	*	*	<ESC>[0w	Set 5 cpi
✓	*	*	*	*	<ESC>[0y	Selecting Draft or HS printing quality
✓	*	*	*	*	<ESC>[0z	Superscript ON
✓	*	*	*	*	<ESC>[10m	Font 0 Default: Draft or HS Roman
✓	*	*	*	*	<ESC>[10y	Right and centre adjustment OFF
✓	*	*	*	*	<ESC>[10z	Microscript ON
✓	*	*	*	*	<ESC>[11e	Set PUM (absolute measuring unit) to OFF
✓	*	*	*	*	<ESC>[11h	Set PUM (absolute measuring unit) to ON
✓	*	*	*	*	<ESC>[11m	Font 1 Default: HS Courier
✓	*	*	*	*	<ESC>[11w	Set 20 cpi
✓	*	*	*	*	<ESC>[11y	Select print quality Draft or HS
✓	*	*	*	*	<ESC>[12m	Font 2 Default: HQ Courier
✓	*	*	*	*	<ESC>[12 SP K	Set horizontal pitch to 12 cpi
✓	*	*	*	*	<ESC>[12w	Set horizontal pitch to 10 cpi
✓	*	*	*	*	<ESC>[12y	Select print quality LQ or HQ
✓	*	*	*	*	<ESC>[12z	Double height ON (top portion)
✓	*	*	*	*	<ESC>[13m	Font 3 Default: HS S Serif
✓	*	*	*	*	<ESC>[13y	HQ with high resolution
✓	*	*	*	*	<ESC>[13z	Double height ON (lower portion)
✓	*	*	*	*	<ESC>[14m	Font 4 Default: HQ S Serif
✓	*	*	*	*	<ESC>[15m	Font 5 Default: HQ Roman
✓	*	*	*	*	<ESC>[15 SP K	Set horizontal pitch to 15 cpi

MTP/L	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
✓	*	*	*	*	<ESC>[16m	Font 6 Default: HQ in actual font
✓	*	*	*	*	<ESC>[17m	Font 7 Default: HQ in actual font
✓	*	*	*	*	<ESC>[18m	Font 8 Default: HQ OCRB
✓	*	*	*	*	<ESC>[19m	Font 9 Default: HQ OCRA
✓	*	*	*	*	<ESC>[1 g	Clear vertical tab at current position
					<ESC> [1 SP k	Printout in Royal Mail customer barcode
✓	*	*	*	*	<ESC>[1 SP L	Set vertical spacing to 4 lpi
✓	*	*	*	*	<ESC>[1 SP p	Initiate US Postnet Barcode
✓	*	*	*	*	<ESC>[1 SP X	Print quality medium or HQ
✓	*	*	*	*	<ESC>[1w	Set 6 cpi
✓	*	*	*	*	<ESC>[1y	Print quality HS
✓	*	*	*	*	<ESC>[1z	Subscript ON
✓	*	*	*	*	<ESC>[21{	ASF-1: Select feeder front
✓	*	*	*	*	<ESC>[22{	ASF-2: Select feeder rear
✓	*	*	*	*	<ESC>[21m	Double underlining
✓	*	*	*	*	<ESC>[23m	Italics OFF
✓	*	*	*	*	<ESC>[24m	Underline OFF
✓	*	*	*	*	<ESC>[26m	Proportional font ON
✓	*	*	*	*	<ESC>[2g	Clear all horizontal tabs in the current line
✓	*	*	*	*	<ESC>[2J	Print page
✓	*	*	*	*	<ESC>[2 SP I	Measuring unit decipoint
✓	*	*	*	*	<ESC> [2 SP k	Printout in Kix barcode
✓	*	*	*	*	<ESC>[2 SP L	Set vertical spacing to 3 lpi
✓	*	*	*	*	<ESC>[2 SP X	Print quality low/HS
✓	*	*	*	*	<ESC>[2w	Set 7.5 cpi
✓	*	*	*	*	<ESC>[2y	Proportional font ON
✓	*	*	*	*	<ESC>[2z	Double height OFF
✓	*	*	*	*	<ESC>[2z	Superscript, subscript and microscript OFF
✓	*	*	*	*	<ESC>[30m	Black
✓	*	*	*	*	<ESC>[<n>m	Color; n = 31–36
✓	*	*	*	*	<ESC>[3g	Clear all horizontal tabs
✓	*	*	*	*	<ESC>[3m	Italics ON
✓	*	*	*	*	<ESC>[3 SP L	Set vertical spacing to 12 lpi
✓	*	*	*	*	<ESC>[3w	Set 8.6 cpi
✓	*	*	*	*	<ESC>[3z	Line density 6 lpi (= line spacing 1/6 inch)
✓	*	*	*	*	<ESC>[4g	Clear all vertical tabs

MTP/L	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
✓	*	*	*	*	<ESC>[4m	Underline ON
✓	*	*	*	*	<ESC>[4 SP L	Set vertical spacing to 8 lpi
✓	*	*	*	*	<ESC>[4w	Set 10 cpi
✓	*	*	*	*	<ESC>[4y	Selecting NLQ or HS printing quality at 10 cpi
✓	*	*	*	*	<ESC>[4z	Line density 8 lpi (= line spacing 1/8 inch)
✓	*	*	*	*	<ESC>[5{	Select fanfold paper mode tractor 1
✓	*	*	*	*	<ESC>[6{	Select fanfold paper mode tractor 2
✓	*	*	*	*	<ESC>[50m	Proportional font OFF
✓	*	*	*	*	<ESC>[50{	Page at print position
✓	*	*	*	*	<ESC>[51{	Page at tear off position (perforation)
✓	*	*	*	*	<ESC>[52{	Page at view position
✓	*	*	*	*	<ESC>[53m	Overlining ON
✓	*	*	*	*	<ESC>[54{	Cut at current line (option)
✓	*	*	*	*	<ESC>[55m	Overlining OFF
✓	*	*	*	*	<ESC>[5n	Request status report
✓	*	*	*	*	<ESC>[5w	Set 12 cpi
✓	*	*	*	*	<ESC>[5y	NLQ or HS with 12 cpi
✓	*	*	*	*	<ESC>[5z	Graphics normal
✓	*	*	*	*	<ESC>[6~	Initialize the printer
✓	*	*	*	*	<ESC>[6 SP K	Set horizontal pitch to 6 cpi
✓	*	*	*	*	<ESC>[6w	Set 15 cpi
✓	*	*	*	*	<ESC>[6z	Graphics inverted
✓	*	*	*	*	<ESC>[7w	Set 17.1 cpi
✓	*	*	*	*	<ESC>[7y	Proportional font OFF
✓	*	*	*	*	<ESC>[7z	Bit 8 = unchanged
✓	*	*	*	*	<ESC>[8w	Reset double stroke
✓	*	*	*	*	<ESC>[8y	Right justification ON
✓	*	*	*	*	<ESC>[8z	Set bit 8 = 0
✓	*	*	*	*	<ESC>[9 SP L	Set vertical spacing to 2 lpi
✓	*	*	*	*	<ESC>[9w	Set double stroke
✓	*	*	*	*	<ESC>[9y	Centering ON
✓	*	*	*	*	<ESC>[9z	Set bit 8 = 1
	✓				<ESC>[g<n1> <n2><0>	Set graphics print to 60 dpi
	✓				<ESC>[g<n1> <n2><1>	Set graphics print to 120 dpi
	✓				<ESC>[g<n1> <n2><11>	Set graphics print to 180 dpi
	✓				<ESC>[g<n1> <n2><12>	Set graphics print to 360 dpi

MTP/L	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
	✓				<ESC>[g<n1> <n2><2>	Set graphics print to 120 dpi
	✓				<ESC>[g<n1> <n2><3>	Set graphics print to 240 dpi
	✓				<ESC>[g<n1> <n2><8>	Set graphics print to 60 dpi
	✓				<ESC>[g<n1> <n2><9>	Set graphics print to 120 dpi
			✓	✓	<ESC>[j	Position paper back 1/180"
✓	*	*	*	*	<ESC>[<n1> <n2>f	Set absolute horizontal and vertical position
✓	*	*	*	*	<ESC>[<n>+w	Interface holding time n = 1 - 30 s
✓	*	*	*	*	<ESC>[<n>+x	Head position horizontal in n/720", also paper load pos.
✓	*	*	*	*	<ESC>[<n>+y	Printhead gap n = (0 - 100)
✓	*	*	*	*	<ESC>[<n>+z	Auto. or man. printhead gap adjustment
✓	*	*	*	*	<ESC>[<n>SP q	Load menu
✓	*	*	*	*	<ESC>[<n1>...<n5>+v	Paper handling options
✓	*	*	*	*	<ESC>[<n1>...<n16>SP r	Print transparent characters
✓	*	*	*	*	<ESC>[<n1> <n2>f	Set absolute horizontal and vertical position
✓	*	*	*	*	<ESC>[<n1> <n2>SP 0	Change character size
✓	*	*	*	*	<ESC>[<n1> <n2>SP D	Select font
✓	*	*	*	*	<ESC>[<n1> <n2>SP G	Set character/line spacing
✓	*	*	*	*	<ESC>[<n1> <n2>r	Set top and bottom margin
✓	*	*	*	*	<ESC>[<n1> <n2>s	Set left and right margin
✓	*	*	*	*	<ESC>[<n> a	Set relative horizontal position
✓	*	*	*	*	<ESC>[<n> d	Set absolute vertical position
✓	*	*	*	*	<ESC>[<n> e	Set relative vertical position
✓	*	*	*	*	<ESC>[<n> j	Relative horizontal position back (to the left)
✓	*	*	*	*	<ESC>[<n> k	Relative vertical position back (to the top)
✓	*	*	*	*	<ESC>[<n> p	Set HMI
✓	*	*	*	*	<ESC>[<n> q	Set horizontal step
✓	*	*	*	*	<ESC>[<n> SP \	Set additional spaces
✓	*	*	*	*	<ESC>[<n> SP C	Select character size
✓	*	*	*	*	<ESC>[<n> SP f	Set reduced spacing
✓	*	*	*	*	<ESC>[<n> SP g	Set character spacing
✓	*	*	*	*	<ESC>[<n> SP h	Line spacing
✓	*	*	*	*	<ESC>[<n> SP s	Transmits the "n" character as an ASCII character (n= 0-255)
✓	*	*	*	*	<ESC>[<n> SP U	Beginning of line (default value)
✓	*	*	*	*	<ESC>[<n> SP V	End of line (default value)
✓	*	*	*	*	<ESC>[<n> t	Set form length in lines
✓	*	*	*	*	<ESC>[<n> u	Set horizontal tab

MTPL	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
✓	*	*	*	*	<ESC>[<n> v	Set vertical tab
			✓	✓	<ESC>[<n1><n2>	Perform relative horizontal step
	✓				<ESC>\<n1>;<n2>	Transparent mode for the characters following
	✓				<ESC>^	Transparent mode for the character following
	✓				<ESC>_<n>	Overline ON/OFF
	✓	✓	✓	✓	<ESC>0	Set line feed to 1/8 inch
	✓				<ESC>1	Set line feed to 7/72 inch
	✓	✓	✓	✓	<ESC>2	Set line feed to 1/6 inch
	✓				<ESC>2	Set line feed to n/72 inch
		✓	✓	✓	<ESC>3<n>	Set line feed to n/180 inch
	✓				<ESC>3>n>	Set line feed to n/216 inch
			✓	✓	<ESC>4	Italics ON
	✓	✓			<ESC>4	Set beginning of form
			✓	✓	<ESC>5	Italics OFF
	✓	✓			<ESC>5<n>	Autom. line feed ON/OFF
			✓	✓	<ESC>6	Print ASCII codes dec. 129 to dec. 159
	✓	✓			<ESC>6	PC character set 2 (expanded)
			✓	✓	<ESC>7	Suppress ASCII codes 129 to 159
	✓	✓			<ESC>7	PC character set 1 (standard)
			✓		<ESC>a<n>	Select orientation
		✓	✓	✓	<ESC>A<n>	Line spacing n/60 inch
	✓				<ESC>A<n>	Prepare line spacing n/72 inch
			✓		<ESC>b<m><0>	Clear all tabs
			✓		<ESC>b<m><n><0>	Set vertical tabs in channels
	✓	✓	✓	✓	<ESC>B<0>	Clear all vertical tabs
			✓	✓	<ESC>B<n1>...<n16><0>	Set vertical tabs
	✓	✓			<ESC>B<n1>...<n64><0>	Set vertical tabs
✓					<ESC>c	Reset to initialisation status
				✓	<ESC>c	Setting the horizontal motion index (HMI)
	✓	✓	✓	✓	<ESC>C<0><n>	Set form length in inches
	✓	✓	✓	✓	<ESC>C<n>	Set form length in lines
	✓	✓		✓	<ESC>d<n1> <n2>	Perform relative horizontal step
	✓	✓	✓	✓	<ESC>D<0>	Clear all horizontal tabs
	✓	✓	✓	✓	<ESC>D<n1>...<n32><0>	Set horizontal tabs
	✓	✓			<ESC><DC2>	Condensed printing OFF
	✓	✓			<ESC><DC4>	Double-wide printing OFF (set with <SO> or <ESC><SO>)

MTPL	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
	✓	✓	✓	✓	<ESC>E	Bold ON
			✓	✓	<ESC>0	Deselect single sheet operation
			✓	✓	<ESC>1	Bin 1 rear (ASF-R), option
			✓	✓	<ESC>2	Bin 2 front (ASF-F), option
			✓	✓	<ESC>4	Select single sheet operation
			✓	✓	<ESC>R	Print page
	✓	✓	✓	✓	<ESC>F	Bold OFF
			✓	✓	<ESC>g	Set character pitch to 15 cpi
	✓	✓	✓	✓	<ESC>G	Set double stroke
	✓	✓	✓	✓	<ESC>H	Reset double stroke
✓					<ESC>H	Set horizontal tab at current printhead position
	✓	✓			<ESC>|<n>	n = 0, 8: Draft; n = 4, 12, 20: Draft DLL/n = 0, 8: HS; n = 4, 12, 20: HS DLL
			✓	✓	<ESC>j<n>	Single line feed back n/180 inch
	✓	✓			<ESC>j	Set printer to Off Line
		✓	✓	✓	<ESC>J<n>	Single line feed n/180 inch
	✓				<ESC>J<n>	Single line feed n/216 inch
			✓	✓	<ESC>k<n>	Select font
	✓	✓	✓	✓	<ESC>K<n1> <n2>	Set graphics print to 60 dpi
			✓	✓	<ESC>l<n>	Set left margin
	✓	✓			<ESC>l<n>	Select print mode
	✓	✓	✓	✓	<ESC>L<n1> <n2>	Set graphics print to 120 dpi
			✓	✓	<ESC>M	Set character pitch to 12 cpi (Elite)
✓	*	*	*	*	<ESC>n	Character generator LS2
	✓		✓	✓	<ESC>N<n>	Set perforation skip
✓	*	*	*	*	<ESC>o	Character generator LS3
	✓	✓	✓	✓	<ESC>O	Reset perforation skip
			✓	✓	<ESC>p<n>	Proportional font ON/OFF
			✓	✓	<ESC>P	Set character pitch to 10 cpi (Pica)
	✓	✓			<ESC>P<n>	Proportional font ON/OFF
	✓	✓			<ESC>Q<35>	Deselect printer
			✓	✓	<ESC>Q<n>	Set right margin
			✓	✓	<ESC>r<n>	Select colour (reserved)
	✓	✓			<ESC>R	Reset all tabs
			✓	✓	<ESC>R<n>	Select national character set
	✓	✓	✓	✓	<ESC>S<n>	Superscript or subscript ON
	✓	✓	✓	✓	<ESC><SI>	Condensed printing 17.1 cpi ON

MTPL	IBM XL24	IBM AGM	Epson LQ-2550	Epson LQ-2170	Code	Function
	✓	✓	✓	✓	<ESC><SO>	Double-wide printing ON
			✓	✓	<ESC><SP><n>	Set character spacing
			✓	✓	<ESC>t<n>	Select character set
	✓	✓	✓	✓	<ESC>T	Superscript or subscript OFF
	✓	✓	✓	✓	<ESC>U<n>	Unidirectional print ON/OFF
			✓	✓	<ESC>Un	Unidirectional print ON/OFF
	✓	✓	✓	✓	<ESC>W<n>	Continuous double width ON/OFF
			✓	✓	<ESC>w<n>	Double height print ON/OFF
			✓	✓	<ESC>x<n>	Set print quality (PQ)
			✓	✓	<ESC>x<0>	sets Draft or HS
			✓	✓	<ESC>x<1>	sets LQ or HQ
				✓	<ESC>X	Font selection according to pitch and points
	✓	✓			<ESC>X<n><m>	Set left and right margin
	✓	✓	✓	✓	<ESC>Y<n1> <n2>	Set graphics print to 120 dpi
	✓	✓	✓	✓	<ESC>Z<n1> <n2>	Set graphics print to 240 dpi
✓	*	*	*	*	<ESC>+F	Assign character set G3
✓	*	*	*	*	<ESC>|	Character generator LS3R
✓	*	*	*	*	<ESC>}	Character generator LS2R
✓	*	*	*	*	<ESC>~	Character generator LS1R
✓	✓	✓	✓	✓	<FF>	Form feed
✓	✓	✓	✓	✓	<HT>	Horizontal tab jump
✓					<HTS>	Set tab stop at actual horizontal position
✓					<IND>	Line feed without CR
✓	✓	✓	✓	✓	<LF>	Line feed
✓					<NEL>	Line feed with CR
✓					<PLD>	Half step line feed
✓					<PLU>	Half step line feed back
✓					<RI>	Line feed without CR back
	✓	✓	✓	✓	<SI>	Condensed printing of 17.1 cpi ON
✓					<SI>	Switching the character generator (SS 3)
	✓	✓	✓	✓	<SO>	Double-wide printing ON
✓					<SO>	Switching the character generator (SS 2)
✓	✓	✓	✓	✓	<VT>	Vertical tab jump
✓					<VTS>	Set tab stop at current vertical position

PJL commands

If a TallyCom III (or compatible) Ethernet interface is installed, you can use the following PJL commands.

This functionality may be activated via the parameter **Jobcntl** in the Advanced Menu.

Sequence	Brief description
"ESC"%-12345X@PJL	Universal Exit Language (UEL) commands
@PJL ECHO	ECHO command
@PJL EOJ @PJL EOJ NAME=	EOJ (End of Job) commands
@PJL INFO STATUS	INFO (Information Request) command
@PJL INFO CONFIG	INFO of the printer configuration
@PJL INFO VARIABLES	INFO of variables which can be set by SET
@PJL INFO MEMORY	INFO about the memory of the printer
@PJL USTATUS DEVICE = ON @PJL USTATUS DEVICE = OFF @PJL USTATUS DEVICE = VERBOSE @PJL USTATUS JOB = ON @PJL USTATUS JOB = OFF @PJL USTATUS PAGE = ON @PJL USTATUS PAGE = OFF @PJL USTATUSOFF	USTATUS (unsolicited status) commands
@PJL JOB NAME = @PJL JOB FILE = @PJL JOB START = @PJL JOB END = @PJL JOB COPY =	JOB (Start of Job) commands
@PJL ENTER LANGUAGE	Exit PJL and start normal parser
@PJL INFO USTATUS	List each type of unsolicited status
@PJL USTATUS TIMED	Enables timed unsolicited status

Barcode

Even the standard version of your printer has the possibility of using up to 23 different barcode types.



Barcode mode can be accessed within every emulation. The user can decide whether barcode is activated permanently or activated depending on the situation by means of an escape sequence.

List of available barcodes

Type	Barcode	Type	Barcode
A*	2/5 Matrix (default)	N	UPC A (with HRI)
B*	2/5 Industrial	O	UPC A (without HRI)
C*	2/5 Interleaved	P	UPC E (with HRI)
D*	Code 11	Q	UPC E (without HRI)
E*	BCD Matrix	R*	Delta Distance (IBM)
F*	Code 39	S	Code 128
G*	Codabar	T	EAN 128
H	EAN 8 (with HRI)	1)	US-Postnet
I	EAN 8 (without HRI)	1)	KIX Barcode
K	EAN 13 (with HRI)	1)	Royal Mail Customer Barcode
L	EAN 13 (without HRI)	1)	USPS Intelligent Mail Barcode
M*	MSI /modified PLESSEY		

* These barcodes may be printed out horizontal and vertical, the unmarked only horizontal.

1) See description on following pages

The barcode types K, L, N, O may be expanded by using Add-On Barcodes: Add-On 2 and Add-On 5.

The information to be printed is transmitted in a “bracket” (DC4)

A control sequence (Header) defines the parameters of the used barcode once (e.g. type, ratio, etc.). If no header is defined, the information in the “bracket” will be printed in Code 2/5 Matrix.



Please note that within the Barcode environment the barcode commands have priority in case of conflicts with the emulation.



Additional information is provided in the *Barcode Programmer's Application Manual* on this CD-ROM.

US Postnet barcode

Postnet is a special US-American type of barcode. It is printed in character size. Numeric values from 0 to 9 are printable.

After activating this barcode type, numeric characters from 0 (hex. 30) to 9 (hex. 39) are interpreted as barcode figures. All other characters terminate the Barcode mode. Exception: the TAB function (hex. 09) is allowed within Barcode mode. The Postnet sequence is accessible in every emulation. The printer can print barcode in HS (180 dpi) and HQ (360 dpi).



**The character (e.g. CR = carriage return, hex. 0D), which terminates the barcode is not printed or carried out.
US Postnet barcode does not require a barcode bracket.**

Example: ASCII ESC[1 SP p 12345 CR
HEX 1B 5B 31 20 70 31 32 33 34 35 0D

The numbers 1 to 5 are printed as Postnet stripes.

Royal Mail Customer barcode

The Royal Mail Customer barcode is a special Mail type barcode. It is printed in character size. Numeric values from 0 to 9 and alphanumeric values from A to Z are printable.

After activating this barcode type, numeric characters from 0 (hex. 30) to 9 (hex. 39) and alphanumeric values from A (hex. 41) to Z (hex. 5A) are interpreted as barcode figures. Lower cases from a (hex. 61) to z (hex. 7a) are automatically converted to capital characters. Control characters from hex. 0 (dec. 0) to hex.1F (dec. 31) terminates this barcode mode. All other characters are ignored. Exception: the TAB function (hex. 09) is allowed within Barcode mode. The Royal Mail Customer sequence is accessible in MTPL emulation. The printer prints barcode in LQ.



**The character (e.g. CR = carriage return, hex. 0D), which terminates the barcode is not printed or carried out.
Royal Mail Customer barcode does not require a barcode bracket.**

Example: ASCII ESC [1 SP k SO36XY1A CR
HEX 1b 5b 31 20 6b 53 4f 33 36 58 59 31 41 0D

The characters "SO36XY1A" are printed as Royal Mail Customer stripes.

KIX barcode

The KIX barcode prints numeric values from 0 to 9 and alphanumeric values from A to Z as barcode characters.

After activating this barcode type, numeric characters from 0 (hex. 30) to 9 (hex. 39) and alphanumeric values from A (hex. 41) to Z (hex. 5A) are interpreted as barcode figures. Lower cases from a (hex. 61) to z (hex. 7a) are automatically converted to capital characters. Control characters from hex. 0 (dec. 0) to hex.1F (dec. 31) terminates this barcode mode. All other characters are ignored. Exception: the TAB function (hex. 09) is allowed within Barcode mode. The KIX sequence is accessible in MTPL emulation. The printer prints barcode in LQ.



The character (e.g. CR = carriage return, hex. 0D), which terminates the barcode is not printed or carried out. KIX barcode does not require a barcode bracket.

Example: ASCII ESC [2 k SO36XY1A CR
 HEX 1b 5b 32 6b 53 4f 33 36 58 59 31 41 0D

The characters “SO36XY1A” are printed as KIX stripes.

USPS Intelligent Mail barcode

The USPS Intelligent Mail barcode is a 4-state barcode which works in MTPL, IBM, Epson and ANSI emulation. 4-state barcode data must be converted into only 0, 1, 2 or 3. Each number represents one of the four possible bars. Tabs (Hex 09) and spaces can separate either the bars or the barcodes horizontal, but every other character user Hex 20 will terminate barcode mode.

You can enter the barcode mode with the sequence ESC [? 11 ~, the sequence ESC [10 ~ exits the barcode mode.

Example: ASCII ESC [9 SP k <data>
 HEX 1b 5b 39 02 6b <data>

LC printing

Certain professional applications may require unusually large character sizes. Therefore your printer has the possibility of scaling standard size characters up to factor 99 by means of control sequences (LCP*).

The Header sequence defines the parameters (e.g. height) once. This definition remains until the printer is switched off.

The printable LCP* information is transmitted in an LCP "bracket" (SI).

The following character sets (with national characters) are available:

	ID	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
US ASCII	01	#	\$	@	[	\	\]	?	`	{	|	}	-
GERMAN	02	#	\$	§	Ä	Ö	Ü	?	`	ä	ö	ü	ß

The character sets are selected via the following LCP sequence ESC "P" "L" "S" n ESC "\". The value of n may range between 01 and 02 (as ASCII characters) – see ID column in the above table.

To select e.g. the german character set, you must use the following data set:

ASCII	ESC	P	L	S	0	1	ESC	\
hex.	1B	50	4C	53	30	31	1B	5C
dec.	27	80	76	83	48	49	27	92



The printout of LCP characters can be selected in all of the emulations. Prerequisite: Printer must be in Barcode mode.



Note that this printer supports some scalable fonts in the LQ-2170 emulation if a compatible driver is used.

* Large Character Printing

List of additional control codes

You can use both the ESC sequences and the control codes.

Sequences	Control codes	Function
<ESC>[?10~	—	Barcode Off
<ESC>[?11~	—	Barcode On
<ESC> PSC 0 <ESC> \	—	Unsecured mode
<ESC> PSC 1 <ESC> \	—	Secured mode
<ESC> PLS <n> <ESC> \	—	LCP character set
<ESC>[<n><SP>s	—	Sends a character as ASCII character; n > 0–255 decimal
<ESC>[20<SP>s	<DC4>	Barcode bracket
<ESC>[16<SP>s	<DLE>	Start code LCP Header
<ESC>[25<SP>s		Termination code Header
<ESC>[15<SP>s	<SI>	LCP bracket
<ESC>[26<SP>s	<SUB>	Start code Barcode-Header
<ESC>[1 SP p	—	US-Postnet Barcode
<ESC>[1 SP k	—	Royal Mail Customer Barcode
<ESC>[2 SP k	—	Kix-Barcode
<ESC>[9 SP k	—	USPS Intelligent Mail Barcode

Header	Function
<DLE> [!] nn EM	LCP header [] = optional nn = factor
<SUB> [F] a [nn][;xyz][;p] EM	Barcode header [] = optional a = Barcode type p = 0: Barcode horizontal p = 9: Barcode vertical



Additional information is provided in the *[Barcode Programmer's Application Manual](#)* on this CD-ROM.

D Interfaces

Your matrix printer offers the possibility of operating either via a parallel or via a optional serial interface. This appendix informs you about the parallel Centronics compatible interface and the serial interface type RS232C/V.24 and describes the communication between your computer and the printer.

These interfaces are linked to form a so-called shared interface. Your printer can be configured to use only one interface or both alternately. When only one interface is used, it is monitored by the printer. If the printer is configured to use both interfaces simultaneously it monitors both interfaces for incoming data. As soon as the printer recognizes a signal it switches to the respective interface and sends the BUSY signal to the other interface. After finishing the data transmission, the printer remains switched to the interface for a certain period of time (30 seconds). When this time has elapsed, the controller reenables both interfaces and the sequence described restarts. If incoming data is on the other interface and the current print position is not "Top of Form", a form feed is carried out.

In the chapter [Options](#) (page 151) , the interfaces which can be purchased with your printer are listed.

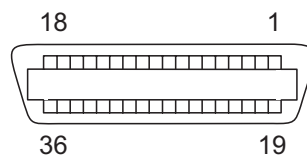
Parallel interface

The bidirectional parallel interface offers the so called “nibble” mode of the IEEE1284 interface norm. This enables installation in accordance with Windows “Plug & Play”.

The standard parallel interface is able to transfer data at a speed of max. 30,000 bytes per second. When the receiving buffer is full, the data input is blocked until the data buffer is empty. This guarantees data transmission in blocks of 1 KB.

Connector assignment

Connector no.	Direction Printer–PC	Signal
1	←	$\overline{\text{STROBE}}$ (active low)
2	←	DATA 1
3	←	DATA 2
4	←	DATA 3
5	←	DATA 4
6	←	DATA 5
7	←	DATA 6
8	←	DATA 7
9	←	DATA 8
10	→	$\overline{\text{ACK}}$ (active low)
11	↔	BUSY
12	↔	PAPER EMPTY (PE)
13	↔	$\overline{\text{SELECT}}$
14	↔	AUTO FEED (active low)
15		not used
16	–	SIGNAL GROUND
17	–	CHASSIS GROUND
18	–	5 V ($I_{\text{max}} = 500 \text{ mA}$)
19–30	–	SIGNAL GROUND
31	←	$\overline{\text{INIT}}$ (active low)
32	↔	$\overline{\text{ERROR}}$ (active low)
33	–	SIGNAL GROUND
34–35		not used
36	←	SELECT IN



Transmission length: max. 2,0 m

Serial interface V.24/RS232C

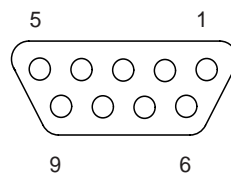
Your printer's serial interface supports the RS232C specification. The signals are received and transmitted by a 9 pin connector.

Basically 3 lines are already enough for exchanging information between computer and printer (one receive line, one send line, one line for common grounding).

Type	RS232C interface
Synchronization	Asynchronous
Transmission rate	600 Baud to 19.200 Baud
Signal status	OFF (log.1) -3 V to -15 V ON (log. 0) +3 V to +15 V
Connection cable	up to 15 m length
Interface connections	ITT Cannon connector, series DB-9 S
Transmission protocol	XON/XOFF, ENQ/STX, READY/ BUSY, Robust XON/XOFF, ETX/ ACK
Capacity of data buffer	512 Byte min. 128 KB max.

Connector assignment

Connector no.	Direction Printer-PC	Signal
3	→	TxD
4	→	DTR
2	←	RxD
6	←	DSR
7	→	RTS
8	←	CTS
5	—	Signal Ground SG
Shield	—	Frame Ground FG



Transmission length: max. 15 m

Interface cable (serial interface)

The cables used must be shielded. The cable shield must be connected to the connector shield on both ends.

PC/AT (9-pin)		Printer (9-pin)	
RxD	2	3	TxD
TxD	3	2	RxD
CTS	8	4	DTR/RDY
SG	5	5	SG
DSR	6		
DTR	4		

PC/AT (25-pin)		Printer (9-pin)	
FG	1		FG
TxD	2	2	RxD
RxD	3	3	TxD
CTS	8	4	DTR/RDY
SG	5	5	SG
DSR	6		
DTR	4		



It depends on the menu setting whether DTR or RDY is active at pin 4.

Input signals

Signal	Function
CTS	Clear to Send
DSR	Data Set Ready
RxD	Receive Data

Output signals

Signal	Function
DTR	Data Terminal Ready
RTS	Request to Send
READY	Ready to receive data
TxD	Transmit Data

Protocols

Memory mode XON/XOFF

The received characters are stored in a FIFO buffer (first in/first out). The characters are processed in this buffer.

The buffer capacity can be adjusted from 0 to 128 Kb.

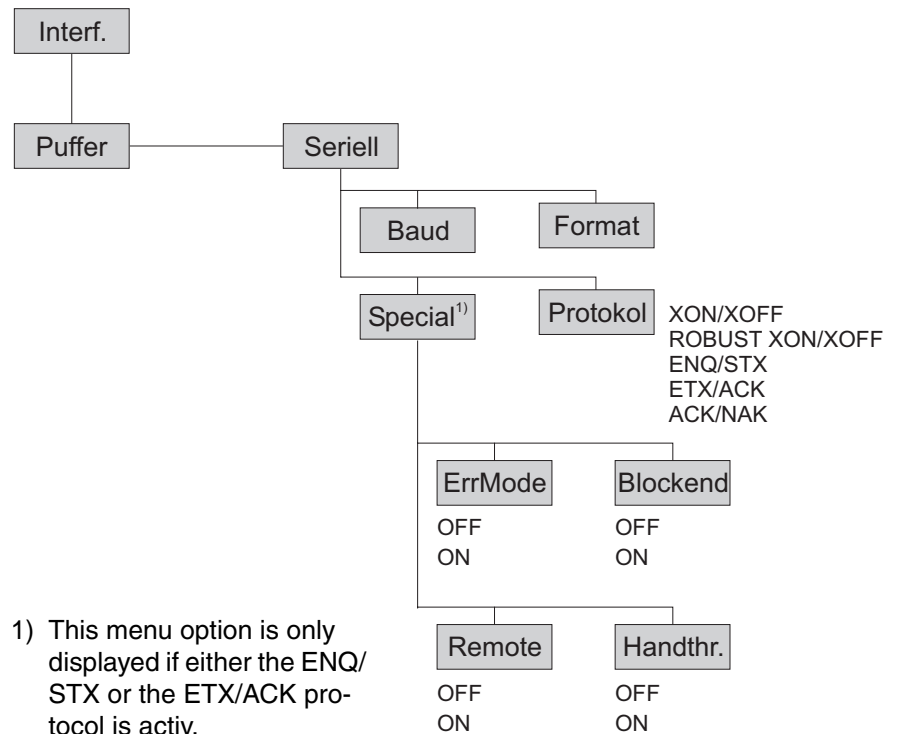
If the buffer is full, the interface signals NOT READY (signal acknowledgement: Level 1, -12 V) and XOFF (hex. 13, dec. 19). This results in stopping the data transmission. When the FIFO buffer is empty again, the interface signals READY (level 0, +12 V) and XON (hex. 11, dec. 17). Data transmission can be continued.

In addition, the READY signal is influenced by the status of the printer (On/Off Line). If the printer assumes an undefined state, the interface also signals NOT READY and XOFF.

Memory mode Robust XON/XOFF

Robust XON/XOFF is similar to XON/XOFF. However, the state of the printer (XON or XOFF) is also periodically transmitted via the TxD line in the case of Robust XON/XOFF.

Extended menu functions with the ENQ/STX and ETX/ACK protocols selected



ENQ/STX protocol

In addition to this XON/XOFF message, the possibility exists of requesting a status byte from the printer using the ENQ code (hex. 05, dec. 5). The STX code (hex 02, dec. 2) is used to clear any error messages (parity error, buffer overflow).

Status byte	Bit 0 – 1	BUSY
	Bit 1 – 1	Off Line
	Bit 2 – 0	Paper end
	Bit 3 – 1	Always 1
	Bit 4 – 1	Cover open
	Bit 5 – 1	Buffer overflow
	Bit 6 – 1	Parity or frame error
	Bit 7 – 0	Always 0

STX (hex02) Clears any previous parity or framing error as well as any buffer overflow error.

ENQ (hex05) The current printer status is sent to the host.

XON/XOFF This protocol is automatically used for data flow control and printer status handling.

HandThr.=ON The STX and ENQ characters are not filtered out of the data stream and control the interface in addition.

HandThr.=OFF The STX and ENQ are filtered out of the data stream and handled immediately by the interface.

ETX/ACK protocol

ETX (hex03) Block end character

ACK (hex06) Acknowledgement informing the host that further data may be transmitted.

XON/XOFF This protocol is used in addition to data flow control and printer status handling.

HandThr.=ON An ETX is not acknowledged by ACK before all previously arrived data have been printed.

HandThr.=OFF When the printer receives an ETX, it returns an ACK to the host. Any previously sent data or blocks may still be present in the printer buffer.

E Options and accessories

Options

The following options can be ordered for your printer.

Automatic cut sheet feeder, front (ASF-F)

The automatic sheet feeder is suitable for single sheets. Paper formats with a width of 150 to 365 mm may be used. Each format in between can be set. The cut sheet feeder cannot be used in conjunction with the optional tractor front.

Part no.: 061797 (narrow printer)

Part no.: 061798 (wide printer)

Automatic cut sheet feeder, rear (ASF-R)

The automatic sheet feeder with two bins is suitable for single sheets and sets of forms with 1 + 2 forms. Paper formats with a width of 100 to 223 mm (narrow printer) or 365 mm (wide printer) may be used. Each format in between can be set.

Part no.: 061799 (narrow printer)

Part no.: 061800 (wide printer)

Tractor 2, front

The push tractor is suitable for fanfold paper and sets of forms with 1 + 5 forms. Paper formats with a width of 76 to 264 mm (narrow printer) or 406 mm (wide printer) may be used. Each format in between can be set.

Part no.: 061795 (narrow printer)

Part no.: 061796 (wide printer)

Tractor 3, rear

The push tractor is suitable for fanfold paper and sets of forms with 1 + 1 forms. Paper formats with a width of 76 to 264 mm (narrow printer) or 406 mm (wide printer) may be used. Each format in between can be set.

Part no.:061795 (narrow printer)

Part no.:061796 (wide printer)

Serial interface adapter

Serial interface adapter from 9 to 25 pins

Part no.: 047995

Optional paper support

Part no.: 052127

Pocket Ethernet interface

Part no.: 048791

Serial interface RS232/TTY

Part no.: 048793

Others

On request

Accessories

Ribbon cassettes

The following ribbon cassettes may be ordered:

Ribbon cassette black, narrow printer

Part no.: 060426

Ribbon cassette black, wide printer

Part no.: 060425

Programmer's application manuals

Programmer's application manual Epson

Part no.: 379302

Programmer's application manual IBM

Part no.: 379306

Programmer's application manual MTPL

Part no.: 379298

Programmer's application manual Barcode

Part no.: 379300

Index

Symbols

\$\$ procedure 126

A

Access to menu mode 41

Accessories 151, 152

Programmer's application manuals 152

Ribbon cassettes 152

Activate PJI language 94

Activation of automatic sheet feeder (AutoASF) 72

Activation of tractors (AutoTra) 71

Additional control codes 143

Additional display messages 103

Advanced menu 77

Advanced settings 82

Activate PJI language 94

Asset number 92

Automatic gap adjustment 85

Beep at paper end 89

Bidirectional parallel interface 88

Deactivate single sheet feeder 90

Graphic Print Speed 93

Improvement of graphic and barcode print quality 93

Increased print speed for 17.1 and 20 cpi 94

Increasing the printhead gap 86

Left-hand area 87

Line wrap 89

Paper handling 85

Paper width 86

Power save mode 91

Right-hand area 87

Serial number 92

Setting for printing copy paper 91

Settings for paper with dark back 90

AGA 85

Asset number 92

AssetN 92

AutoASF 72

Auto-CR 61

Auto-LF 61

Automatic carriage return (Auto-CR) 61

Automatic cut sheet feeder, front (ASF-F) 151

Automatic cut sheet feeder, rear (ASF-R) 151

Automatic gap adjustment (AGA) 85

Automatic line feed (Auto-LF) 61

AutoTear 67

AutoTra 71

AutoView 67

Available barcodes 139

Available character sets and fonts 122

Available control codes 128

B

Barcode 68, 139

additional control codes 143

KIX 141

LC printing 142

Royal Mail Customer 140

US Postnet 140

USPS Intelligent Mail barcode 141

Barmode 69

Baud 53

Beep at paper end (Sound) 89

Bidir 52

Bidirectional parallel interface (CX-bid) 88

Bidirectional printing (Bidir) 52

Block end character (Blockend) 55

Blockend 55

Buffer 58

C

Calling up the menu 41

Care 105

Carriage shafts 108

CG-Tab 59

- Changing
 - ribbon cassette *16*
- Changing printer settings *24*
- Changing the paper type *27*
- Character density
 - Setting *29*
- Character set
 - Available character sets and fonts *122*
 - MTPL *118*
 - MTPL, international substitution characters *119*
 - OCR-A *120*
 - OCR-B *121*
- Character sets *117*
- CharSet *59*
- Checking the printer voltage *7*
- Cleaning
 - Carriage shafts *108*
 - Housing *106*
 - Interior *106*
 - Platen *107*
 - Printer *106*
 - Upper friction *107*
- Cleaning the printer *106*
- Connecting the printer *8*
- Control codes *126, 128*
- Control panel *10*
 - Programming via *41*
- Country *60*
- CPI *50*
- CX-bid *88*
- D**
- Data format (Format) *54*
- Data transmission rate (Baud) *53*
- Deactivate single sheet feeder *90*
- Display *11*
- Display messages *103*
- DTR *57*
- E**
- Emulate *52*
- Emulations *125*
 - Escape sequences *125*
 - General *125*
- Enable/Disable Paper Handling Features *74*
- ENQ/STX *150*
- ErrMode *55*
- Error handling (ErrMode) *55*
- Error messages via the display *100*
- Escape sequences *125, 127*
 - MTPL *126*
- ESCChar *51*
- Ethernet interface *59*
- ETH-INT *59*
- ETX/ACK *150*
- F**
- Fanfold paper
 - Loading *30*
- FFaftLC *73*
- FFmode *70*
- Firmware
 - Loading *25*
 - Troubleshooting *25*
- First printing position (FormAdj) *65*
- Font *49*
- Form feed mode (FFmode) *70*
- Form length (Forml) *63*
- Form lenth (Forml) *84*
- Form settings *24*
- FormAdj *65*
- Format *54*
- Forml *63, 84*
- Further settings (Special) *55*
- Fuse
 - Replacing *105*
- G**
- General print problems *96*
- Graphic Print Speed *93*
- GrFreq *93*

GrSpeed 93

H

Handthr 56

Head 66

Head up 86

Hex-Dump 80

HS-Draft 94

HvyForm 91

I

I/O 53

IBM character set (CharSet) 59

Improvement of graphic and barcode print quality 93

Increased print speed for 17.1 and 20 cpi 94

Increasing the printhead gap (Head up) 86

Input signals 148

Installation 5

Installing printer drivers 19

Interf. 58

Interface buffer (Buffer) 58

Interface cable (serial interface) 148

Interface specifications 113

Interface test (Hex-Dump) 80

Interfaces 145

Parallel interface 146

Serial interface 147

J

Jobcntl 94

K

Key functions

when turning on the printer 15

KIX barcode 141

L

Language 62

Selecting 44

LC display 11, 14

LC printing 142

Left-hand area 87

LeftMrg 72

Leftzon 87

Line length 68

Line wrap (Wrap) 89

Loading menu configurations (Menu) 47

Loading optional firmware 25

Loading paper 30

Local copy (screen print) from a Coax or Coax/IPDS 73

LPI 50

M

Maintenance 105

Ribbon 107

MenLock 62

Menu 41, 47

Advanced 77

Calling up 41

Enabling access to menu mode 41

Handling 43

Save settings 43

Selecting the LC display language 44

Terminating Setup mode 45

Menu configurations 42

Menu handling 43

Menu lock (MenLock) 62

Menu parameters 47

Activation of automatic sheet feeder 72

Activation of tractors 71

Automatic carriage return 61

Automatic line feed 61

Barcode 68

Bidirectional printing 52

Block end character 55

Data format 54

Data transmission rate 53

Enable/Disable paper handling features 74

Error handling 55

Ethernet interface 59

First printing position 65

- Form feed mode 70
- Form length 63
- Further settings 55
- IBM character set 59
- Interface buffer 58
- Language 62
- Line length 68
- Loading menu configurations 47
- Local copy from a Coax or Coax/IPDS 73
- Menu lock 62
- National character set 60
- Normal characters and barcode 69
- Paper parameter 63
- Print head gap manually 66
- Printing out menu configurations 47
- Protocol 57
- Quietmode 48
- Reset to default values 48
- Selecting character set 59
- Selecting emulation 52
- Selecting font 49
- Selecting interface 58
- Selecting start signal for escape sequence 51
- Serial interface 53
- Setting and activating options 71
- Setting character density 50
- Setting line spacing 50
- Setting the left margin 72
- Setting the right margin 73
- Settings for interfaces 53
- Signal feedback 56
- Signal processing 57
- Skipping perforation 51
- Slashed zero 60
- Tear position 67
- Transparence 56
- View position 67

Menu settings

- Example 75

Menu structure 46

Messages in the LC display 14

MTPL sequences 126

MTPL standard character set 118

MTPL, international substitution characters 119

N

- National character set (Country) 60
- Normal characters and barcode (Barmode) 69

O

- OCR-A character set 120
- OCR-B character set 121
- Offline mode 12
- Online mode 12
- Optional paper support 151
- Options 151
 - ASF-F 151
 - ASF-R 151
 - Optional paper support 151
 - Pocket Ethernet interface 151
 - Serial interface adapter 151
 - Serial interface RS232/TTY 151
 - Tractor 2, front 151
- Output signals 148

P

- Pagewid 86
- Pap.back 90
- Paper 63
 - Fanfold paper 30
 - loading 30
 - Moving to the tear position 37
 - Removing 37
 - Single sheets 34
- Paper handling 27
- Paper handling (Paphand) 85
- Paper parameters (Paper) 63
- Paper specifications
 - Standard printer 114
- Paper transport 36
- Paper type
 - Changing 27
- Paper width 86
- Paper with dark back, setting 90
- Paperways 4
- Paphand 74, 85

- PapOpt 71
 - Parallel interface 146
 - Parity error 101
 - Physical left margin (Physlm) 88
 - Physlm 88
 - PJL commands 138
 - Placing the printer 6
 - Platen
 - Cleaning 107
 - Pocket Ethernet interface 151
 - Power save mode (Sleepmod) 91
 - Print 47
 - Print quality
 - Problems with 99
 - Printer
 - At a glance 2
 - Connecting 8
 - Installation 5
 - Paperways 4
 - Placing 6
 - Specifications 109
 - Switching on 9
 - Unpacking 5
 - Printer drivers 19
 - Printer in single sheet mode 3
 - Printer in tractor mode 3
 - Printer self-test (Rolling ASCII) 78
 - Printer settings
 - Changing 24
 - Printhead gap adjustment, automatic 85
 - Printhead gap manually (Head) 66
 - Printing out menu configurations (Print) 47
 - Problems with the print quality 99
 - Programmer's application manuals 152
 - Programming via the control panel 41
 - Protocol 57
 - Protocol (Protocol) 57
 - Protocols 149
 - ENQ/STX 150
 - Robust XON/XOFF 149
 - XON/XOFF 149
- Q**
- Quietm. 48
 - Quietmode 48
- R**
- Remote 56
 - Removing paper 37
 - Replacing the fuse 105
 - Reset 48
 - Reset to default values (Reset) 48
 - Ribbon
 - Service life 107
 - Ribbon cassette 16
 - changing 16
 - Ribbon cassettes 152
 - Right-hand area 87
 - RightMrg 73
 - Rightzo 87
 - Robust XON/XOFF 149
 - Rolling ASCII 78
 - Royal Mail Customer barcode 140
- S**
- Save menu settings 43
 - Selecting character density 29
 - Selecting character set (CG-Tab) 59
 - Selecting emulation (Emulate) 52
 - Selecting font (Font) 49
 - Selecting interface (Interf.) 58
 - Selecting start signal for escape sequence (ESC-Char) 51
 - Selecting the LC display language 44
 - Serial 53, 92
 - Serial interface
 - Connector assignment 147
 - Input signals 148
 - Interface cable 148
 - Output signals 148
 - Serial interface (Serial) 53
 - Serial interface adapter 151

- Serial interface RS232/TTY *151*
- Serial number *92*
- SerialN *92*
- Setting and activating options (PapOpt) *71*
- Setting character density (CPI) *50*
- Setting for printing copy paper (HvyForm) *91*
- Setting line spacing (LPI) *50*
- Setting the first printing line *40*
- Setting the left margin *72*
- Setting the print head gap *38*
- Setting the right margin *73*
- Setting the tear position *39*
- Settings *38*
 - Advanced *82*
 - Character density *29*
 - First printing line *40*
 - Font *29*
 - Print head gap *38*
 - Tear position *39*
- Settings for interfaces (I/O) *53*
- Settings for paper with dark back (Pap.back) *90*
- Setup mode *13*
 - Terminating *45*
- Signal feedback (Remote) *56*
- Signal processing (DTR) *57*
- Single *90*
- Single sheets
 - Loading *34*
- Skip *51*
- Skipping perforation (Skip) *51*
- Sl.Zero *60*
- Slashed Zero (Sl.Zero) *60*
- Sleepmod *91*
- Sound *89*
- Special *55*
- Specifications *109*
 - Interface specifications *113*
- Switching on the printer *9*

- T**
 - Tear position *37*
 - Tear position (AutoTear) *67*
 - Terminating Setup mode *45*
 - Test functions *77*
 - Interface test *80*
 - Printer self-test *78*
- TOF
 - Setting the first printing line *40*
- Tractor 2 front *151*
- Transparence (Handthr) *56*
- Troubleshooting *95*
 - Additional display messages *103*
 - Error messages via the display *100*
 - General print problems *96*
 - Problems with the print quality *99*

- U**
 - Unpacking the printer *5*
 - Upper friction
 - Cleaning *108*
 - US Postnet barcode *140*
 - USPS Intelligent Mail barcode *141*

- V**
 - View position (AutoView) *67*
 - Voltage
 - Checking *7*

- W**
 - Width *68*
 - Wrap *89*

- X**
 - XON/XOFF *149*

“All rights reserved. Translations, reprinting or copying by any means of this manual complete or in part or in any different form requires our explicit approval. We reserve the right to make changes to this manual without notice. All care has been taken to ensure accuracy of information contained in this manual. However, we cannot accept responsibility for any errors or damages resulting from errors or inaccuracies of information herein.”

DASCOM REPRESENTATIVES

GERMANY

DASCOM Europe GmbH
Heuweg 3
D-89079 Ulm
Deutschland
Tel.: +49 (0) 731 2075 0
Fax: +49 (0) 731 2075 100
www.dascom.com

SINGAPORE

DASCOM AP Pte Ltd
21 Bukit Batok Crescent
#29-81, WCEGA Tower
Singapore 658065
Phone: +65 6760 8833
Fax: +65 6760 1066
www.dascom.com

AMERICAS

DASCOM Americas Corporation
421 W. Main Street
Waynesboro, VA 22980
USA
Phone: +1 (877) 434 13 77
www.dascom.com

UNITED KINGDOM

DASCOM GB Ltd
Hart House, Priestley Road
Basingstoke, Hampshire
RG24 9PU, England
Phone: +44 (0) 1256 481481
Fax: +44 (0) 1256 481400
www.dascom.com

FRANCE

DASCOM Europe GmbH
117 Avenue Victor Hugo
92100 Boulogne-Billancourt
France
Phone: +33 (1)73 02 51 98
www.dascom.com

RUSSIA and CIS

DASCOM Europe GmbH
Representation Moscow
Leninsky Prospekt 95a, Office 322
119313 Moscow, Russian Federation
Phone: +7 (495) 984 70 65
Fax: +7 (495) 984 56 42
www.dascom.com