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PP 5110XF

Operator's Manual



Edition 1.0

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**Table of Contents**

Chapter	Page
<b>1. Introduction</b>	<b>7</b>
1.1. General Description	7
1.2. Conventions	9
1.3. CE Conformity	10
1.4. General Safety Information	10
<b>2. Installation</b>	<b>13</b>
2.1. Check List	13
2.2. Printer View	14
2.3. Environment and Power Standards	16
<b>3. Paper Handling</b>	<b>19</b>
<b>4. Operation and Menu Structure</b>	<b>23</b>
4.1. Attaching the Printer to a Computer	23
4.2. Turning on the Printer	23
4.3. Control Panel View	24
4.4. Function of the Control Panel Elements	25
4.5. Configuration via the Control Panel	28
4.6. Menu Structure	30
4.7. Syntax of Diagrams	34

Chapter	Page
<b>5. Panel Functions</b>	<b>35</b>
5.1. Printing the Status Sheet	35
5.2. Printing the Font List	37
5.3. Choosing Print Resolution	38
5.4. Hexdump - Mode Activation	40
5.5. Normal Print Mode Activation (incl. FORM FEED)	41
5.6. Clearing the Input Buffer (Cancel Job)	42
5.7. Printing the Menu Page	43
5.8. Generating Test Prints (Sliding Pattern)	44
5.9. Page Length Adjustment	45
5.10. Paper Width Adjustment (Format Width)	45
5.11. Selecting the Number of Printpages per Page Format (Two-Up Mode)	47
5.12. Print Direction Selection	49
5.13. Data - Interface Configuration	50
5.14. Emulation Selection	51
5.15. Display Language Selection	53
5.16. Transparent Code Adjustment	54
5.17. Selection of Memory Distribution (Input Buffer)	55
5.18. Setting to Factory Default	56
5.19. Font Selection	57
5.20. Text Orientation Selection	60
5.21. Symbol Code Selection	60
5.22. Configuration of Text Margins	62
5.23. Image Shifting to the X-Direction	63
5.24. Image Shifting to the Y-Direction	65
5.25. Lines per Inch Setting (Line Spacing)	67
5.26. Number of Characters per Inch Setting (Character Spacing)	68
5.27. Print Density Setting	68
5.28. Configuration of Network Parameters (IP Address, e.g.)	70

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Chapter	Page
<b>6. Operator Maintenance</b>	<b>73</b>
6.1. Printer Cleaning	73
6.1.1. Cleaning the Printer Cabinet	74
6.1.2. Cleaning the Printer Interior	75
6.2. Replacing the Toner Cartridge	79
6.3. Exchanging the Waste Toner Bottle	84
<b>7. Troubleshooting</b>	<b>87</b>
7.1. Error during the Print Process	88
7.2. Reduced Print Quality	89
7.3. Error Messages	90
7.3.1. Error Codes	92
7.4. Clearing Paper Jam	94
7.4.1. Paper Jam at the Tractor	95
7.4.2. Paper Jam inside the Printer	96
7.5. Print Repetition after an Error	100
<b>8. Measures for Transport and Shipping (Repacking)</b>	<b>101</b>
<b>9. Specifications</b>	<b>103</b>
<b>10. Index</b>	<b>107</b>



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## 1. Introduction

### 1.1. General Description

The PP 5110XF is a high speed continuous-form printer. The print system works on an electrophotographical base employing an LED array as exposure unit.

The print speed is up to 110 A4 pages per minute in the Two-Up mode. The printing resolution is 600 dots per inch corresponding to about 24 dots per mm.

The material to be printed on has to be provided with sprocket holes for the tractor to guide it. The maximum material width is 18 inches, the printable width is 17 inches.

The non-contact Xenon flash fusing system in combination with the straight paper flow enables you to use the most different paper types and label materials with a weight from 64 - 209 g/m<sup>2</sup> (wood-free paper) respectively 64 - 105 g/m<sup>2</sup> (wood-free labels).

With the PP 5110XF, all kinds of information – e.g. bar codes, alphanumerical characters and vector graphics – can be printed. The printer controller's high functionality with the PP 5110XF makes form printing simple.

The printer is capable of using most of the page description languages used in the industrial field and also the business standards known in connection with laser printers can be used.

The capabilities featured include the page description language IDOL. Using this language, complex tasks such as the creation of forms can be carried out by simple software commands (see separate IDOL manual).

Data can be sent from almost any software platform, because printer drivers are already available for this.

For the printer PP 5110XF a software (called [IP\\_printADMIN](#)) will be available to allow a printer configuration via Ethernet. The controller has its integrated website with information on the printer status and the printjob status.

Consequently there is a multitude of scopes for this print system. It is suitable for high-speed printing with excellent print quality using different types of materials.

### Printing Basics

The printer controller enables the connection of this print system to EDP systems whereby several interfaces, emulations and fonts are available.

The digital information (e.g. a text file) is transferred from the computer into the printer memory. The printer's electronic component (the controller) combined with the page description language, defines the letters, numbers, graphics, etc. into bit patterns and posts them into the controller's frame store.

In this way, a "pattern" of the future print page (generated by dots) is created. The electronically controlled LED (Light Emitting Diode Array) plots the dot pattern in rows onto a rotating light-sensitive negatively charged drum.

At those drum spots impacted by the light the electronic charge is extinguished. The negatively charged toner will stick to these spots. Because similar charges repulse each other, the remaining drum surface stays blank.

The paper is guided past the drum and the electrostatically charged toner particles are attracted by the paper. This process is supported by a positively charged field below the paper (transfer charger).

When transported further, the toner particles, which are affected by the Xenon flash fusing, are combined resistantly with the paper. The drum is discharged and cleaned.



## 1.2. Conventions

The following conventions should help you to find information and to understand instructions more easily:



This symbol refers to a possible source of danger. If you do not pay attention to this information, injuries may result, the function of the printer could be reduced or objects could be damaged.



This symbol refers to important hints and suggestions on using the printer. Disregarding these hints might cause problems with the printer or within the environments.



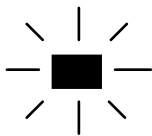
This symbol shows a key of the control panel. Such symbols will be used in this manual whenever keys have to be pressed in order to activate certain functions.

[blue colored text](#)

Link to another chapter or a different document. By clicking the blue colored text you'll enter the concerning chapter or document.

[Menu Level 1 ]

This symbol represents messages shown in the display (panel).



This symbol is used to show a shining LED (light emitting diode). The PP 5110XF printer panel is provided with several LEDs. The real shape of the LEDs differs from the shape of this symbol (compare figure in section 4.2).



This symbol will be used in this manual to show a non-shining LED.

### 1.3. CE Conformity

The manufacturer hereby declares that the equipment complies with the guideline RL 89/336/EWG for information technology devices.

The determinations of the product standard concerning high frequency interferences of information technology devices  
EN 55022, class A/DIN VDE 0878 (electromagnetic interference) are complied.

Also the generic standard EN 50082-1/DIN VDE 0839 for interference strength is complied.

### 1.4. General Safety Information



This device produces, employs and possibly radiates high frequency energy. Because of this, incorrect installation can disturb radio communications.

This product and its consumables are designed and tested according to strict safety standards.

Heeding the following instructions ensures secure operation:



- Please make sure your electricity source is properly grounded.
- Install the device on a solid and level place.
- Only trained staff are authorized to transport the equipment.
- Only use consumables which are specially developed for this device.
- Using improper consumables may cause a reduction of output quality or damage to the device.
- Ensure no liquids get on or into the device.
- Do not remove any cover or safety device fastened by screws.





- Do not bridge a safety device.
- Do not push anything into the ventilation apertures.
- Never perform installations, cleanings or maintenance work that is not described in this manual. Such work should only be done by authorized service personnel.

In order to disconnect the printer quickly from the main power in the event of an emergency, please note the following:



- For printers connected by a plug, the power-outlet should be installed near the printer and easily within reach.
- For permanently connected printers, an easily accessible emergency power-off switch should be installed close to the printer.
- Please do not conceal any disconnect devices with the printer or other objects.



- Please follow all the instructions and hints directly attached to the device and/or described in this manual.

## 2. Installation

### 2.1. Check List

Please make sure that there are no transport damages and that everything is included. Damages should be reported to the supplier immediately.

Carefully open the cardboard boxes to make sure the following contents are included:

1. PP 5110XF printer
2. CD containing:
  - Operator's Manual PP 5110XF
  - Print drivers
  - IDOL Programming Manual
3. Developer Unit
4. Developer mix (powder)
5. Toner
6. Photoreceptor Drum



The printer's first installation has to be done by a trained service engineer.



Please retain the original packing materials in case the printer has to be transported in the future.  
Use the original packing materials and adhesive fasteners to avoid damage to the internal components.  
(See chapter 8 Measures for Transport and Shipping (Repacking)).

## 2.2. Printer View

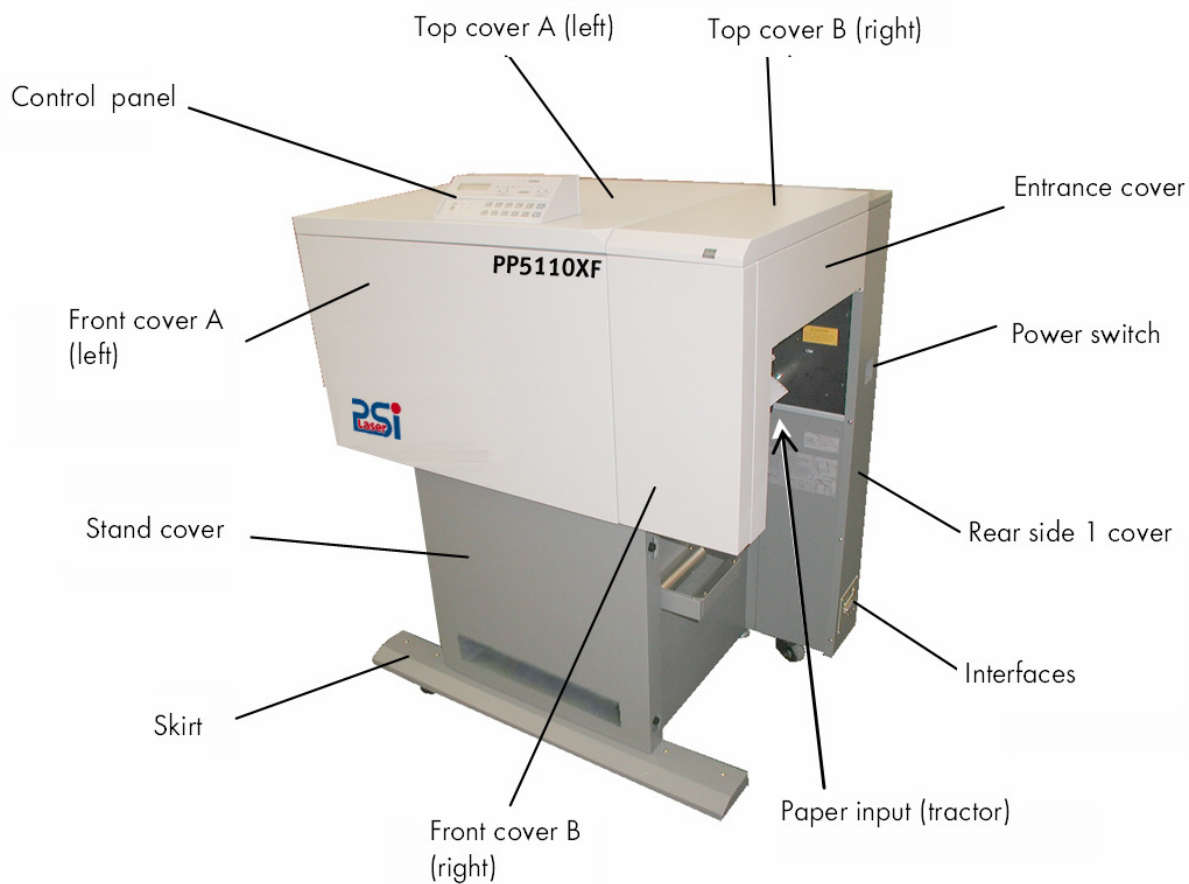


Fig. 2.2.a Main view of the printer

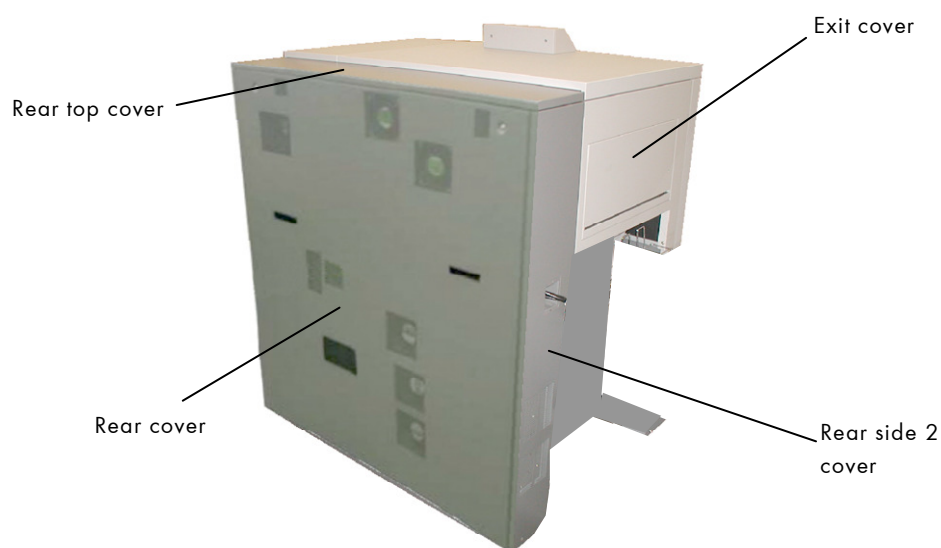


Fig. 2.2.b View from the rear side of the printer

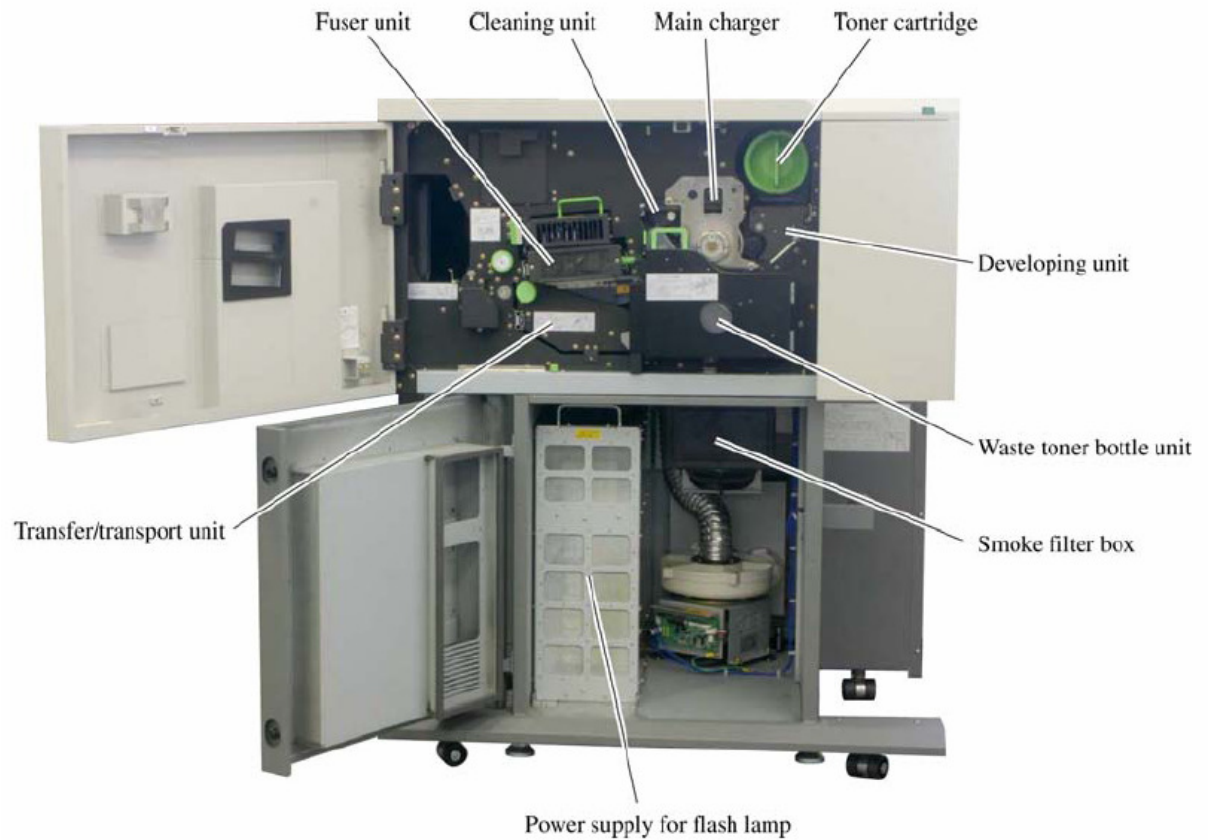


Fig. 2.2.c Components inside the printer

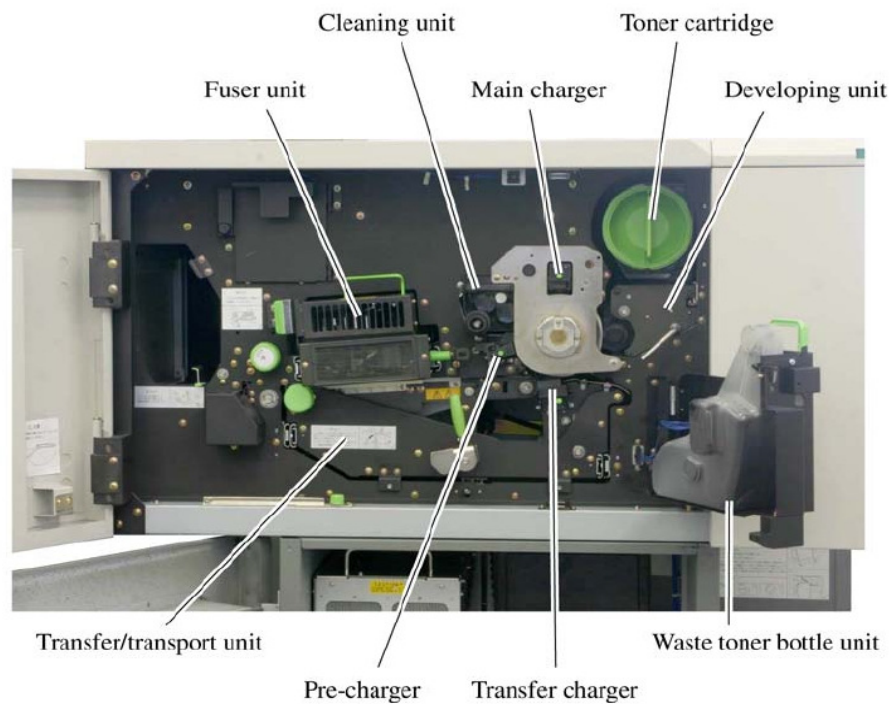


Fig. 2.2.d Further components inside the printer

## 2.3. Environment and Power Standards

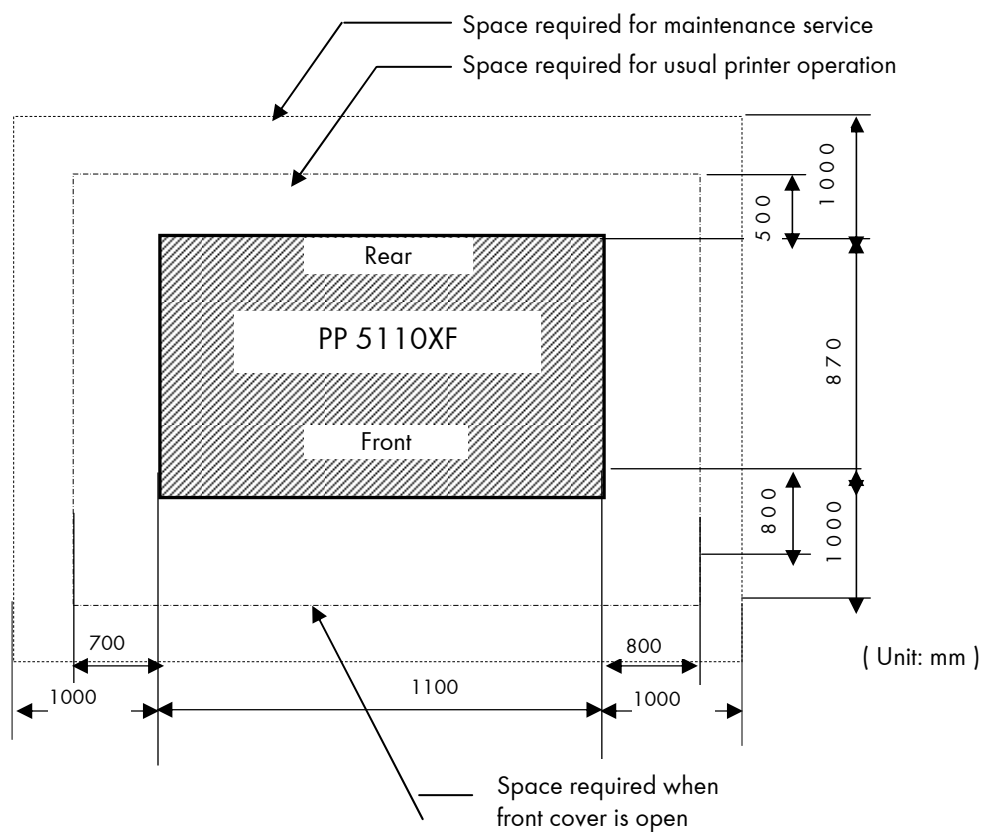


Fig. 2.3.a PP 5110XF: Required space (plan view)



The printer's first installation has to be done by a trained service engineer.





- The chosen location should be well ventilated.
- Damaging environmental factors such as metal vapors, oil mist, corrosive leaches or the like must not affect the printer.
- Place the printer on horizontal, firm and solid ground.
- The horizontal position of the printer has to be adjusted accurately.
- At the side of the paper outlet there should be room enough so that the paper can flow out of the printer without hindrance.
- Do not expose the printer to shocks or vibrations.
- There must be enough room on all sides of the printer to guarantee necessary ventilation.



- Do not expose the printer to abrupt temperature changes.
- The printer should not be located near volatile or combustible materials (e.g. a curtain).
- Avoid locating the printer close to an air current (e.g. ventilators).
- The printer should not be exposed to direct sunlight.
- Do not touch the drum surface because the material is easy to damage.
- In order to run the printer reliably, please maintain the following environmental conditions:
  - Temperature: + 10°C to +30°C (50°F to 86°F) operating
    - 10°C to +35°C (14°F to 95°F) non-operating
  - Relative atmospheric humidity: 30% to 80% operating
    - 10% to 80% non-operating

#### Power standards:

- Please connect the printer to

230 V AC, 50 Hz (Europe, United Kingdom e.g.)

120 V AC, 60 Hz (North America)



- The max. effective power input is 5.6 kW, the max. apparent power is 6.2 kVA.
- The power source must be free of noise, and not subjected to surges or noise (e.g. generated by big machines).
- The printer is provided with a flexible connection cable including a CEE plug. If using an equivalent fixed connection ensure the grounding is effected.
- Use the printer only within the allowed fluctuation range of  $\pm 10\%$  for the power voltage.

Conditional connection for the PP 5110XF:



Data about the maximum permissible system impedance  $Z_{\max}$  of this device can be found in chapter 9 Specifications.

The user of this device has to determine in consultation with the supply authority, if necessary, that the equipment is connected only to a supply of that impedance  $Z_{\max}$  or less!



To avoid damage, the devices must be switched off (i.e. cut off from the power supply) before the user begins connecting the interface line.

### 3. Paper Handling



The printer processes continuous paper from 7 to 18 inches (incl. sprocket holes; 17 inches printable).

You can check the printer configuration (inclusive the settings regarding paper length etc.) by printing a status sheet (see section 5.1).

The tractor is located at the right side of the printer (compare figure 2.2.a).



If a large quantity of paper with a paper width smaller than 18 inch has been processed, the printer has to be cleaned first before you start to process paper with a larger paper width.

See chapter 6 Operator Maintenance.

1. Place the box containing the fanfold paper below the tractor unit.

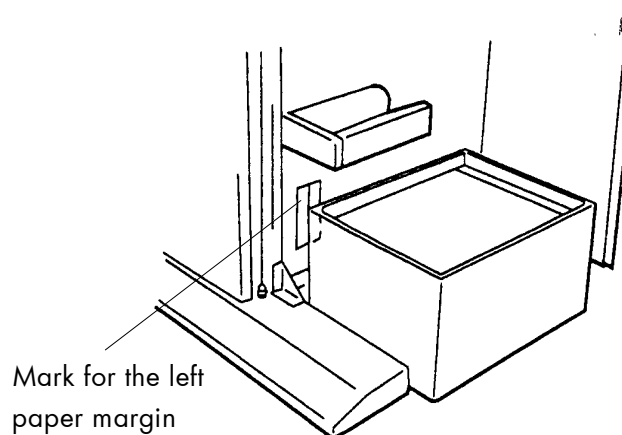


Fig. 3.a Placing the fanfold paper

2. Pass the fanfold paper through the sensor guide (Paper Near End Sensor PNES).

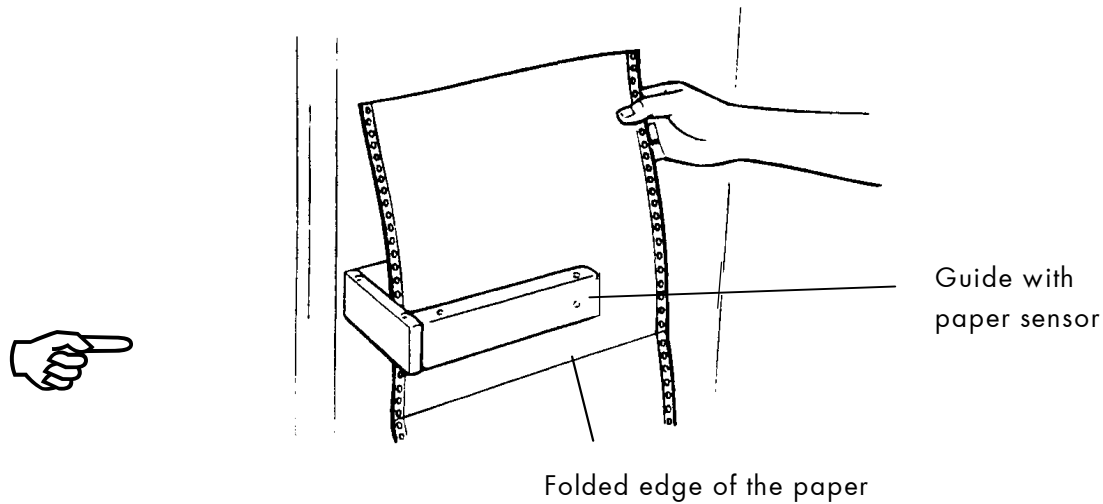


Fig. 3.b Passing the paper through the PNES

To avoid paper jams the folded edge should point in the direction of the printer. Do not stretch the paper excessively and do not allow any slack to avoid incorrect filing.

By this you can secure that the paper will be positioned right in the optional stacker.

3. Release the right tractor bar by pushing it toward the inside of the printer. The tractor bar (black lever) is located next to the tractor cover plate (green) and it is used to unlock the tractor.

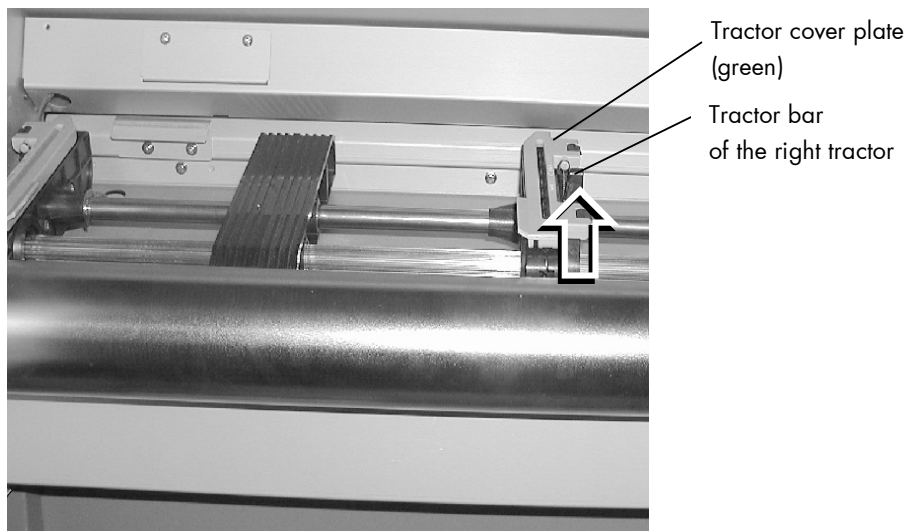


Fig. 3.c Unlocking the tractor

4. Open the two green tractor cover plates (by positioning them into the upright position; see figure 3.d).

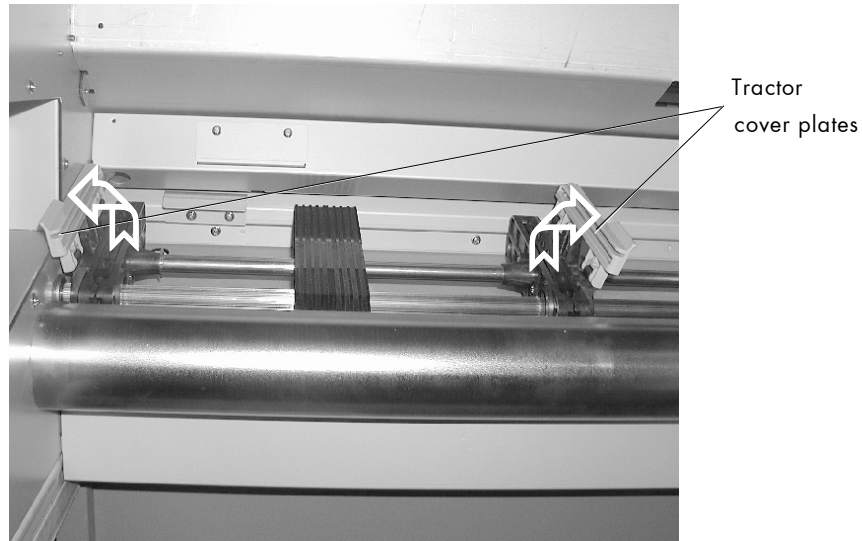


Fig. 3.d Opening the tractor cover plates

5. Place the paper on the tractor pins of the left tractor.  
The paper perforation should be aligned over 4 or 5 tractor pins.  
Now close the green tractor cover plate of this tractor.
6. Spread out the tractor so that the sprocket holes on the right side of the continuous paper can be placed easily onto the tractor pins.

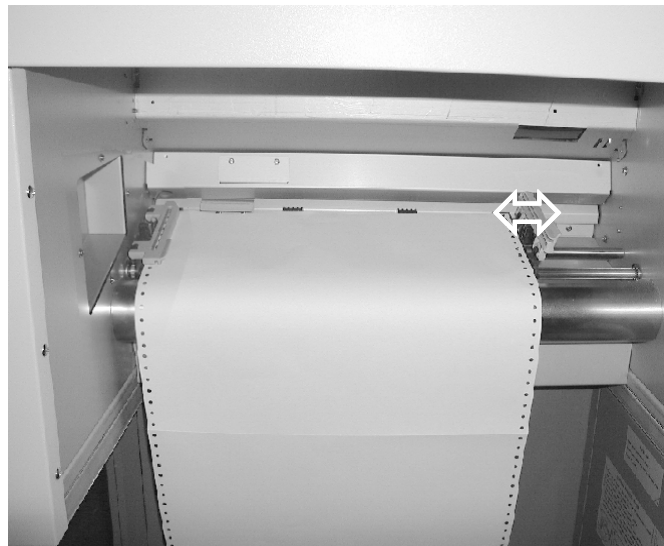


Fig. 3.e Inserting paper and adjusting the right tractor to the paper width.

Please make sure that the paper does not reach into the printer too far. Only the paper sensor has to be covered by the paper.

7. Close the right green tractor cover plate and tighten the paper **gently** by adjusting the width of the tractors.

To avoid paper jams the paper must not be inserted too loose or too tight.

8. Lock the right tractor by using the black tractor bar.

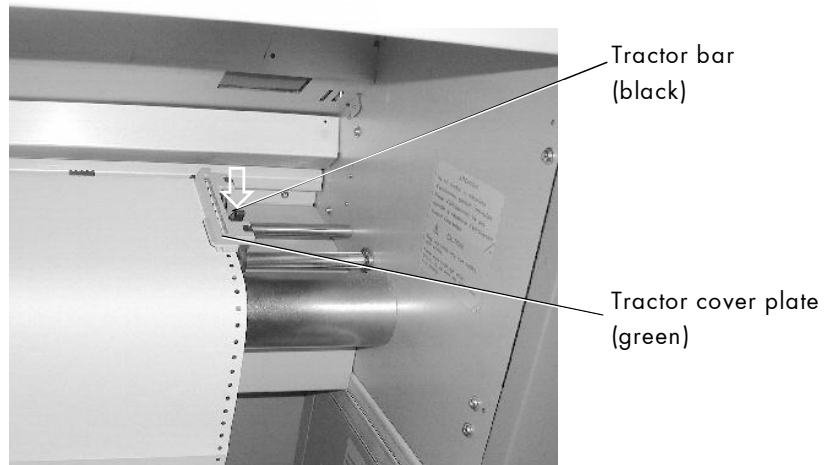


Fig. 3.f Locking the tractor

9. Now please press the LOAD FANFOLD key.  
If the printer is off, you have to turn on the printer first.  
(See section 4.2 Turning on the Printer).

## 4. Operation and Menu Structure

### 4.1. Attaching the Printer to a Computer

1. Make sure the printer, computer, and any other attached devices are turned off and unplugged.
2. Use a proper interface line to connect the printer to the computer or to attach the printer to the network.  
The printer PP 5110XF is provided with several interfaces; see figure 2.2.a and chapter 9 Specifications for more information.

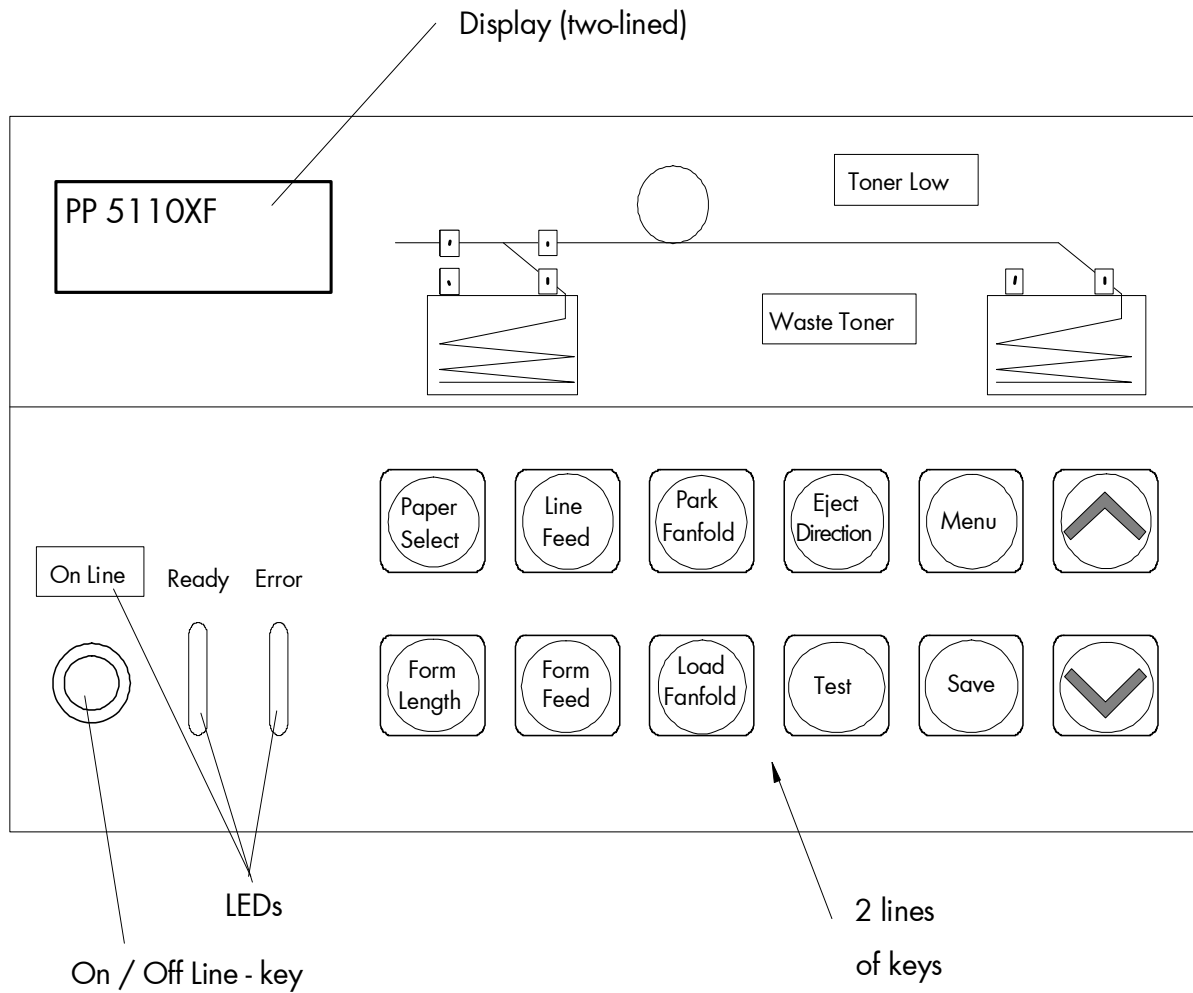
### 4.2. Turning on the Printer

**Note:** Before you connect the printer to the main power, make sure that the voltage of the main power matches the printer's voltage requirement.

The power switch is located at the right side of the printer (see figure 2.2.a).  
As soon as the printer's warm up phase is finished the print system PP 5110XF goes into the ON LINE mode.  
The Online LED and the Ready LED shine and the name of the printer is displayed.

**Note:** You can change the language that appears on the control panel display. Use the "Display Language Selection" panel function (see section 5.15).

### 4.3. Control Panel View





#### 4.4. Function of the Control Panel Elements

##### Display

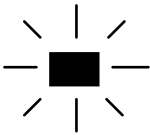
The display (LCD panel; 2 x 16 character LCD) serves to show the printer's status messages.

##### LEDs

Meaning of the LED Announcements:

The printer control panel contains the following LEDs  
(Light Emitting Diodes):

##### ON LINE - LED



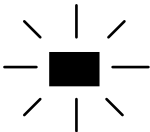
The printer is ready to receive data from the host (the printer is ON LINE).

All control panel keys except the ON LINE key are ineffective.



The printer is not ready to receive data from the host (OFF LINE). The control panel keys are active.

##### READY - LED

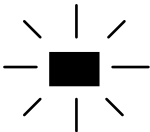


The printer is ready to operate - initializing has been completed, the photoreceptor drum is warmed up, etc.

The phase of initializing is not yet completed.



##### ERROR - LED



An error occurred in the printer. The printer is OFF LINE.

No error occurring.



### Panel keys



This symbol shows the ON LINE key. This key is used to turn the printer ON LINE or OFF LINE.

The other control panel keys are only active in the OFF LINE - mode.



No function



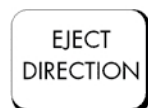
Paper will be transported 1/6 inch forward.



The last print job will be cut at its end and the paper will be moved to the park position.



The cutting device can only cut paper along the perforation, so the setted form length has to correspond with the current paper size. Wrong settings lead to paper jams.



The PP 5110XF is provided with one paper output path, no additional eject direction can be selected.



The current form length is announced. Form lengths from 7 to 20 inches can be selected in 1/6 inch steps.



In the OFF LINE mode the paper is conveyed one format length further after having activated the FORM FEED key. A possibly prepared print page will be printed.

Newly loaded paper will be conveyed to the start position. Subsequently the printer is ready to operate. If paper is already in the printer, it will be transported forward one form length. Bitmap memory remains unchanged. A possibly prepared page will not be printed.



A status sheet will be printed (see section 5.1 Printing the Status Sheet and section 5.8 Generating Test Prints, too).



These keys are used for working within the different levels of the menu structure. This structure and the panel functions are described in the following sections.



#### 4.5. Configuration via the Control Panel

You can use the control panel to change the printer configuration and customize your printer to meet your specific needs.

In addition a software (called [IP\\_printADMIN](#)) will be available for the printer PP 5110XF to allow a printer configuration via Ethernet.

The controller has its integrated website with information on the printer status and the printjob status.

Chapter 5 (Panel Functions) describes how to reach the particular printer functions via the control panel.

**T e m p o r a r y** changes in printer configuration are effective only as long as the printer stays turned on. To select such changes temporarily, the user must terminate the change of function by pressing the **SAVE** key one single time.

**P e r m a n e n t** changes in printer configuration are active each time the printer is turned on again. To select such changes permanently, the user must terminate the change of function by pressing the **SAVE** key **two times**.

An output of the current printer values can be generated using the panel function "Printing the Status Sheet" (see section 5.1).

## Switching the Printer OFF LINE

After the printer was turned on (and as soon as the warm up phase is finished) the printer goes into the ON LINE – Mode.

[PP 5110XF ] The display of the control panel shows the name of the printer.



This symbol shows the ON/OFF LINE key. If the printer is turned OFF LINE with this key you get automatically into the first menu level.

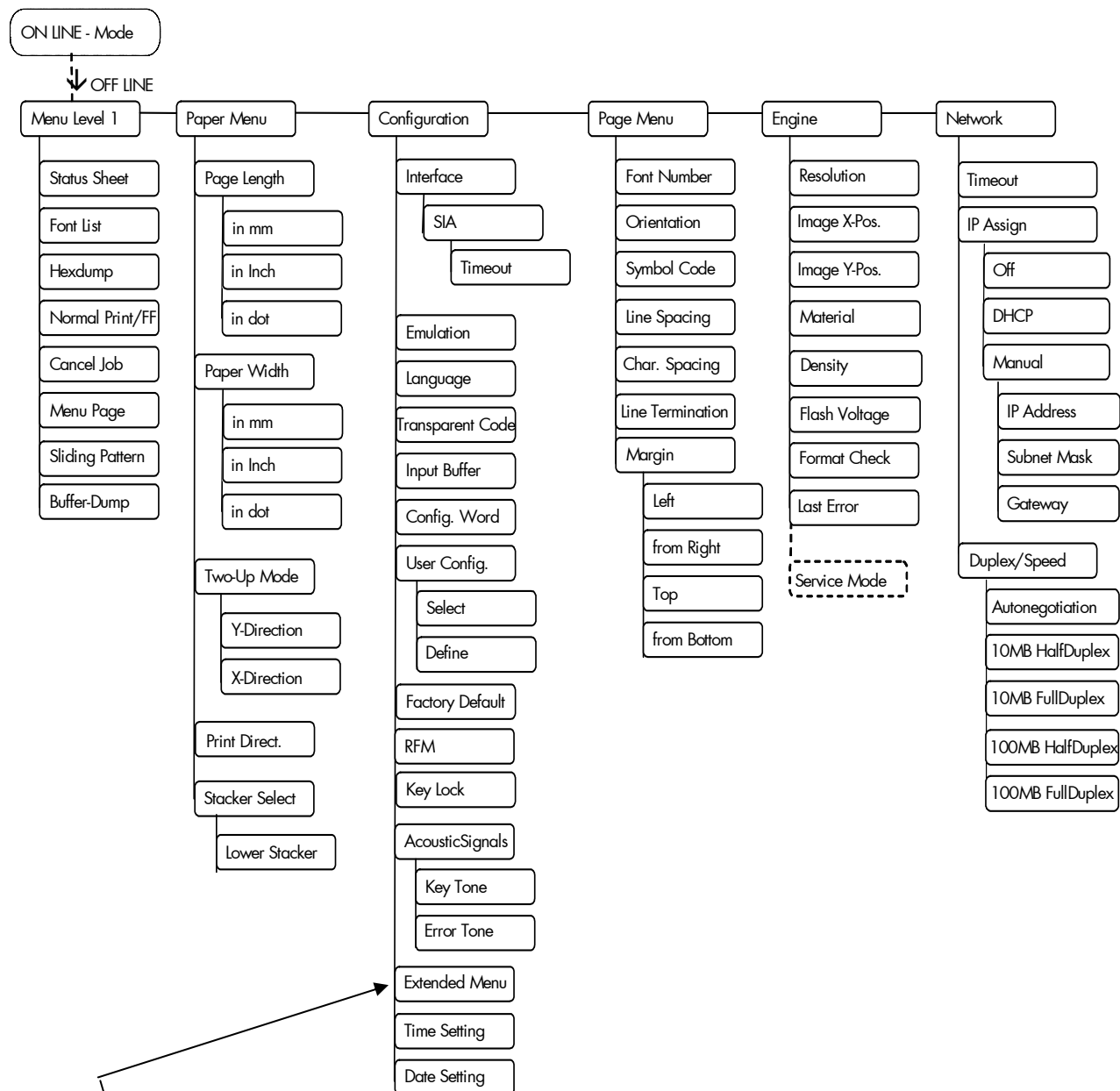
[Menu Level 1 ] Now this message is shown by the display of the control panel.

In the interest of simplicity, in the following chapters only the most important display messages are shown in the Panel display column.

#### 4.6. Menu Structure

Access to the menu structure is possible as soon as the printer is turned OFF LINE.

The menu structure of the PP 5110XF is arranged in different levels:



**Selecting positions in the menu structure:**

This symbol shows the ON LINE key. You get automatically into first menu level, if the printer is turned OFF LINE with this key.



These symbols show the UP and DOWN keys.

By pressing the UP arrow or the DOWN arrow you can move within the menu levels.

Press and hold the UP key to scroll forward or the DOWN key to scroll backward (to change numerical values, for example).

["Menu Level"]

Each menu item/subitem within a menu level is shown in the display.



The SAVE key has two main functions. It gives the user access to a particular menu and, once in the menu, it allows the user to select a particular function.

["Function"]

### Functions / Changing of function values:



Within one function the value can be changed by pressing the UP or DOWN key.



In case of a multi-digit function value the value of the currently chosen digit will be changed.



In case of a multi-digit function value pressing the SAVE key switches to the next position of the function value.

Pressing the MENU key switches to the previous digit of the function value.



Please note: If you press the MENU key although the absolute left digit of the function value is still arrived, the changing procedure will be cancelled and this moves you to the next menu level above.

If you press the SAVE key although the absolute right digit (digit 1) of the function value is still arrived, the currently displayed function value is stored.



Pressing the SAVE key the currently displayed function value is confirmed respectively the displayed function is activated. The changes are saved temporary. (This means, the changes are saved only until the next printer power off).

[Save as Setup? ]

After this you have to decide, if you want to save the changes permanent (Save as setup).



To select such changes permanently, the user must press the SAVE key one more time. These permanent changes in printer configuration are active each time the printer is turned on again.



If the MENU key is pressed instead, the changes are only stored temporary (not saved as setup). (This key takes the user to the respective previous menu level).

### Return to the menu level above:





Pressing the MENU key takes the user back to the respective menu level above.

**Return to the ON LINE - mode:**



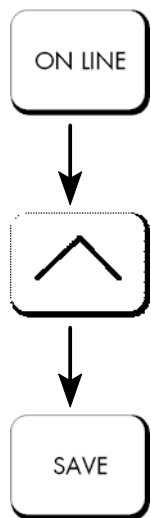
Pressing the ON LINE key switches the user directly to "ON LINE" from any menu position.

#### 4.7. Syntax of Diagrams

The control panel functions will be described using diagrams. These diagrams show the course necessary in order to activate a certain function.

First the elements of the diagrams are explained:

The sequence on the left describes which keys have to be pressed briefly in succession.



In this example the ON LINE key has to be pressed first. Then the ON LINE key has to be released and the UP key has to be pressed. Then the UP key has to be released and the SAVE key has to be pressed.

The "Panel display" column shows the display messages corresponding to the sequences listed on the left.

["Message"]

In the column "Notes" explanations to particular operational steps are given.

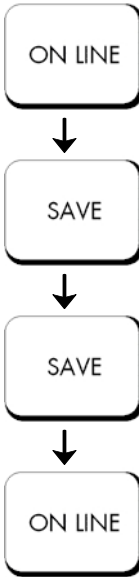
## 5. Panel Functions



For the panel functions described in the following text, the printer is presumed to be switched on and in the ON LINE - mode.

### 5.1. Printing the Status Sheet

This function generates a status sheet.  
The status sheet contains information about the current printer configuration, the available fonts and options.

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	
		Turn the printer OFF LINE with this key.
	[Menu Level 1 ]	
		Press the SAVE key. Menu Level 1 is selected.
	[Status Sheet ]	
		Press the SAVE key again.
		A status sheet is printed.
	[Status Sheet ]	
		The printer is turned ON LINE again.

### **Status sheet contents:**

The first lines, entitled SERVICE INFORMATION, contain hexadecimal coded configuration parameters.






Printed in plain text:

- Controller version / memory / serial number
- Firmware release
- Interface  
parameters of Parallel, Serial, USB, Network (Ethernet)
- Printer emulation
- User-RAM / free User-RAM
- Input data buffer
- Transparent code
- Paper size
- Default margins           top / left  
                                      bottom / right
- Default character code
- Options
- Fonts installed (Font banks)

**Note:** Use the panel function Printing the Font List to show the fonts installed (see the following section).

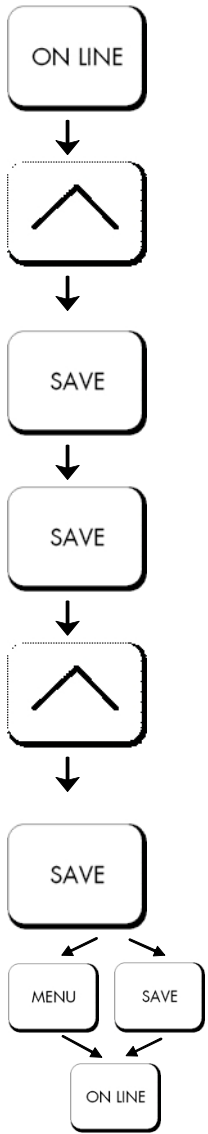
5.2. Printing the Font List

This function generates a list of all fonts installed to the printer. The font list shows demo prints of all fonts and, in addition, the concerning PCL selection commands. These commands contain information on font width and font height (see section 5.19 Font Selection, too).

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	
		Turn the printer OFF LINE with this key.
↓		
	[Menu Level 1 ]	Menu Level 1 is selected.
↓		
	[Status Sheet ]	
↓		
	...	Press the UP or DOWN key until [Font List ] is displayed.
↓		
	[Font List ]	
		The font list is printed.
↓		
	[Font List ]	The printer is turned ON LINE again.

5.3. Choosing Print Resolution

This function allows the user to choose the current print resolution. If, after a particular resolution is chosen, the print data stream indicates a different resolution (e.g. via a WINDOWS print driver), the second print resolution will be used only for that job.

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	Turn the printer OFF LINE with this key.
	[Menu Level 1 ]	
	...	Press the UP or DOWN key until [Engine ] is displayed.
	[Engine ]	Menu item Engine is selected.
	[Resolution ]	Menu item Resolution is selected.
	[300 dpi ]	Press the UP or DOWN key until the desired Resolution (e.g. 600 dots per inch) is displayed.
	...	
	[600 dpi ]	600 dpi resolution is selected.
	[Save as Setup? ]	In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

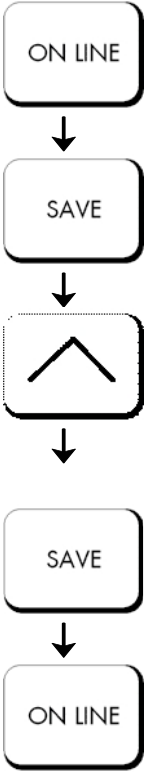
**Remarks on choosing print resolution (Fonts):**

By selecting 300 dpi resolution the printing system will be compatible for all applications (300 dpi data stream), also the 300 dpi font banks (bitmap writing) are available.

If 600 dpi resolution is chosen, the corresponding fonts must be loaded into the printer server (e.g. True Type fonts, scalable download fonts).

5.4. Hexdump - Mode Activation

In the Hexdump-Mode the printer prints all characters received via interface without any interpretation (hexadecimal coded). This mode helps with error diagnosis. The Hexdump-Mode can be activated only temporarily.

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF]	
		Turn the printer OFF LINE with this key.
	[Menu Level 1]	Menu Level 1 is selected.
	[Status Sheet]  ...	Press the UP or DOWN key until [Hexdump] is displayed.
	[Hexdump]	
	[Hexdump]	The Hexdump-Mode is activated.
		The printer is turned ON LINE again.

**Note:** By activating the normal print mode (see next page) or by turning the printer off and on again the printer can be taken out of Hexdump-Mode. Time between turning the printer off and on again should be at least 15 seconds.



### 5.5. Normal Print Mode Activation (incl. FORM FEED)

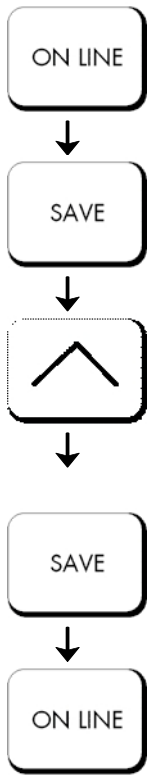
The normal print mode suspends the Hexdump-Mode. This function is activated, when a print job must be continued without turning the printer off and on again. In addition to that the function "Normal Print Mode Activation" is used to produce a FORM FEED.

	<u>Panel display</u>	<u>Notes</u>
<pre> graph TD     A[ON LINE] --&gt; B[SAVE]     B --&gt; C[Up Arrow]     C --&gt; D[...]     D --&gt; E[SAVE]     E --&gt; F[ON LINE]         </pre>	[PP 5110XF ]	
	[Menu Level 1 ]	Turn the printer OFF LINE with this key.
	[Status Sheet ]	Menu Level 1 is selected.
	...	Press the UP or DOWN key until [Normal Print/FF ] is displayed.
	[Normal Print/FF ]	
	[Normal Print/FF ]	The normal print mode is activated.  The printer is turned ON LINE again.

**Note:** After activating the normal print mode a FORM FEED is released automatically and one sheet is put out. This is necessary because after a test in the Hexdump-Mode it is possible that data can remain in the input buffer unintentionally (cause: in the Hexdump-Mode no control characters are evaluated and no FORM FEED is effected).

5.6. Clearing the Input Buffer (Cancel Job)

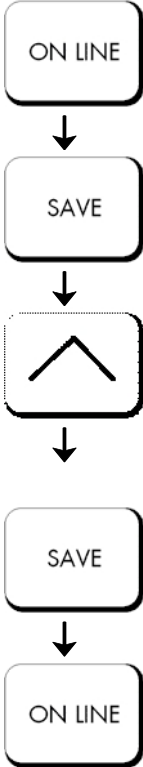
This function permits the resumption of a print job at a particular page after a print interruption (e.g. paper jam). The data contained in the input buffer before the interruption are cleared.

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	
		Turn the printer OFF LINE with this key.
	[Menu Level 1 ]	
		Menu Level 1 is selected.
	[Status Sheet ]	
	...	Press the UP or DOWN key until [Cancel Job ] is displayed.
	[Cancel Job ]	
	[Cancel Job ]	All data contained in the input buffer will be cleared.
		The printer is turned ON LINE again.

### 5.7. Printing the Menu Page




This function prints a survey of the available panel functions.

**Note:** When printing the menu page please use a large paper.

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	
		Turn the printer OFF LINE with this key.
	[Menu Level 1 ]	
		Menu Level 1 is selected.
	[Status Sheet ]	
	...	Press the UP or DOWN key until [Menu Page ] is displayed.
	[Menu Page ]	
		A menu structure presentation of the PP 5110XF (see section 4.6) is printed.
	[Menu Page ]	
		The printer is turned ON LINE again.

5.8.    Generating Test Prints (Sliding Pattern)

This function generates a series of test prints without sending data to the printer.  
These test prints facilitate error analysis.

Panel display	Notes
	
↓	
	
↓	
	

[PP 5110XF ]

Turn the printer OFF LINE with this key.






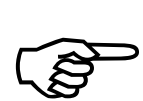
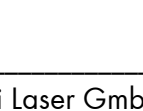
[Menu Level 1 ]

A status sheet is generated (possibly printed on several pages).

[Menu Level 1 ]










The printer is turned ON LINE again.

Another way to activate the function:

	[PP 5110XF ]	
↓		
	[Menu Level 1 ]	Turn the printer OFF LINE with this key.
↓		
	[Status Sheet ]	Menu Level 1 is selected.
↓		
	[Sliding Pattern ]	Press the UP or DOWN key until [Sliding Pattern ] is displayed.
↓		
	[Sliding Pattern ]	A series of test prints is generated.
↓		
		The printer is turned ON LINE again.
		The printing out of test prints can be stopped by pressing the ON LINE key.

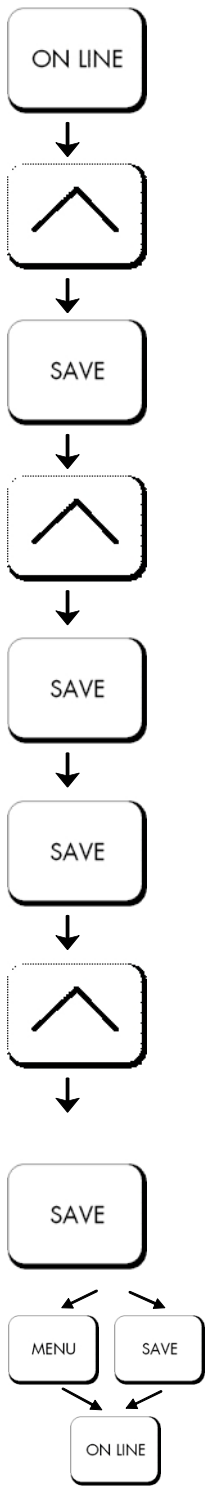
5.9. Page Length Adjustment

After having inserted new material to print on (e.g. paper) the paper size (the print format) has to be adjusted with this function corresponding to the currently used paper size.  
The standard value for the paper size is 12 inches for Europe, 11 inches for North America.

	Panel display	Notes
	[PP 5110XF ]	
↓	[Menu Level 1 ]	
	...	Press the UP or DOWN key until [Paper Menu ] is displayed.
↓	[Paper Menu ]	
		Press the SAVE key to select the paper menu.
↓	[Page Length ]	
		Press the SAVE key to adjust the page length.
↓	[in Inch ]	Inch = currently selected unit (By pressing the UP or DOWN key the unit dot or mm can be selected alternatively).
	...	Pressing the UP or DOWN key changes the value of the current digit (Digit 4 = left position, in the example: 1).
↓	[Digit4 12.00]	Pressing the SAVE key moves you to the next digit (the MENU key moves you back, if need be).
	...	Values from 7 to 20 inches are settable.
↓	[Digit1 12.33]	Here the page length was changed to 12.33 inches.
	[Save as Setup? ]	In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.
		
↓		

5.10. Paper Width Adjustment (Format Width)

The paper width (print width) has to be adjusted with this function according to the currently used paper format.

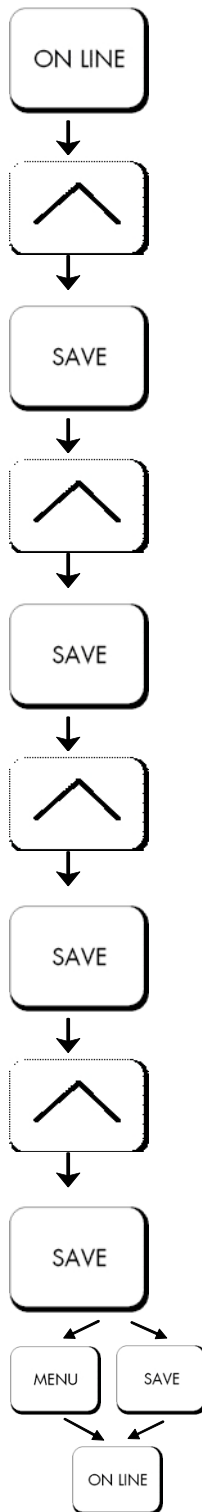


Panel display  
[PP 5110XF ]  
[Menu Level 1 ]  
...  
[Paper Menu ]  
[Page Length ]  
...  
[Paper Width ]  
[in Inch ]  
...  
[Digit4 16.00]  
...  
[Digit1 17.00]  
[Save as Setup? ]

Notes  
Turn the printer OFF LINE with this key.  
Press the UP or DOWN key until [Paper Menu ] is displayed.  
Press the SAVE key to select the paper menu.  
Press the UP or DOWN key until [Paper Width ] is displayed.  
Press the SAVE key to adjust the paper width.  
Inch = currently selected measuring unit. (By pressing the UP or DOWN key the unit dot or mm can be selected alternatively.)  
Pressing the UP or DOWN key changes the value of the current digit (Digit 4 = left position, in the example: 1). Pressing the SAVE key moves you to the next digit (the MENU key moves you back, if need be).  
The maximum adjustable format width is 18 inches (17 inches printable).  
Here the paper width was changed to 17.00 inches.  
In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

### 5.1.1. Selecting the Number of Printpages per Page Format (Two-Up Mode)

Activating this function determines the arrangement of several printpages per page format (paper width resp. page length).



Panel display

[PP 5110XF ]

[Menu Level 1 ]

...

[Paper Menu ]

[Page Length ]

...

[Two-Up Mode ]

[Y-Direction ]

...

[X-Direction ]

[X-Direction: OFF ]

...

[X-Direction: 2 ]

[Save as Setup? ]

Notes

Turn the printer OFF LINE with this key.

Press the UP or DOWN key until [Paper Menu ] is displayed.

Press the SAVE key to select the paper menu.

Press the UP or DOWN key until [Two-Up Mode ] is displayed.

Press the SAVE key to select the function Two-up mode.

Operate the UP or DOWN key to effect the adjustment of the two-up mode to the X-direction (cross to the print direction).

Press the SAVE key to set the two-up mode.

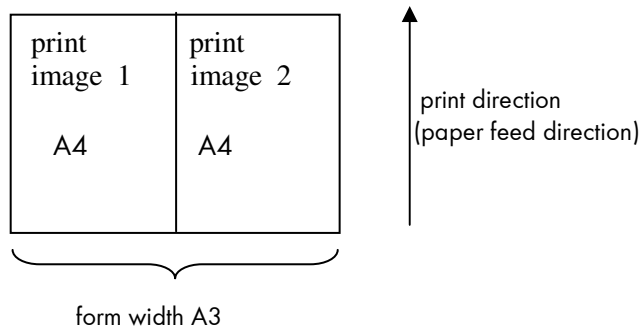
By operating the UP or DOWN key the number of print pages cross to the print direction can be altered. The maximum number of print pages being adjustable next to each other is 9.

Here the number of print pages per format width was altered to 2.

In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

**Example:**

The printer processes fanfold paper with a width of 17".  
When the Two-Up mode is chosen each time 2 images of A4 are printed side by side.

**Note:**

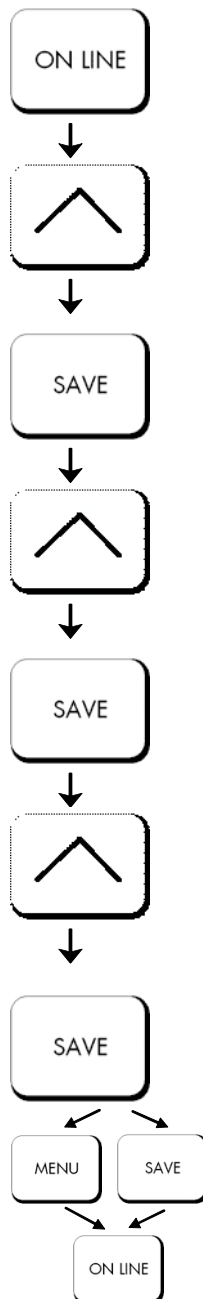
All other page parameters have to be set optionally in accordance to the requirements.

A simultaneous combination of several print images per form length and several print images per form width isn't possible until now.



### 5.12. Print Direction Selection

This function selects the active print orientation (orientation of the whole printout including graphics, etc. on the paper).



#### Panel display

[PP 5110XF ]

[Menu Level 1 ]

...

[Paper Menu ]

[Page Length ]

...

[Print Direct. ]

[Print Direct. 0 ]

...

[Print Direct. 1 ]

[Save as Setup? ]

#### Notes

Turn the printer OFF LINE with this key.

Press the UP or DOWN key until [Paper Menu ] is displayed.

Press the UP or DOWN key until [Print Direct. ] is displayed.

Press the UP or DOWN key until the desired print direction is displayed.

The print direction 1 = landscape is selected.

In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

Print direction assignment:

Print direction 0 = Portrait (upright format)

Print direction 1 = Landscape (horizontal format)

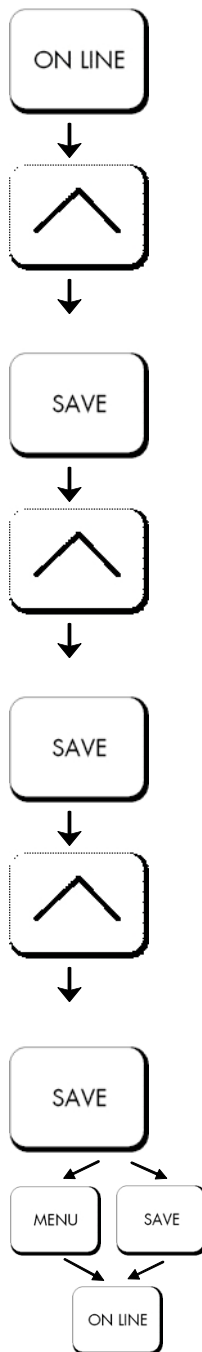
Print direction 2 = Portrait upside down

Print direction 3 = Landscape upside down



### 5.14. Emulation Selection

This function helps to determine which printer emulation will be activated.



#### Panel display

[PP 5110XF ]

[Menu Level 1 ]

...

[Configuration ]

[Interface ]

...

[Emulation ]

[SOLID Standard ]

...

[HP PCL 5 ]

[Save as Setup? ]

#### Notes

Turn the printer OFF LINE with this key.

Press the UP or DOWN key until [Configuration ] is displayed.

Press the UP or DOWN key until [Emulation ] is displayed.

Press the UP or DOWN key until the desired emulation (e.g. HP PCL 5) is displayed.

The emulation HP PCL 5 is selected.

In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

**Available emulations:**

Standard:

MICROPLEX IDOL,  
HP LaserJet (PCL 5),  
Epson FX,  
IBM Proprinter,  
TIFF (CCITT group 4),  
ANSI Genicom,  
µ-Postscript

Optional:

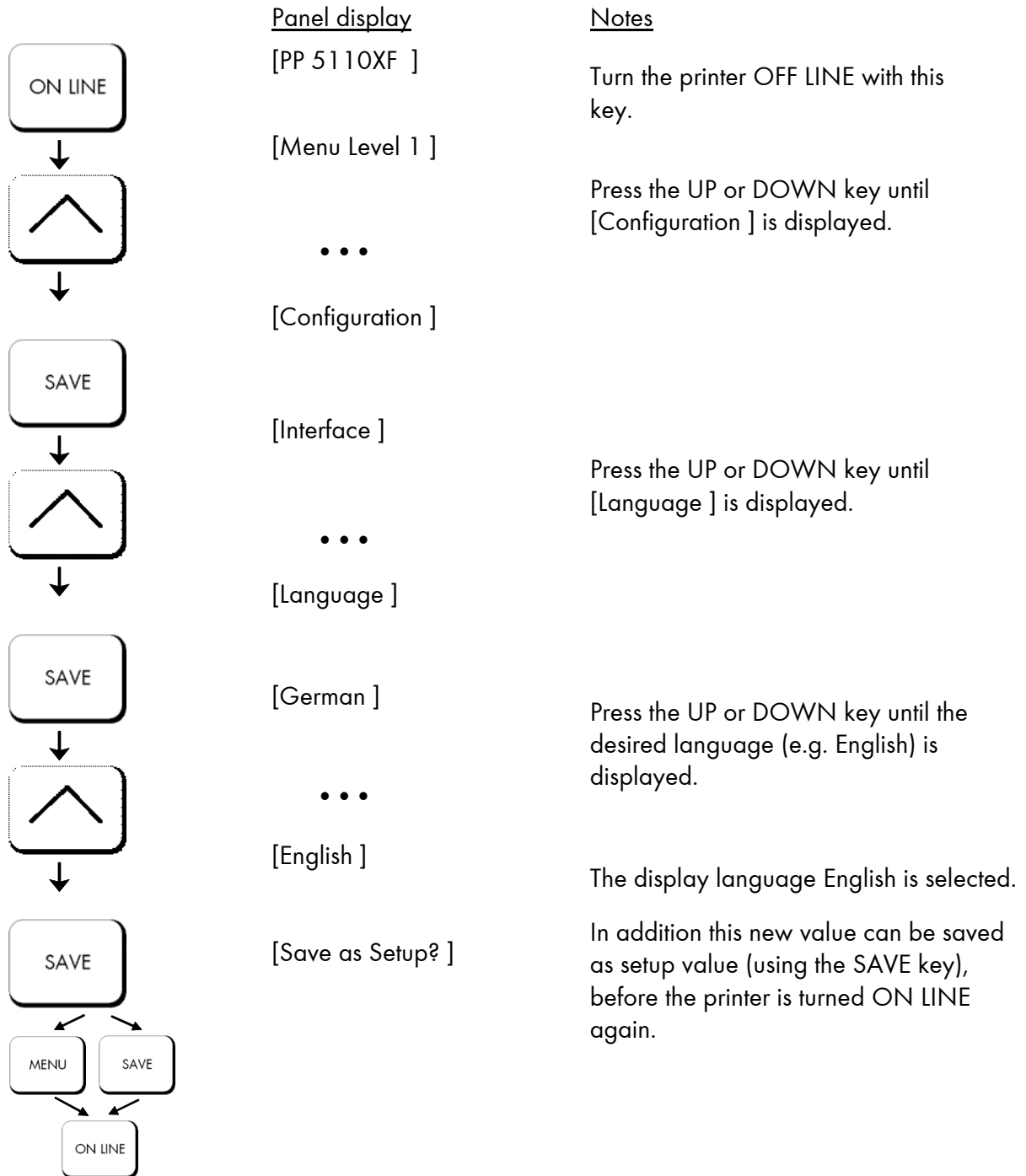
Kyocera Prescribe,  
Printronix IGP/PGL,  
QMS Magnum Code V,  
Tektronix 4010/4014,  
XEROX XES,  
HP DesignJet (HPGL-2),  
LDC (Label Description Language),  
Express,  
Diablo 630,  
AGFA Reno,  
S3000 Lineprinter,  
HPGL (7475A),  
DEC LN03+,  
Tally MT 6xx,  
Bull MP6090,  
TEC B6xx (Thermal Transfer),  
TEC Bx72 (Thermal Transfer),  
Etimark (Thermal Transfer),  
IDS/IDS2,  
Datamax (FGL),  
Eltron EPL2,  
ZPL II (Zebra Programming Language)

**Notice:**

The brand names mentioned are registered trademarks of the enterprises named above.

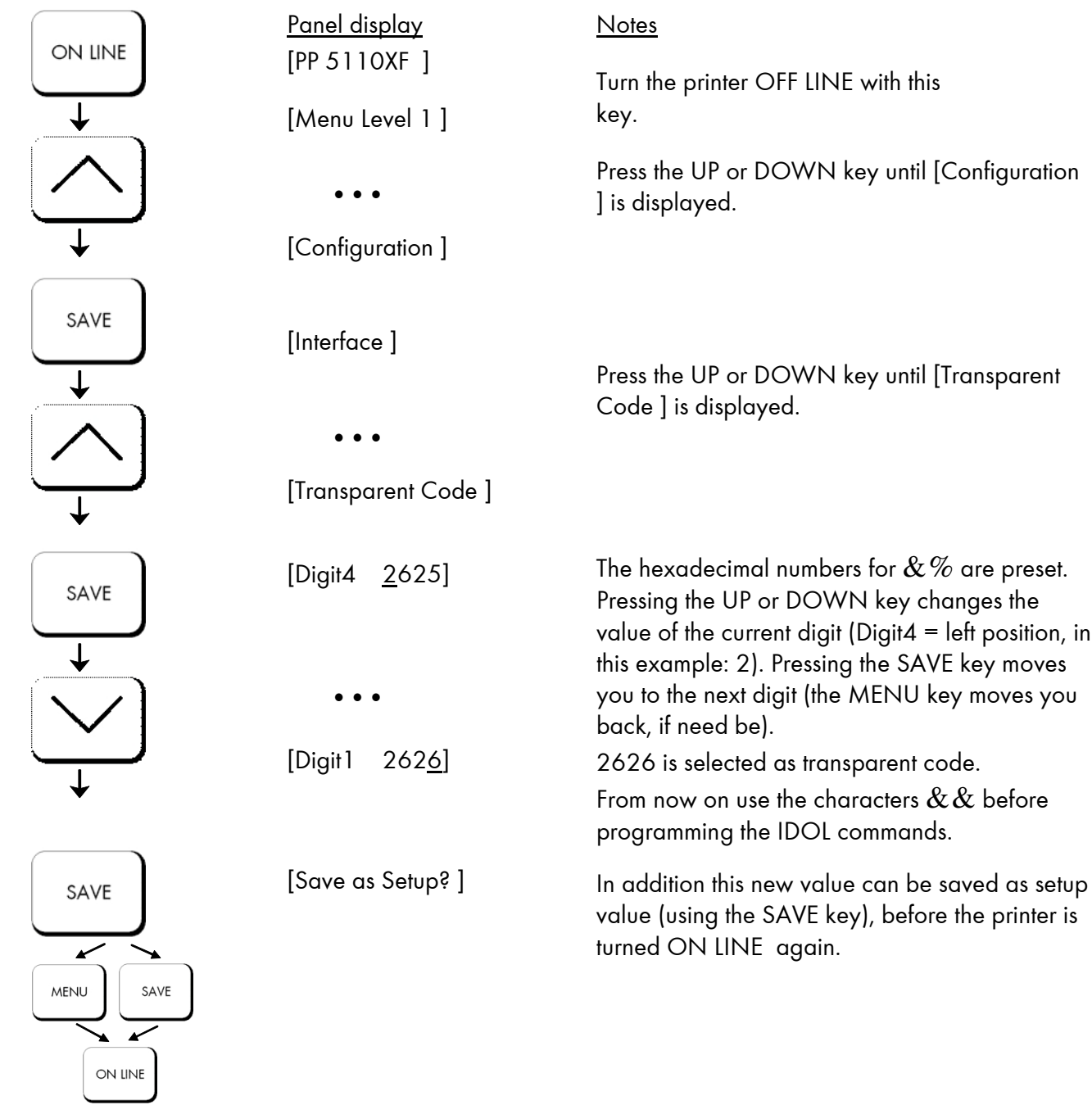
### 5.15. Display Language Selection

This function enables the user to determine the language for the display messages, the status sheet and the font list.



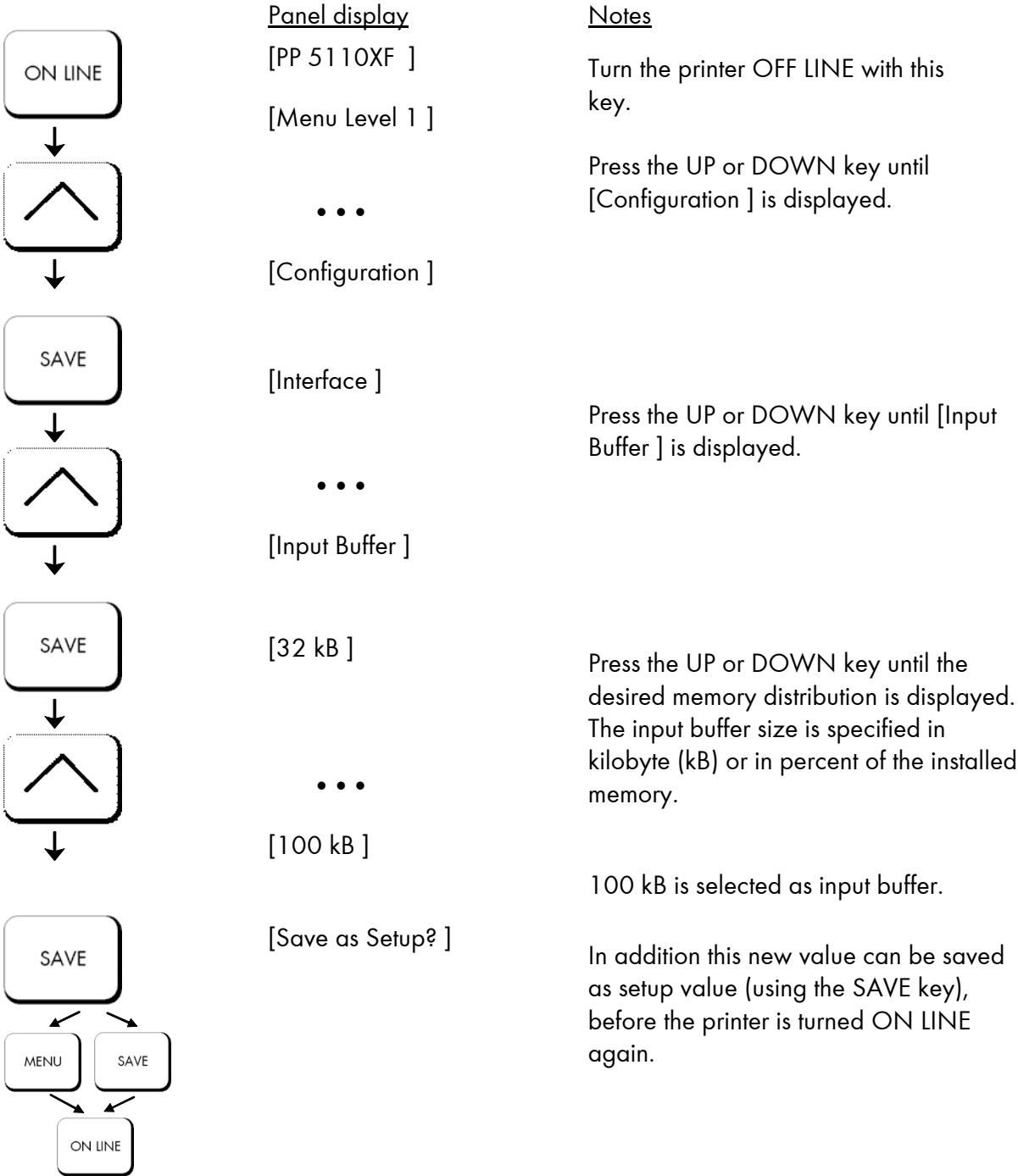
5.16. Transparent Code Adjustment

This function configures the transparent code. Using the transparent code enables you to initiate the commands of the page description language IDOL by **printable** characters. The transparent code pre-setting is 2625. These are the ASCII character codes (hexadecimal) for the characters **&** **%**. (ref. IDOL Programming Manual).



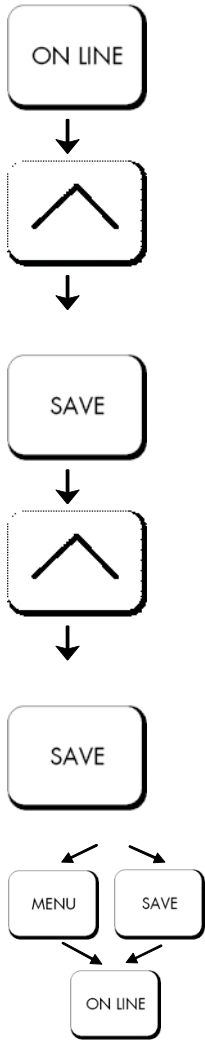
### 5.17. Selection of Memory Distribution (Input Buffer)

This function enables the user to choose the distribution of the available RAM memory between input buffer and macro/download memory.



5.18. Setting to Factory Default

This function back-outs all configurations to factory defaults.

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	Turn the printer OFF LINE with this key.
	[Menu Level 1 ]	Press the UP or DOWN key until [Configuration ] is displayed.
	...	
	[Configuration ]	
	[Interface ]	Press the UP or DOWN key until [Factory Default ] is displayed.
	...	
	[Factory Default ]	
	[Save as Setup? ]	Only if you press the SAVE key a second time the configuration will be back-outed to factory defaults.
		The printer is turned ON LINE again.



5.19. Font Selection

This function selects the active font. Select a font number out of the list of available fonts.

	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	Turn the printer OFF LINE with this key.
	[Menu Level 1 ]	
	...	
	[Page Menu ]	Press the UP or DOWN key until [Page Menu ] is displayed.
	[Font Number]	
	[Font 0600 ]	
	...	Press the UP or DOWN key until the desired font number (e.g. 5507 Langeoog) is displayed.
	[Font 5507 ]	
	[Save as Setup? ]	The font number 5507 Langeoog is selected.
		In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

The **PP 5110XF standard equipment** contains the following **fonts**:

<u>Font no.</u>	<u>Font width</u>	<u>Font height</u>	<u>Font name</u>
0600	10	12	Kurilen
0602	10	12	Kurilen Italic
0610	12	10.1	Kurilen
1710	12	10.1	Kurilen Italic
4508	P	8.1	Helgoland
4510	P	10	Helgoland
4714	P	14.4	Helgoland Bold
5507	20	7	Langeoog
5508	16.6	7.9	Langeoog
5509	15	9.1	Langeoog
6610	10	10.1	Juist Monosp.
9210	P	10.1	Tasmanien
9310	P	10.1	Tasmanien Italic
2000	P	SC	Tasmanien
9900	P	SC	Neuwerk

Resumption of this standard font list see next page.

**Explanations:**

**Font width:**

Character distance in CPI (Characters Per Inch).

P = proportional, (meaning that each character has an individual width).

**Font height:**

Font height from the lowest descender to the upper edge of the highest character, measured in graphical points (1/72 inch).

SC = scalable.

	<u>Font no.</u>	<u>Font width</u>	<u>Font height</u>	<u>Font name</u>
	0050	SC		Plakatschrift
	0590	SC		OCR /B
	0591	SC		OCR /A
	6600	SC		Juist Monospaced
	0699	SC		Kurilen
	1700	SC		Kurilen Italic
	1800	SC		Kurilen Bold
	1900	SC		Kurilen Bold Italic
	5500	SC		Langeoog
	5600	SC		Langeoog Bold
	5700	SC		Langeoog Italic
	5800	SC		Langeoog Bold Italic
	2100	P	SC	Texel Bold
	2200	P	SC	Texel Italic
	2300	P	SC	Texel Bold Italic
	9800	P	SC	Neuwerk Italic
	9500	P	SC	Neuwerk Bold Italic
	9600	P	SC	Neuwerk Bold
	0060	SC		Plakatschrift
	9501	P	SC	Neuwerk-II Condensed Italic
	9601	P	SC	Neuwerk-II Condensed Bold Ital.
	9801	P	SC	Neuwerk-II Condensed Bold
	9901	P	SC	Neuwerk-II Condensed
	0530	P	SC	PiktoWin
	5100	P	SC	Amrum
	5200	P	SC	Amrum Bold
	5300	P	SC	Amrum Italic
	7500	P	SC	Antigua
	7700	P	SC	Antigua Bold
	7800	P	SC	Antigua Italic
	7900	P	SC	Antigua Bold Italic
	9199	P	SC	Tasmanien-II Bold Italic
	9299	P	SC	Tasmanien-II
	9399	P	SC	Tasmanien-II Italic
	9499	P	SC	Tasmanien-II Bold

PCL 5 compatible

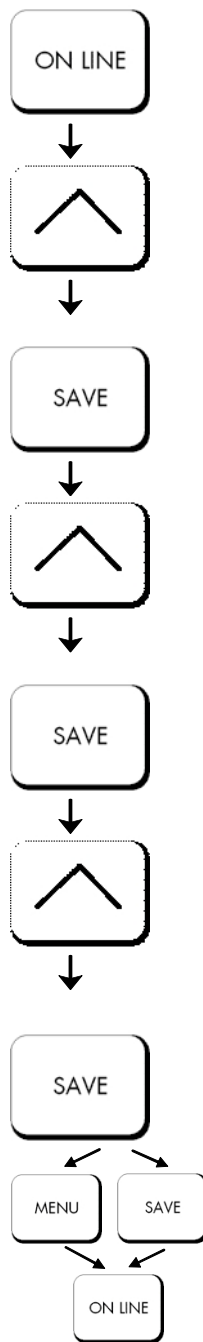
**Notes:**

Additional fonts can be selected from the font catalogue depending upon the memory capacity.

You can use the panel function Printing the Font List (see section 5.2) to generate a list of all fonts installed to the printer.

## 5.21. Symbol Code Selection

This function selects the active symbol code.



Panel display

[PP 5110XF ]

[Menu Level 1 ]

...

[Page Menu ]

[Font Number]

...

[Symbol Code ]

[902, IBM PC-II ]

...

[901, IBM PC-I ]

[Save as Setup? ]

Notes

Turn the printer OFF LINE with this key.

Press the UP or DOWN key until [Page Menu ] is displayed.

Press the UP or DOWN key until [Symbol Code ] is displayed.

Press the UP or DOWN key until the desired symbol code is displayed.

The symbol code 901, IBM PC-I is selected.

In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

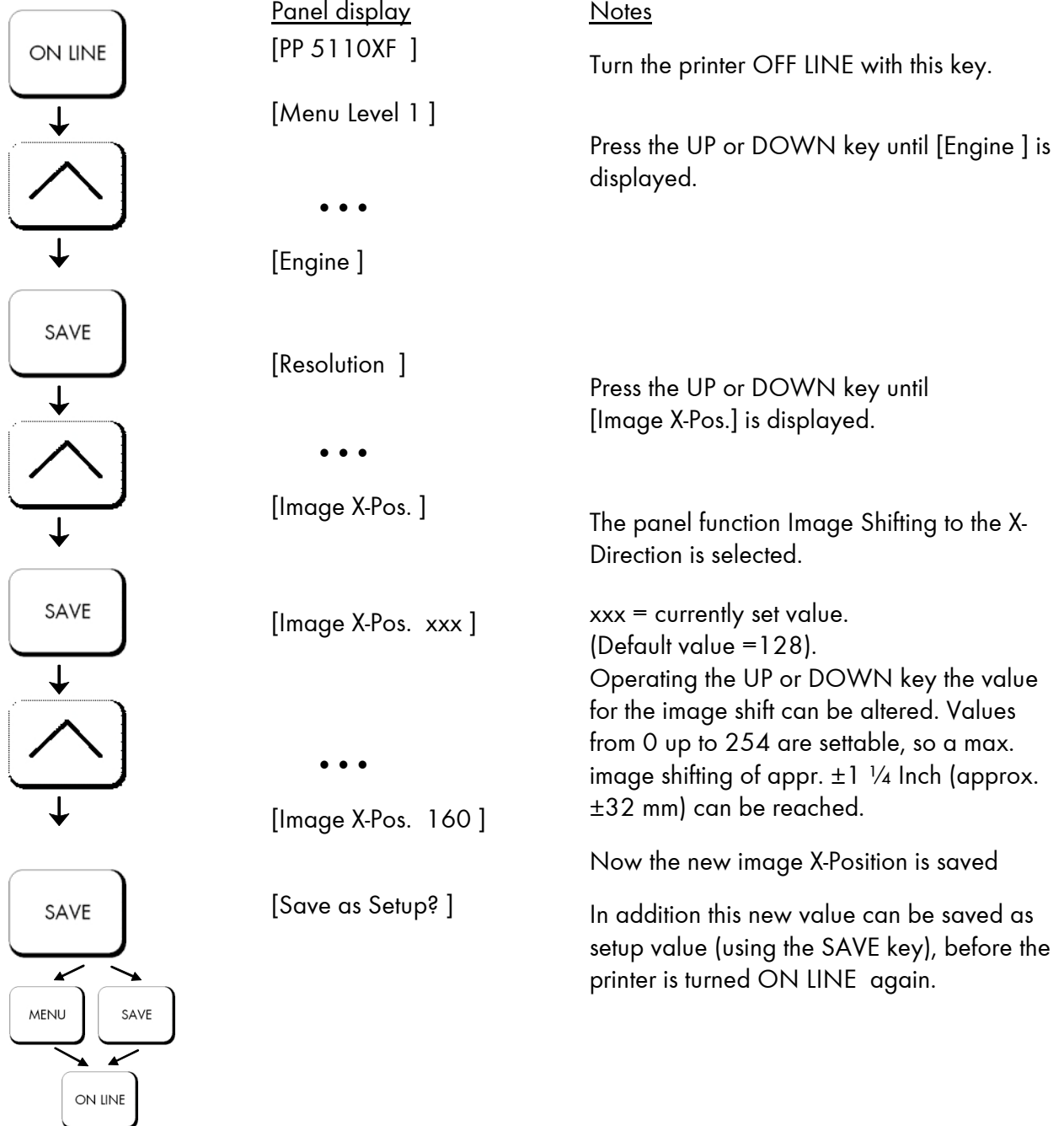
5.22. Configuration of Text Margins

This function sets text margins. Margins are expressed in dots at the concerning edge of the paper.

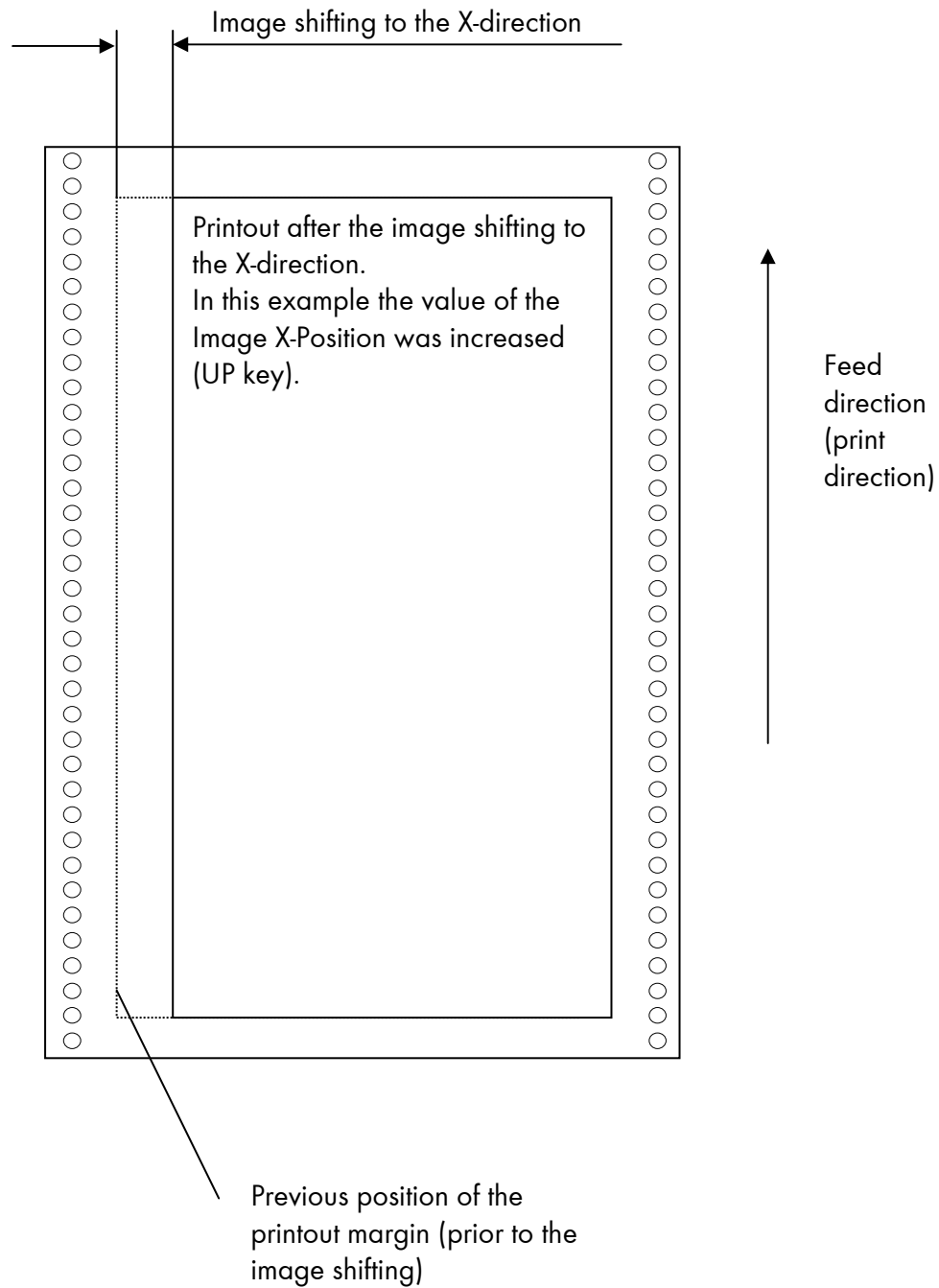
	<u>Panel display</u>	<u>Notes</u>
	[PP 5110XF ]	Turn the printer OFF LINE with this key.
	[Menu Level 1 ]	
	...	Press the UP or DOWN key until [Page Menu ] is displayed.
	[Page Menu ]	
	[Font Number]	
	...	Press the UP or DOWN key until [Margin ] is displayed.
	[Margin ]	
	[Left ]	
	...	Press the UP or DOWN key until the desired margin is displayed.
	[from Right ]	
	[Digit4 0089]	Pressing the UP or DOWN key changes the value of the current digit (Digit 4 = left position, in this example: 0). Pressing the SAVE key moves you to the next digit (the MENU key moves you back, if need be).
	...	
	[Digit1 008Z]	The right margin is changed into 87 dot.
	[Save as Setup? ]	In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

### 5.23. Image Shifting to the X-Direction

This function shifts the print image in relation to the paper to the X-direction (crosswise the print direction). Because the paper feed is always centered to the middle in the PP 5110XF, the image shifting might be necessary when using e.g. special paper formats to shift the X-coordinate zero to the left paper edge.



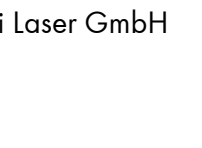
Example for shifting the image to the X-direction:



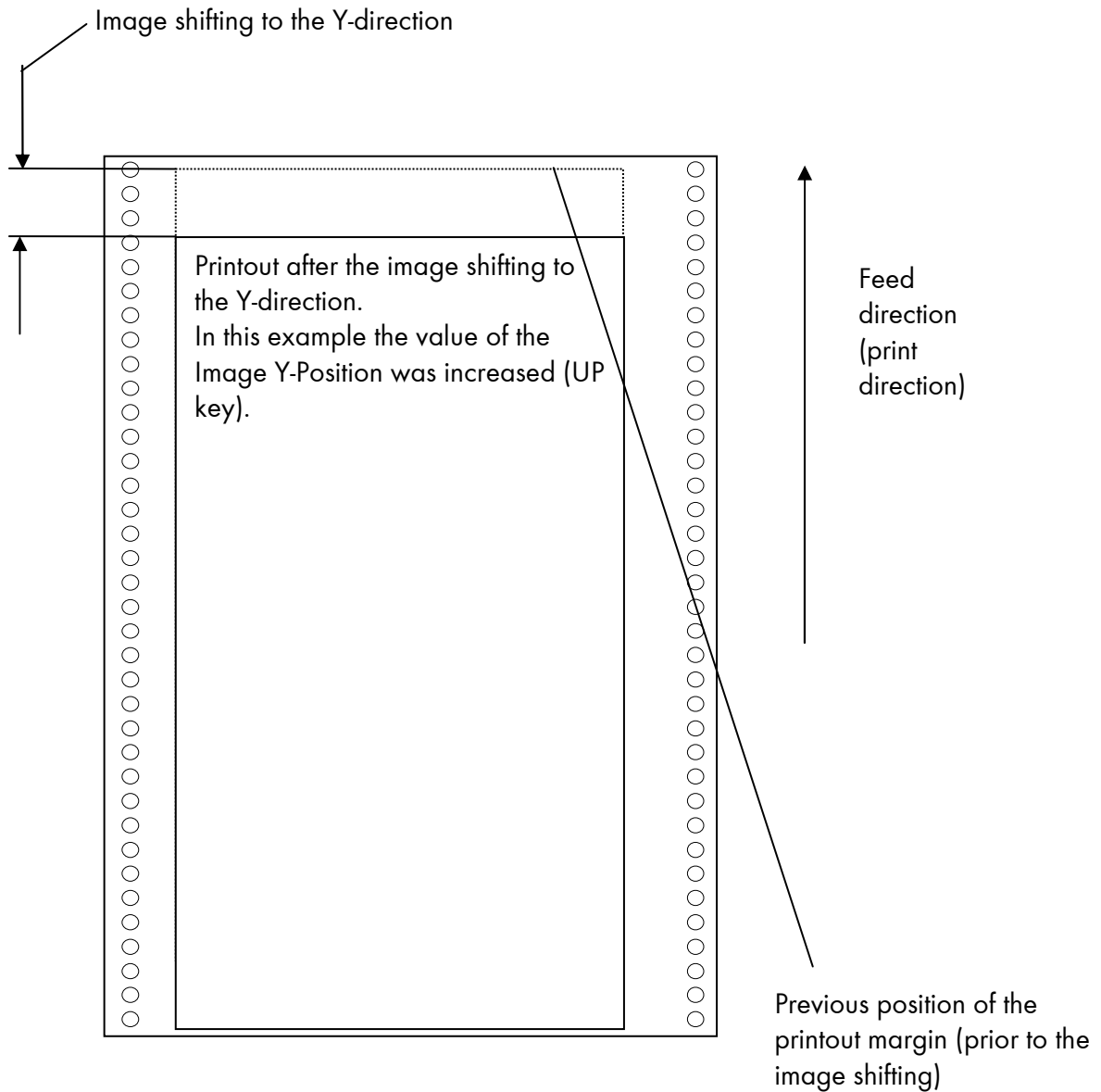


### 5.24. Image Shifting to the Y-Direction

This function shifts the print image in relation to the paper to the Y-direction (print direction).

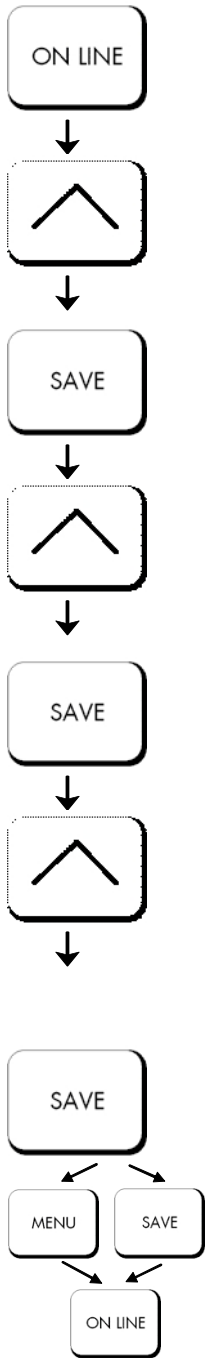
<u>Panel display</u>	<u>Notes</u>
ON LINE	Turn the printer OFF LINE with this key.
↓ [Menu Level 1 ]	Press the UP or DOWN key until [Engine ] is displayed.
↓ ...	
[Engine ]	
↓ SAVE	
↓ [Resolution ]	Press the UP or DOWN key until [Image Y-Pos.] is displayed.
↓ ...	
[Image Y-Pos. ]	The panel function Image Shifting to the Y-Direction is selected.
↓ SAVE	yyy = currently set value. (Default value = 128).
↓ [Image Y-Pos. yyy ]	Operating the UP or DOWN key the image can be shifted relative to the paper. Values from 0 up to 254 are settable, so a max. image shifting of approx. ± 1 ¼ Inch (approx. ± 32 mm) can be reached.
↓ ...	
[Image Y-Pos. 190 ]	Now the new image Y-Position is saved.
↓ [Save as Setup? ]	In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.
	

Example for shifting the image to the Y-direction:



### 5.25. Lines per Inch Setting (Line Spacing)

This function sets the number of lines per inch. This setting is effective only in case of using the printer as a line printer.  
With a small number of lines per inch, line spacing will be relatively large. (Ref. IDOL Programming Manual).



Panel display  
[PP 5110XF]

[Menu Level 1]

...

[Page Menu]

[Font Number]

...

[Line Spacing]

[Digit4 006.5]

...

[Digit1 010.0]

[Save as Setup?]

#### Notes

Turn the printer OFF LINE with this key.

Press the UP or DOWN key until [Page Menu] is displayed.

Press the UP or DOWN key until [Line Spacing] is displayed.

6.5 lpi = currently set value.  
(lines per inch).

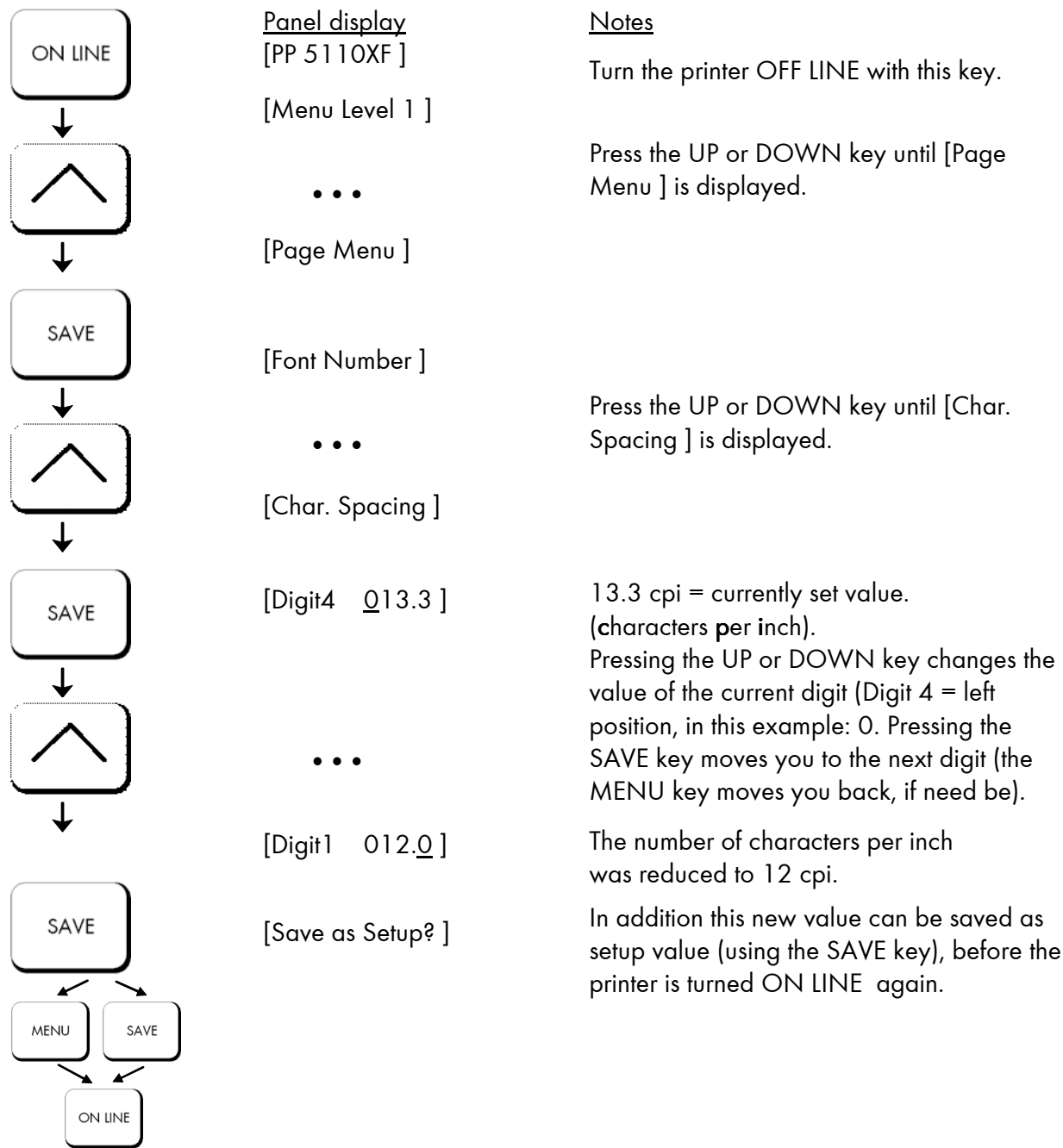
Pressing the UP or DOWN key changes the value of the current digit (Digit 4 = left position, in this example: 0). Pressing the SAVE key moves you to the next digit (the MENU key moves you back, if need be).

The number of lines per inch was increased to 10 lpi.

In addition this new value can be saved as setup value (using the SAVE key), before the printer is turned ON LINE again.

5.26. Number of Characters per Inch Setting (Character Spacing)

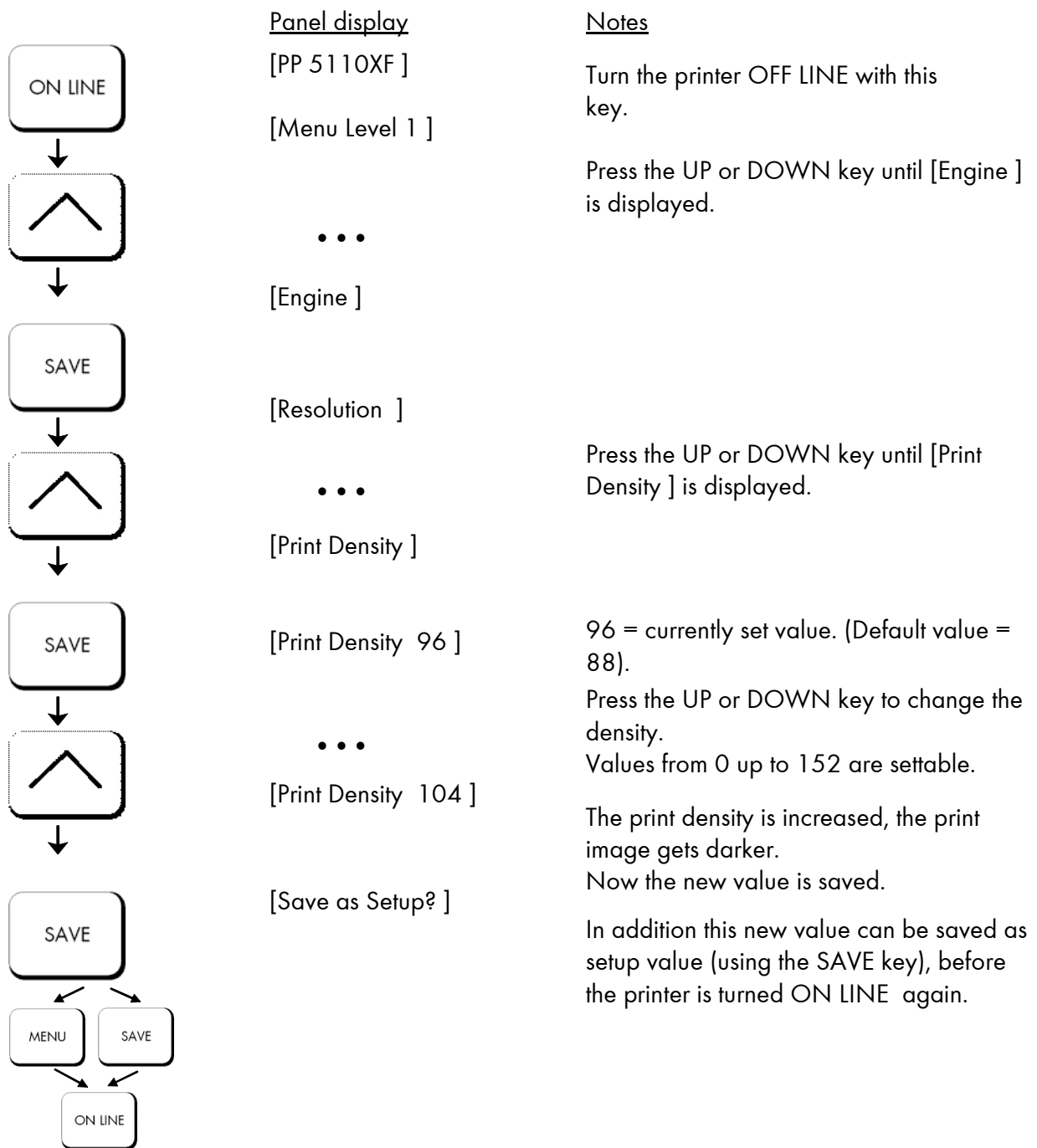
This function sets the number of characters per inch. This setting is effective only in case of using a line printer emulation.  
With a small number of characters per inch, character spacing will be relatively large. (Ref. IDOL Programming Manual).



5.27. Print Density Setting

Using this function the density of the printed characters can be

changed.



5.28. Configuration of Network Parameters (IP Address, e.g.)

The functions of the submenu Network are used to set the parameters for connecting the printer to a network (Ethernet).

Setting the IP address manually:

Panel display	Notes
ON LINE	Turn the printer OFF LINE with this key.
PP 5110XF	
[Menu Level 1]	
...	Press the UP or DOWN key until [Network ] is displayed.
[Network ]	
SAVE	Press the SAVE key to select the Network menu.
[Timeout]	
...	
[IP Assign ]	Press the UP or DOWN key until [IP Assign ] is displayed.
SAVE	Press the SAVE key to select the IP Assign menu.
[Off ]	The currently set configuration is displayed.
...	Press the UP or DOWN key until [Manual ] is displayed.
[Manual ]	
SAVE	Press the SAVE key to set the IP address manually.
[IP Address ]	
[192.168.002.002 ]	Pressing the UP or DOWN key changes the value of the current digit (left digit first, in this example: 1). Pressing the SAVE key moves you to the next digit (the MENU key moves you back, if need be).
...	
[192.168.010.123 ]	The new IP address is saved as setup value.
SAVE	The printer is turned ON LINE again.
[Saved ! ]	
SAVE	
ON LINE	

**Notes:** If your network is using DHCP<sup>①</sup>, an address can be automatically assigned (select the subitem **DHCP** from the network menu).

The parameters **Subnet Mask** and **Gateway** are configured in the same way as described above. Please select the concerning panel functions for this (compare section 4.6 Menu Structure).

Select the subitem **Off** from the network menu to switch off the network access.

<sup>①</sup> Dynamic Host Configuration Protocol: offers among other things a centralized address management.

### Duplex/Speed Setting

This panel function is located in the network menu (submenu Duplex/Speed Setting).

The factory default value is Autonegotiation.

Autonegotiation means that devices on the network agree a transmission mode, which each unit is able to handle, before data transmission starts. By this the printer automatically adjusts itself to maximize link performance.

**Hint:** **Autonegotiation is the recommended setting!**

If you set the Duplex/Speed parameters manually, you may experience problems. Wrong settings can slow down the speed of the link (worst case: communication does not occur).

#### Explanations:

##### Auto-Negotiation

A Ethernet procedure that allows devices at either end of a link segment to advertise and negotiate modes of operation such as the speed of the link (100 Mbit/s or 10 Mbit/s) and half- or full-duplex operation.

##### Half duplex

A device can either receive or send data at a given time.

##### Full duplex

Capability of a device for sending and receiving data at the same time. In the case of full duplex, collision detection is deactivated. A full duplex capable device is able to buffer data packets.



## 6. Operator Maintenance

In order to run the printer always on its highest quality level, it is necessary to perform regularly simple cleaning operations, and to occasionally replace certain components.

These operations can be performed by a PSI LASER GMBH trained operator. A untrained person is not allowed to perform these operations.

### 6.1. Printer Cleaning

By a regular and conscientious performance of the following operations, the printer is guaranteed to always work at an optimum reliability.



After the printing of about 25,000 pages of 12"x17" (print density 4 %; compare chapter 9 Specifications) the components listed in this chapter should be cleaned. (For some components different values for the number of pages are valid; see following pages).

Please note:

The printer is provided with a drum counter.

Although this counter only records the revolutions of the drum, the meter readings can be used to calculate values for the "number of pages". For every conversion you have to know the page length of the printjob and to consider the following:

One digit of the counter corresponds to a page length of 14.8 inch, because this is the circumference of the drum.

Example: If 25,000 pages of 12"x17" have been printed the number shown by the counter is approx. 20,000.



For safety disconnect the printer from the main power first. Make sure the components that are to be cleaned have cooled down.



Please be especially careful to avoid damaging mechanical or electronic modules.

Do not use detergents, or any other devices or tools not mentioned in this manual to avoid damages and unnecessary costs of repairs.

Please do only use the auxiliary materials being contained inside the cleaning kit.

#### 6.1.1. Cleaning the Printer Cabinet

- Please use a soft, lint-free cloth, which has been moistured with water or a neutral detergent if necessary to remove dust and grease from the printer cabinet.
  
- Please be especially careful to avoid damaging the mechanical or electronic components.

### 6.1.2. Cleaning the Printer Interior



Turn off the PP 5110XF printer and disconnect the printer from the main power. Make sure, the printer has been switched off for at least 15 minutes before you start cleaning.

Please be especially careful to avoid damaging the mechanical or electronic modules.

The following cleaning operations should always be performed before the installation of a new toner cartridge (see also section 6.2 Replacing the Toner Cartridge).



If there are any toner residues on the print pages, please do also perform a cleaning of the printer interior.

1. Disconnect the printer from the mains and let it cool down for at least 15 minutes.
2. Remove all toner residues, paper dust etc. in the area of the paper feeder (tractor) and the paper outlet with an anti-static service vacuum cleaner.
3. Open the printer's front cover.

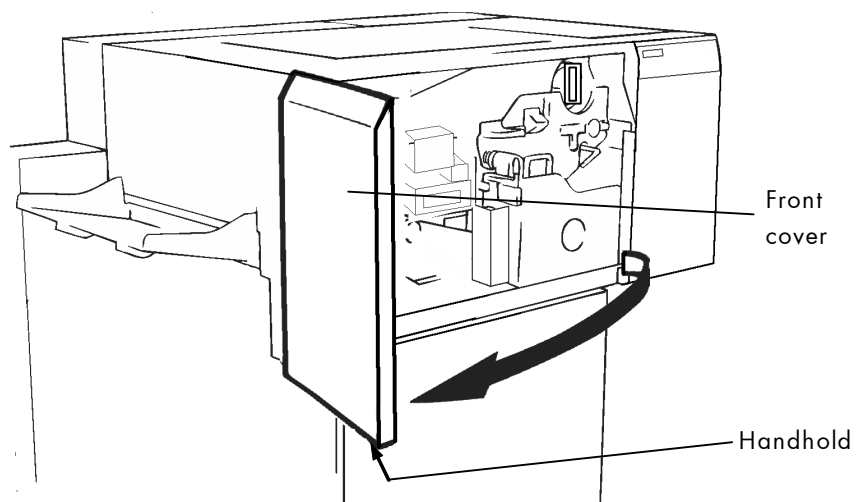


Fig. 6.1.2.a Opening the printer's front cover

4. Remove the toner residues from the environment of the waste toner bottle unit with an anti-static service vacuum cleaner.
5. Push down the open lever of the waste toner bottle unit, pull the green handle and open the unit.

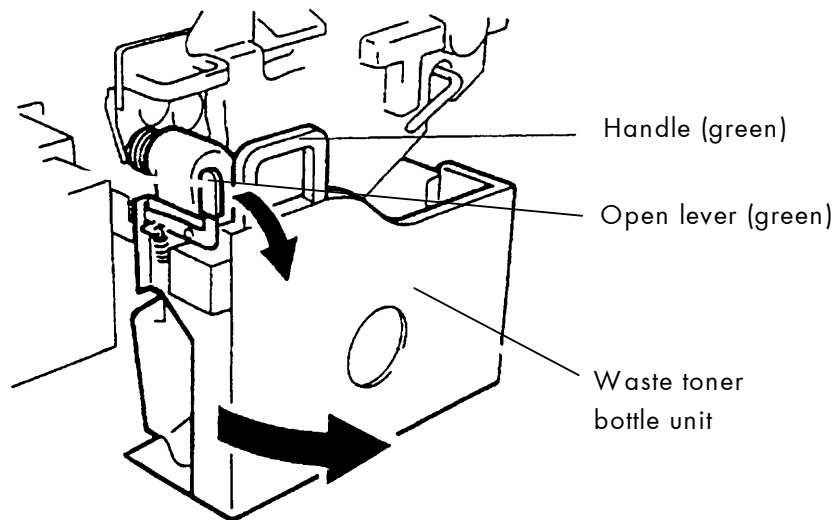


Fig. 6.1.2.b Opening the waste toner bottle unit

6. Remove the waste toner bottle and clean this area of the waste toner bottle unit, too.

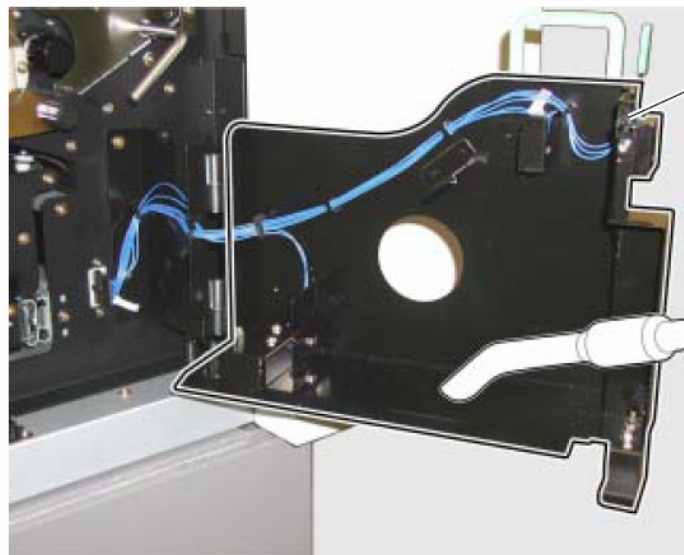


Fig. 6.1.2.c Cleaning the inside of the waste toner bottle unit

7. Reassemble the waste toner bottle.

8. Using an anti-static service vacuum cleaner, pick up any dirt on the developer unit or toner cartridge.

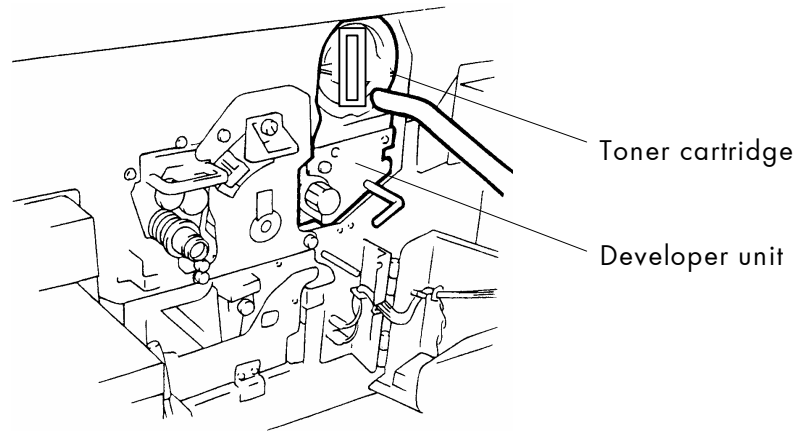


Fig. 6.1.2.d Cleaning the area of the developer unit

9. Clean the drum cleaning unit and the elements around it in the same way.

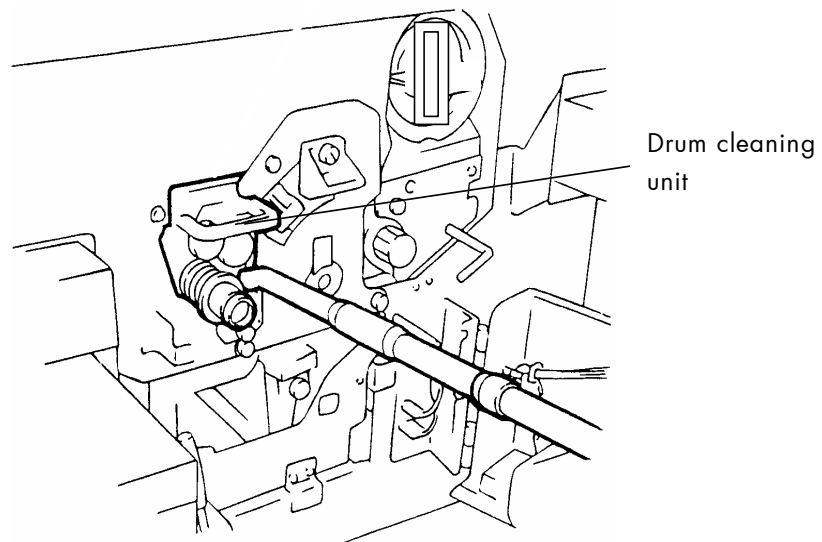


Fig. 6.1.2.e Cleaning the area of the drum cleaning unit

10. Also vacuum the fuser unit and the area around it.

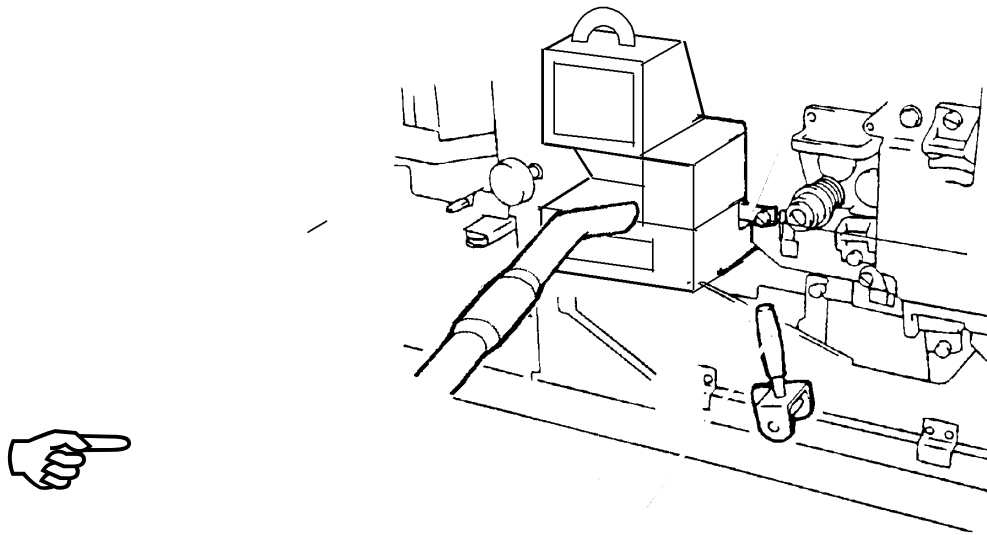


Fig. 6.1.2.f Cleaning the area of the fuser unit

11. Close the waste toner unit.  
Make sure the bar has engaged.
12. Close the printer's front cover.

## 6.2. Replacing the Toner Cartridge



Replace the toner cartridge when the message [TONER EMPTY ! ] is displayed. With one toner filling approximately 25,000 pages of 12"x17" with a print density of 4 % can be printed.

### a) Removing the old toner cartridge

1. Prepare a place to put the spent toner cartridge. For example, you might put it in a small plastic trash bag or on sheets of paper. The spent toner cartridge will give off black toner dust.



Please wear vinyl gloves to avoid dirty hands when replacing the cartridge.

2. Open the printer's front cover.

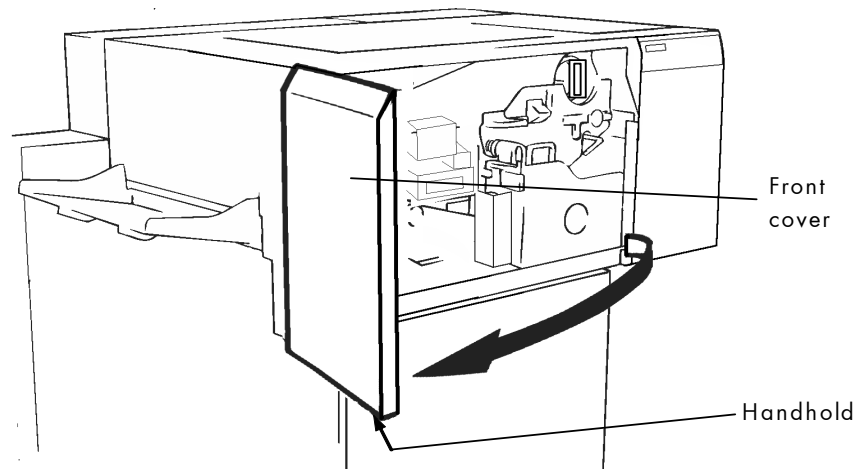


Fig. 6.2.a Opening the printer's front cover

3. Use the green handle (compare figure 6.2.b) to rotate the used toner cartridge 180° counterclockwise until it stops.

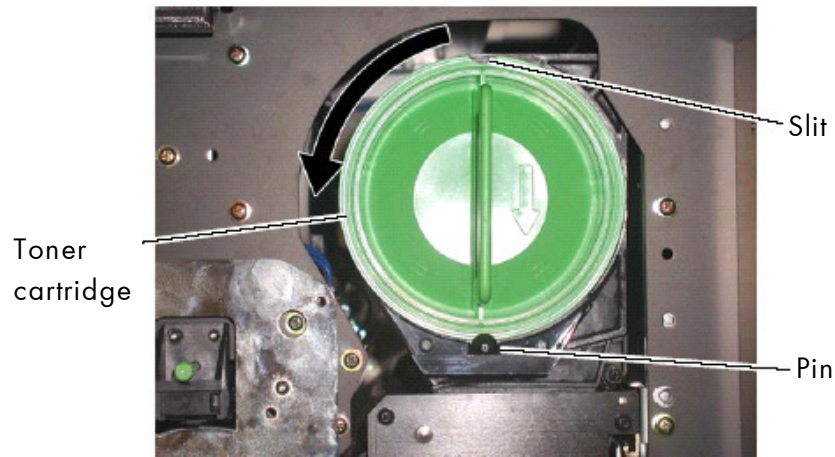


Fig. 6.2.b Rotating the toner cartridge



4. Slowly pull the used toner cartridge out of the printer and put it in the place you prepared for it.

Please use your second hand to hold the cartridge.

5. Wrap up the used toner cartridge so it doesn't spill toner dust.

#### **b) Performing a cleaning of the printer interior**

The description can be found in chapter 6.1.2.

#### **c) Inserting the new toner cartridge**

6. Take the new toner cartridge out of the packing and hold it as shown in figure 6.2.c (plastic sealing tape point upward).
7. Shake the new cartridge gently by performing horizontal movements to distribute the toner.



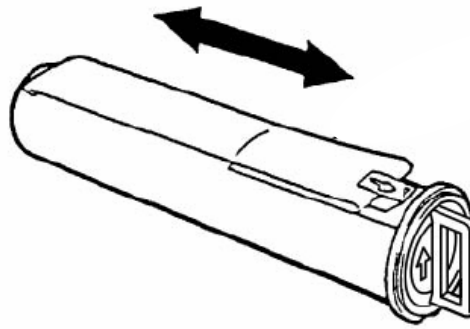


Fig. 6.2.c Shaking the new toner cartridge

8. Now take the new toner cartridge and position it in front of the corresponding opening of the printer.
9. Put the end of the new cartridge into the PP 5110XF toner hopper with the adhesive tape facing up, and slowly strip off the tape from the front to the back (in direction of the smaller arrow shown in figure 6.2.d). Slide the cartridge gently into the device in one operation.

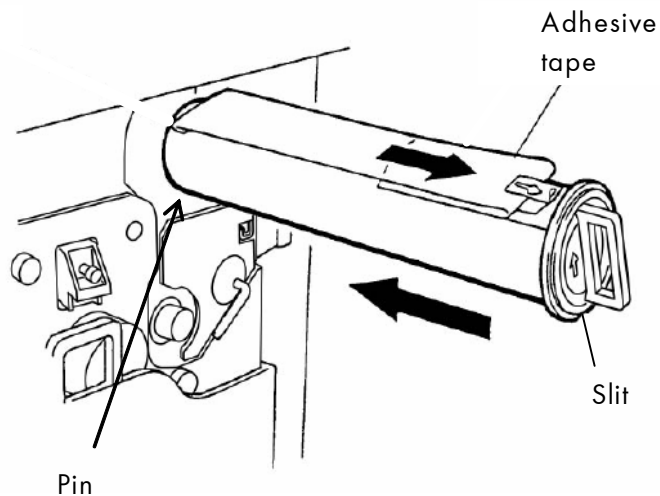


Fig. 6.2.d Inserting the new toner cartridge

10. Insert the cartridge deeply into the toner hopper until it stops. For that you have to align the toner cartridge slit with the developing unit pin (see figure 6.2.d and 6.2.e).

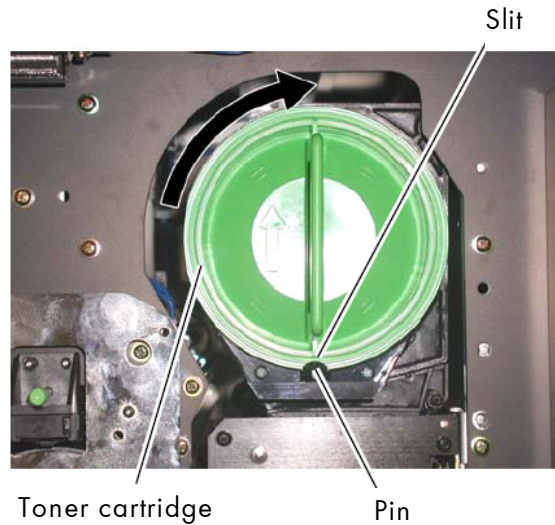


Fig. 6.2.e Aligning the new toner cartridge

#### d) Dropping toner into the developer unit

11. Use the green handle (compare figure 6.2.e) to rotate the new toner cartridge 180° clockwise until it stops.

This effects that the toner falls out of the toner cartridge into the developer unit.

Now the toner cartridge's handle should be vertical and the toner cartridge is locked into position (compare figure 6.2.f).

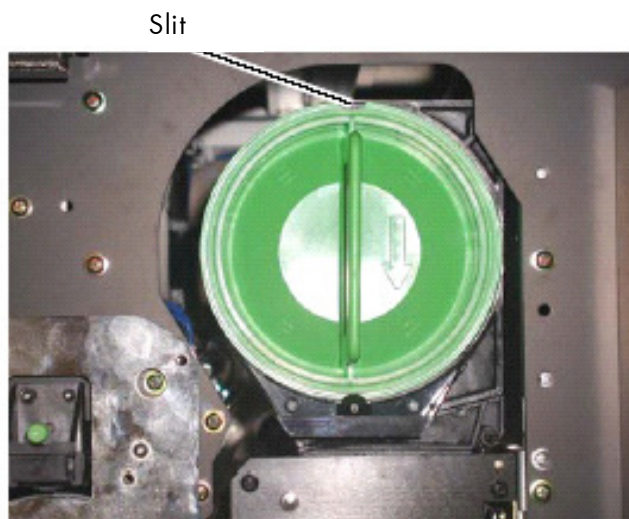


Fig. 6.2.f Toner cartridge locked into position

12. Close the printer's front cover.

The announcement [TONER EMPTY!] will be extinguished.

The toner is easily combustible and should never come in contact with fire. Disposal will be carried out by your service engineer. Until disposal please store the old cartridge in a vinyl bag in a closed cardboard box.

Now replace the waste toner bottle if need be (see next section).

### 6.3. Exchanging the Waste Toner Bottle



The waste toner bottle has to be replaced every third time the toner cartridge is replaced (compare section 6.2).

Exchange the waste toner bottle immediately, if the message [Toner Waste !] is displayed.

Approximately 75,000 pages of 12"x17" with a print density of 4 % can be printed until the waste toner bottle is filled.

1. Open the printer's front cover.
2. Push down the open lever of the waste toner bottle unit, pull the green handle and open the unit.

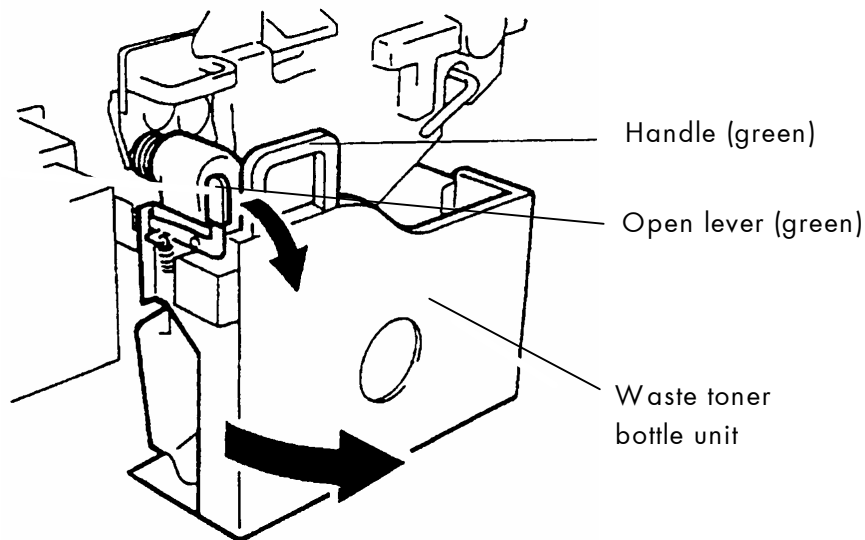


Fig. 6.3.a Opening the waste toner bottle unit

The waste toner bottle unit is provided with two sensors (compare figure 6.3.b).

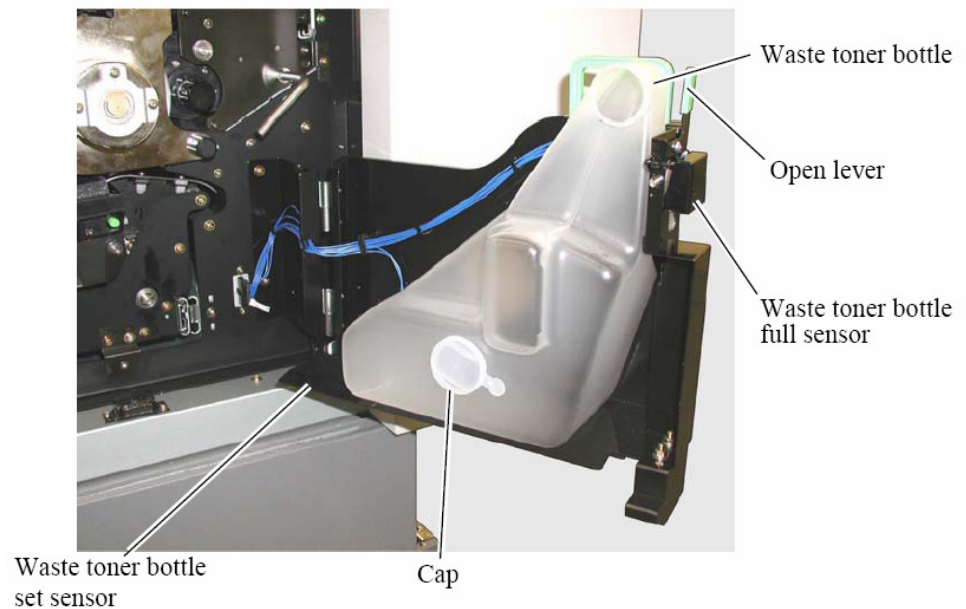


Fig. 6.3.b Waste Toner Bottle unit opened

3. Close the filled waste toner bottle using the cap located at the center of the waste toner bottle (compare figure 6.3.b and figure 6.3.c).

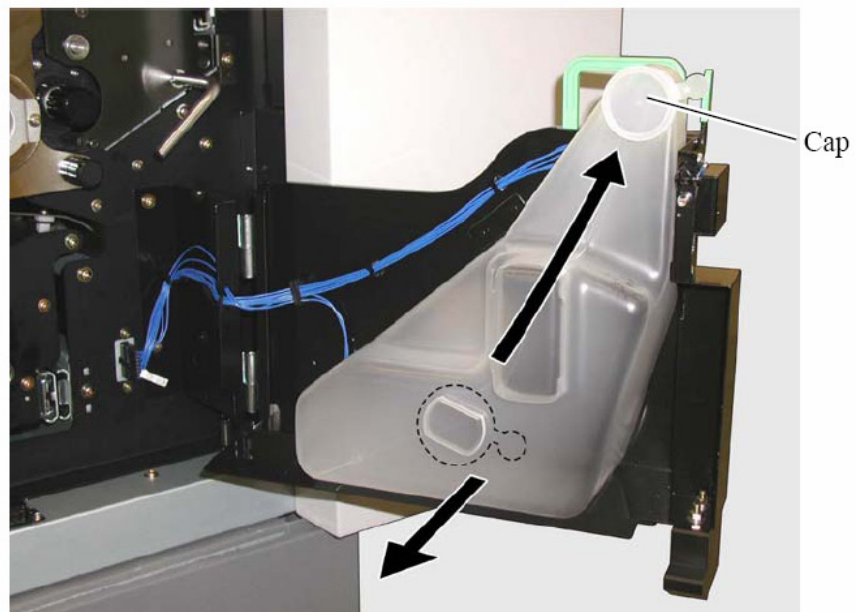
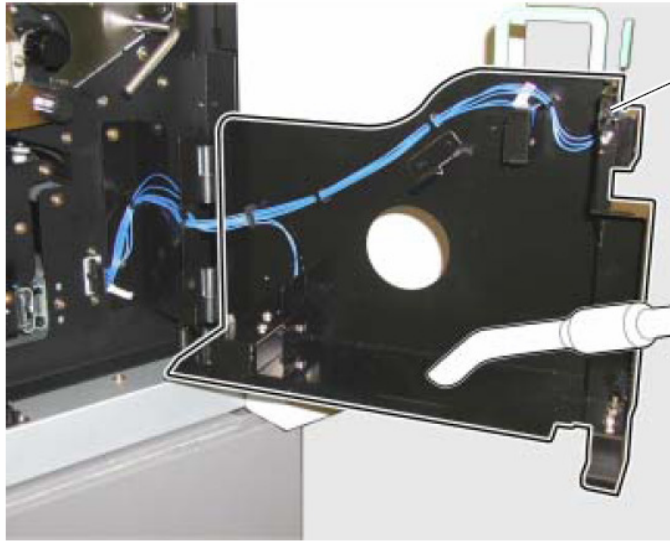


Fig.6.3.c Using the cap to close the filled bottle

4. Remove the old waste toner bottle from the printer (compare lower arrow in figure 6.3.c).
5. Remove all toner residues, paper dust etc. in the area of the

waste toner bottle unit with an anti-static service vacuum cleaner.



6.3.d Cleaning the inside of the waste toner bottle unit

6. Take a new waste toner bottle and insert this bottle into the waste toner bottle unit.

7. Close the waste toner bottle unit. Make sure the bars click into place.

8. Close the printer's front cover.  
Make sure the front cover is completely closed.



The announcement [Toner Waste !] will be extinguished.

The waste toner is easily combustible and should never come in contact with fire. Disposal will be carried out by your service engineer. Until disposal please store the old waste toner bottle in a vinyl bag in a closed cardboard box.

## 7. Troubleshooting



When an error occurs, a corresponding error message is displayed in the control panel (see section 7.3).

Please address the problems described in section 7.1 to 7.3 yourself, especially the consumable replacement.  
Please regard the following subjects if an opening of the printer becomes necessary:



- While operating the printer components inside the device will heat up. Take care that you do not burn your fingers when removing a paper jam.
- Make sure all covers of the device are completely closed afterwards.



Any others but the troubles described in the following sections are only to be repaired by an authorized operator or a service engineer.  
When reporting a problem to your service engineer, please give him the exact error message (descriptions on the following pages). That helps to localize the error more quickly.



If an error message indicates a paper jam, a print repetition will be necessary.

The printer is provided with an automatic jam safety routine to prevent a loss of information.

This automatic jam safety routine can also be switched off, if the user wants to take up the print job at a passage chosen by himself (see section 5.6 Clearing the Input Buffer).

### 7.1. Error during the Print Process

<u>Defect</u>	<u>Remedy</u>
Printer does not work	<ul style="list-style-type: none"><li>- Check the power supply, switch on the device.</li><li>- Make sure all covers of the device (e.g. the front cover) are completely closed.</li><li>- Pay attention to the panel messages (see section 7.3).</li><li>- Check if the paper has been inserted correctly (see chapter 3).</li></ul>
Frequent paper jams	<ul style="list-style-type: none"><li>- Make sure all paper is removed from the paper path after a paper jam.</li><li>- Pay attention to all information in section 7.4: Paper Jam Removing</li></ul>

If the remedies above are not successful or there is an error message that is not described on the following pages please switch off the device and contact a LASER GMBH authorized service engineer. PSI



## 7.2. Reduced Print Quality

<u>Defect</u>	<u>Remedy</u>
One side of the printout too light	- Adjust the horizontal position of the printer.
Printout too light	<ul style="list-style-type: none"> <li>- If the message [Toner Empty! ] is displayed: Replace the toner cartridge (see section 6.2: Replacing the Toner Cartridge).</li> <li>- Do not use damp paper.</li> <li>- If you want to print on special paper: please choose a more appropriate paper type if necessary.</li> <li>- Check the environment conditions and change them if necessary. Pay attention to the admissible values for atmospheric humidity, temperature etc, see also section 2.3: Environment and Power Standards.</li> </ul>
Toner residues on the printouts	- Clean the printer (see section 6.1: Printer Cleaning).

If the remedies above are not successful, please call a PSI LASER GMBH authorized service engineer.

Hint: Fanfold material cannot be printed in the area of the sprocket holes, even in the distance up to 5mm around the sprocket holes a reduced print quality has to be expected.

### 7.3. Error Messages

In the following the individual error messages that may appear on the display are shown in the following systematic manner:

[Error message] [Error code	]	Short description Remedy
[COVER OPEN! [E0001	]	The front cover has not been closed completely. Please close it completely.
[PAPER END! [E0002	]	There is no more fanfold paper on the tractor. Replace the fanfold paper (see chapter 3).
[PAPER JAM! [E0003	]	Paper jam in the fusing section. Remove the jammed paper (see section 7.4).
[PAPER JAM! [E0004	]	Paper jam behind the fusing section. Remove the jammed paper (see section 7.4).
[PAPER JAM! [E0005	]	Paper jam in the exit unit. Remove the jammed paper (see section 7.4).
[PAPER JAM! [E0007	]	1) Knob "A" (scuff roller) is free. Turn knob "A" counterclockwise to lock (see section 7.4.2). 2) The paper path is open. Use the lever (located left side of knob "A" in a distance of about 3cm; compare section 7.4.2) to close the paper path.
[PAPER JAM! [E0011	]	There is still paper within the separator unit. Remove the paper (compare section 7.4).
[PAPER JAM! [E0012	]	There is still paper within the fuser unit. Remove the paper (compare section 7.4).

[PAPER JAM]	]	There is still paper within the exit unit. Remove the paper (compare section 7.4).
[E0013]	]	
[PAPER JAM]	]	Paper jam within the feeding unit. Remove the jammed paper (compare section 7.4) and press the key PARK FANFOLD.
[E0016]	]	
[TONER WASTE]	]	The waste toner bottle is full. Replace the bottle with a new one (see section 6.3).
[E0028]	]	
[TONER WASTE]	]	There is no waste toner bottle within the unit. Insert a waste toner bottle (see section 6.3).
[E0029]	]	
[TONER EMPTY]	]	There is no more toner within the cartridge. Insert a new toner cartridge (see section 6.2).
[E002A]	]	
[PAPER TRAY FULL]		The (optional) power stacker is full. Please remove the paper.
[E0056]	]	
[STACK ERROR!]	]	X = 4,5,7,8,9,A,B,C An error occurred at the (optional) power stacker. The number "X" indicates, what kind of error occurred (see section 7.3.1).
[E005X]	]	

### 7.3.1. Error Codes

The following printer errors will be displayed in the panel by a hex number only and the additional word "ERROR".

Only a PSI LASER GMBH authorized operator or service engineer should address the printer problems listed in the following table (error code E009 and so on).

<u>Error code</u>	<u>Description</u>
E0001	Front cover open
E0002	No fanfold paper on the tractor
E0003	Paper jam within the fuser unit
E0004	Paper jam behind the fuser unit
E0005	Paper jam in the paper exit
E0007	Paper Transport roller is free (knob C) or paper path is open
E0008	Paper path is open
E0009	Transport motor does not work normally
E000A	Cut motor does not work normally (at the front)
E000B	Cut motor does not work normally (at the rear)
E000C	Transport motor does not work normally (no up position)
E000D	Transport motor does not work normally (no down position)
E0011	Paper does not leave the separator unit
E0012	Paper does not leave the fuser unit
E0013	Paper does not leave the paper exit
E0014	Tractor speed is not normal (too fast)
E0015	Tractor speed is not normal (too slow)
E0016	Position of fanfold paper is not normal
E0017	High voltage providing is not normal
E0018	Drum motor does not work normally
E0019	Surface potential is not normal (too high)
E001A	Surface potential is not normal (too low)
E001B	Locking device is defect (locking signal for the tractor cannot be released)
	Flash power is not normal
E001E	Flash is missing
E001F	Fuser unit is too hot
E0020	Cleaning unit is missing
E0026	Waste toner bottle is full
E0028	Waste toner bottle is missing
E0029	No toner
E002A	

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<u>Error code</u>	<u>Description</u>
E002B	Toner density is not normal (too high)
E002C	Toner density is not normal (too low)
E0032	LED head is too hot
E0038	RAM is not normal
E0039	Exeption interruption is not normal
E003A	Bus error
E003B	Address error
E003C	Undefined order
E003D	0 Division interruption
E003E	CHK order interruption
E003F	TRAPV order interruption
E0040	TRAP interruption is not used
E0041	Auto vector interruption is not used
E0042	Null task
E0043	Monitor overrun
E0044	Privileged command
E0045	Spurious command
E0046	Interruption during interruption vector initializing
E0047	Macro error
E0048	Communication error with the controller (overrun error)
E0049	Communication error with the controller (parity error)
E004A	Communication error with the controller (framing error)
E004B	Communication error with the controller (command error)
E004C	Video data input error
E004D	No power supply for the controller
E0050	Communication error at the power stacker (overrun error)
E0051	Communication error at the power stacker (parity error)
E0052	Communication error at the power stacker (framing error)
E0053	Communication error at the power stacker
E0054	Error at the locking device of the power stacker
E0055	Fanfold paper is not folded
E0056	Stacker is full
E0057	Stacker is not ready
E0058	No auto mode
E0059	Stacker capacity is exceeded
E005A	Motor rotation is not normal
E005B	Power stacker is active
E005C	Error at the stacker

## 7.4. Clearing Paper Jam

Operation steps for clearing a paper jam are described in this paragraph.

Please note:



- The fuser unit and the components next to it become very hot.  
Because of this let the printer cool down first.
- To avoid soiling your clothes please be especially careful with the components carrying toner.



Please regard the following information to avoid resp. remove a paper jam:

- Check if the paper has been inserted correctly  
(see chapter 3).
- Check if the paper is impeccable (crushed or damped paper must not be inserted).
- The jammed material only has to be removed carefully out of the printer.
- The paper has to be removed completely from the paper path.
- Close all parts of the printer cabinet correctly.
- Press the ON LINE key to continue printing.

### 7.4.1. Paper Jam at the Tractor

1. Open the two green tractor cover plates (by positioning them into the upright position).

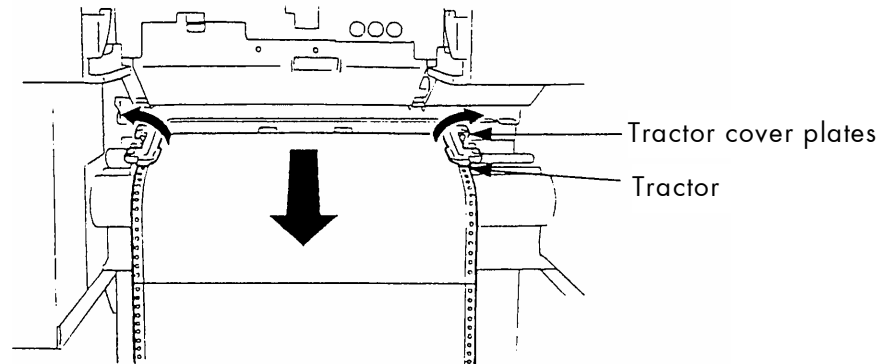


Fig. 7.4.1.a Opening the tractor cover plates

2. Remove the jammed paper. Crushed sheets must be disjoined at the perforation.
3. Pull the paper only in transport direction out of the printer.
4. Insert paper if necessary (see chapter 3).



Please do not push the paper beyond the tractor into the device to avoid reaching the Paper Jam Sensor.

### 7.4.2. Paper Jam inside the Printer



The components of the fuser unit and the transport unit can get hot. Please wait until they have cooled down.

1. Open the printer's front cover.
2. Push down the open lever of the waste toner bottle unit, pull the green handle and open the unit.

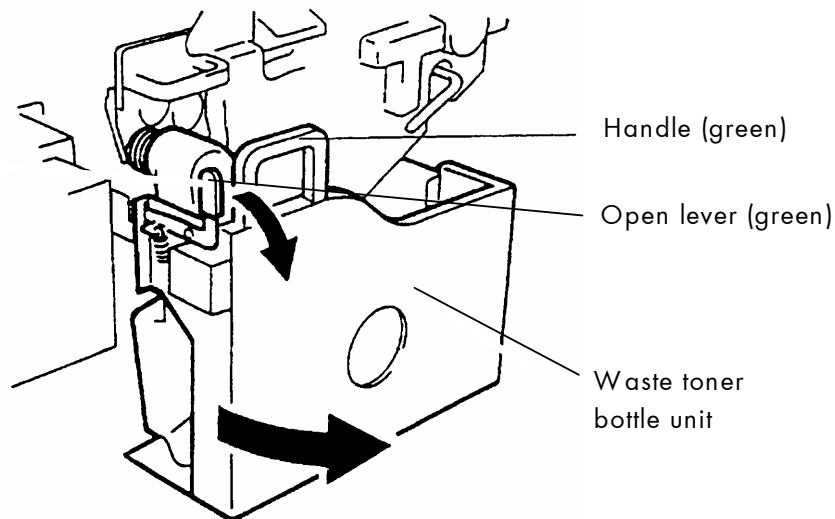


Fig. 7.4.2.a Opening the waste toner bottle unit

3. Swivel the lever of the transport unit to the left (as shown in figure 7.4.2.b).  
The transport path will be shifted down. Do not pull out the transport unit.



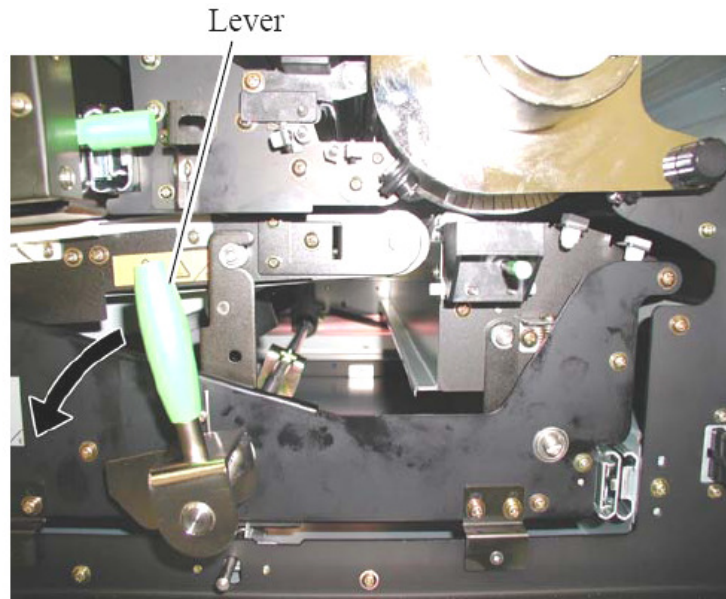


Fig. 7.4.2.b Swivelling the lever of the transport unit



4. Look for jammed paper in the transport unit and then perform the following working steps if need be.

Please note: If you have to pull paper out of the printer, this has to be done in transport direction only.

5. Rotate knob "A" clockwise (as shown in figure 7.4.2.c) to release the scuff roller.

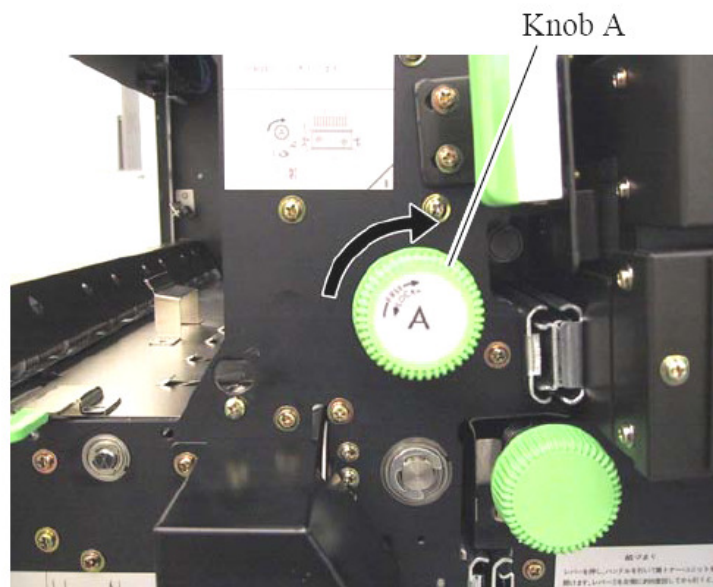


Fig. 7.4.2.c Releasing the scuff roller

6. Open the two green tractor cover plates (by positioning them into the upright position).

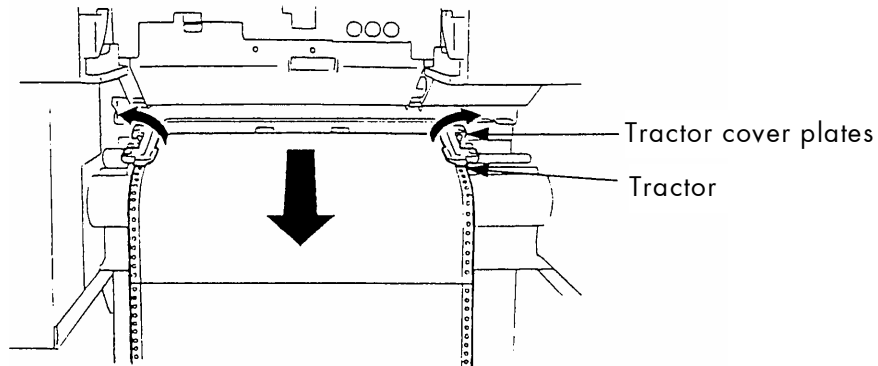


Fig. 7.4.2.d Opening the tractor cover plates

7. Remove the jammed paper reachable from this input side of the printer. Crushed sheets must be disjoined at the perforation.
8. Now remove the jammed paper from the printer's output side by pulling it out as shown in the following figure.

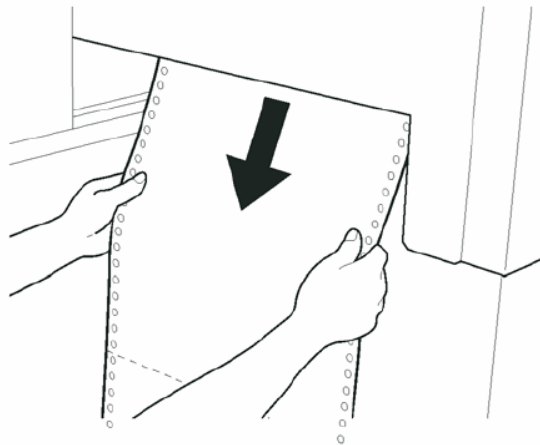


Fig. 7.4.2.e Removing jammed paper from the printer's output side



The paper has to be removed completely from the paper path.  
 Remaining pieces of paper can cause paper jams.  
 Remaining paper in the area of the fuser unit may even cause fire.

9. After having removed the jammed paper:

- Rotate knob "A" counterclockwise (compare figure 7.4.2.c) to lock the scuff roller.
- Swivel the Lever of the transport unit to the right (see figure 7.4.2.f). The transport path will be shifted up.

Pay attention to the second bar of the transport unit located under the Lever - it also has to click into place (second bar up).

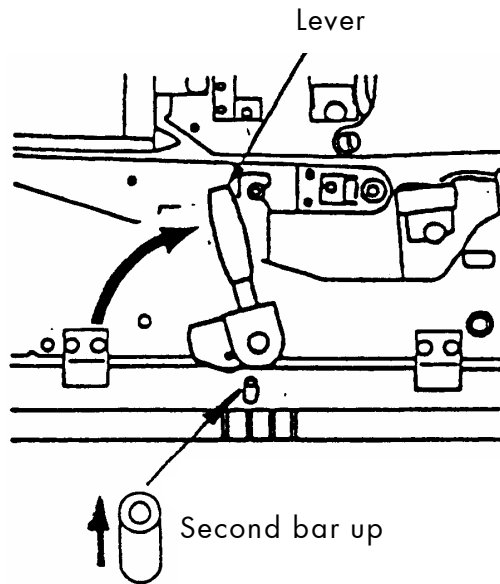


Fig. 7.4.2.f Second bar of the transport unit

Both locks of the transport unit have to be engaged to avoid damaging the printer.

- Close the waste toner bottle unit.
- Close the printer's front cover.

10. Insert paper if necessary (see chapter 3).



### 7.5. Print Repetition after an Error

The printer is provided with an automatic jam safety function to prevent a loss of data.

When an error occurs, all the pages on the paper path will be printed again. This ensures that no data will get lost.

The exact number of pages to repeat depends on the format length and the position where the error occurred on the page.

This automatic jam safety function can be switched off (by changing the EEPROM - configuration) if the user wants to resume the print job at a position he chooses himself.

In addition to this see panel function Clearing the Input Buffer (section 5.6).

## 8. Measures for Transport and Shipping (Repacking)

The Printer is shipped with special packing material and fixing measures.  
It is recommended to store the boxes and those packing materials.



**In case of further shipping or returning of the products they must be repacked in the original way in order to avoid damaging during transportation.**

The following list gives you an overview of the working steps necessary for repacking. Pay attention to the notices located on the products and the hints given in the Service Manual as well.



If you are not familiar with any of the working steps please ask your service engineer or your supplier.

- Remove the printer's optional devices  
(for example: feeder, stacker, cassettes ...).
- Remove the Waste Toner Bottle from the printer and seal it.
- Remove the Developer Unit.  
Close carefully the toner input and output holes  
(for example using paper stripes sealed with adhesive tape).  
Put the Developer Unit into its original box.
- Remove the Drum from the printer and pack it lightproof into its original box.
- Lock all moveable parts of the printer (use all original transport safety devices, adhesive fasteners and so on).

Repack all items in their original packing material and ship them in the original boxes.



## 9. Specifications

Print technology:	LED array electrophotographic system, flash fusing system based on a Xenon
Print speed:	up to 110 A4 pages per minute in the Two-Up mode
Resolution:	300/600 dpi (dots per inch, horizontal and vertical)
Warm-up time:	60 seconds max.
Paper weight:	64 - 209 g/m <sup>2</sup> (wood-free paper) 64 - 105 g/m <sup>2</sup> (wood-free labels)
Paper size:	width: 7" (17.8 cm) to 18" (45.7 cm), 17" printable *) length: 7" (17.8 cm) to 20" (50.8 cm)
Interfaces:	parallel: IEEE 1284 (Centronics), (MP-BUS, SPS-Control, optional) LAN: Ethernet 10/100 Mbit (TCP-IP) Optional: LAN: Ethernet (SPX-IPX, LAT), Token Ring Host: IBM SCS / IPDS (Twinax/Coax), Siemens (BAM/SS-97)
Size:	1310 mm (H) x 1100 mm (W) x 870 mm (D) (measurements without options and the control panel)
Weight:	about 320 kg
Noise level:	operation: ≤ 68 dB(A) stand by: ≤ 53 dB(A)
Environment:	temperature: +10°C to +30°C (50°F to 86°F) operating - 10°C to +35°C (14°F to 95°F) non-operating relative atmospheric humidity: 30% to 80% operating 10% to 80% non-operating

\*) Hint: Fanfold material cannot be printed in the area of the sprocket holes, even in the distance up to 5mm around the sprocket holes a reduced print quality has to be expected.

Mains connection:	120 V AC / 60 Hz North America 200 up to 240 V AC, 50 Hz / 60 Hz Europe, United Kingdom e.g.
Power admission:	apparent power max. 6.2 kVA (max. 0.3 kVA standby) max. 5.6 kW effective
maximum permissible system impedance $Z_{\max}$ :	0.007 + j0.004 Ohm





### 3. Spare parts

Spare parts are exchanged by the service engineer, when they fail.

Examples for spare parts are:

- couplings
- electronic assemblies
- rollers

Depending on the application some parts may change categories under certain circumstances. If for example very rough paper is used, the rollers can become an (application specific) wearing part.

It's a fact, that the right time to exchange a component depends not only on the failure of a component but also on a possible loss of print quality in the printouts.

**MNPSQ** = Mean Number of Prints with Specified Quality (**SQ**).

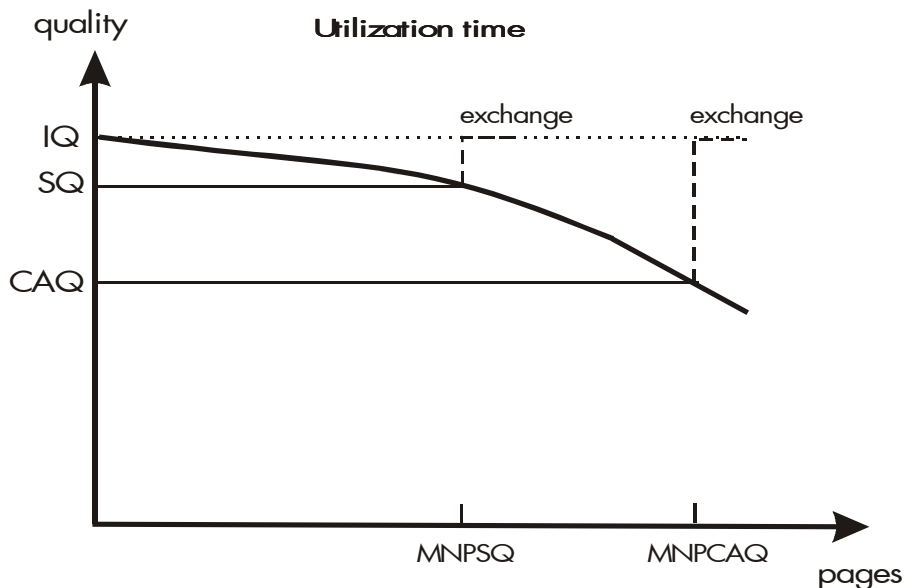
This value is often associated with "Lifetime". This term is not correct. MNPSQ describes the period of time in which a defined print quality is maintained.

The print quality is determined by the values for

- print density
- background darkness
- homogeneity

The value **IQ** (Initial Quality) is used to designate the print quality that is reached with a new printer.

**CAQ** (Customer Acceptable Quality) is a purely subjective lower limit which a respective customer is willing to accept the print quality. An exchange of parts is only then necessary even if the MNPSQ is already exceeded.



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## 10. Index

### A

apparent power 17

### C

cancel job 42  
CE - conformity 10  
character spacing 68  
characters per inch 68  
check list 13  
cleaning 73  
configuration 28, 35, 56  
connect, printer to a PC 23  
contents 3  
control panel 9, 24, 28  
control panel elements 25  
conventions 9  
COVER OPEN! 90

### D

danger 9  
data interface 50  
density 68  
detergent 74  
diagrams 34  
**display** 25  
display language 53  
disposal 79, 84  
DOWN key 31, 32  
drum counter 73

### E

emergency power-off 12  
Emulation 51  
environment 16, 103  
ERROR - LED 25  
error codes 92  
error messages 87, 90  
extended menu 31

### F

factory default 56  
fanfold paper 7, 103  
first installation 13

flash fusing 7  
font bank 36  
Font List 37  
font number 57  
fonts 39, 57  
FORM FEED 41  
FORM FEED key 26  
FORM LENGTH key 26  
front cover 14

### H

Hexdump 40  
humidity 103  
humidity, relative atmospheric 17

### I

IDOL 54  
image shifting 63, 65  
input buffer 55  
input buffer clearing 42  
installation 13  
interfaces 14, 50, 103  
IP address 70

### K

knob 99

### L

language 53  
LED (light emitting diode) 9  
LED announcements 25  
LINE FEED key 26  
line spacing 67  
lines per inch 67  
LOAD FANFOLD key 26  
loading paper 19

### M

mains connection 104  
material width 45  
measures, transport 101  
memory distribution 55  
MENU key 26, 32, 33  
menu page 43  
menu structure 30

**N**

network parameters 70  
noise level 103  
normal print mode 41

**O**

OFF LINE 30  
**ON /OFF LINE switching** 29  
ON LINE - LED 25  
ON LINE key 26, 31, 33  
operation 23, 29  
operator maintenance 73

**P**

packing materials 13  
page description language 54  
page format 47  
page length 45  
panel display 29, 34  
panel functions 35, 43  
panel keys 26, 31, 34  
PAPER END! 90  
paper handling 19  
paper jam 87, 94  
PAPER JAM! 90  
paper near end sensor 19  
paper sensor 19  
paper size 7, 45, 103  
paper weight 103  
paper width 45  
PARK FANFOLD key 26  
permanent configuration changes 32  
permanent function changes 28  
power on 23, 29  
power source 17  
power standards 16, 17  
power switch 14  
print density 106  
print direction 49  
print pages per page format 47  
print quality 106  
print repeat 87, 100  
print resolution 38  
print speed 7, 103  
print technology 7, 103

printer view 14  
printing basics 8

**R**

radiation 10  
READY - LED 25  
**reduced menu** 30  
repacking 101  
required space 16  
resolution 7, 38, 103  
returning 101

**S**

safety information 10  
SAVE key 31, 32  
shipping 101  
size 103  
Sliding Pattern 44  
**spare parts** 106  
specifications 103  
status sheet 35  
symbol code 60

**T**

temperature 17, 103  
temporary function changes 28  
TEST key 26  
text margins 62  
text orientation 60  
toner cartridge replacing 79  
TONER EMPTY! 79, 91  
toner refilling 79  
TONER WASTE! 91  
tractor 14, 19, 95  
tractor bars 19  
tractor cover plates 19, 95  
Transparent Code 54  
transport 101  
troubles 87  
two-up mode 47

**U**

UP key 31, 32

**V**

ventilation 17

---

**W**

warm-up time 103

waste toner bottle 84

weight 103