```
Lines   Standard
Back  |   |  Next
 1     2    3    4
```
Online

Setup

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

```
Fanfold   12"   *
Set  <   >  Exit
 1    2    3    4
```
Online

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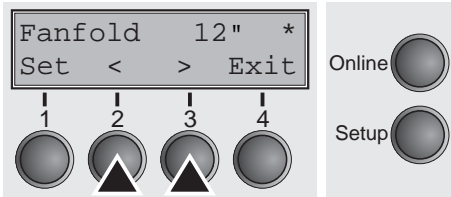
Use the **<** (2) or **>** (3) key to select the desired setting.

Setting Options:  **DIN A3, DIN A4, DIN A5, DIN B5, DIN B6, DIN C6, Executive 10.5**", **Letter 11**", **Fanfold 12**", **Legal 14**", **No Format**

Default Setting:  **Letter 11**"

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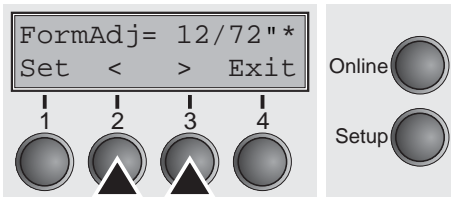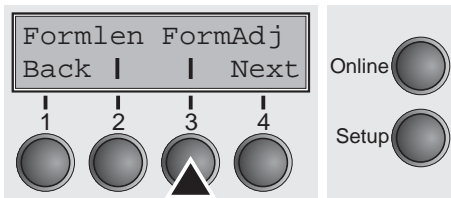
Confirm the setting by pressing the **Set** key (1).

*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.

```
Formlen FormAdj
Back  |   |  Next
 1     2    3    4
```
Online

Setup

```
FormAdj= 12/72"*
Set  <   >  Exit
 1    2    3    4
```
Online

Setup

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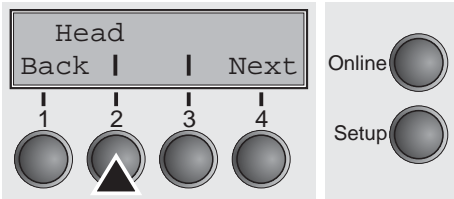
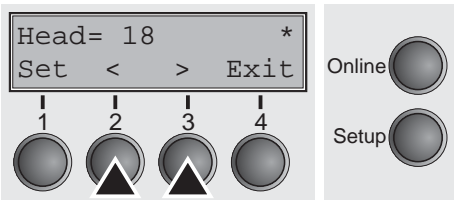**i**  **An alternative notation for** FormAdj **is** TOF **(Top Of Form).**

*Print head gap manually (Head)*

This parameter is ignored if the automatic gap adjustment (AGA) is activated; see *Automatic gap adjustment (AGA) (page 77)*.

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

```
 Head
Back  |    |  Next
```

Press **Head** (2) key.

```
Head= 18         *
Set  <    >  Exit
```

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:

| 1 layer | 2 layers | 3 layers | 4 layers | 5 layers | 6 layers |
|---------|----------|----------|----------|----------|----------|
| 18      | 26       | 34       | 42       | 50       | 58       |

**If you change this value, this may affect the print quality.**

Confirm the setting by pressing the **Set** key (1). Press the **Next** key (4) to access the next group of parameters.
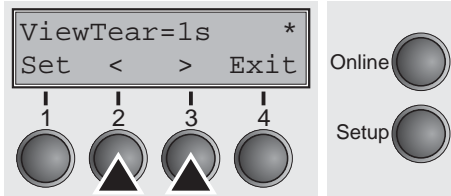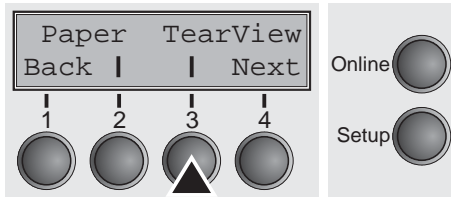
## View and tear position (TearView)

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

When auto view is switched on, the last printed text is visible.

When auto tear is switched on, the perforation of the paper is positioned at the tear off edge of the printer, when no data are processed.

Press **TearView** (3) key.

```
 Paper    TearView
 Back  |     |  Next
   |    |    |    |
   1    2    3    4
```
Online

Setup

```
ViewTear=1s        *
Set   <    >   Exit
  |    |    |    |
  1    2    3    4
```
Online

Setup

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

Setting Options:  **View=1s/3s/6s**
**Tear=1s/3s/6s**
**Tear at TOF**
**No Tear/Reverse**
**Manual**

Default Setting:  **Tear=1s**

If the parameter **View** is set to **1s**, **3s** or **6s**, the paper moves to the "normal" print position as soon as data is received. After printing the printer waits for the given interval to bring the paper once more to the auto view position.

If the parameter **Tear** is set to **1s**, **3s** or **6s**, 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 is not aligned with the perforation of the paper, this can be corrected (see .

If the parameter **No Tear/Reverse** is set, TearView mode is disabled and no backward movements are performed.

If the parameter **Manual** is set, the paper can still be brought into a View or Tear position via a specific sequence or by pressing 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.

```
Width
Back |        Next
```

Press **Width** (2) key.

```
Width=13.6Inch *
Set  <    >  Exit
```
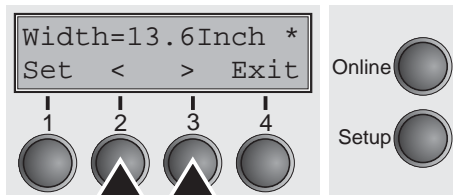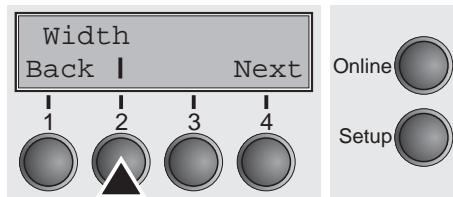
Use the **<** (2) or **>** (3) key to select the desired setting.

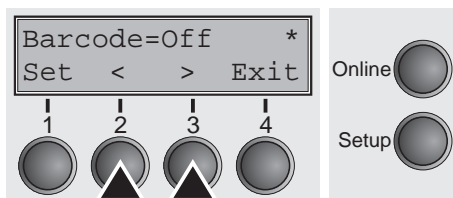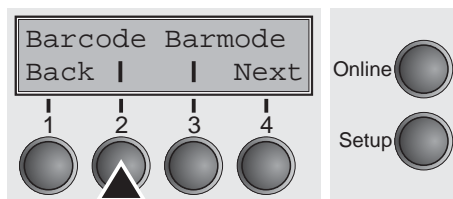Setting Options:   **8 Inch, 13.2 Inch, 13.6 Inch**
Default Setting:    **13.6 Inch**

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 posible to print different barcodes and LCP (Large Character Printing).

```
Barcode Barmode
Back |     |  Next
```

Press **Barcode** (2) key.

```
Barcode=Off    *
Set  <    >  Exit
```

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

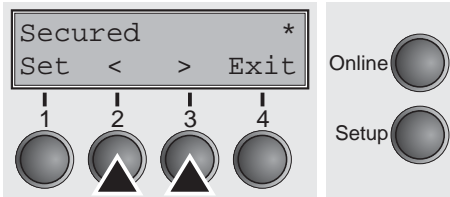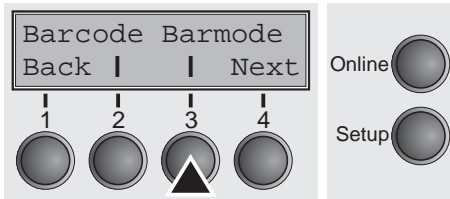Setting Options: **On/Off**
Default Setting:   **Off**

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. (The possible barcodes, LCP characters and the operation of these functions are described in the *Programmer's Manual*).

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

## Normal characters and bar-code (Barmode)

Allows printing of normal characters on the left and right of the bar-code.

```
Barcode Barmode
Back  |    |  Next
  1    2    3    4
```

Online

Setup

Press **Barmode** (3) key.

```
Secured         *
Set  <    >  Exit
  1    2    3    4
```

Online

Setup

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 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 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.
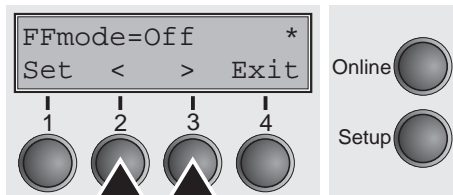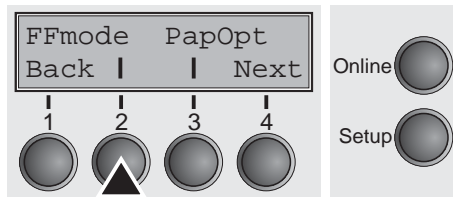
**This function can be activated/deactivated by sequences.**

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.

```
FFmode   PapOpt
Back  |    |  Next
   1    2    3    4
```
Online

Setup

Press **FFmode** (2) key.

```
FFmode=Off        *
Set  <    >  Exit
   1    2    3    4
```
Online

Setup

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

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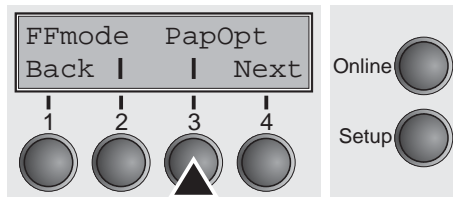Default Setting: **Off**

**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).
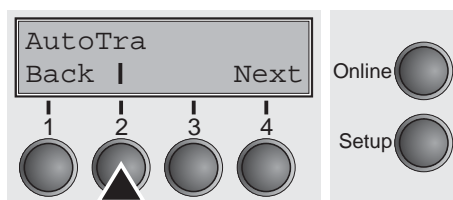
## Setting and activating options (PapOpt)

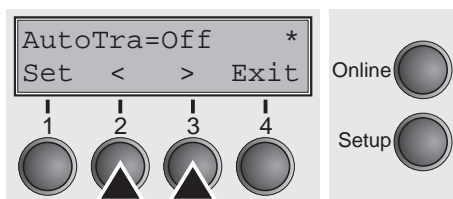For setting the tractor; see *Paperway* (page 5).

Press **PapOpt** (3) key.

```
FFmode  PapOpt
Back |    | Next
  1    2   3    4
```
Online
Setup

*Activation of tractors (AutoTra)*

This parameter only appears if the 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.

```
AutoTra
Back |       Next
  1    2   3    4
```
Online
Setup

```
AutoTra=Off      *
Set  <   >  Exit
  1    2   3    4
```
Online
Setup

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

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

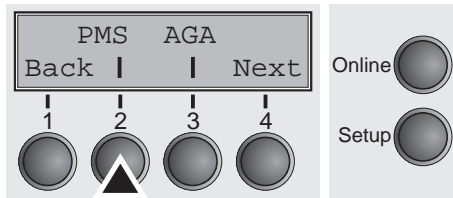If an optional tractor is installed and the **Off** parameter is activated, only the selected tractor is supported (either via the menu or an ESC sequence). If the selected tractor is out of paper, printing stops.

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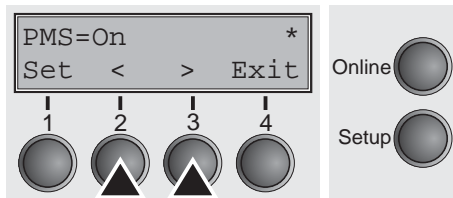
Confirm the setting by pressing the **Set** key (1).

## Automatic paper motion sensor (PMS)

You can use this function to activate or deactivate the paper motion detection feature. When it is active, printing and paper movements stop in case of a paper jam and an error message is output in the display. Set the printer to test mode by pressing the **Online** key while you switch on the printer.

```
   PMS   AGA
Back  |     |   Next      Online
  1    2    3    4
                           Setup
```

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

```
PMS=On              *
Set   <   >   Exit         Online
  1    2    3    4
                           Setup
```

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

**PMS=On**: The form movements of the active paper path are monitored. In case of a paper jam, printing and paper movements stop and an error message (**PAPER JAM**) is displayed.

**PMS=Off**: A paper jam will not produce an error message.

**The Paper Motion Sensor (PMS) detects any paper jam or unintended paper end condition and provides efficient protection against any paper transport problems together with the paper end sensor. This prevents the printer from printing on jammed paper or printing without paper. Disabling the PMS can affect the operational reliability of your printer and should therefore be avoided.**

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

## Automatic gap adjustment (AGA)

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

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

```
   PMS   AGA
Back  |    |   Next
  1    2    3    4
```
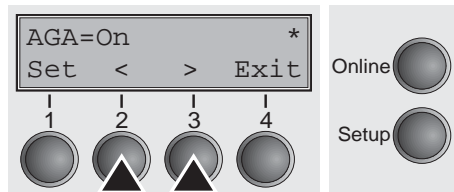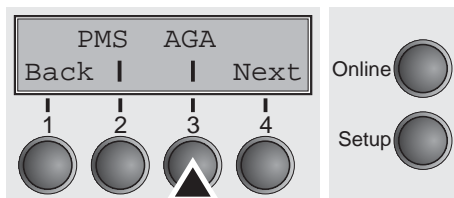
Setting options:   **Off/On**
Default setting:    **On**

```
AGA=On              *
Set   <   >   Exit
  1    2    3    4
```

**AGA=On**: printer checks paper thickness and changes gap adjustment if necessary (default). Measurments take place
– after power-on
– in single sheet mode: for each sheet
– in tractor mode: whenever changing the paper path, when loading paper

**AGA = Off**: selects manual gap adjustment; the value can be set for each paper source and each of the 4 macros available.
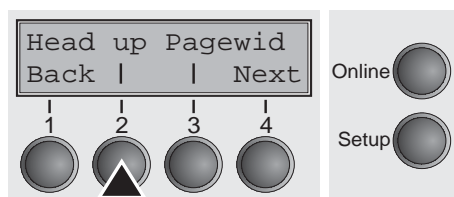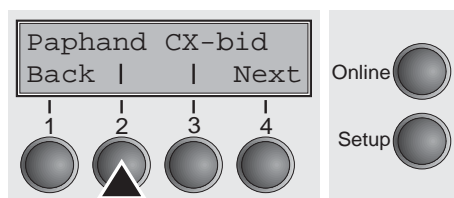
Confirm the setting by pressing the **Set** (1) key. The printer automatically leaves test mode and assumes online mode.

## 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.

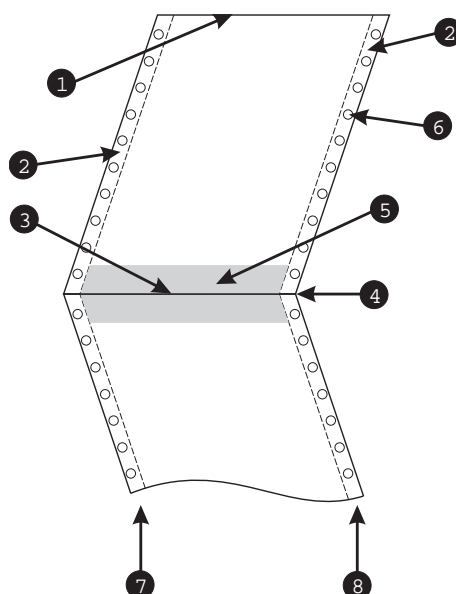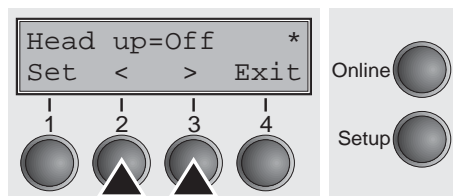Put the printer into Menu mode by pressing the **Setup** key. Press the **Menu** key. The display shows **Print/Macro**. Press Next or Back key until the parameter group **Paphand/CX-bid** appears in the display.

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

```
Paphand CX-bid
Back  |    |   Next
  1    2    3    4
```

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

```
Head up Pagewid
Back  |    |   Next
  1    2    3    4
```

### *Increasing the print head gap (Head up)*

```
Head up=Off      *
Set   <   >  Exit
  |   |   |   |
  1   2   3   4
```

Online   Setup

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

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

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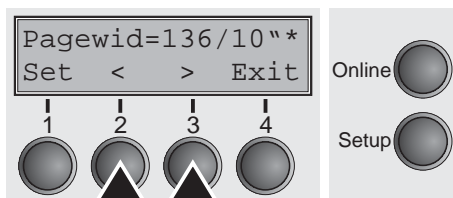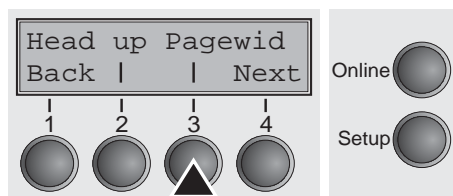
ℹ **Printing is possible in the protected area.**

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

**1** Top edge of form      **5** Protected zone
**2** Paper transport strip      **6** Transport holes
**3** Bottom edge of form      **7** Left-hand area
**4** Form separation perforation      **8** Right-hand area

### *Paper width (Pagewid)*

```
Head up  Pagewid
Back  |    |  Next
  |   |    |   |
  1   2    3   4
```

Online   Setup

This parameter determines the actual paper width.

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

```
Pagewid=136/10"*
Set   <   >  Exit
  |   |   |   |
  1   2   3   4
```

Online   Setup

Setting options: From 20 to 136 in 1/10 inch steps
Default setting: 136/10 Zoll (136 characters at 10 characters/inch)

If **Head up = On**, the print head moves to the calculated center of the paper during the time the paper is moving in the protected zone. If **Rightzo = On** (see below), the print head moves out of the perforation zone on the right as long as the paper is being transported.
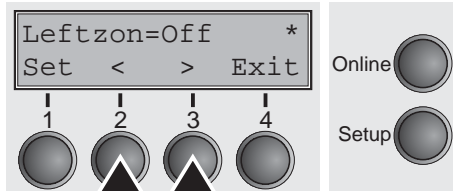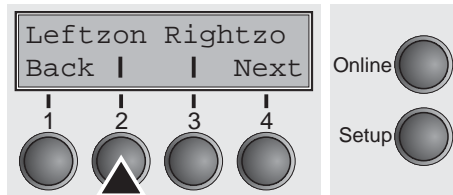
Set the printing width rather than the actual paper width.

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 print head moves out of the perforation zone (area ❼) on the left as long as the paper is being transported. The Pagewid setting has no influence (see above).

```
Leftzon Rightzo
Back |    | Next
  1    2    3    4
```

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

```
Leftzon=Off    *
Set  <   >  Exit
  1    2    3    4
```

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 (❽) towards the center of the paper while the paper is moving. The **Pagewid** option must be correctly set in this case, see .

```
Leftzon Rightzo
Back |    | Next
  1    2    3    4
```

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

```
Rightzo=Off    *
Set  <   >  Exit
  1    2    3    4
```
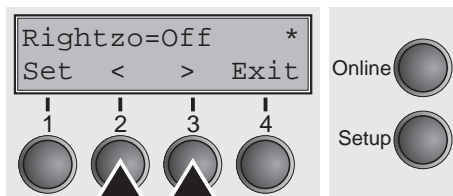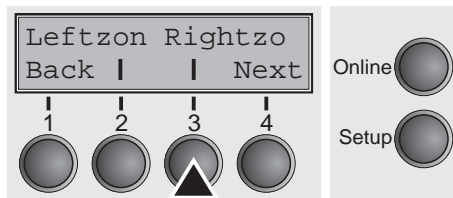
Setting options:  **On**/**Off**
Default setting:  **Off**

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

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

## Bidirectional parallel interface (CX-bid)

This parameter sets the parallel interface either to bidirectional or to compatibility mode.

```
Paphand CX-bid
Back |     | Next
  |    |    |    |
  1    2    3    4
```
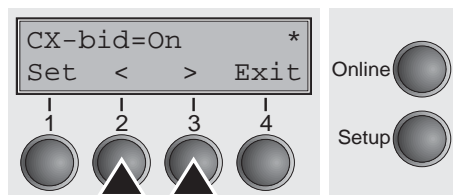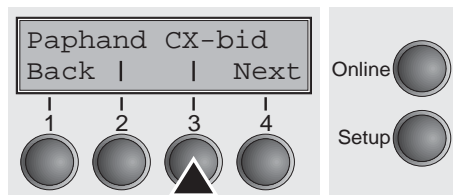
Select the **CX-bid** menu (3).

```
CX-bid=On        *
Set  <   >  Exit
  |    |    |    |
  1    2    3    4
```

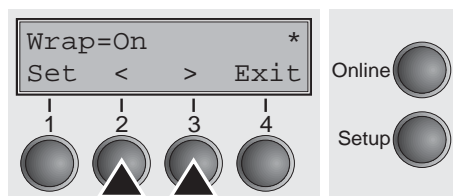Setting options:   **On/Off**
Default setting:    **On**

**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 or print server.

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

## Line wrap (Wrap)

```
 Wrap   Sound
Back |     | Next
  |    |    |    |
  1    2    3    4
```

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

```
Wrap=On          *
Set  <   >  Exit
  |    |    |    |
  1    2    3    4
```
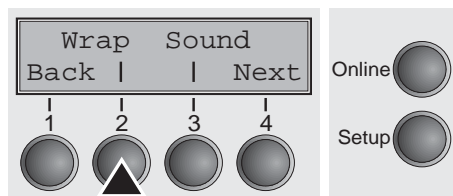
Setting options:   **On/Off**
Default setting:    **On**

**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)

Generates a beep when paper is empty.

```
 Wrap   Sound
Back  |   |  Next
```
Online
Setup
1  2  3  4

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

```
Sound=On        *
Set  <   >  Exit
```
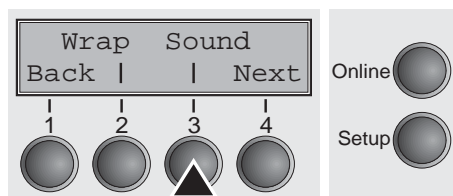Online
Setup
1  2  3  4
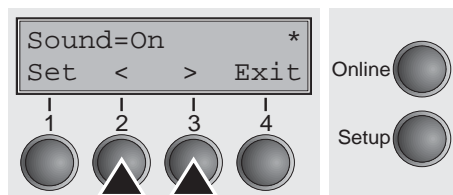
Setting options:  **On/Off**
Default setting:  **On**

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).

## 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.

```
         HvyForm
Back      |  Next
```
Online
Setup
1  2  3  4
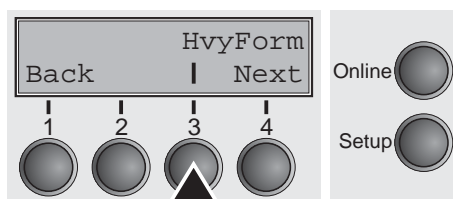
Select the **HvyForm** menu (3).

```
HvyForm=Off     *
Set  <   >  Exit
```
Online
Setup
1  2  3  4

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

**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).

## Automatic paper width detection (APW)

The automatic paper width detection feature **APW** prevents the printer from printing beyond the paper edge. This is useful to prevent the printer from printing on the platen, for example, because of an incorrect driver setting.

```
   APW    AED
Back |    |  Next
  |    |    |    |
  1    2    3    4
```
Online
Setup

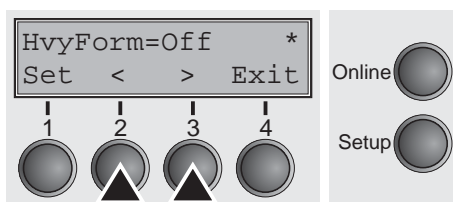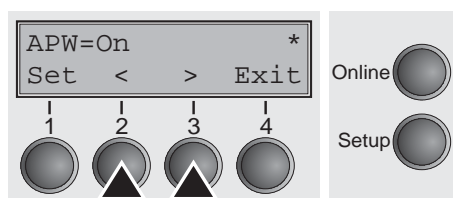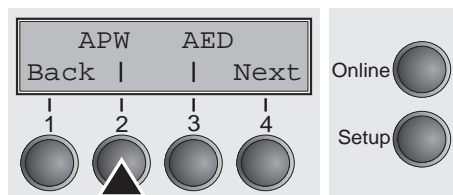Select the **APW** (2) menu.

```
APW=On          *
Set  <   >  Exit
  |    |    |    |
  1    2    3    4
```
Online
Setup

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

If **APW=On,** the printer is in the standard mode and  truncates all data located beyond the right-hand paper edge. These print data are lost.

When you select **APW=Off**, the printer does not prevent undesirable printing on the platen.

The printer determines the paper width by means of an optical sensor in the print head module. The print head carriage moves once across the maximum possible printable area of the paper and stores the width measured in this process. The measuring process varies, depending on the paper source selected.

**Tractor**: The measurement is made
▶ after power-on and before the first print job;
▶ after paper end and before the subsequent print job; after
▶ changing the paper source (e.g. from Tractor 1 to Tractor 2).

**Single sheet mode**: The measurement is made for each printed sheet.

**Manual sheet feeder**: The measurement is made for each printed sheet.

When you submit a print job which exceeds the paper width, the following message appears in the display:

```
Paperwidth Error
Press Online
  |    |    |    |
  1    2    3    4
```
Online
Setup
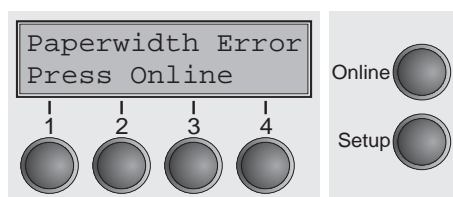
The print job is stopped at the measured paper-end position after printing the first line.

You can now either cancel the print job or load suitable paper. In the latter case, the printer will resume the print job upon pressing the **Online** key.

🛈 **If you press the** Online **key without having changed the paper, another line is printed until reaching the measured paper-end position.**

🛈 **The sensor interprets dark areas with a width of 13 mm or more as the right-hand paper edge.**
**If the sensor does not detect any black area, the maximum possible printing width is used as the printable area.**

🛑 **If there is a sensor malfunction (e.g. because of dirt, a defect or misinterpretation of the paper width) it is necessary to deactivate the APW function (**APW=Off**), since otherwise the printout will be too narrow or there will be no printout at all. In this case contact your service technician.**

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

## Automatic detection of the top paper margin (AED)

This menu option only appears, if a cut device is installed. It corrects possible inaccuracies of the paper positioning at the tear edge if the paper path is changed after a cutting action.

Select the **AED** (3) menu.
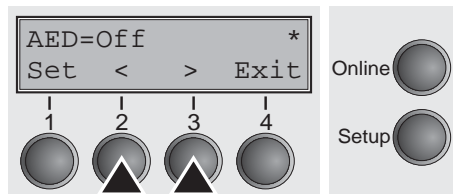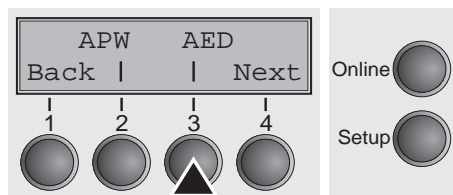
```
    APW    AED
Back  |    |  Next
   |    |    |    |
   1    2    3    4
```
Online

Setup

```
AED=Off           *
Set   <   >   Exit
   |    |    |    |
   1    2    3    4
```
Online

Setup

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

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

## Setting the page margins (Margin)
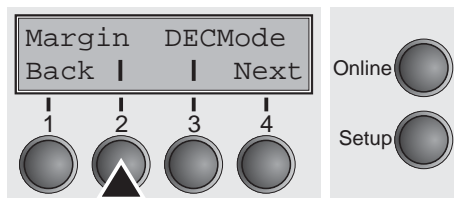
This parameter group allows you to define the area for printing. You can set the top, bottom and left margin.

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

```
Margin  DECMode
Back  |    |  Next
```
Online
Setup
1  2  3  4

*Setting the top margin (Topmrg)*
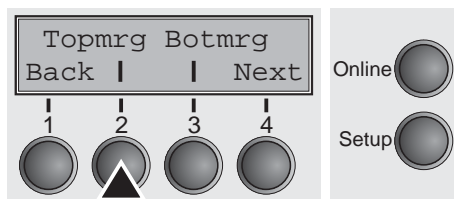
This option lets you set the top margin with the number of the line (numbered from the top paper edge) where the printing actually starts.

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

```
 Topmrg Botmrg
Back  |    |  Next
```
Online
Setup
1  2  3  4

```
Topmrg=  1       *
Set  <   >  Exit
```
Online
Setup
1  2  3  4
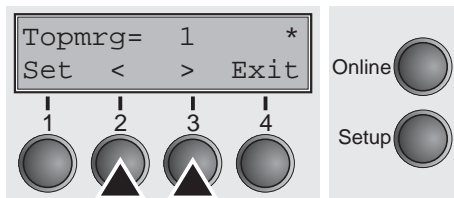
Setting options:　Line **1 to Formlength**
Default setting:　Line **1**

ℹ️ **The setting of this Option depends on the setting of both the vertical pitch and the form length options. For details refer to** *Setting line spacing (LPI)* **(page 54) and** *Form length (Formlen)* **(page 68).**

🛑 **Do not set** Topmrg **eqal or higher than** Botmrg**.**

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

*Setting the bottom margin (Botmrg)*
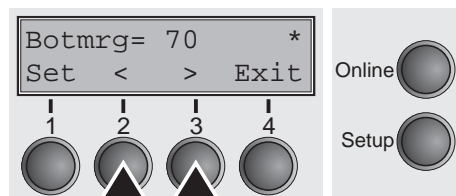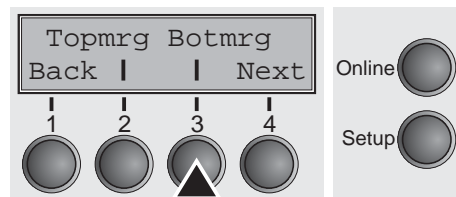
The bottom margin option gives you the possibility to set the bottom margin with the number of the line (numbered from the top paper edge) where the printing actually stops for a given page.

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

```
Topmrg Botmrg
Back  |    |  Next
  1    2   3   4
```

Setting options:   Line **1 to Formlength**
Default setting:   **Formlength**

```
Botmrg= 70      *
Set  <   >  Exit
  1    2   3   4
```

ℹ️ **The setting of this Option depends on the setting of both the vertical pitch and the form length options. For details refer to** *Setting line spacing (LPI)* **(page 54) and** *Form length (Formlen)* **(page 68). The Values range from the value for top margin (see** *Setting the top margin (Topmrg)* **on page 84) to the value for form length.**

🛑 **Do not set** Topmrg **eqal or higher than** Botmrg**.**

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

*Setting the left margin (Leftmrg)*
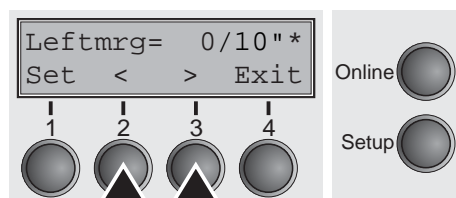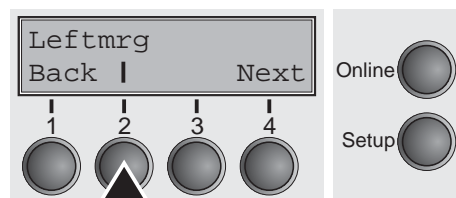
The left margin option is defined by the number of the columns (numbered from the left paper edge) where the printing actually starts.

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

```
Leftmrg
Back  |       Next
  1    2   3   4
```

Setting options:   **0 to 30/10"**
Default setting:   **0/10"**

```
Leftmrg=  0/10"*
Set  <   >  Exit
  1    2   3   4
```

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

## Setting the DEC Mode (DECMode)

The DEC mode option sets the DEC protocol specific features.
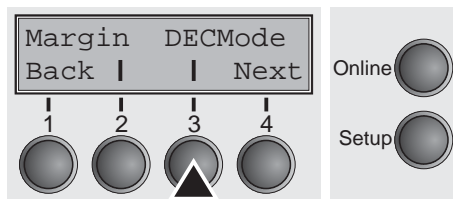
```
Margin  DECMode
Back  |    |  Next
  1    2    3    4
```
Online
Setup

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

---

### *Horizontal spacing of characters (CPI)*

Sets the horizontal spacing of the printed characters used with the DEC protocol.

```
    CPI CharSet
Back  |    |  Next
  1    2    3    4
```
Online
Setup

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

```
CPI= 10 CPI      *
Set   <    >  Exit
  1    2    3    4
```
Online
Setup
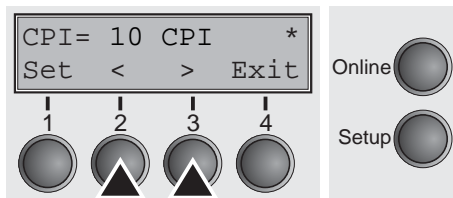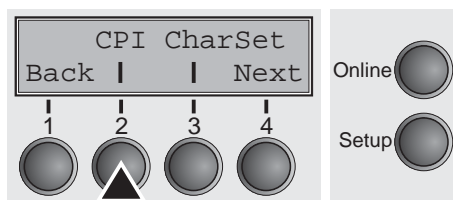
Setting options:   **5, 6, 6.65, 8.25, 8.6, 9, 10, 12, 13.3, 15, 16.5, 17.1, 18, 20 cpi and Proportional Spacing**
Default setting:    **10**

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

***Character set (CharSet)***

Selects the G0 character set that will be used with the DEC protocol.

```
     CPI CharSet
Back  |     |   Next
```
Online
Setup
1  2  3  4

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

```
US ASCII            *
Set   <   >   Exit
```
Online
Setup
1  2  3  4
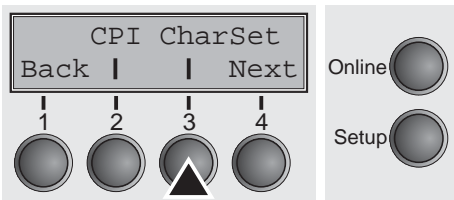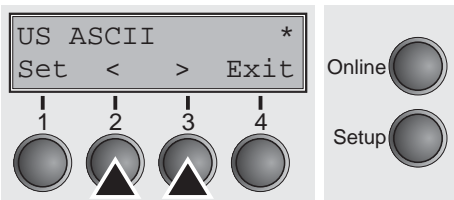
Setting options:   see **table** below
Default setting:   **US ASCII**

| Character Set | Definition |
|---|---|
| US ASCII | US ASCII |
| British | British |
| French | French |
| German | German |
| Norw./Danish | Norwegian/Danish |
| DEC Finnish | DEC Finnish |
| DEC French-Can. | DEC French-Canadian |
| DEC Norw.-Dan. | DEC Norwegian/Danish |
| DEC Swedish | DEC Swedish |
| DEC Dutch | DEC Dutch |
| DEC Swiss | DEC Swiss |
| DEC Portuguese | DEC Portuguese |
| DEC Supplement. | DEC Supplemental |
| DEC Spec.-Graphi. | DEC Special Graphics |
| DEC Technical | DEC Technical |
| DEC 7bit Hebrew | DEC 7Bit Hebrew |
| DEC Turkish | DEC 7Bit Turkish |
| DEC Hebrew Sup. | DEC Hebrew Supplemental |
| DEC Greek Sup. | DEC Greek Supplemental |
| DEC Turk. Sup | DEC Turkish Supplemental |
| ISO Italian | ISO Italian |
| ISO Spanish | ISO Spanish |
| JIS Katakana | JIS Katakana |
| JIS Roman | JIS Roman |
| Legal | Legal |

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

*User preference character set (UserChr)*

This option sets the user character set for the DEC protocol.

```
UserChr
Back  |       Next
 1    2    3    4
```

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

```
DEC Supplement *
Set  <    >  Exit
 1    2    3    4
```
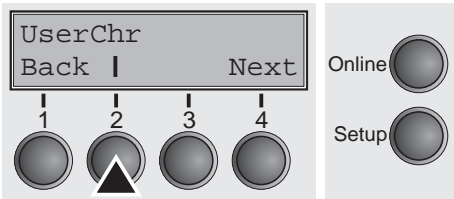
Setting options:  see **table** below
Default setting:  **DEC supplement**

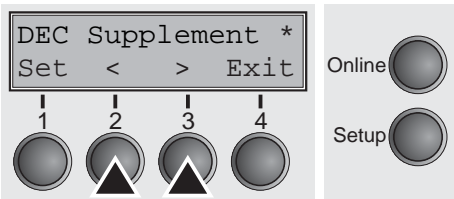| | | |
|---|---|---|
| DEC Finnish | ISO Latin-Hebr. Su | Code Page 853 |
| French | ISO Latin-Cyr. Sup | Code Page 855 |
| DEC French-Can. | ISO Latin-5 Su | Code Page 857 |
| German | ISO Latin-9 Su | Code Page 858 |
| ISO Italian | E-USA | Code Page 860 |
| JIS Roman | E-France | Code Page 861 |
| DEC Norw./Dan. | E-Germany | Code Page 862 |
| ISO Spanish | E-United Kingd | Code Page 863 |
| DEC Swedish | E-Denmark 1 | Code Page 864 |
| Norw./Danish | E-Sweden | Code Page 865 |
| DEC Dutch | E-Italy | Code Page 866 |
| DEC Swiss | E-Spain 1 XXX | Code Page 869 |
| DEC Portuguese | E-Japan | Abicomp |
| Legal | E-Norway | Brazilian ASCII |
| DEC Supplement | E-Denmark 2 | Mazowian |
| DEC Spec.Graph. | E-Spain 2 | Code MJK |
| DEC Technical | E-L. America | Bulgarian |
| DEC 7Bit Hebrew | E-Turkey | ISO 8859-7 |
| DEC Hebrew Sup. | E-Korea | ISO 8859-15 |
| DEC Greek Sup. | E-Legal | ISO Latin 1T |
| DEC 7Bit Turk. | E-Old Hebrew | New Hebrew |
| DEC Turk. Sup. | Code Page 437 | D-Hebrew |
| JIS Katakana | CP 437 Greek | Code Page 210 |
| ISO Latin-1 Su | Code Page 850 | Code Page 220 |
| ISO Latin-2 Su | Code Page 851 | |
| ISO Latin-Greek Su | Code Page 852 | |

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

*Printer ID (Prn.ID)*

This option defines the DEC printer ID used by the printer when responding to DA commands (DA = device attributes, see *Programmer's Manual, Reports*. from your host computer or application software (serial transmission only).

Press the **Prn.ID** key (2).

```
Prn.ID CAN Fkt.
Back  |    |  Next
```
Online
Setup
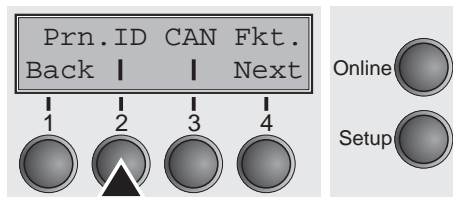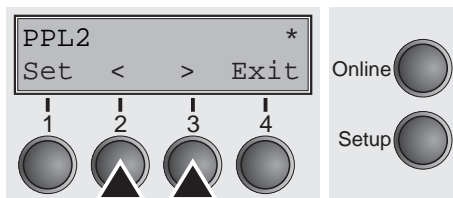
Setting options:   **PPL2**, **LA120 ID**, **LA210 ID**
Default setting:   **PPL2**

**PPL2**: Allows the printer to respond as a DEC Conformance Level 2 device.
**LA120 ID**: The printer responds as a LA120 printer.
**LA210 ID**: The printer responds as a LA210 printer.

```
PPL2            *
Set   <   >  Exit
```
Online
Setup

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

*Deleting sequence or buffer (CAN Fkt.)*

This option defines the behaviour of the cancel function.

Press the **CAN Fkt.** key (3).

```
Prn.ID CAN Fkt.
Back  |    |  Next
```
Online
Setup
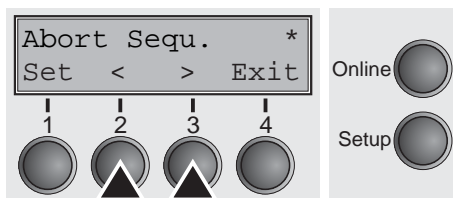
Setting options:   **Abort Sequ.**/**Kill Buffer**
Default setting:   **Abort Sequ.**

If **Abort Sequence** is set, the printer immediately deletes the currently processed sequence (without execution). If **Kill buffer** is selected, the printer immediately deletes the complete receiving buffer, even if a prior X-OFF was sent to printer.

```
Abort Sequ.      *
Set   <   >  Exit
```
Online
Setup

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

***Disconnection on end of transmission (Discnct)***

This option determines whether the communication disconnect occurs at the end of the transmission.
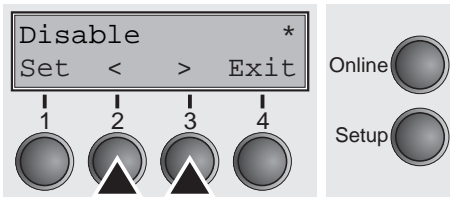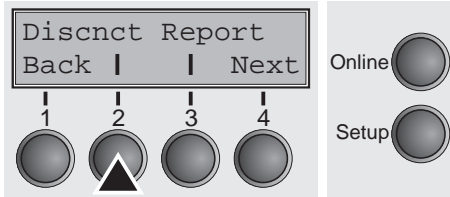
```
Discnct Report
Back |    | Next
  1    2    3    4
```

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

```
Disable        *
Set  <   >  Exit
  1    2    3    4
```

Setting options: **Enable**/**Disable**
Default setting: **Disable**

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

***Initial Report (Report)***

This option determines whether the printer sends an initial report to the host or not.
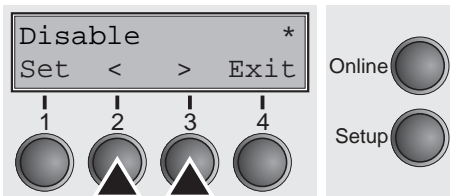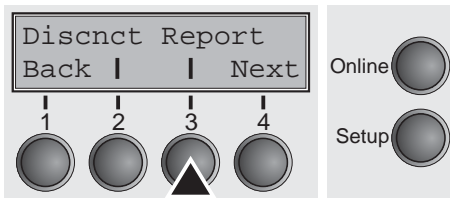
```
Discnct Report
Back |    | Next
  1    2    3    4
```

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

```
Disable        *
Set  <   >  Exit
  1    2    3    4
```

Setting options: **Enable**/**Disable**
Default setting: **Disable**

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

*Automatic answerback (Answbck)*

This option determines whether the printer sends an answerback message to the printer during initialization or not.

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

```
Answbck Answ_ENQ
Back  |    |  Next
```
Online
Setup

Setting options:   **Enable/Disable**
Default setting:   **Disable**

```
Disable          *
Set   <   >   Exit
```
Online
Setup

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

*Answerback on ENQ (Answ_ENQ)*

This option determines whether the answerback message is sent to the host when the printer receives an ENQ code.

Press the **Answ_ENQ** key (3).
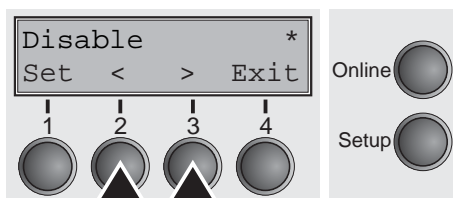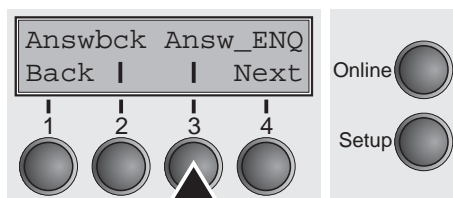
```
Answbck Answ_ENQ
Back  |    |  Next
```
Online
Setup

Setting options:   **Enable/Disable**
Default setting:   **Disable**

```
Disable          *
Set   <   >   Exit
```
Online
Setup

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

## Setting the IBM mode (IBMMode)

The IBM mode option sets the IBM specific features.

```
IBMMode EPSMode
Back  |    |  Next
   1    2    3    4
```

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

### Horizontal spacing of characters (CPI)

Sets the horizontal spacing of the printed characters used with the IBM protocol.
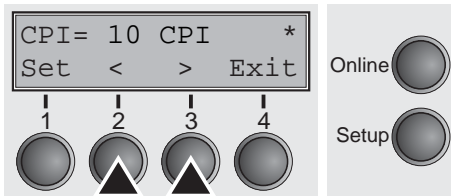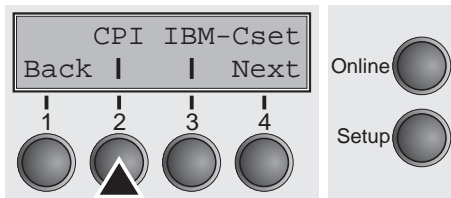
```
   CPI IBM-Cset
Back  |    |  Next
   1    2    3    4
```

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

```
CPI= 10 CPI      *
Set   <    >  Exit
   1    2    3    4
```

Setting options:     **5, 6, 7.5, 8.6, 10, 12, 15, 17.1, 20 cpi and Proportional Spacing**
Default setting:     **10**

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

### IBM character set (IBM-Cset)

This option identifies which kind of character set is to use: for English (IBM standard characters) or non English languages (IBM extended characters).

Press the **IBM-Cset** key (3).

```
   CPI IBM-Cset
Back  |    |  Next
   1    2    3    4
```

```
Standard         *
Set   <    >  Exit
   1    2    3    4
```
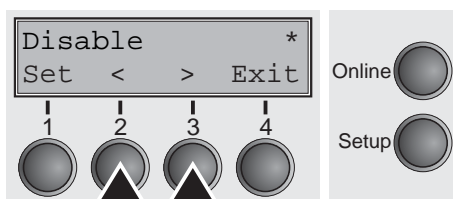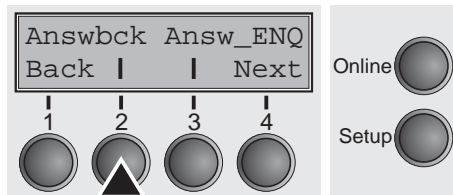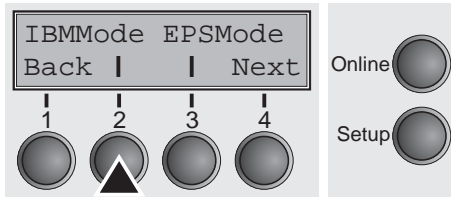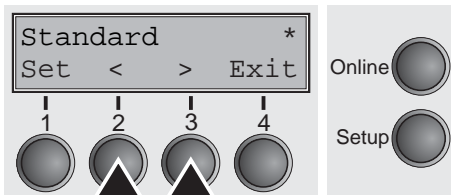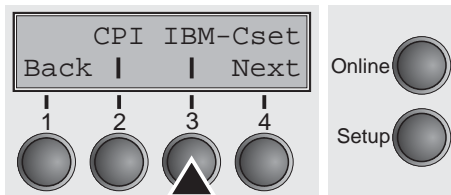
Setting options:     **Standard/Extended**
Default setting:     **Standard**

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

*Code page (CodPage)*　　　　　　This option determines which code page the printer uses in IBM mode.

```
CodPage DblHigh
Back  |    |  Next
  1    2    3    4
```

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

```
Code Page 437   *
Set   <   >  Exit
  1    2    3    4
```

Setting options:　　see **table** below
Default setting:　　**Code Page 437**

| E-Denmark 2 | US ASCII | |
| E-Spain 2 | British | ISO Latin-Greek |
| E-L. America | DEC Finnish | ISO Latin-Hebr. Su |
| E-Turkey | French | ISO Latin-Cyr. Sup |
| E-Korea | DEC French-Can. | ISO Latin-5 Su |
| E-Legal | German | ISO Latin-9 Su |
| E-Old Hebrew | ISO Italian | E-USA |
| Code Page 437 | JIS Roman | E-France |
| CP 437 Greek | DEC Norw./Dan. | E-Germany |
| Code Page 850 | ISO Spanish | E-United Kingd |
| Code Page 851 | DEC Swedish | E-Denmark 1 |
| Code Page 852 | Norw./Danish | E-Sweden |
| Code Page 853 | DEC Dutch | E-Italy |
| Code Page 855 | DEC Swiss | E-Spain 1 |
| Code Page 857 | DEC Portuguese | E-Japan |
| Code Page 858 | Legal | E-Norway |
| Code Page 860 | DEC Supplement | Code MJK |
| Code Page 861 | DEC Spec.Graph. | Bulgarian |
| Code Page 862 | DEC Technical | ISO 8859-7 |
| Code Page 863 | DEC 7Bit Hebrew | ISO 8859-15 |
| Code Page 864 | DEC Hebrew Sup. | ISO Latin 1T |
| Code Page 865 | DEC Greek Sup. | New Hebrew |
| Code Page 866 | DEC 7Bit Turk. | D-Hebrew |
| Code Page 869 | DEC Turk. Sup. | Code Page 210 |
| Abicomp | JIS Katakana | Code Page 220 |
| Brazilian ASCII | ISO Latin-1 Su | |
| Mazowian | ISO Latin-2 Su | |

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

*IBM Double Height (DblHigh)*

This option determines whether the IBM double height mode should be used (**On**) or not (**Off**).

```
CodPage DblHigh
Back  |    |  Next
  1    2    3    4
```

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

```
DblHigh=Off      *
Set   <   >  Exit
  1    2    3    4
```
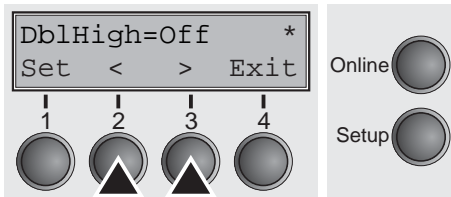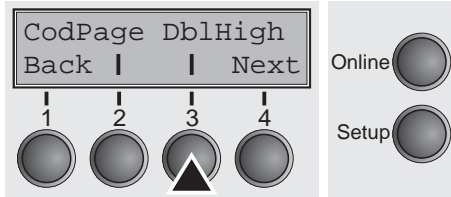
Setting options:    **On/Off**
Default setting:    **Off**

If the parameter **On** is selected, all data will be printed in double height.

If the parameter **Off** is selected, all data will be printed in normal height.

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

*Horizontal pitch on Compress (IBMComp)*

This option selects the character density when receiving the Compress command (SI or ESC SI).

```
IBMComp Sl.Zero
Back  |    |  Next
  1    2    3    4
```

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

```
IBMComp= 17.1 C*
Set   <   >  Exit
  1    2    3    4
```
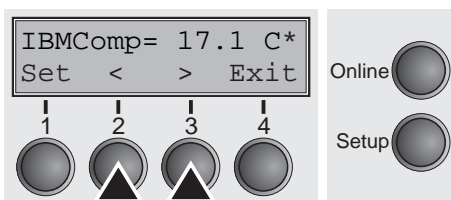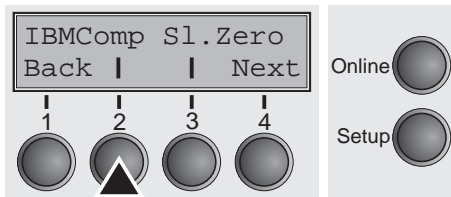
Setting options:    **17.1**, **20 CPI**
Default setting:    **17.1 CPI**

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

***Slashed Zero (Sl.Zero)***          This option selects whether the zero character is printed with or without a slash.

Press the **Sl.Zero** key (3).
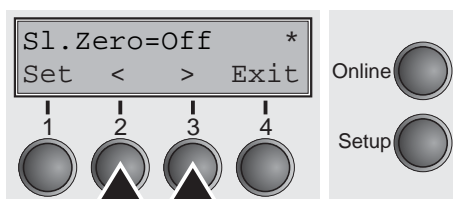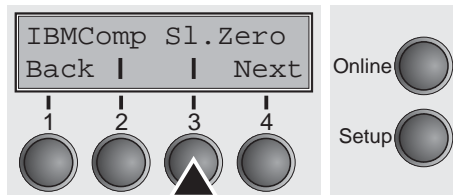
```
IBMComp Sl.Zero
Back  |     |  Next
```
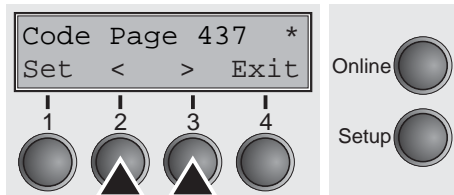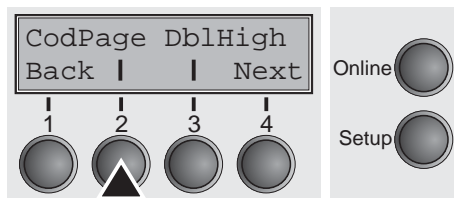
Setting options:   **On/Off**
Default setting:   **Off**

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

```
Sl.Zero=Off       *
Set   <   >  Exit
```

## Setting the EPSON Mode (EPSMode)

The EPSON mode option sets the EPSON protocol specific features.
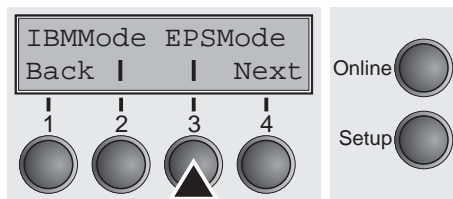
```
IBMMode EPSMode
Back  |    |  Next
  1    2    3    4
```

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

### Horizontal spacing of characters (CPI)

Sets the horizontal spacing of the printed characters used with the EPSON protocol.
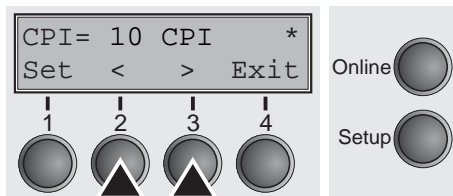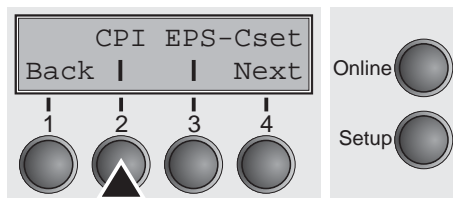
```
    CPI EPS-Cset
Back  |    |  Next
  1    2    3    4
```

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

```
CPI= 10 CPI    *
Set  <    >  Exit
  1    2    3    4
```

Setting options: **5, 6, 7.5, 8.6, 10, 12, 15, 17.1, 20 cpi and Proportional Spacing**
Default setting: **10**

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

### EPSON character set (EPS-Cset)

This option defines the style which is applied to the character set.

```
    CPI EPS-Cset
Back  |    |  Next
  1    2    3    4
```

Press the **EPS-Cset** key (3).

```
Graphic        *
Set  <    >  Exit
  1    2    3    4
```
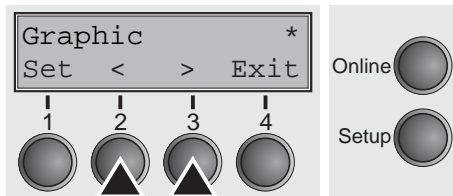
Setting options: **Graphic**, **Italic**, **DLL**
Default setting: **Graphic**

**Graphic**: The character sets are not altered.
**Italic**: The Italic style is applied to the character set.
**DLL**: A DLL (download) character set, as defined before, can be activated in the code range from hex. A0 to hex. FE.

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

*Code Page (CodPage)*

This option determines which code page the printer uses in EPSON mode.

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

```
CodPage Sl.Zero
Back  |    |  Next
```

```
Code Page 437   *
Set   <   >  Exit
```
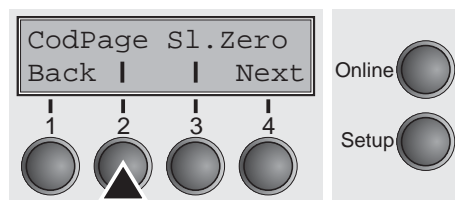
Setting options:　see **table** below
Default setting:　**Code Page 437**

| | | |
|---|---|---|
| CPI 210 | ISO Latin-2 Su | Code Page 852 |
| US ASCII | ISO Latin-Greek | Code Page 853 |
| British | ISO Latin-Hebr. Su | Code Page 855 |
| DEC Finnish | ISO Latin-Cyr. Sup | Code Page 857 |
| French | ISO Latin-5 Su | Code Page 858 |
| DEC French-Can. | ISO Latin-9 Su | Code Page 860 |
| German | E-USA | Code Page 861 |
| ISO Italian | E-France | Code Page 862 |
| JIS Roman | E-Germany | Code Page 863 |
| DEC Norw./Dan. | E-United Kingd | Code Page 864 |
| ISO Spanish | E-Denmark 1 | Code Page 865 |
| DEC Swedish | E-Sweden | Code Page 866 |
| Norw./Danish | E-Italy | Code Page 869 |
| DEC Dutch | E-Spain 1 | Abicomp |
| DEC Swiss | E-Japan | Brazilian ASCII |
| DEC Portuguese | E-Norway | Mazowian |
| Legal | E-Denmark 2 | Code MJK |
| DEC Supplement | E-Spain 2 | Bulgarian |
| DEC Spec.Graph. | E-L. America | ISO 8859-7 |
| DEC Technical | E-Turkey | ISO 8859-15 |
| DEC 7Bit Hebrew | E-Korea | ISO Latin 1T |
| DEC Hebrew Sup. | E-Legal | New Hebrew |
| DEC Greek Sup. | E-Old Hebrew | D-Hebrew |
| DEC 7Bit Turk. | Code Page 437 | Code Page 210 |
| DEC Turk. Sup. | CP 437 Greek | Code Page 220 |
| JIS Katakana | Code Page 850 | |
| ISO Latin-1 Su | Code Page 851 | |

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

*Slashed Zero (Sl.Zero)*        This option selects whether the zero character is printed with or without a slash.

```
CodPage Sl.Zero
Back  |    |  Next
```
  1    2    3    4

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

```
Sl.Zero=Off     *
Set  <    >  Exit
```
  1    2    3    4
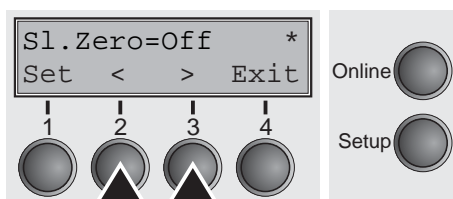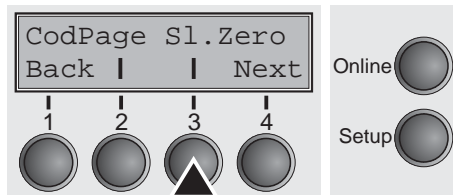
Setting options:   **On/Off**
Default setting:   **Off**

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

# Menu settings (example)

| | Macro 1 * | Macro 2 | Macro 3 | Macro 4 | Current |
|---|---|---|---|---|---|
| **Protocol** | | | | | |
| Parall. | EPSON ESC/P2 | IBM XL24E | EPSON ESC/P2 | IBM XL24E | EPSON ESC/P2 |
| Serial | DEC PPL2 | DEC PPL2 | DEC PPL2 | DEC PPL2 | DEC PPL2 |
| Font | Draft | Draft | Draft | Draft | Draft |
| LPI | 6 LPI | 6 LPI | 6 LPI | 6 LPI | 6 LPI |
| **Single** | * | | | | * |
| Formlen | DIN A4 (297 mm) | Letter 11" | Executive 10.5" | Letter 11" | DIN A4 (297 mm) |
| Head | 18 | 18 | 18 | 18 | 18 |
| FormAdj | 0/72" | 0/72" | 0/72" | 0/72" | 0/72" |
| **Front1** | | * | * | * | |
| Formlen | Letter 11" | Letter 11" | Letter 11" | Letter 11" | Letter 11" |
| Head | 18 | 18 | 18 | 18 | 18 |
| FormAdj | 12/72" | 12/72" | 12/72" | 12/72" | 12/72" |
| Width | 13.6Inch | 13.6Inch | 13.6Inch | 13.6Inch | 13.6Inch |
| Topmrg | 1 | 1 | 1 | 1 | 1 |
| Botmrg | 66 | 66 | 66 | 66 | 66 |
| Leftmrg | 0/10" | 0/10" | 0/10" | 0/10" | 0/10" |
| PrinDir | Bidir | Bidir | Bidir | Bidir | Bidir |
| Auto-CR | On | On | On | On | On |
| Auto-LF | Off | Off | Off | Off | Off |
| FFmode | Off | Off | Off | Off | Off |
| Rightzo | Off | Off | Off | Off | Off |
| Leftzon | Off | Off | Off | Off | Off |
| Head up | Off | Off | Off | Off | Off |
| AGA | On | On | On | On | On |
| AGA offset | 0 | 0 | 0 | 0 | 0 |
| Hvy Form | Off | Off | Off | Off | Off |
| TearView | Tear=1s | Tear=1s | Tear=1s | Tear=1s | Tear=1s |
| ESCChar | ESC | ESC | ESC | ESC | ESC |
| Barcode | Off | Off | Off | Off | Off |
| Barmode | Secured | Secured | Secured | Secured | Secured |
| **DECMode** | | | | | |
| CPI | 10 CPI | 10 CPI | 10 CPI | 10 CPI | 10 CPI |
| Country | US ASCII | US ASCII | US ASCII | US ASCII | US ASCII |
| UserChr | DEC Supplement | DEC Supplement | DEC Supplement | DEC Supplement | DEC Supplement |
| Wrap | On | On | On | On | On |
| Prn.ID | PPL2 | PPL2 | PPL2 | PPL2 | PPL2 |
| CAN Fkt. | Abort Sequ. | Abort Sequ. | Abort Sequ. | Abort Sequ. | Abort Sequ. |
| Discnct | Disable | Disable | Disable | Disable | Disable |
| Report | Disable | Disable | Disable | Disable | Disable |
| Answbck | Disable | Disable | Disable | Disable | Disable |
| Answ ENQ | Disable | Disable | Disable | Disable | Disable |
| **IBMMode** | | | | | |
| CPI | 10 CPI | 10 CPI | 10 CPI | 10 CPI | 10 CPI |
| CharSet | Standard | Standard | Standard | Standard | Standard |
| CodPage | Code Page 437 | Code Page 437 | Code Page 437 | Code Page 437 | Code Page 437 |
| DblHigh | Off | Off | Off | Off | Off |
| IBMComp | 17.1 CPI | 17.1 CPI | 17.1 CPI | 17.1 CPI | 17.1 CPI |
| Sl.Zero | Off | Off | Off | Off | Off |
| **EPSMode** | | | | | |
| CPI | 10 CPI | 10 CPI | 10 CPI | 10 CPI | 10 CPI |
| CodPage | Code Page 437 | Code Page 437 | Code Page 437 | Code Page 437 | Code Page 437 |
| Eps-Cset | Graphic | Graphic | Graphic | Graphic | Graphic |
| Sl.Zero | Off | Off | Off | Off | Off |
| **Interface** | **Power-On Value** | **Options** | **Power-On Value** | **Options** | **Power-On Value** |
| Interf. | Auto | PMS | On | AutoASF | Off |
| Timeout | 2 sec | Quiet | Off | AutoTRA | Off |
| Buffer | 128 KB | Pap.back | normal | Single | On |
| CX-bid | On | Sound | On | Language | English |
| Baud | 9600 | Pagewid | 136/10" | Menu Locked | Off |
| Format | 8Bit No 1Stop | | | | |
| BuffCtrl | XON/XOFF | | | | |
| DTR | DTR | | | | |
| TearAdj Front1 | 0/72" | | | | |

# 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 print head 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**, **H-Dump**).

```
ASCII80 ASCII136
Back |     |  Next
```
ASCII test with 80 or 136 characters per line.

```
   H-Dump
Back |       Next
```
Interface test (H-Dump)

```
Testmode
Initializing ...
```
1  2  3  4

Online

Setup
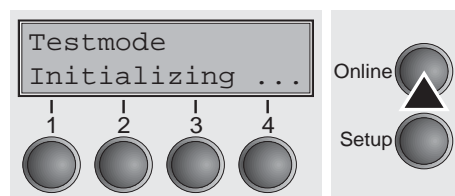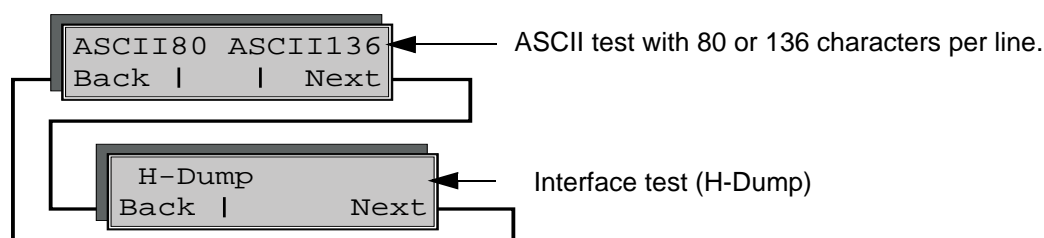
Enter advanced menu mode by pressing the key **Online** while switching on the printer and keep the key pressed until **Testmode** appears on the display.

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.

```
Testmode
Initializing ...
  1    2    3    4
```
Online
Setup

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.

```
ASCII80 ASCII136
Back |    | Next
  1    2    3    4
```
Online
Setup

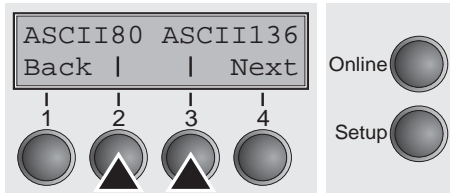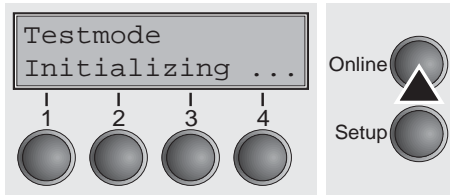Press the soft key for the ASCII 80 format (corresponds to Legal Portrait) or for ASCII 136 (Double or Legal Landscape). The display will indicate **Test mode Off**.

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 printout.

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 .

Some changes in menu mode may cause the printer to reinitialize; 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:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^
 456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]
  56789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\
   6789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[
    789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ
     89:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXY
      9:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWX
       :;<=>?@ABCDEFGHIJKLMNOPQRSTUVW
        ;<=>?@ABCDEFGHIJKLMNOPQRSTUV
```

*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 print head gap (see the section** *Setting the print head gap (page 43)***.**

*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 (H-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.
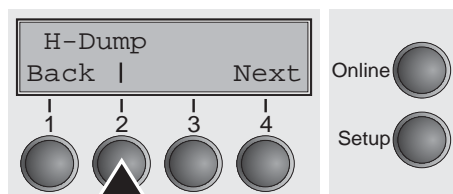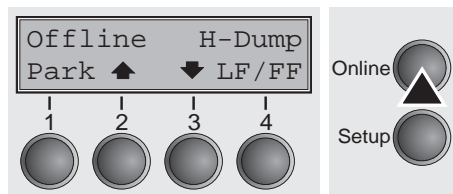
*Printout in Hex-Dump*

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**.

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

```
ASCII80 ASCII136
Back |    | Next
  |    |    |    |
  1    2    3    4
```
Online
Setup

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

```
 H-Dump
Back |         Next
  |    |    |    |
  1    2    3    4
```
Online
Setup

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.

```
Offline    H-Dump
Park ↑    ↓ LF/FF
  |    |    |    |
  1    2    3    4
```
Online
Setup

```
                   1B 5B 36 7E 1B 5B              .[6~.[
3F 36 7E 1B 74 01 1B 36 1B 28 72 1B 5B 31 31 68    ?6~.t..6.(r.[11h
1B 5B 30 3B 30 20 44 1B 5B 31 3B 31 20 44 1B 5B    .[0;0.D.[1;1.D.[
32 3B 32 20 44 1B 5B 33 3B 33 20 44 1B 5B 34 3B    2;2.D.[3;3.D.[4;
34 20 44 1B 5B 35 3B 35 20 44 1B 5B 36 3B 36 20    4.D.[5;5.D.[6;6.
44 1B 5B 3F 35 32 68 1B 5B 35 3B 3B 30 7B 1B 32    D.[?52h.[5;;0{.2
1B 5B 38 34 31 38 74 1B 5B 37 32 38 20 68 0A 1B    .[8418t.[728.h..
5B 31 32 30 20 68 1B 5B 37 31 32 60 1B 5B 31 30    [120.h.[712'.[10
6D 1B 5B 34 79 1B 5B 34 77 54 68 69 73 20 69 73    m.[4y.[4wThis.is
20 61 20 73 61 6D 70 6C 65 20 74 65 78 74 20 73    .a.sample.text.s
68 6F 77 69 6E 67 20 74 68 65 20 66 75 6E 63 74    howing.the.funct
69 6F 6E 61 6C 69 74 79 20 6F 66 20 74 68 65 20    ionality.of.the.
68 65 78 2D 64 75 6D 70 20 0D 1B 5B 31 32 30 20    hex-dump...[120.
68 0A 1B 5B 31 32 30 20 68 1B 5B 37 31 32 60 66    h..[120.h.[712'f
65 61 74 75 72 65 2E 20 69 74 20 69 73 20 69 6E    eature..it.is.in
74 65 6E 64 65 64 20 74 6F 20 61 6E 61 6C 79 73    tended.to.analys
65 20 74 68 65 20 69 6E 63 6F 6D 69 6E 67 20 64    e.the.incoming.d
61 74 61 20 73 74 72 65 61 6D 2E 20 20 0C 1B 5B    ata.stream.....[
35 34 7B 1B 5B 36 7E                               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.
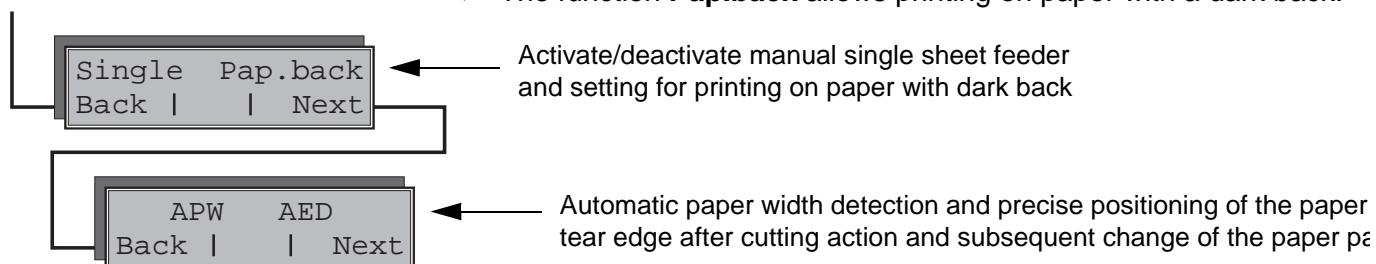
**If you want to stop the Hex-Dump printout before switching off the printer, press the key** Online **and then the key** LF/FF **(4) once.**

## Advanced settings

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

▸ The **Single** 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.

```
Single   Pap.back
Back |    |  Next
```
Activate/deactivate manual single sheet feeder
and setting for printing on paper with dark back

```
  APW    AED
Back |    |  Next
```
Automatic paper width detection and precise positioning of the paper
tear edge after cutting action and subsequent change of the paper pa

Enter Extended menu mode by pressing the key **Online** while switching on the printer and keep the key pressed until **Testmode** appears on the display.

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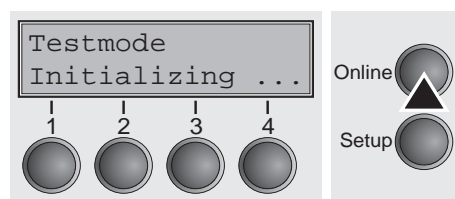
The display shows **Test mode** for approx. 1 second and then automatically changes to display **ASCII 80 ASCII 136**.

## Deactivate single sheet feeder (Single)

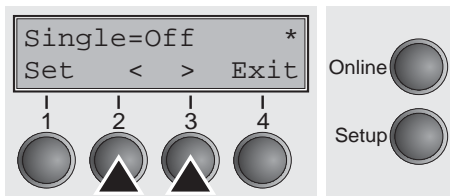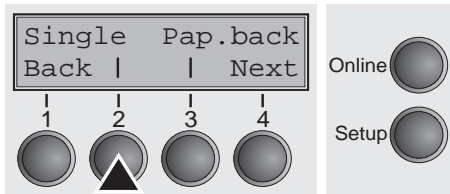Some printer models are designed for fanfold paper operation only and therefore do not feature a single sheet feeder. To prevent erroneous selection of the single sheet paper source, all sequences referring to the single sheet feeder can be deactivated by setting the **Single** menu option to **Off**.

```
Single   Pap.back
Back |    | Next
  |    |    |    |
  1    2    3    4
```

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

```
Single=Off       *
Set   <   >  Exit
  |    |    |    |
  1    2    3    4
```

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

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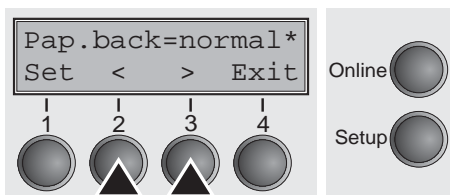
**This setting is not reset by loading the default factory settings.**

Confirm your settings by pressing the **Set** key (1).

## Settings for paper with dark back (Pap.back)

```
Single   Pap.back
Back |    | Next
  |    |    |    |
  1    2    3    4
```

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

```
Pap.back=normal*
Set   <   >  Exit
  |    |    |    |
  1    2    3    4
```
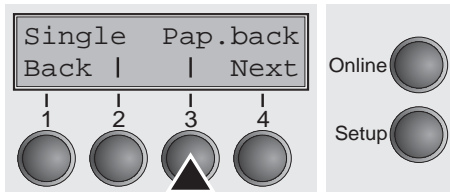
Setting options:    **normal/dark**
Default setting:    **normal**

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

**Pap.back = dark** can be set to process paper with a gray 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).

# 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.

**STOP** **Repairs should only be performed by authorised service personnel.**

# General print problems

| Problem | Corrective action |
|---|---|
| ***The display remains dark***<br>The printer is switched on, but nothing happens (nothing is displayed, no noise). | Switch off the printer and proceed as follows:<br><br>1  Check that the power plug is correctly connected to the socket on the printer.<br><br>2  Check that the power plug is seated properly in the wall socket.<br><br>3  Switch on the printer again. If the printer is now connected correctly, the printer initializes and text is shown on the display.<br><br>If these steps do not eliminate the fault:<br><br>▸  Replace the power cord and repeat step 3.<br><br>▸  Check whether the fuse is faulty and if so exchange it:, see *Replacing the fuse* (page 116).<br><br>▸  Check that power flows at the socket e.g. using a desk lamp, if necessary use a different socket and repeat step 3.<br><br>▸  Contact your dealer if the printer cannot be powered up.<br><br>**STOP** **Do not attempt to open the printer. You might suffer an electric shock.** |
| ***The display is lit, but the printer does not print*** | 1  Check that the printer is **Online**. If the displays shows **Offline**, then press the key **Online**. Try to print again.<br><br>2  Check the connection from the printer to the computer (interface cable):<br><br>▸  Check that the interface cable is properly connected to the computer and to the printer.<br><br>▸  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 133)*.<br><br>▸  Check that the printer is properly adapted to the computer (configured). Refer to section *The control panel* (page 26). Check the parameter set in the **Setup** menu under *Settings for interfaces (I/O)* (page 57)and if necessary correct it.<br><br>3  Check whether the printer is working properly. To do this, print out a copy of the menu; siehe *Printing out macro configurations (Print)* (page 51)<br><br>4  Check that the top cover is closed.<br><br>5  Check that paper is inserted and loaded. Refer to the section *Loading paper (page 34)* |

| Problem | Corrective action |
|---|---|
| ***Problems with the paper feed***<br>The paper is not fed in | 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 path (page 32)*. If you wish to use optional paper types, make sure they are correctly installed.<br><br>2  Make sure that the paper guide is correctly adjusted at the side.<br><br>3  When using single sheets, push the paper fully into the paper feed.<br><br>  **(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.**<br><br>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.<br><br>  **(i)**  **If necessary, drive the remaining paper manually to the park position with the ⬇ key.** |
| ***Paper jam (fanfold paper)*** | 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).<br><br>2  Press the ⬇ key to transport the paper backwards.<br><br>3  You may support the paper return feed by cautiously pulling the paper in the correct direction.<br><br>Before you replace the fanfold paper, refer to the instructions in the section *Loading paper (page 34)*.<br><br>You should pay special attention to the following points:<br><br>▸  Insert the paper straight.<br><br>▸  After inserting the paper, close the tractors.<br><br>▸  Adjust the tractors, the paper should be positioned in the tractors straight but without tension.<br><br>▸  Adjust the print head gap to the paper thickness (if AGA=Off).<br><br>▸  Set the parameter Head-up to **On**, see section *Increasing the print head gap (Head up)* (page 78).<br><br>▸  Clean upper friction, see section *Cleaning the upper friction* (page 118). |

| Problem | Corrective action |
|---|---|
| *Paper jam (single sheets)* | 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. |
| | Before you replace the single sheet, refer to the instructions in the section *Single sheets* (page 36). |
| | Pay attention to the following points: |
| | ▸ Set single sheet feed to the corresponding paper width. |
| | ▸ Insert the paper straight as far as possible. |
| | ▸ Adjust the print head gap to the paper thickness (card-like paper etc.) (if AGA=Off). |
| *Paper does not move to tear off position*<br>Single sheet inserted | It is only possible to tear off when fanfold paper is used, refer to the section *Moving the paper to the tear position* (page 39). |

# Problems with the print quality

| Problem | Corrective action |
|---|---|
| *Print is too pale* | 1  The ribbon is used up or the ribbon cassette is not correctly fitted. Refer to the section *Inserting the ribbon cassette* (page 10).<br><br>2  The print head to platen gap is not correctly set, refer to the section *Setting the print head gap (page 43)*.<br><br>3  For printers with the AGA = ON: Enter a correction value <0. See the section *Setting the print head gap (page 43)*. |
| *Smudged print* | 1  The ribbon is damaged (e.g. frayed). Change the ribbon as described in the section *Inserting the ribbon cassette* (page 10).<br><br>2  The print head gap is too small, increase the gap. See the section *Setting the print head gap (page 43)*.<br><br>3  For printers with **AGA = ON**: Enter a correction value >0 (correction value 0 to +10). See the section *Setting the print head gap (page 43)*. |
| *Prints undefined characters* | 1  Check that the interface plug is correctly connected to the computer and to the printer.<br><br>2  Check that the proper emulation and the correct character set (country, CG table or character set) is selected in the **Setup** menu.<br><br>3  Check the length of the interface cable, see section *Interface specifications* (page 123).<br><br>4  Set **CX-bid** in the advanced menu to **Off**, see section *Bidirectional parallel interface (CX-bid)* (page 80).<br><br>5  Check that the printer is properly adapted to the computer (configured). Refer to section *The control panel* (page 26). Check the parameter set in the **Setup** menu under *Settings for interfaces (I/O)* (page 57)and if necessary correct it. |
| *The first line is not completely printed out at the top* | Check the function **FormAdj**. Refer to the section *First printing position (FormAdj)* (page 69). |
| *Dots within characters are missing* | 1  Check whether the ribbon is damaged, if necessary replace it. See the section *Inserting the ribbon cassette* (page 10).<br><br>2  Set the correct print head gap.<br><br>3  Check whether the platen is damaged.<br><br>4  Check whether the print head is damaged.<br><br>ⓘ  We recommend to use genuine ribbon cassettes only. In case of points 3 or 4, please contact your dealer. |

# Error messages via the display

| Message | Possible cause | Corrective action |
|---|---|---|
| `Eject Error` | The printer cannot eject the paper or cannot place the paper in the park position. | Check the following:<br>▸ Whether the paper path is blocked by a foreign object.<br>▸ Whether the paper is damaged.<br>▸ Whether the upper friction is down and clicked into place.<br>▸ Whether the print head gap is too small; see section *Setting the print head gap (page 43)*. |
| `Load Error` | The printer cannot feed in the loaded paper. | Check the following:<br>▸ Whether the paper path is blocked by a foreign object.<br>▸ Whether the paper is damaged.<br>▸ Whether the tractors are closed and locked.<br>▸ Whether the paper is too tight or loose.<br>▸ Whether the paper is within the specified range.<br><br>Details see section *Loading paper (page 34)* |
| `Load paper from ...`<br><br>alternating with<br><br>`Printing` | The paper has run out during operation.<br><br>1 Printer is switched on but no paper is loaded in the displayed (active) paper compartment.<br><br>2 The paper is not fed past the light barrier. | ▸ Insert paper in the active sheet feeder.<br><br>▸ Place the paper more to the left.<br><br>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. |

| Message | Possible cause | Corrective action |
|---|---|---|
| Paper Jam | Paper jam. | ▸ Eliminate the paper jam detected by the paper motion sensor. For the procedure, see *Paper jam (fanfold paper)* (page 109) or *Paper jam (single sheets)* (page 110). <br><br> ▸ Paper is too narrow. Use paper with a width of at least 6.3" (16 cm) if the PMS function is enabled. See *Automatic paper motion sensor (PMS)* (page 76) |
| Cover open | Top cover is open. | ▸ Close the top cover. |
| Hardware Alarm | Internal hardware error. | ▸ Try switching off and on. <br><br> ▸ Check if changes to options have been previously carried out. <br><br> ▸ Note down the display message. Contact your dealer. |
| Parity Error | Transmission error from computer to printer via the optional serial interface. | ▸ Compare the interface configuration of your printer with the settings of your computer (protocol), see *Interfaces (page 133)*. <br><br> ▸ Check the cable, if necessary replace it. <br><br> ▸ The cable exceeds the maximum allowed length, see *Interface specifications* (page 123). |
| Frame Error | Transmission error (serial interface). | ▸ Compare the format setting of your printer with the setting of your computer. <br><br> ▸ Check the permissible cable length, see *Interface specifications* (page 123). <br><br> ▸ See parity error. |

| Message | Possible cause | Corrective action |
|---|---|---|
| `Overrun Error` | Received data which has not yet been printed is overwritten with new data. | ▶ Check that the correct busy protocol (e.g. XON XOFF) is set in the menu **Serial interface, protocol**, see *Protocols (page 139)*.<br><br>▶ Check the interface cable, see section *Connecting the printer* (page 8) and *Interfaces (page 133)*. |
| `Paperwidth Error`<br>`Press Online` | A print job exceeds the paper width with the automatic paper width detection active. | ▶ Cancel the print job or load suitable paper, see also *Automatic paper width detection (APW)* (page 82).<br><br>If this message appears although the loaded paper is wide enough, consult the technical service. |
| `Head Hot` | The printer prints at lower speed. | ▶ No action required.<br><br>When this message comes up even in a "cold" printer, please contact your technical service. |
| `Check Ribbon` | The ribbon misses, is damaged and blocked or a non-genuine ribbon is installed. | ▶ Only use genuine ribbon cassettes of the manufacturer.<br><br>**STOP** **During the process of initialization after powering on, the printer checks if a ribbon cassette is installed. It also checks during the execution of a print job the operativeness of the ribbon cassette. These functions mandatory require the use of the manufacturers original ribbon cassettes** *Accessories* **(page 143).**<br><br>▶ Replace the ribbon.<br><br>▶ 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 Protocol (emulation)* (page 55). |
| `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 34)* |

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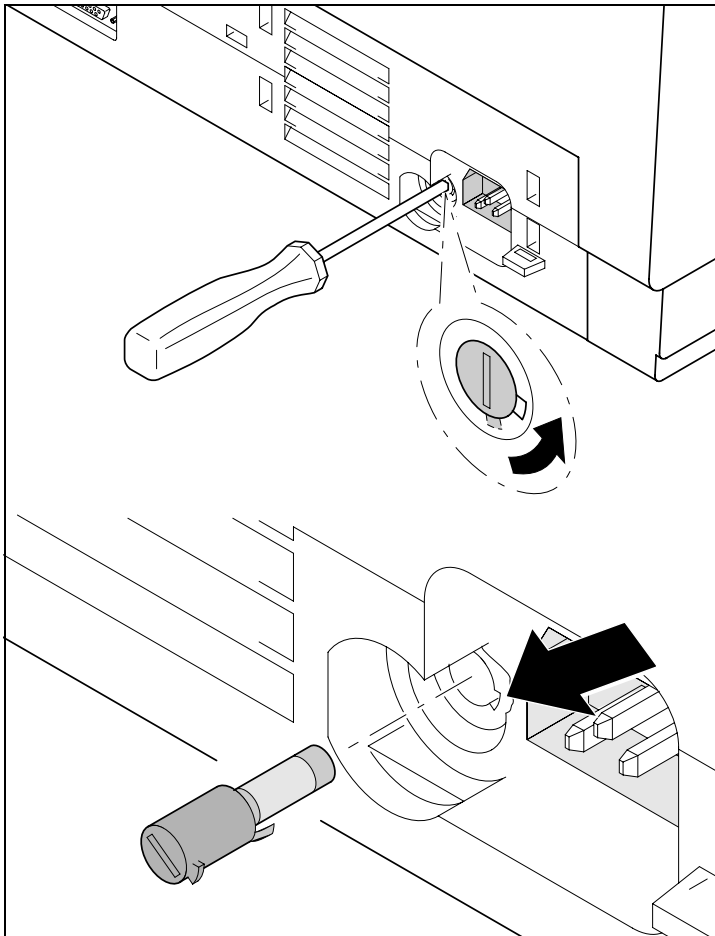
**STOP**   **Before cleaning, turn off the printer, wait 5 to 10 seconds and disconnect the power cable.**

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

## Replacing the fuse



The printer is provided with a line fuse accessible from the exterior. Press the fuse cover slightly inwards with a screwdriver and turn it until the cover tab comes out through the recess in housing. Then remove the fuse.

Install the fuse in reverse order of steps.

**STOP**   **Only use the same type of fuse for replacement.**

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

**T4,00AH250V**

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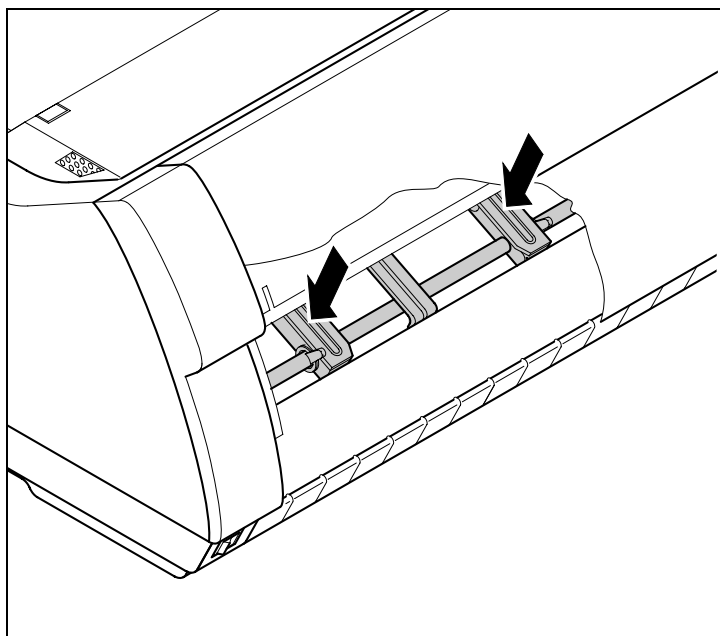
Clean the printer housing with mild detergent (use a dishwashing agent, if necessary, or a plastic cleaning agent) and a soft lint-free cloth.

ℹ️ **Do not use abrasive cleaners. Never use solvents.**

# Cleaning the interior

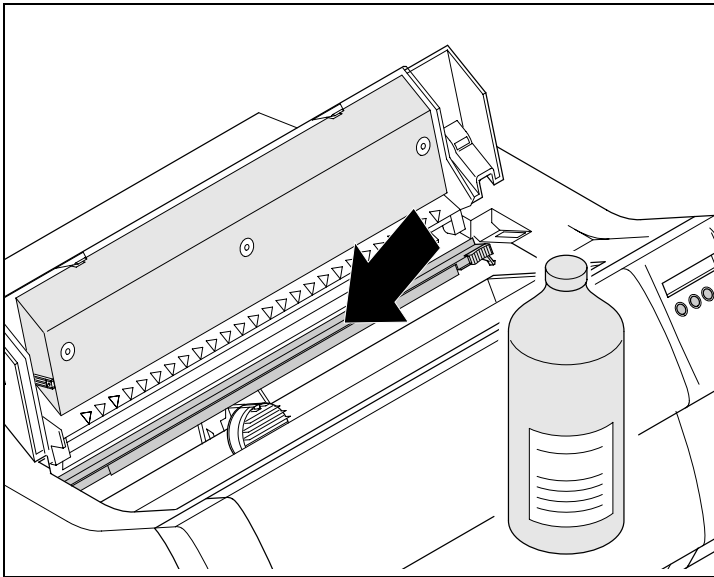Remove paper and dust with a soft brush.

Check that any paper has been removed from the tractors.

ℹ️ **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



Remove the ribbon. Clean the printer bar cautiously with an alcohol-based cleaning agent.
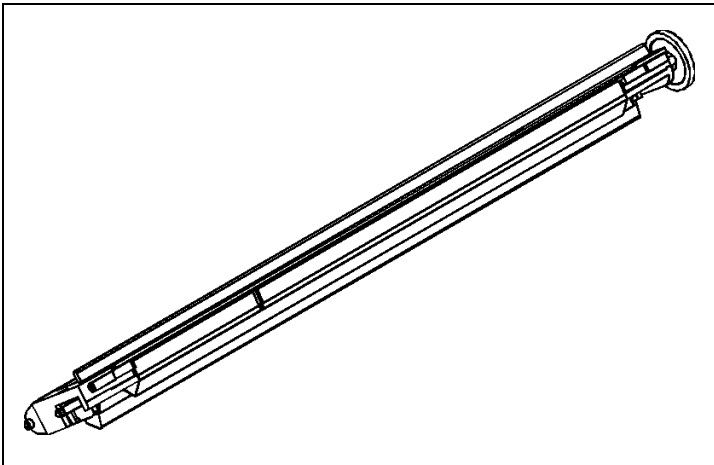
Remove dustcarefully from the platen.

**STOP**   **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 *Inserting the ribbon cassette* (page 10) and *Error messages via the display* (page 112).

# Cleaning the upper friction



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

**STOP**   **Avoid touching the pin rollers.**

## Carriage shafts

**STOP**   **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 |
|---|---|
| | print head with 24 needles, $\varnothing$ 0.25 mm bidirectional printing |

| Print speed and character matrices | LA650+ | | | LA800+ | | |
|---|---|---|---|---|---|---|
| | *CPS* | *CPI* | *matrix* | *CPS* | *CPI* | *matrix* |
| HSQ (High Speed Quality) | 650 | 10,0 | 12 x 10 | 800 | 10,0 | 12 x 10 |
| | 720 | 12,0 | 12 x 10 | 800 | 12,0 | 12 x 10 |
| | 900 | 15,0 | 08 x 08* | 1000 | 15,0 | 08 x 08* |
| | 900 | 15,0 | 12 x 08 | 1000 | 15,0 | 12 x 08 |
| | 515 | 17,1 | 12 x 12 | 571 | 17,1 | 12 x 12 |
| | 600 | 20,0 | 12 x 10 | 667 | 20,0 | 12 x 10 |
| DPQ (Data Print Quality) | 600 | 10,0 | 12 x 12 | 667 | 10,0 | 12 x 12 |
| | 720 | 12,0 | 12 x 10 | 800 | 12,0 | 12 x 10 |
| | 900 | 15,0 | 08 x 08* | 1000 | 15,0 | 08 x 08* |
| | 900 | 15,0 | 12 x 08 | 1000 | 15,0 | 12 x 08 |
| | 515 | 17,1 | 12 x 12 | 571 | 17,1 | 12 x 12 |
| | 600 | 20,0 | 12 x 10 | 667 | 20,0 | 12 x 10 |
| CPQ (Copy Print Quality) | 300 | 10,0 | 24 x 12 | 333 | 10,0 | 24 x 12 |
| | 360 | 12,0 | 24 x 10 | 400 | 12,0 | 24 x 10 |
| | 450 | 15,0 | 16 x 08* | 500 | 15,0 | 16 x 08* |
| | 450 | 15,0 | 24 x 08 | 500 | 15,0 | 24 x 08 |
| | 260 | 17,1 | 24 x 12 | 285 | 17,1 | 24 x 12 |
| | 300 | 20,0 | 24 x 10 | 333 | 20,0 | 24 x 10 |
| NLQ (Near Letter Quality) | 200 | 10,0 | 24 x 18 | 222 | 10,0 | 24 x 18 |
| | 240 | 12,0 | 24 x 15 | 267 | 12,0 | 24 x 15 |
| | 300 | 15,0 | 16 x 12* | 333 | 15,0 | 16 x 12* |
| | 150 | 15,0 | 24 x 18 | 167 | 15,0 | 24 x 18 |
| | 170 | 17,1 | 24 x 18 | 190 | 17,1 | 24 x 18 |
| | 200 | 20,0 | 24 x 15 | 222 | 20,0 | 24 x 15 |
| LQ (Letter Quality) | 100 | 10,0 | 24 x 36 | 111 | 10,0 | 24 x 36 |
| | 120 | 12,0 | 24 x 30 | 133 | 12,0 | 24 x 30 |
| | 150 | 15,0 | 16 x 24* | 167 | 15,0 | 16 x 24* |
| | 150 | 15,0 | 24 x 18 | 167 | 15,0 | 24 x 18 |
| | 170 | 17,1 | 24 x 18 | 190 | 17,1 | 24 x 18 |
| | 200 | 20,0 | 24 x 15 | 222 | 20,0 | 24 x 15 |
| | * Epson emulation only: superscript, subscript, microscript | | | | | |

| Tab speed | **LA650+**:<br>65 ips (inch per second) | **LA800+**:<br>80 ips (inch per second) |
|---|---|---|
| **Print width** | 136 characters at 10 cpi<br>163 characters at 12 cpi<br>204 characters at 15 cpi<br>232 characters at 17,1 cpi<br>272 characters at 20 cpi | |
| **Character pitch** | depends on the selected emulation, see *Setting the DEC Mode (DECMode)* (page 86), *Setting the IBM mode (IBMMode)* (page 92) and *Setting the EPSON Mode (EPSMode)* (page 96). | |
| **Character size** | | |
| Height | 3.32 mm (incl. descenders) | |
| Width | 2.19 mm, max. 2.43 mm | |
| **Fonts** | | |
| Standard | High Speed Draft, DPQ, Copy Draft; Courier, Roman, Sans Serif, OCR A + B, Gothic, Prestige, Orator, Souvenir (all resident in NLQ und LQ); DLL is standard | |
| Barcodes (Standard) | 18, see *Barcode* (page 132) | |
| **Emulations** | | |
| Standard | DEC PPL2<br>IBM Proprinter XL24E, IBM Proprinter XL24E+AGM<br>EPSON ESC/P | |
| Optional | on request | |
| **Resolution** | 60 to 360 dpi horizontal | |
| | 90 to 360 dpi vertical | |
| **Print attributes**<br>in all character pitches | Double width, italics, right justification, shadowed, auto centered, double height, bold, proportionally spaced, underlined, overlined, superscript, subscript, heavy form mode | |
| **Self-test** | ASCII-Test | |
| | Hexdump | |
| | Fault display | |
| | Ribbon test | |
| **Print buffer** | 128 KB max. | |

| Panel | LCD display, 2 x 16 digits |
|---|---|
| | Online |
| | Setup |
| | 4 softkeys |

| Noise | |
|---|---|
| Sound pressure level | **LA650+**: $L_{PA} = \leq 55$ dB(A) in HS mode (ISO 7779[1988])<br>**LA800+**: $L_{PA} = \leq 57$ dB(A) in HS mode (ISO 7779[1988]) |
| Sound power level | **LA650+**: $L_{WAd} = 72$ dB(A) in HS mode (ISO 7779[1988])<br>**LA800+**: $L_{WAd} = 72$ dB(A) in HS mode (ISO 7779[1988]) |

| Continuous operation | LA650+ | LA800+ |
|---|---|---|
| Throughput (ECMA 132) | >40 000 pages/month (DPQ)<br>540 pages/hour | >50 000 pages/month (DPQ)<br>600 pages/hour |
| MTBF | 10 000 h; 100% DC | 10 000 h; 100% DC |

| Mains voltage | USA/Canada: 120 V ±10%, 60 Hz ±2% |
|---|---|
| | Europe       230 V ±10%, 50/60 Hz ±2% |

| Power consumption | LA650+<br>at 100% throughput: 65 VA<br>when idling: 20 VA | LA800+<br>at 100% throughput: 75 VA<br>when idling: 24 VA |
|---|---|---|

| Approvals | ISO 60950, CE, GOST, VDE/GS+CB, cULus, FCC/B, CCC, Energy Star |
|---|---|

| Dimensions | |
|---|---|
| Width | 624 mm |
| Height | 276 mm |
| Depth | 430 mm |

| Weight | 21 kg |
|---|---|

| Paper feed | |
|---|---|
| Feed speed | 10"/sec |
| Feed first line | (6 lpi) 35 ms |
| View position | 10"/sec |
| Reverse motion | Up to max. form length (22 inch)<br>max. 0.5 inch for automatic single sheet feeder |

| Print head gap | |
|---|---|
| Standard | Automatic gap adjustment |

| Paper transport | |
|---|---|
| Standard | Tractor with parking position |
| | Manual single sheet feeder, front insertion (friction rollers) |
| Optional | Tractor 2 (front) |
| **Service life** | |
| Print head | 500 mio. / DPQ, 12 x 12 matrix |
| Ribbon | 20 mio. characters, DPQ |
| **Environmental conditions** | |
| Operation | |
| Temperature | +10° to +35°C |
| Rel. humidity | 15 to 75% |
| Climate | IEC/EN 60721-3-3, class 3K2 |
| Storage | |
| Temperature | -5° to +45°C |
| Rel. humidity | 5 to 95% |
| Climate | IEC/EN 60721-3-1, class 1K3 |
| Transport | |
| Temperature | -20° to +60°C |
| Rel. humidity | 5 to 95% |
| Climate | IEC/EN 60721-3-2, class 2K2 |

## Interface specifications

| Parallel interface | bidirectional |
|---|---|
| Type of data transmission | 8-bit parallel interface (Centronics compatible) IEEE-1284; Nibble mode |
| Transmission rate | Max. 30 KHz |
| Signal status | Low:      0,0 V to +0,4 V<br>High:     +2,4 V to +5,0 V |
| Connection cable | Material: AWG 28 at least<br>Length:  up to 2,0 m<br>Twisted-pair cable with double-shield, acc. IEEE Std 1284 – 1294 |
| Voltage supply of external devices on pin 18 | $U = +5$ V ±10%<br>$I = 0,5$ A$_{max}$ |
| Interface connections | Printer side: Amphenol 57-40360, 36-pin (or compatible)<br>Cable side:  Amphenol 57-30360, 25-pin (or compatible) |
| **Ethernet interface** | Onboard 10/100BaseT Ethernet-RJ45 with 2 LEDs |
| Transmission rate | 100 Mbps / Full Duplex |
| Supported protocoles | TCP/IP, Telnet |
| Network print protocoles | LPR/LPD, RAW Port, FTP |
| IP address designation | DHCP, BootP and manually over the control panel |
| Connection cable | RJ45 |
| Network print management protocoles | HTTP, HTML, SNMP |
| Capacity of data buffer | 8 MB |

| **Serial interface** | RS232C interface |
|---|---|
| Synchronization | Asynchronous |
| Transmission rate | 600 bauds to 19 200 bauds |
| Signal status | OFF = Mark = log.1 = –3 V to –15 V |
| | ON = Space = log. 0 = +3 V to +15 V |
| Connection cable | Length up to 15 m |
| Interface connections | ITT Cannon connector, series DB-25 S |
| Transmission protocol | XON/XOFF, ENQ/STX, READY/BUSY, Robust XON/XOFF, ETX/ACK |
| Capacity of data buffer | 1024 KB max. |

## Paper specifications

| | | |
|---|---|---|
| **Continuous paper tractor 1, single part forms** | Weight | 60 to 120 g/m$^2$ |
| | Width[1] | 76 to 420 mm |
| | Form length | 76 to 559 mm |
| **Continuous paper Multi-part forms, tractor 1** (to be tested individually) | Copies   LA650+<br>             LA800+ | 1 + 6<br>1 + 5 |
| | Weight of original | 45 to 65 g/m$^2$ |
| | Weight of copies | 45 to 56 g/m$^2$ |
| | Weight of bottom sheet | 45 to 65 g/m$^2$ |
| | Thickness (max.) | 0.6 mm |
| | Width[1] | 76 to 420 mm |
| | Form length | 76 to 451 mm |
| **Cut sheet insertion via front feed/manual single part forms** | Weight | 80 to 120 g/m$^2$ |
| | Width[1] | 76 to 420 mm |
| | Form length | 76 to 305 mm |
| **Envelopes** | Width | 76 to 420 mm |
| | Length | 76 to 305 mm |
| | Thickness | 0.32 mm |
| **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 amper the smooth feeding of these sets. Multi-part forms must be loaded with the bound top edge 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. | |
| 1   with PMS = Off, if PMS = On: 6.3" (160 mm) | | |

# B  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.

The character sets are only available in the fonts marked with an X. They can be selected via the menu or by means of ESC ( <n> printer control sequences, in the EPSON emulation, also by ESC R, in the DEC emulation by the SCD command.

| | ID for ESC R/ESC ( | High Speed | Draft | Draft Copy | Roman | Sans Serif | Courier (incl. Courier IBM) | OCR-B | OCR-A | Prestige | Script | Orator |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ISO USA (ASCII)** | 42 | X | X | X | X | X | X | X | X | X | X | X |
| **ISO UK (British)** | 41 | X | X | X | X | X | X | X | X | X | X | X |
| **ISO France (French)** | 52 | X | X | X | X | X | X | X | X | X | X | X |
| **ISO Germany (German)** | 4B | X | X | X | X | X | X | X | X | X | X | X |
| **ISO Italy (Italian)** | 59 | X | X | X | X | X | X | X | X | X | X | X |
| **ISO Norway (Norw./Danish)** | 60 | X | X | X | X | X | X | X | X | X | X | X |
| **ISO Spain (Spanish)** | 5A | 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 |
| **Epson USA** | 00 | 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 |
| **Epson Germany** | 02 | 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 |
| **Epson Denmark** | 04 | 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 |
| **Epson Italy** | 06 | 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 |
| **Epson Japan** | 08 | 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 |

| | ID for ESC R/ESC ( | High Speed | Draft | Draft Copy | Roman | Sans Serif | Courier (incl. Courier IBM) | OCR-B | OCR-A | Prestige | Script | Orator |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Epson Denmark II** | 0A | 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 |
| **Epson Latin America** | 0C | 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 |
| **Epson Legal** | 40 | X | X | X | X | X | X | X | X | X | X | X |
| **Epson Turkey** | 0F | X | X | X | X | X | X | X | X | X | X | X |
| **Epson Old Hebrew** | 10 | X | X | X | X | X | X | X | X | X | X | X |
| **Epson/IBM New Hebrew** | A5 | X | X | X | X | X | X | X | X | X | X | X |
| **Epson/IBM D-Hebrew** | A4 | X | X | X | X | X | X | X | X | X | X | X |
| **CP437 Latin US** | 80 | X | X | X | X | X | X | X | X | X | X | X |
| **CP850 Latin 1** | 82 | X | X | X | X | X | X | X | X | X | X | X |
| **CP851 Greek** | 88 | X | X | X | X | X | X | X | X | X | X | X |
| **CP852 Eastern Europe** | 87 | X | X | X | X | X | X | X | X | X | X | X |
| **CP853 Turkish** | 89 | X | X | X | X | X | X | X | X | X | X | X |
| **CP855 Cyrillic** | 8A | X | X | X | X | X | X | X | X | X | X | X |
| **CP857 Turkish** | 8D | X | X | X | X | X | X | X | X | X | X | X |
| **CP858 IBM with _** | 9E | X | X | X | X | X | X | X | X | X | X | X |
| **CP860 Portuguese** | 84 | X | X | X | X | X | X | X | X | X | X | X |
| **CP861 Icelandic** | 94 | X | X | X | X | X | X | X | X | X | X | X |
| **CP862 Hebrew** | 8B | X | X | X | X | X | X | X | X | X | X | X |
| **CP863 French Canada** | 85 | X | X | X | X | X | X | X | X | X | X | X |
| **CP864 Arabic** | 8C | X | X | X | X | X- | X | X | X | X | X | X |
| **CP865 Nordic** | 86 | X | X | X | X | X | X | X | X | X | X | X |

| | ID for ESC R/ESC ( | High Speed | Draft | Draft Copy | Roman | Sans Serif | Courier (incl. Courier IBM) | OCR-B | OCR-A | Prestige | Script | Orator |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP866 Russian** | 8E | X | X | X | X | X | X | X | X | X | X | X |
| **CP866 Bulgaria** | 9D | X | X | X | X | X | X | X | X | X | X | X |
| **CP869 Greek** | 9F | X | X | X | X | X | X | X | X | X | X | X |
| **Mazowia (Polish)** | 92 | X | X | X | X | X | X | X | X | X | X | X |
| **8859-7 Greek** | 2D | X | X | X | X | X | X | X | X | X | X | X |
| **8859-15 Latin 9 (Euro)** | 2F | X | X | X | X | X | X | X | X | X | X | X |
| **Brazilian ASCII** | 6D | X | X | X | X | X | X | X | X | X | X | X |
| **Abicomp (Br. Portuguese)** | 6E | X | X | X | X | X | X | X | X | X | X | X |
| **DEC ISO Latin-1 Supplem.** | 63 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC ISO Latin-2 Supplem.** | B1 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC ISO Latin-Greek Supp.** | B2 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC ISO Latin-Hebrew Sup.** | B3 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC ISO Latin-Cyrillic Sup.** | B4 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC ISO Latin-5 Supplem.** | B5 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC ISO Latin-9 Supplem.** | B6 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Hebrew Supplemental** | 3F | X | X | X | X | X | X | X | X | X | X | X |
| **DEC 7-Bit-Hebrew** | 44 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Legal** | 50 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC JIS Katakana** | 49 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC 7-Bit-Turkish** | 53 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC 8-Bit-Turkish Suppl.** | 54 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC 8-Bit-Greek Supplem.-** | 57 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Dutch** | 34 | X | X | X | X | X | X | X | X | X | X | X |

| | ID for ESC R/ESC ( | High Speed | Draft | Draft Copy | Roman | Sans Serif | Courier (incl. Courier IBM) | OCR-B | OCR-A | Prestige | Script | Orator |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DEC Finnish** | 35 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC French-Canadian** | 39 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC JIS Roman** | 4A | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Norwegian/Danish** | 36 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Swedish** | 37 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Swiss** | 3D | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Supplemental** | 62 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Technical** | 3E | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Special Graphics** | 30 | X | X | X | X | X | X | X | X | X | X | X |
| **DEC Portuguese** | 61 | X | X | X | X | X | X | X | X | X | X | X |
| **CP437 Greek** | A0 | X | X | X | X | X | X | X | X | X | X | X |
| **Code MJK** | A1 | X | X | X | X | X | X | X | X | X | X | X |
| **CP210** | A2 | X | X | X | X | X | X | X | X | X | X | X |
| **CP220** | A3 | X | X | X | X | X | X | X | X | X | X | X |

All codepages will be printed in all fonts, but the character shape may look the same although the font names are different. In IBM emulation only the codepages defined by ESC [ T ... are available.

‣ DEC Technical: non-Greek characters are the same for all LQ fonts

‣ Greek characters are the same in OCR-A and OCR-B

‣ There are only two LQ fonts for cyrillic characters : Roman = Courier = Prestige = Script  and Orator = SansSerif = OCR-A = OCR-B

‣ Arabic characters exist only in LQ 10 and 12 cpi, no Arabic Draft, Draft Copy and 15 cpi Epson style

‣ Greek characters look the same for all LQ fonts

▸ Epson Turkey, Old Hebrew, New Hebrew and D-Hebrew have preliminary IDs and cannot be selected via the ESC ( t ... command; but the code pages will be implemented and shown in the menu and can be selected via the menu or with the ESC R ... command.

▸ Codepages 210 and 220 cannot be selected with ESC ( t ... commands in Epson emulation, these commands are not defined, instead these codepages can be selected via the menu or with the ESC R ... command.

▸ There is only one Draft- and one LQ-font for all Hebrew characters and for all Katakana characters.

# C   Emulations

## General

When a printer understands the control set written for another printer type, it is said to emulate the other printer. Your printer in its standard version emulates, i.e. "understands" the DEC-PPL2 for the serial interface and Epson ESC/P2 using the parallel interface.

## 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.

## 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 *Programming manuals*, page 143).

**For details on the escape sequences in the DEC, EPSON and IBM emulation refer to the *Programmer's Manual* on this CD-ROM.**

# Barcode

Even the standard version of your printer has the possibility of using up to 18 different barcode types.

**Barcode mode can be accessed in DEC 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 |
|------|---------|------|---------|
| 0, 2 | Code 3 of 9 | 11 | UPC-A |
| 1 | Interleaved 2 of 5 | 12 | UPC-E |
| 4 | EAN 8 | 13 | Postnet |
| 5 | EAN 13 | 14 | Industrial 2 of 5 |
| 7 | Codabar a/t | 15 | not supported |
| 8 | Codabar b/n | 16 | MSI mod 10/10 |
| 9 | Codabar c/* | 17 | Code 128 (EAN 128) |
| 10 | Codabar d/e | 18 | Matrix 2 of 5 |

**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 _Programmer's Manual_ on this CD-ROM.**

# D  **Interfaces**

Your printer offers the possibility of operating via a parallel, an Ethenet or a serial interface. This chapter informs you about the parallel Centronics compatible interface, the Ethernet 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 this interface for a certain period of time (Macro: 1 to 30 seconds, default 2 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 142) , 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 | ↔ | SELECT |
| 14 | ↔ | $\overline{\text{AUTO FEED}}$ (active low) |
| 15 | | not used |
| 16 | – | SIGNAL GROUND |
| 17 | – | CHASSIS GROUND |
| 18 | – | 5 V (Imax = 500 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 |

18          1

36          19
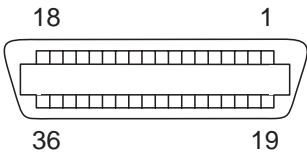
Transmission length: max. 2,0 m

# 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<br>ON (log. 0) +3 V to +15 V |
| Connection cable | up to 15 m length |
| Interface connections | ITT Cannon connector,<br>series DB-9 S |
| Transmission protocol | XON/XOFF, Robust XON/XOFF |
| Capacity of data buffer | 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 |
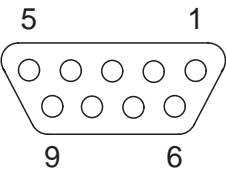
Transmission length: max. 15 m

## 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 |

# Ethernet interface

The Ethernet interface affords the printer to connect to local area networks. It's attributes are:

**Hardware**
- ▶ LAN/Ethernet: RJ45, Ethernet 100BaseTX with 100 Mbps (IEEE802.3u), 10Base-T with 10 Mbps (IEEE802.3)
- ▶ RAM: 8 MB
- ▶ Flash: 4 MB
- ▶ Speed: 100 Mbps / Full Duplex

**Supported operating systems**
- ▶ Windows XP, Windows Server 2003, Windows 2000, Windows NT
- ▶ Linux
- ▶ Unix
- ▶ Sun Solaris

**Supported protocols**
- ▶ SNMP
- ▶ SMTP
- ▶ TCP/IP
- ▶ FTP
- ▶ lpr/lpd
- ▶ Port 9100

**Designation of IP address**
- ▶ DHCP
- ▶ BOOTP
- ▶ Static (manually via the printer's control panel)

**Configuration**
- ▶ HTTP
- ▶ TCP/IP
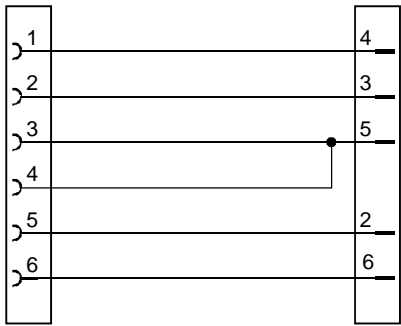
**Status**
- ▶ SNMP
- ▶ TCP/IP
- ▶ SMTP
- ▶ PING

**Management**
- ▶ Web Panel
- ▶ HP Web Jet Admin
- ▶ E-Mail notification with SMTP
- ▶ TGNet Admin
- ▶ Pre-string, Post-String

**Setup**
- ▶ Setup via the printer's control panel
- ▶ Web Panel (HTTP/HTML)
- ▶ TGNet Admin

## Interface-Adapter
## IF Adapter-Set RS232
## (DB9M)/MMP

The set consists of an adapter RS232 (D-Sub9)/MMJ and a MMJ cable.

| Adapter RS232(D-Sub9)/MMJ | |
|---|---|
| Serial connector | D-SUB9, male, 9 pins |
| Modular connector | DEC-MMJ, female, 6 pins |
| Internal wiring |  |

| MMJ-Cable | |
|---|---|
| Length | 3 m, unshielded, leads crossed (1–6, 2–5, 3–4) |
| Connector | 2 x MMP, plug 6-pin |
| Internal wiring | |



**Make sure that the ferrit bead always points in direction to the printer.**

## 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.

## Configuring the serial interface of the PC

**DOS mode**

To use the serial interface of your PC, you must add the following mode commands to the AUTOEXEC.BAT file:

```
mode com1:9600,n,8,1,p
mode lpt1:= com1:
```

With the first MODE command, you configure the serial interface Com1 of your PC to the printer's factory defaults. The second MODE command redirects the parallel standard output port LPT1 of your PC to Com1.

| | |
|---|---|
| **Transmission rate:** | 9600 bauds |
| **Parity:** | none |
| **Data bits:** | 8 |
| **Stop bits:** | 1 |

These settings must be modified to use other values.

**Windows 95/98/ME**

Click on the **Start** button in the Windows taskbar. Move the mouse to **Settings** and click on **Control Panel**. Click on **System**, followed by **Device Manager**. Click on **Ports**, **COM1** and **Port Settings**.

| | |
|---|---|
| **Bits per second:** | 9600 bauds |
| **Data bits:** | 8 |
| **Parity:** | none |
| **Stop bits:** | 1 |

These settings must be modified to use other values.

**Windows 2000/NT 4.0/XP**

Click on the **Start** button in the Windows taskbar. Click on **Printers and Faxes** to open the printer folder. In the menu bar, click on **File** and **Server Properties**. Click on **Ports**, then select **COM1** and click on **Configure…**.

| | |
|---|---|
| **Bits per second:** | 9600 bauds |
| **Data bits:** | 8 |
| **Parity:** | none |
| **Stop bits:** | 1 |

These settings must be modified to use other values.

## Physical printer port in Ethernet with TCP/IP

Wenn Sie Ihren Drucker in einem lokalen Netz mit Ethernet-Anschlüssen und dem Übertragungsprotokoll TCP/IP verwenden, müssen Sie verschiedene Adressinformationen zuweisen.

**STOP**

**Address information for the Ethernet port can only be made available by your network administrator, who has the necessary rights to install printers on the network and/or make any changes.**

▶ The assumed address space corresponds to the TCP/IP adress, class C, 192.168.1.xxx.

▶ The subnet mask to be used is 255.255.255.0

▶ The address of the router, or gateway, is 0.0.0.0, if not available.

### Example of a printer connected to a computer in an Ethernet

| Computer 1 | Caution: Twisted-pair cable required! | Printer 1 |
|---|---|---|
| IP: 192.168.1.1 | | IP: 192.168.1.2 |
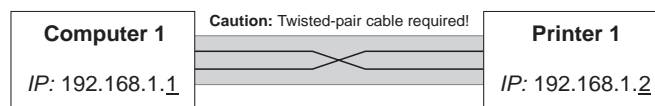
### Example of several devices in an Ethernet

| Computer 1 | Computer 2 | . . . |
|---|---|---|
| IP: 192.168.1.1 | IP: 192.168.1.2 | |

. . . 

| Printer 1 | Printer 2 |
|---|---|
| IP: 192.168.1.3 | IP: 192.168.1.4 |

**HUB**
4-fold or 8-fold
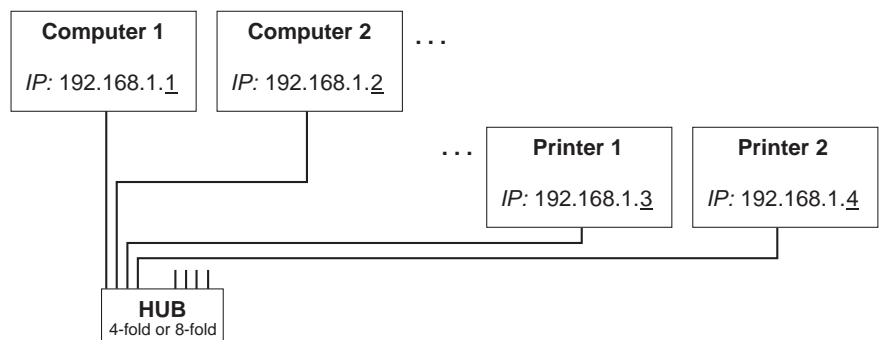
**You wll find more information on our *internet page*.**

# E　Options and accessories

## Options

The following options can be ordered for your printer.

### Tractor 2, front

The push tractor is suitable for fanfold paper. You can use paper formats with a width in the range from 76 to 406 mm; you can set any intermediate format.

*Part no.: 061 052*

### Printer pedestal

A cabinet to be used as a printer stand and for storing fanfold paper stacks.

*Part no.: 061 910*

### Paper output tray

An optional accessory for the printer stand, useful for optimum output of prin-ted continuous forms.

*Part no.: 060 833*

### Cable cover

*Part no.: 061 909*

### Interface modules

The following interface modules are available.

| Name | Part no. |
|---|---|
| Serial interface RS422/V.11 | 048 956 |
| Serial line current interface TTY 20 mA | 048 957 |
| Ethernet interface module ENI/3 (multi-protocol TCP/IP, SPX/IPX) | 048 959 |

# Accessories

**Ribbon cassette**                    Ribbon cassettes are available in the following versions.

| Name | Part no. |
|---|---|
| Ribbon cassette, black | 060 097 |

**Programming manuals**                The available programming manuals are enclosed on this CD-ROM.

# Index

**MPI**

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