# SOLID T8

# SOLID T6

# SOLID T5

# SOLID T4

Operator's Manual

Edition 2.0M★

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# 1. Introduction

## 1.1. General Description

The SOLID T4, SOLID T5, SOLID T6 and SOLID T8 are multifunctional non-impact printers based on thermal print technology.
The devices can be used for thermal transfer printing as well as for thermal direct printing. Because of their wide range of application, you can use them to print all kind of information as barcodes, alphanumerical characters and vector graphics e.g. .
Each of these devices not only knows one device-specific page description language as standard thermal printers usually do, but most of the languages used in the industrial field and the well-known market standards of laserprinters, too.

The SOLID T4, SOLID T5, SOLID T6 and SOLID T8 are all provided with a controller that is also used in SOLID laserprinters. So the advantages of the thermal print technology are combined with the flexibility of the „laserprinter intelligence“.

For the printers SOLID T4, SOLID T5, SOLID T6 and SOLID T8 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.

Data can be sent without programming expenditure from almost any software platform, because printer drivers are already available for this.

The capabilities featured include the MICROPLEX 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).

The resolution is 300 dots per inch corresponding to about 12 dots per millimeter.
The print speed is 100 to 300 mm/second.
Roll-fed media as well as continuous-media can be printed on.
The maximum processable width of media is 254 mm (SOLID T8). 213 mm of that are printable.

## Fundamentals of Thermal Printing

The thermal print technology enables a quiet and fast print process with a high resolution output. The printhead produces the image by heating single elements (dots). So you need a special ribbon (thermal transfer printing) or a special kind of paper (thermal direct printing).
While thermal transfer printing the dots touch the thermal ribbon so that the heating of particular dots leads to a partial melting of the ribbon. Due to the contact with a media (future carrier of the information, for example paper) this leads to a transfer of the image onto the media.
While thermal direct printing the dots touch the thermal paper directly. The dyes and developers within the paper respond to the heat of particular dots, change their colour to black and so the wanted image emerges.

The SOLID T4, SOLID T5, SOLID T6 and SOLID T8 can all be used for both methods of printing.

## 1.2. Conventions

To find the requested information more quickly and to understand instructions more easily, the following conventions are used:

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).

## 1.3. CE - Conformity

The manufacturer hereby declares that the device 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 Regulations

### FCC-Instructions

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

This device complies with the FCC-rules and regulations class B (subject J, part 15) corresponding to high frequency interferences.

This MICROPLEX 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 appropriately grounded.

- Install the device on solid and level ground.

- Only trained staff are authorized to transport the equipment.

- Only use consumables which are specially developed for this device.

- Using unsuitable consumables may cause a reduction of output quality or damages 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 remove or bridge over any safety device.

- Do not push anything into the ventilation apertures.

- Never carry out installations, cleanings or maintenance operations which are not described in this manual. This should only be done by MICROPLEX authorized service personnel.

- Be careful when operating equipment with opened cover hoods (setting-up work or service). Rotating parts **can cause injury** , and it is also possible for hair, clothing, jewellery, etc. to be caught in the machinery.
  Ribbon and material should only be inserted and changed by specially instructed personnel.

- Optional device components may only be installed by authorized personnel, and in accordance with the appropriate assembly and usage regulations.
- The cutter may only be installed by trained personnel.
- Only attach or remove the printhead when the device is switched off.
  After switching off the device, wait at least 3 minutes before removing the printhead.
- Only plug in or remove interface connectors when the device is switched off.

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

- For connected printers with plugs, 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.
- After switching off the device, wait at least 15 seconds before the device is switched on again.

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

# 2. Installation

## 2.1. Check List

First of all place the printer and the accessories onto a level surface until the definitive location is chosen.

Please make sure that all items are included and that there are no defects.
Immediately inform your supplier of any damage.
Open the cardboard box carefully and check the contents:

1. Printer SOLID T4, T5, T6 or T8
2. Power cord
3. 1 Ribbon (Foil)
4. CD containing:
    - Operator's Manual for SOLID T4 / T5 / T6 / T8
    - Print drivers
    - IDOL Programming Manual

## 2.2. Printer Unpacking

1. Open the box and remove the parts lying on top.
2. Remove the foam covering.
3. Take hold of the SOLID printer from the bottom and lift it out the box carefully. (Get somebody to hold the box when removing the printer).

Do not use other parts of the printer (e.g. the cutter or the magazine ...) to lift the device!

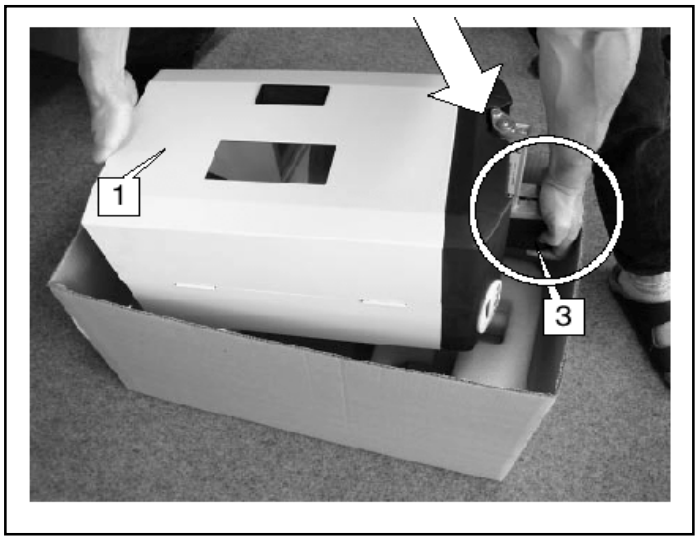



Fig. 2.2.a Lifting the printer out of the box

4. Set the device down.

Fig. 2.2.b Setting the printer down

5. Turn the device to the position in which it is to be used.

Fig. 2.2.c Printer turned to the right position

6. Place the printer onto a suitable base (see chapter 2.3).

Please retain the original packing materials in case the printer has to be transported in the future.

## 2.3. Printer Installation

- The chosen location should be well-ventilated, clean and dry.
- Damaging environmental factors such as metal vapors, oil mist, corroding lixivum or the like must not come into contact with the printer.
- Position the printer on solid and level ground.
- Do not exposure the printer to shocks or vibrations.
- The printer and socket have to be easily accessible.
- The printer should not be located near volatile or combustible materials (e.g. a curtain).

- The printer must be connected to an appropriate AC power source 120V AC/60 Hz (North America) or 230V/50 Hz (Europe, United Kingdom e.g.). The power source must be properly grounded. The socket and power cords must not be damaged.
- Use the printer only within the allowed fluctuation range of ±10%.
- The voltage support must not be impaired by interference.

- In order to run the printer reliably, please maintain the following environmental conditions:

  Temperature: +5°C to +35°C (operating)
  -20°C to +70°C (storage temperature)
  Relative atmospheric humidity: 45% to 75% (without condensation)

- Do not expose the printer to abrupt temperature changes (heating, window or air condition).
- The printer should not be exposed to direct sunlight.

## 2.4. Printer Components

Main view:

Fig. 2.4.a Main view of the printer

Rear view:

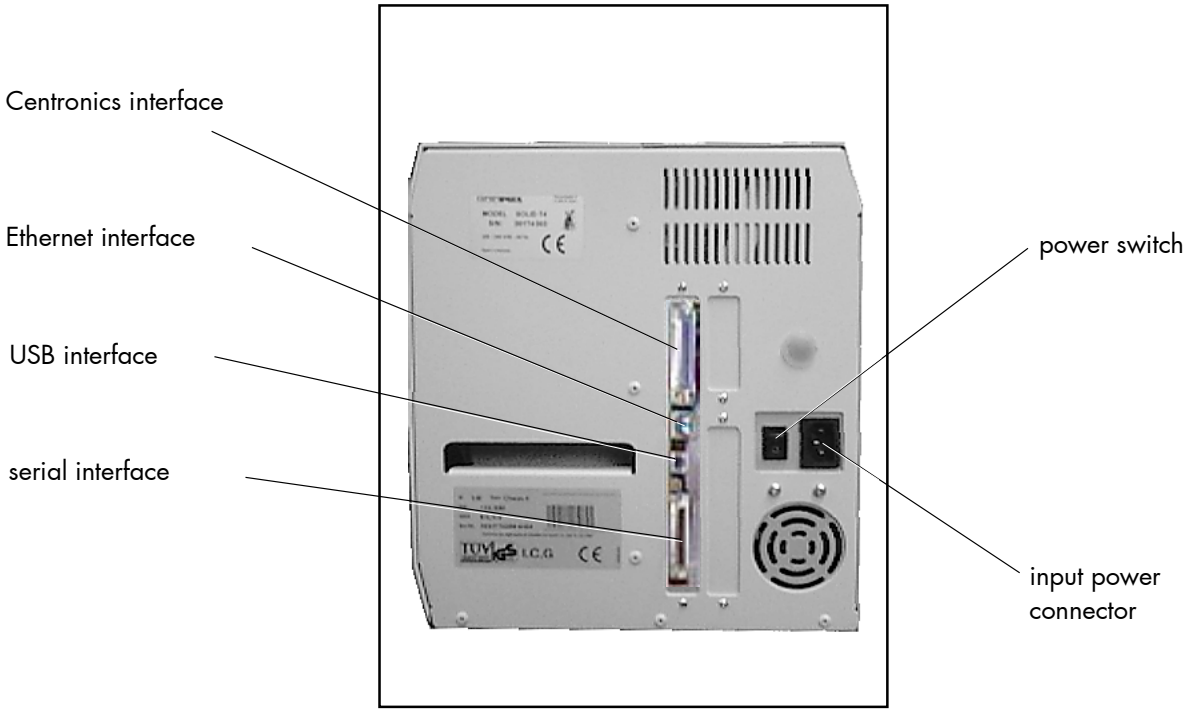
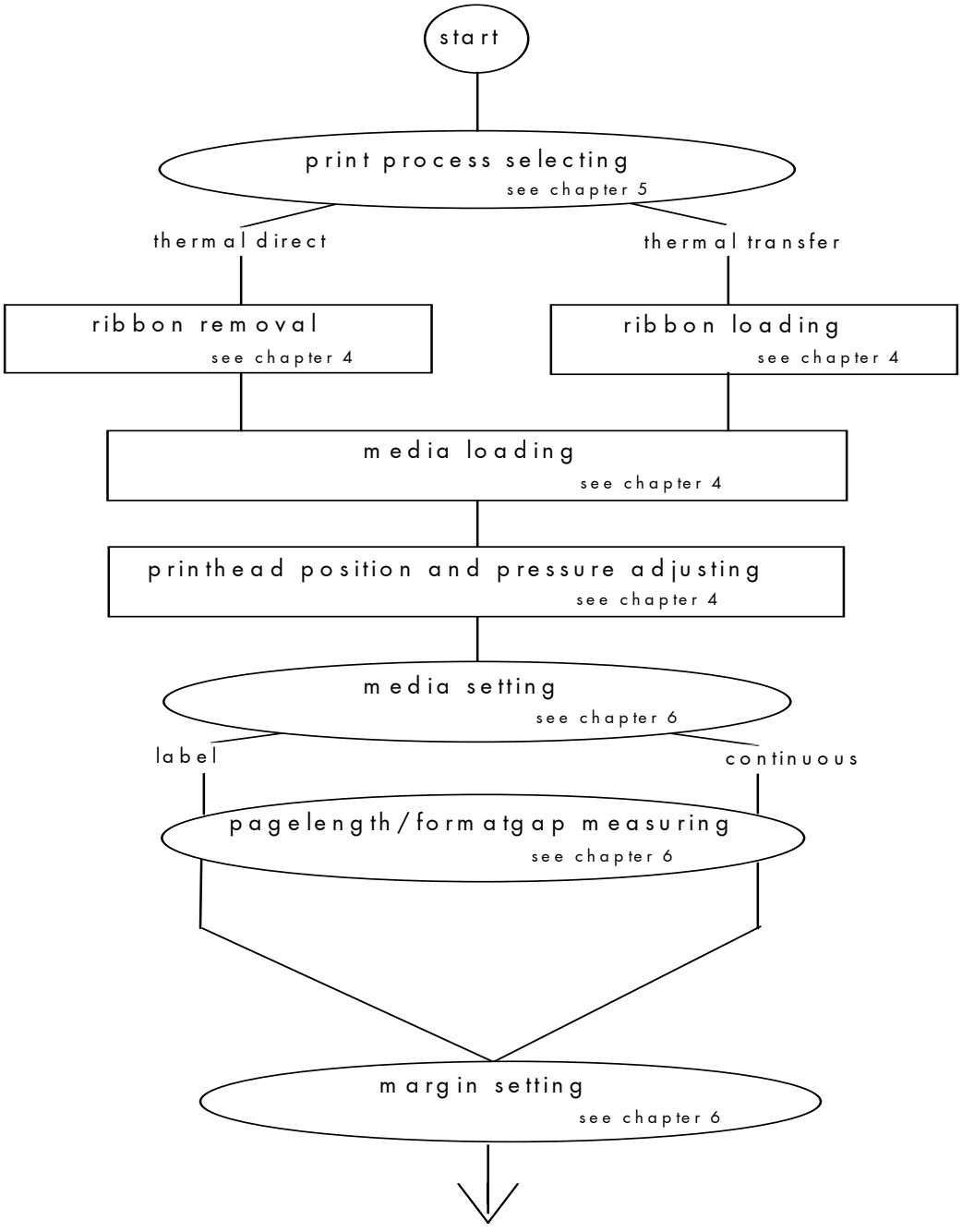



Fig. 2.4.b Rear view of the printer

# 3. Basic Operation Sequences

## 3.1. Overview



If the panel settings above shall be effective permanently (that means they do not have to be put in again after a printer OFF/ON) the setting values can be saved permanently by operating the ON LINE ↵ key three times.

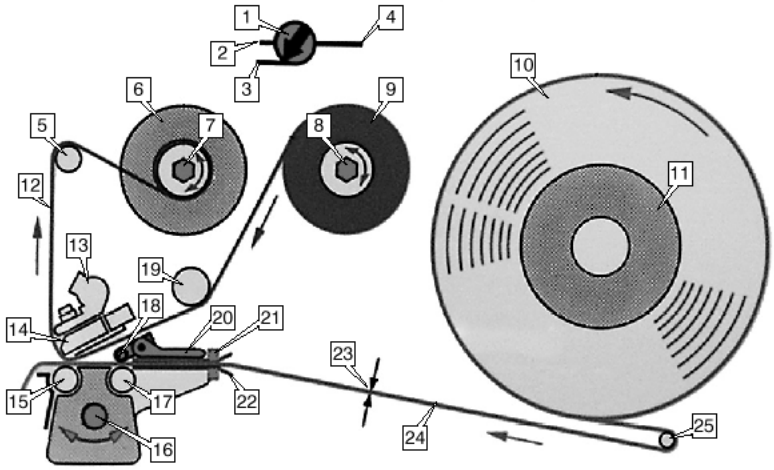
The output of the actual setting values can be effected by activating the panel function "Printing the Status Sheet " (see chapter 6.6).

Detailed information on the operations above and to further functions of the printers SOLID T4, T5, T6 and T8 can be found in the following chapters.

## 4. Handling of Consumables

For thermal direct printing it is not allowed to load a ribbon to avoid damaging the printhead. Make sure your settings using the control panel and display respectively via interface (see chapter 5 and 6) fit to the printer implementation (ribbon inserted /not inserted).

### 4.1. Winding Diagram




The diagram above shows the usual winding directions of material and ribbon.
Always follow this diagram when inserting/changing material and ribbon.
Also pay attention to the instructions located on the inside of the device hood.
Ribbon and material should only be inserted/changed by specially instructed personnel.

| **Designation of the parts** | |
|---|---|
| 1 Setting screw, printhead contact | 14 Printhead (thermal bar) |
| 2 Setting – thin/narrow material | 15 Print roller |
| 3 Setting – medium material | 16 Sensor setting gap detection |
| 4 Setting – thick/wide material | 17 Feed roller |
| 5 Ribbon transport roller | 18 Pressure rollers |
| 6 Ribbon roll-up mandrel (ribbon mandrel left) | 19 Ribbon guide mandrel |
| 7 Setting – roll-up speed | 20 Fan lever for contact rollers |
| 8 Setting – unwind speed | 21 Material end photoelectric switch |
| 9 Ribbon unwinder with ribbon | 22 Material guide |
| 10 Material unwinder with material | 23 Material thickness |
| 11 Outer guide disc | 24 Material |
| 12 Ribbon | 25 Bouncer arm (not with SOLID T4) |
| 13 Head mounting | |

## 4.2. Roll-Fed Media Handling

### 4.2.1. Tear-Off Media Loading

To load roll-fed media for tear-off respectively for further external processing go on like this:

The tear-off roll-fed media is easier to insert if the end is gored before inserting as shown in figure 4.2.1.a (when using a new roll you should first remove the protection foil if necessary and discard one full turn of the media).

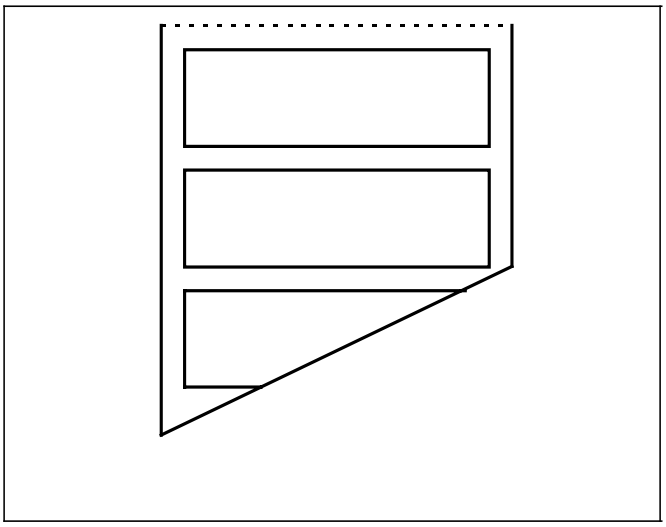


Fig. 4.2.1.a Goring the tear-off roll-fed media

1. Open the printer hood.

2. Switch off the printer.

3. Pull off the outer guide disc (1) of the unwinder (2) (see figure 4.2.1.b).

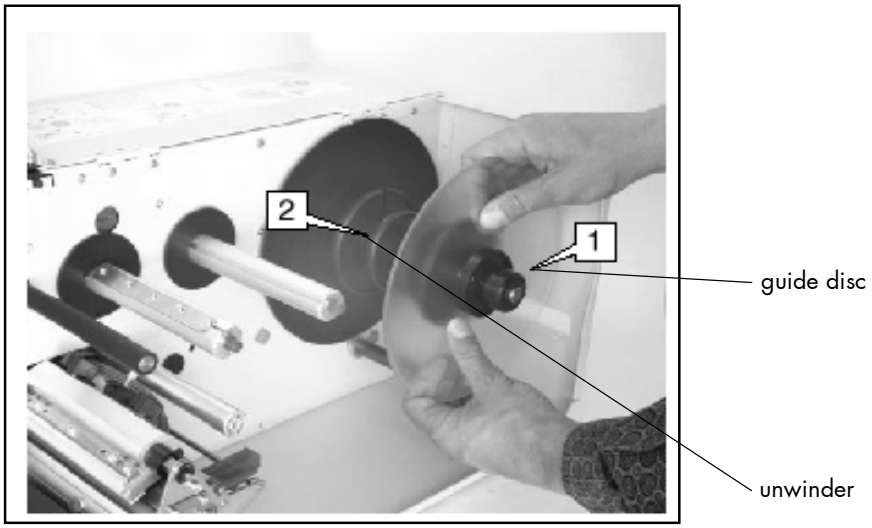



Fig. 4.2.1.b Pulling off the outer guide disc

4. The material roll should turn in an anti-clockwise direction when unwinding. Take the Tear-off roll-fed media and hold it in the corresponding way.

5. Push the material onto the unwinder with the appropriate adapter rings.

6. Push on the outer guide disc of the unwinder.

7. Lay the material around the bouncer arm (compare item 25 in chapter 4.1 Winding Diagram).

8. Set the material guide to the width of the label material. To do this loosen the thumb screw on the underside of the front material guide (3). Push the material guide to the side (if necessary). Tighten the thumb screw again.

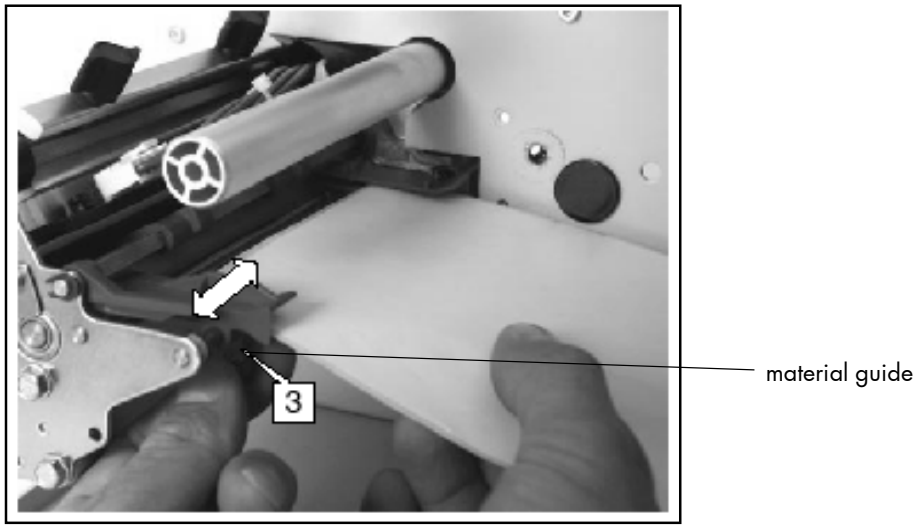



Fig. 4.2.1.c Setting the material guide

9. Press the red load lever (4) of the infeed to raise the contact rollers. Keeping the load lever (4) pressed down, push the beginning of the material through the material guide until it is underneath the printhead.

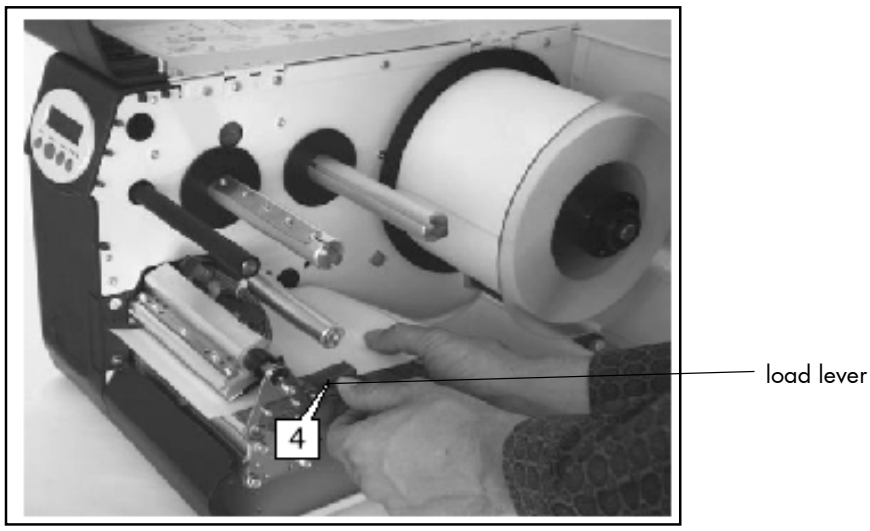



Fig. 4.2.1.d Inserting the material

10. Arrange the material so that it is drawn in straight. Position the contact rollers of the print unit, while pressing down the load lever, so that both rollers (5) sit symmetrically on the material.
(Notice: in figure 4.2.1.e the printhead has been removed to provide a clearer view)

Pay attention to the following safety instructions!

Safety instructions:

- The cutter (optional) can cause injuries if the printer is operated incorrectly.
- There is a danger of fingers, hair, clothing, jewellery etc. being drawn into the machine in the vicinity of the ribbon and material transport unit.

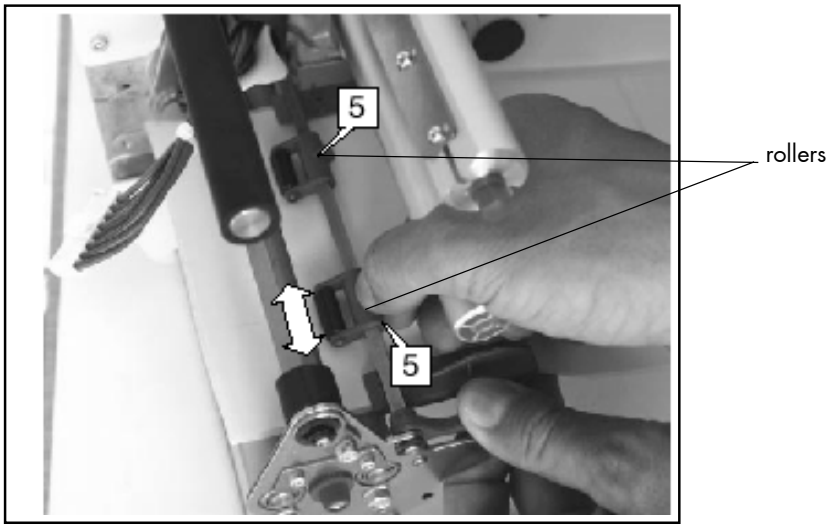



Fig. 4.2.1.e Arranging the material

11. Close the hood of the printer.

### 4.2.2. Media Removal

1. Switch the printer to OFF LINE mode.

2. Open the hood of the printer.

3. Press the lift lever to remove the material (see chapter 4.1: Item 20 in the Winding Diagram) and at the same time pull away the material to the rear.

The material can also be expelled from the rear of the printer module by using the panel function Paper Feed (see Menu Structure in chapter 5).

4. Rotate the media unwinder including the tear-off roll-fed media clockwise until the free end is winded up.

5. Remove the roll with the tear-off roll-fed media (if necessary protect the media against unintentional unwinding first).

6. Close the hood of the printer.

## 4.3. Handling of Ribbon (Foil)

### 4.3.1. Ribbon Loading

If you want to operate the printer in the thermal transfer mode a printer ribbon has to be used (compare chapter 1.1).

Make sure you always use a printer ribbon being wider than the media to print on. In the case of printing on abrasive media printhead damaging can be avoided this way.

To set the ribbon go on like this:

1. Open the printer hood.

2. Switch off the printer.

3. The ribbon unwinding should be performed counter-clockwise. Take the ribbon and slip it onto the ribbon mandrel (1) in the corresponding way until it stops.

4. Remove the protection foil if necessary (by unwinding it and cutting it off).

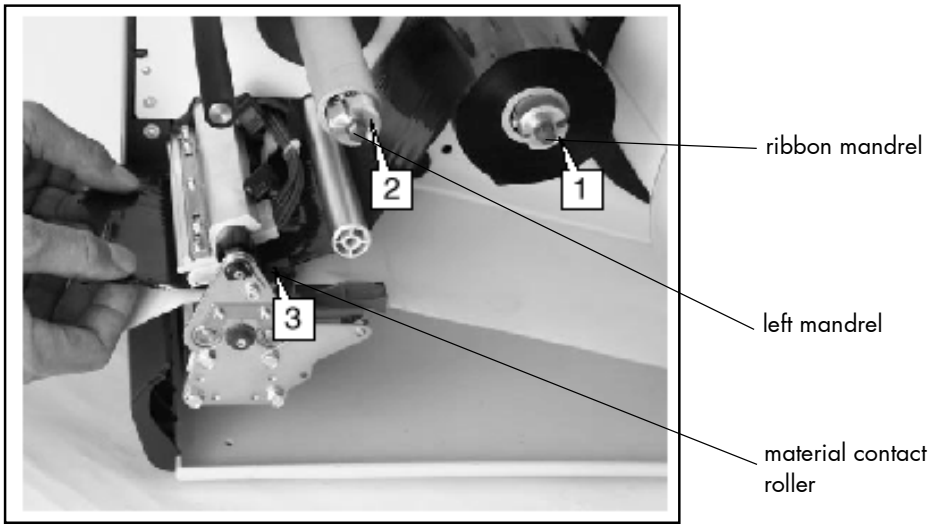



Fig. 4.3.1.a Feeding through the ribbon below the printhead

5. Place an empty ribbon sleeve onto the left mandrel (2).

6. Feed the ribbon end between the printhead bracket and the material contact roller (3).

7. Then pull up the ribbon and drape it over the guide mandrel (compare Fig. 4.3.1.b).

8. Feed the ribbon under the take-up mandrel (4) and secure it to the ribbon sleeve (turn up the ribbon once so that the adhesive part at the beginning of the ribbon can be used).

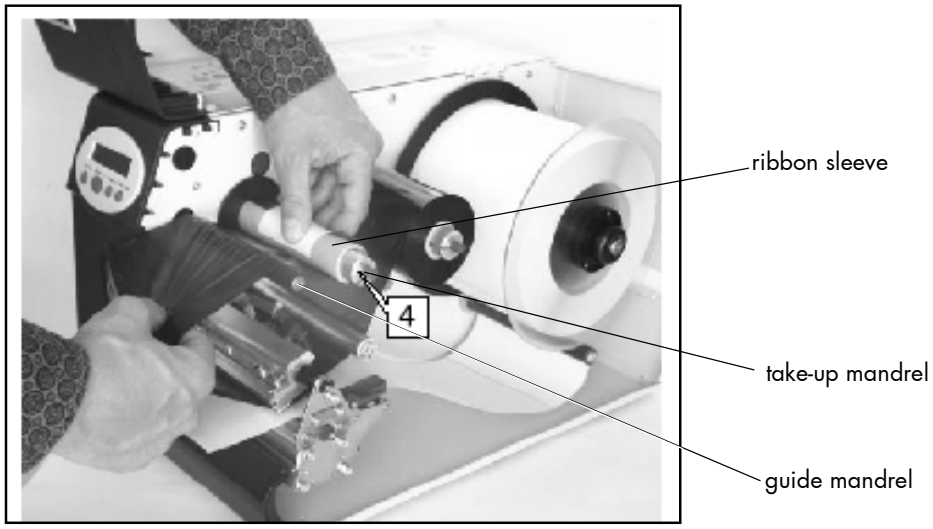



Fig. 4.3.1.b Securing the ribbon to the ribbon sleeve

9. Check that the ribbon has no folds and is running straight. If necessary, tauten the ribbon by turning the take-up mandrel in a counter-clockwise direction (5).

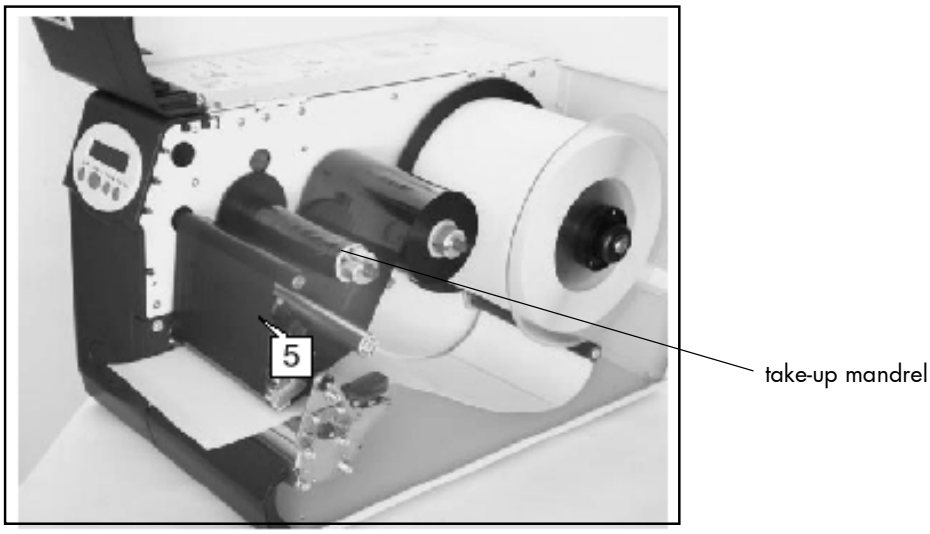



Fig. 4.3.1.c Tautening the ribbon by turning the take-up mandrel

### 4.3.2. Setting the Ribbon Tautness

The factory settings cover a large range of varying ribbon widths, nevertheless slight adjustment may be necessary when using very narrow or very wide ribbon.

The unwinding/roll-up torque has to be increased, when:
- the ribbon is slack or has folds or
- the ribbon is not wound up tightly enough on the roll-up mandrel.

The unwinding/roll-up torque has to be decreased, when:
- the ribbon stretches visibly or tears during printing
  or
- the ribbon is not transported properly.

The braking torque of the ribbon unwind mandrel (1) and the ribbon roll up mandrel (2) can be set from the front using the red plastic hexagonal nuts (3) on the ribbon mandrels.

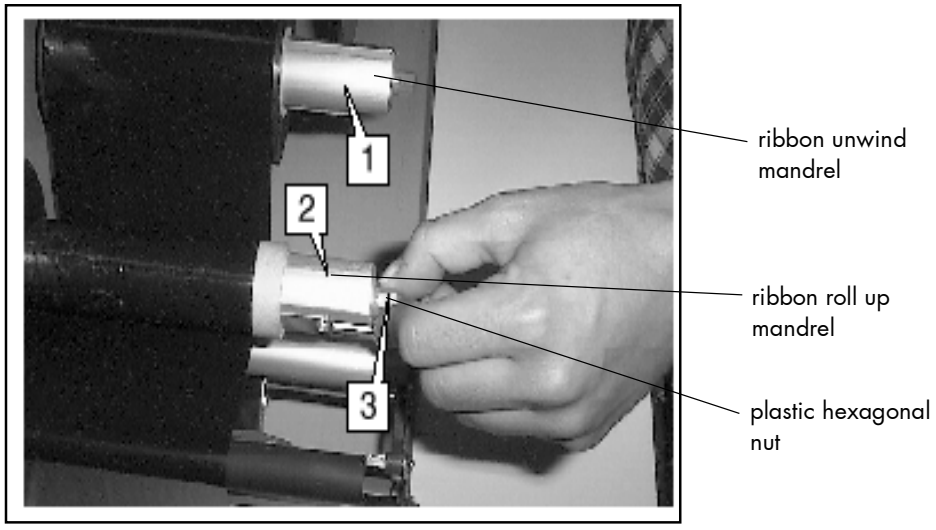



Fig. 4.3.2.a Setting the braking torque of the ribbon roll up mandrel

The braking torque is increased by turning them in a clockwise direction.

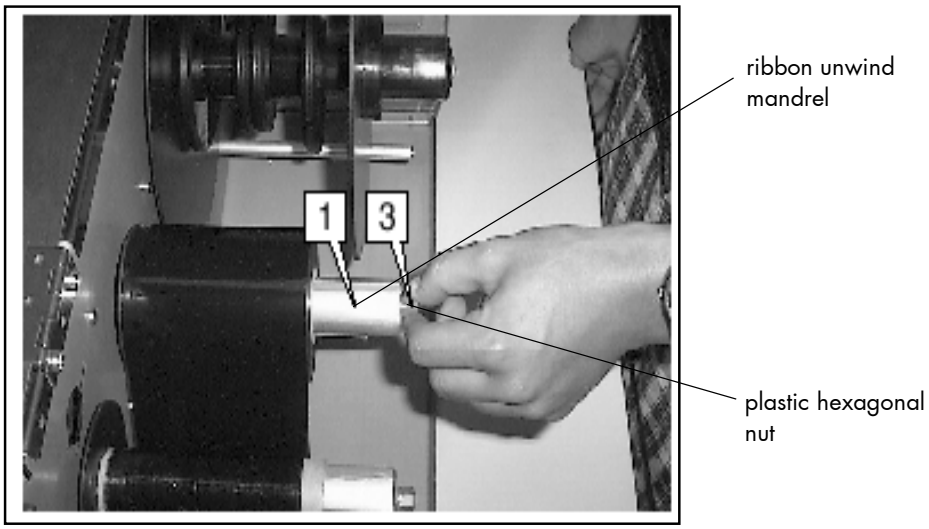



Fig. 4.3.2.b Setting the braking torque of the ribbon unwind mandrel

During feeding, the ribbon must run between the mandrels evenly and without folds over the entire length.

### 4.3.3. Ribbon Removal

The following steps are necessary if you want to switch from printing in the thermal transfer mode to printing in the thermal direct mode.
In case only a used-up ribbon has to be removed the steps 4 and 5 have to be omitted.

1. Switch the printer to OFF LINE mode.

2. Open the hood of the printer.

3. The core of a used-up ribbon can be removed by pulling it from the ribbon mandrel (compare figure 4.3.1.a).

4. If the inserted ribbon is not used-up, cut it close to the ribbon take-up mandrel (see figure 4.3.1.b)

5. Rotate the ribbon mandrel clockwise until the free end of the ribbon is winded up.

The unused ribbon can remain within the device until it is used for the next thermal transfer operation (if necessary protect the ribbon against unintentional unwinding).
The ribbon has to be loaded as described in chapter 4.3.1.

6. Rotate the take-up mandrel counter-clockwise until the free end of the used-up ribbon is winded up.

7. Remove the used-up ribbon from the take-up mandrel and dispose it according to the rules.

8. Close the hood of the printer.

## 4.4. Setting the Photoelectric Switch

The printers SOLID T4, SOLID T5, SOLID T6 and SOLID T8 are provided with transparency photoelectric switches.

The photoelectric switch (2) can be adjusted using the red adjustment knob (1) on the front of the print module over a range of 15 mm crossways to the material feed direction.

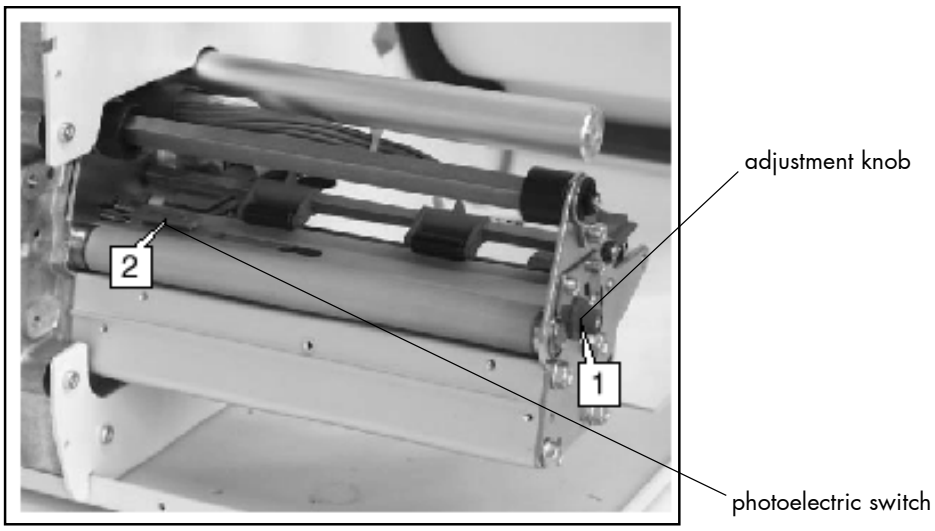



Fig. 4.4.a Position of the photoelectric switch (Illustration without printhead)

A scale (3) from 0 to 15 is given on the red adjustment knob (see figure 4.4.b).

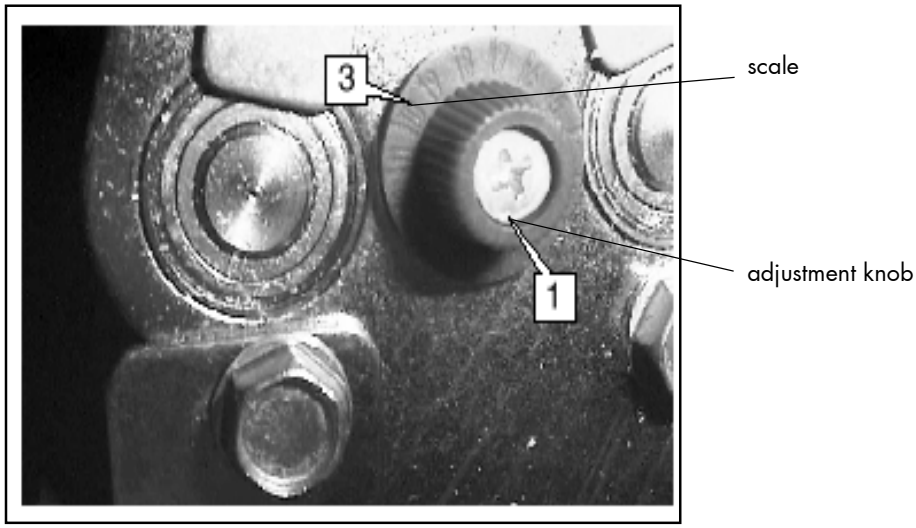



Fig. 4.4.b Adjustment knob for the photoelectric switch

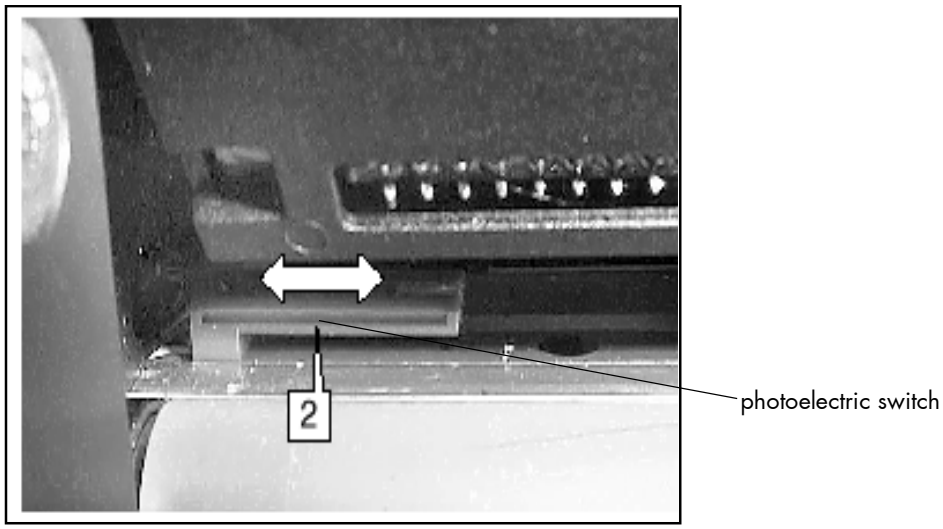



Fig. 4.4.c Photoelectric switch

For the adjustment of the photoelectric switch the gap position of the currently used material is important. The following formula is valid:

**Setting value = Gap position – 2 mm**

– Gap position: measured from the left edge of the material
– Setting value: scale value on the adjustment knob

Example:

Centre of the gap from the left edge = 11 mm, minus
2 mm gives a setting value of 9 mm.

## 4.5. Printhead Pressure Adjusting

Different material width and/or material thickness have an effect on the contact pressure of the thermal bar on the feed roller.

To compensate this influence, the contact pressure can be set in 3 stages:

Setting 1 for thin/narrow material
Setting 2 for medium material
Setting 3 for thick/wide material

The corresponding red setting screw (4) sits above the ribbon roll up mandrel and is recessed into the front plate. It can be turned using a coin.

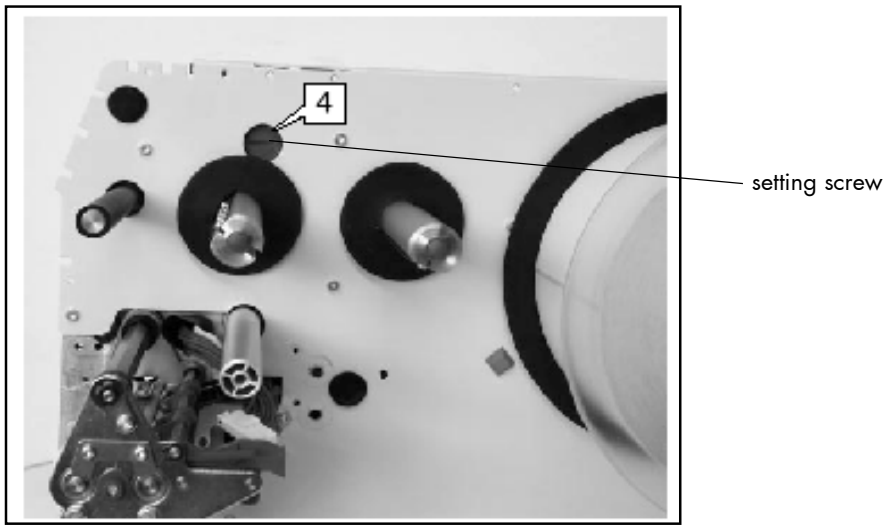



Fig. 4.5.a Setting screw for the printhead's contact pressure
(Illustration without printhead)

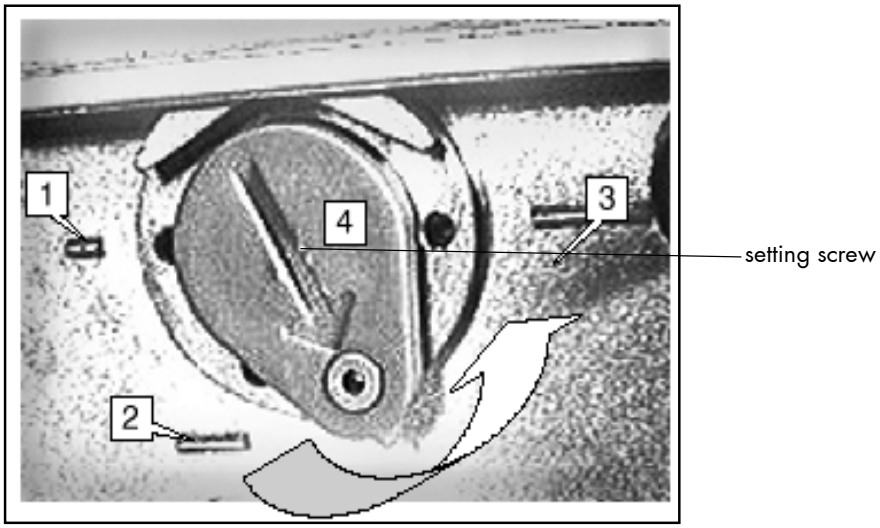



Fig. 4.5.b Increasing the printhead's contact pressure

The factory setting for the printhead contact pressure is Setting 1 (setting for thin/narrow material).

For medium head contact pressure turn the arrow to Setting 2 until it lightly clicks into place.

To get a further increased printhead's contact pressure turn the arrow to Setting 3 until it lightly clicks into place.

Please note:

- Printing should always be carried out with the lightest contact pressure possible for creating a satisfactory print quality. This protects the printhead and the entire device.

- Excessive contact pressure can result in premature wearing of the printhead.

- See also chapter 7.2 Printhead Exchange
  and chapter 7.3 Adjusting the Right Pressure Value.

## 4.6. Printhead Position Adjustment

The printhead 0 line can be variably adjusted from 2mm (from the left edge of the label) to 13mm:
(does not apply for SOLID T4)

1. For adjustment first loosen the two thumb screws (1).

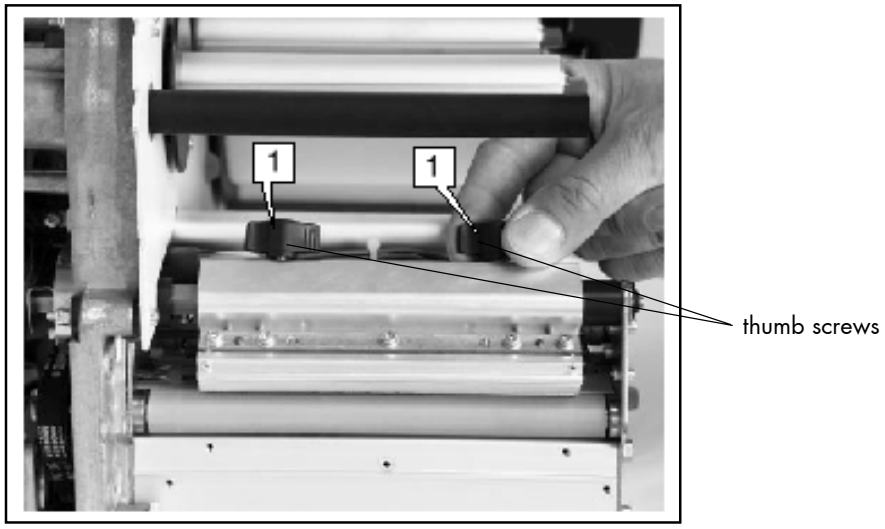



Fig. 4.6.a Loosening the thumb screws

The printhead may and must not be removed for these operations.

2. Shift the printhead to the required position.

3. Tighten the screws again.

The following operations have to be done to suit the "lateral position" of the ribbon to the new position of the printhead.

4. Loosen the black plastic discs (4) on the ribbon roll up mandrel and the ribbon unwind mandrel at the back using a 2mm Allan key.

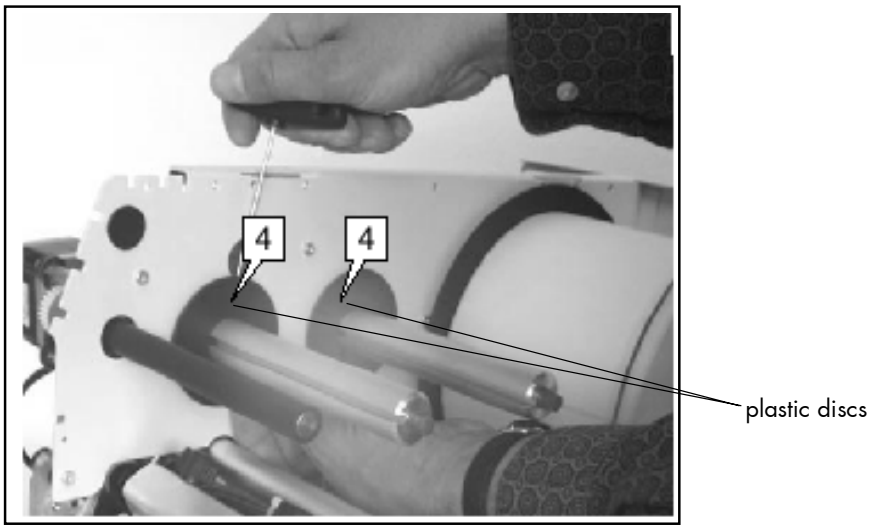



Fig. 4.6.b Loosening the screws of the plastic discs

5. Adjust the plastic discs to the same position as the printhead interior.

6. Tighten the screws again using the Allan key.

# 5. Control Panel

## 5.1. 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 printers SOLID T4, SOLID T5, SOLID T6 and SOLID T8 are provided with several interfaces; see figure 2.4.b and chapter 9 Specifications for more information.

## 5.2. Turning on the Printer

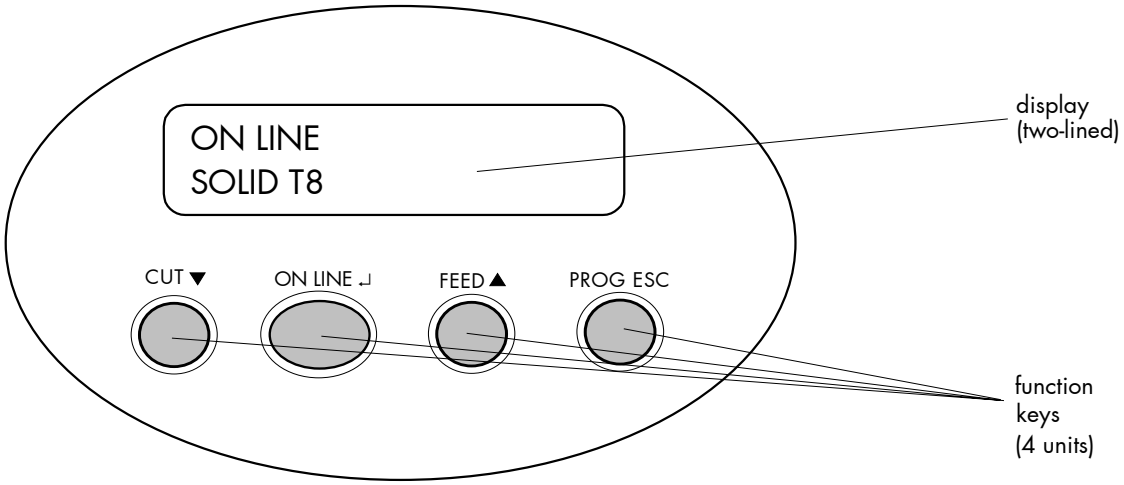
First, please notice the instructions given in chapter 4 Handling of Consumables.

1. Plug one end of the printer power cord into the socket at the back of the printer and the other end into a properly grounded outlet.

2. Turn on the printer. The power switch is located at the right side of the printer (see chapter 2.4 Printer Components).

As soon as the printer's warm up phase is finished the printer goes into the ON LINE mode. A status message and the name of the printer are displayed.

## 5.3. Control Panel View



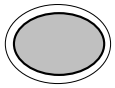

## 5.4. Function of the Control Panel Elements

### Display

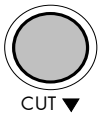
The display (LCD-panel, 2 x 16 characters) serves to show the printer's status messages.

## Control Panel Keys

Now the individual control panel keys are described:

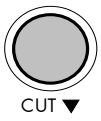



The ON LINE ↵ key is used to turn the printer OFF LINE or ON LINE.
In addition to that this key can be used to clear an error message in the display after the fault was fixed.




In the OFF LINE mode this key is used to **start the cutter**.

In the OFF LINE mode the paper is conveyed one format length further after having activated the FEED ▲ key.



These keys are used for working within the different levels of the menu structure described in the following.

## 5.5. Configuration via the Control Panel

By operating the panel the printer configuration can be changed. In addition a software (called IP printADMIN) will be available for the SOLID T4, SOLID T5, SOLID T6 and SOLID T8 to allow a printer configuration via Ethernet.
The controller has its integrated website with information on the printer status and the printjob status.

Chapter 6 (Panel Functions) describes how to reach the particular printer functions via the 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 ON LINE ↵ key one single time.

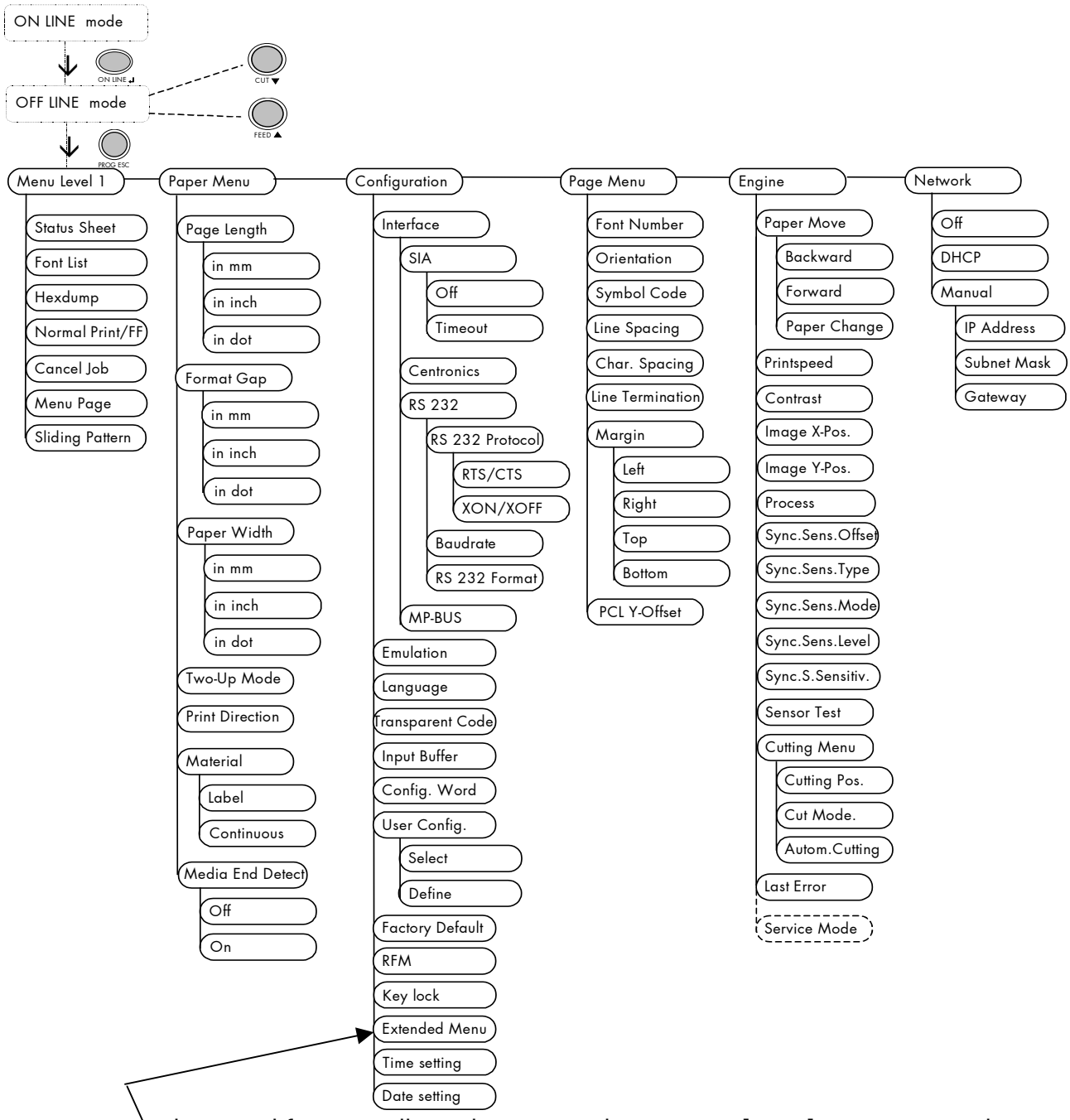
P e r m a n e n t changes in printer configuration are active each time the printer is turned on again. To select such changes permanently, the user must terminate the change of function by pressing the ON LINE ↵ key three times.

An output of the current printer values can be generated using the "Status Sheet Printing" panel function (see chapter 6.6).

## 5.6. Menu Structure

Access to the menu structure is possible as soon as the printer is turned OFF LINE and the PROG ESC key was pressed.

The menu structure of the printers SOLID T4, SOLID T5, SOLID T6 and SOLID T8 is arranged in different levels:

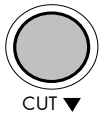



This panel function allows the user to choose a **reduced menu** instead of the extended menu shown above.

**Selecting positions in the menu structure:**

This symbol shows the ON LINE ↵ key. The printer is turned OFF LINE with this key.

With this key you get into the first menu level of the menu structure.



By pressing the keys CUT ▼ and FEED ▲ you can move within the menu levels.

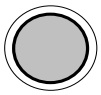
["Menu Level "]

Each menu item / sub-item within a menu level is shown in the display of the control panel.

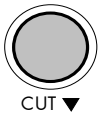
The ON LINE ↵ key has two main functions. It gives the user access to a particular menu and, once in the menu, it allows the user to select a particular function.

["Function"]

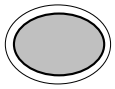
**Functions / Changing of function values:**



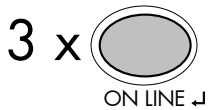

Within one function the value can be changed by pressing the key FEED ▲ or CUT ▼.




The digit to change can be selected by pressing the CUT ▼ key. (This moves you to the next position of the function value).



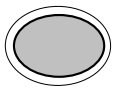

By pressing the ON LINE ↵ key the function values currently displayed are confirmed resp. the selected function is activated (the changes are stored temporary).




To select such changes permanently, the user must terminate the change of function by pressing the ON LINE ↵ key three times. These permanent changes in printer configuration are active each time the printer is turned on again.

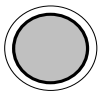
**Return to the ON LINE mode:**

A) In one step:




Pressing the ON LINE ↵ key longer than 2 seconds switches the user directly to the ON LINE mode from nearly any menu position.

B) Return to the ON LINE mode step by step:




Pressing the PROG ESC key takes the user to the respective previous menu level. Aim is to jump back to the OFF LINE mode. The name of the printer is shown on the display, when this mode is reached (e.g. [SOLID T8 ]).

The ON LINE ↵ key switches the user to the ON LINE mode if the printer is in the OFF LINE mode.

## 5.7. 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 diagram 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 is released and the PROG ESC key has to be pressed. Then the PROG ESC key has to be released and the FEED ▲ key has to be pressed.

["Message"] The ″Panel display″ column shows the display messages corresponding to the sequences listed on the left.

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

# 6. Panel Functions

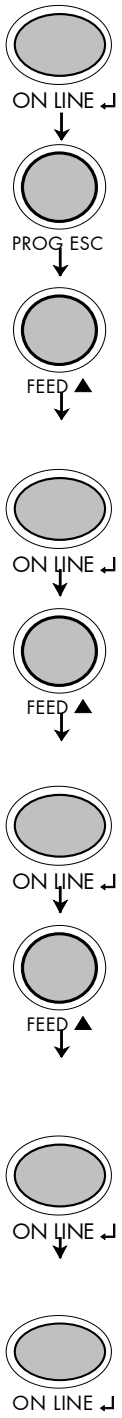
For the panel functions described in the following text, the printer is presumed to be turned on and in the ON LINE mode.

## 6.1. Print Process Selecting

This function allows to select the print process. While thermal direct printing the device operates without ribbon, while thermal transfer printing a ribbon is needed (see chapter 4 Handling of Consumables, too).

For thermal direct printing it is not allowed to insert a ribbon to avoid damaging the printhead.
Make sure your settings match to the printer implementation (ribbon inserted/not inserted).

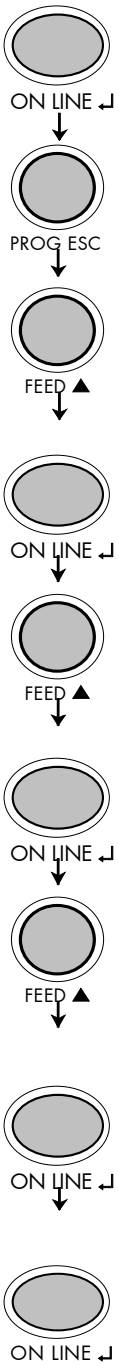
Description of this control panel function continues on the next page.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | |
| [Menu Level 1 ] | The PROG ESC key gives the user access to the menu structure. |
| • • • | Press the FEED ▲ or CUT ▼ key until [Engine] is displayed. |
| [Engine ] | The menu item Engine is selected. |
| [Paper Move ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Process] is displayed. |
| [Process ] | The menu item Process is selected. |
| [Thermo direct ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until the display message is corresponding with the printer implementation (ribbon inserted = Thermo transfer e.g.). |
| [Thermo transfer ] | |
| [Thermo transfer ] | The thermal transfer print process is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.2. Media Setting (Material; Label or Continuous)

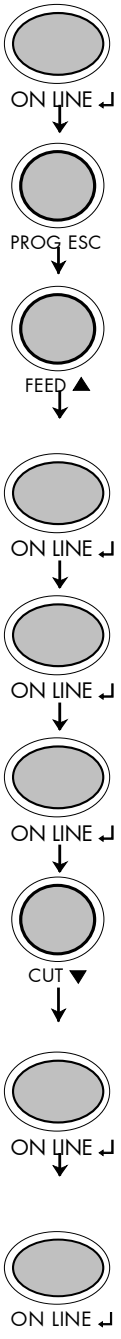
This function allows to adjust the printer to the actual used material (distinction between formatted media (label) and continuous media).




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | |
| | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Paper Menu] is displayed. |
| [Paper Menu ] | |
| [Page Length ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Material ] is displayed. |
| [Material ] | |
| | Select sub-menu Material. |
| [Label ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until the statement shown by the display corresponds to the inserted media (Continuous e.g.). |
| [Continuous ] | |
| [Continuous ] | The printer is adjusted to continuous material. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.3. Page Length Adjustment

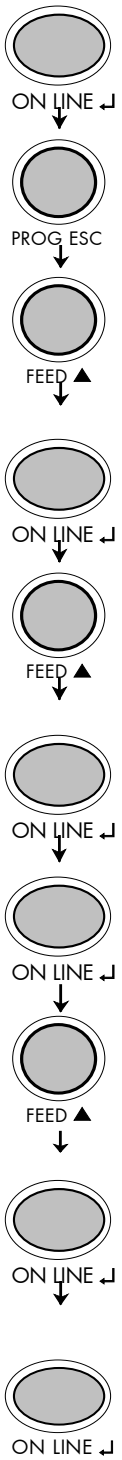
After inserting new material (e.g. paper) this function is used to adjust the printer to the new page length.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Paper Menu ] is displayed. |
| • • • | |
| [Paper Menu ] | Press the ON LINE ↵ key to select the paper menu. |
| [Page Length ] | Press the ON LINE ↵ key to adjust the page length. |
| [in mm ] | mm = currently selected measuring unit. (Alternative the units inch or dot can be chosen with FEED ▲ or CUT ▼). |
| • • • | |
| [Digit1 280.1] | Pressing the FEED ▲ key changes the value of the current position (Digit1 = last position, in this example: 1). Pressing the CUT ▼ key switches to the next digit. |
| • • • | |
| [Digit1 282.5] | The page length is changed to 282.5 mm. |
| [Digit1 282.5] | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.4. Material Width Adjustment (Paper Width)

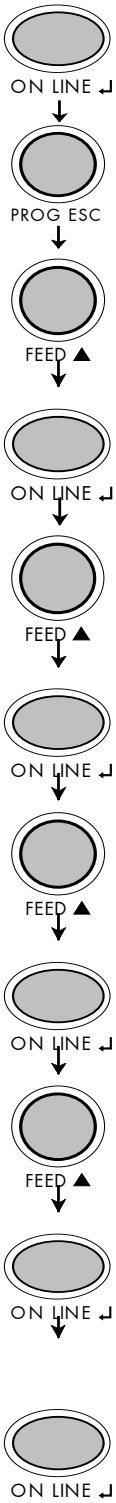
The paper width (print width) has to be adjusted with this function according to the currently used format.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Paper Menu ] is displayed. |
| • • • | |
| [Paper Menu ] | Press the ON LINE ↵ key to select the paper menu. |
| [Page Length ] | Press the FEED ▲ or CUT ▼ key until [Paper Width ] is displayed. |
| • • • | |
| [Paper Width ] | Press the ON LINE ↵ key to adjust the format width to the paper width. |
| [in mm ] | mm = currently selected measuring unit. (Alternative the units inch or dot can be chosen with FEED ▲ or CUT ▼). |
| • • • | |
| [Digit1 210.3] | Pressing the FEED ▲ key changes the value of the current position (Digit1 = last position, in this example: 3). Pressing the CUT ▼ key switches to the next digit. |
| • • • | |
| [Digit1 210.0] | The format width (paper width) is changed to 210.0 mm. |
| [Digit1 210.0] | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.5. Configuration of Text Margins

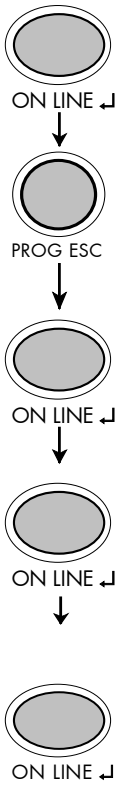
This function sets text margins. Margins are expressed in dots at the upper left edge of the paper.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Page Menu ] is displayed. |
| [Page Menu ] | |
| [Font Number ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Margin ] is displayed. |
| [Margin ] | |
| [Left ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired margin is displayed. |
| [Right ] | |
| [Digit1 0238<u>1</u>] | Pushing the FEED ▲ key changes the value of the current position (digit 1 = last position, in this example: 1). Pushing the CUT ▼ key moves you to the next position. |
| • • • | |
| [Digit1 0238<u>7</u>] | |
| [Digit1 02387] | The right margin is changed into 2387 dot. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.6. Printing the Status Sheet

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




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the ON LINE ↵ key. Menu level 1 is selected. |
| [Status Sheet ] | Press the ON LINE ↵ key again. A status sheet is printed. |
| [Status Sheet ] | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

**Status sheet contents:**

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

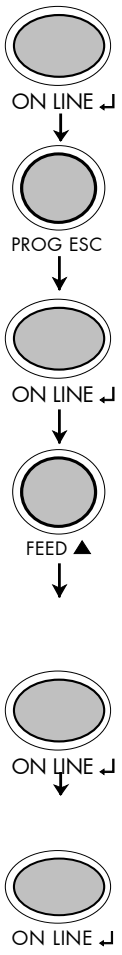
Printed in plain text:

- 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 chapter).

## 6.7. Printing the Font List

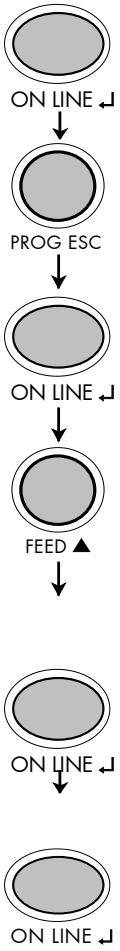
This function generates a list of all fonts installed to the printer. The font list shows demo prints of all fonts and, in addition, the concerning PCL selection commands. These commands contain information on font width and font hight (see chapter 6.19 Font Selection, too).




| Panel display | Notes |
|---|---|
| [[ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | |
| [Menu Level 1 ] | Menu Level 1 is selected. |
| [Status Sheet ] | Press the FEED ▲ or CUT ▼ key until [Font List ] is displayed. |
| • • • | |
| [Font List ] | |
| [Font List ] | The font list is printed. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.8. Hexdump-Mode Activation

Within 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.

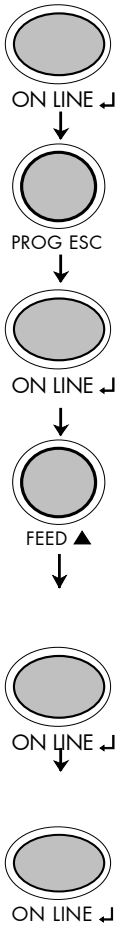



| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Menu level 1 is selected. |
| [Status Sheet ] | Press the FEED ▲ or CUT ▼ key until [Hexdump ] is displayed. |
| • • • | |
| [Hexdump ] | |
| [Hexdump ] | The Hexdump-Mode is activated. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

**Note:** By activating the normal print mode (see next chapter) 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.

## 6.9. 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.

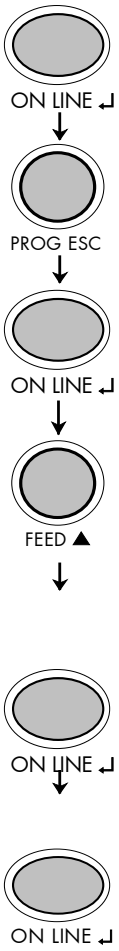



| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | |
| [Menu Level 1 ] | The PROG ESC key gives the user access to the menu structure. |
| [Status Sheet ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Normal Print/FF ] is displayed. |
| [Normal Print/FF ] | |
| [Normal Print/FF ] | The normal print mode is activated. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

**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).

## 6.10. Clearing the Input Buffer (Cancel Job)

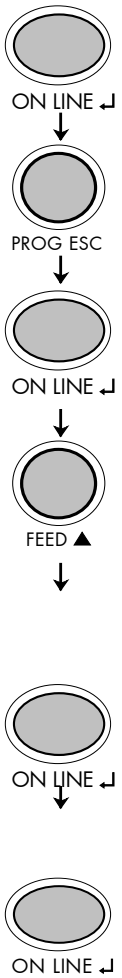
This function permits the resumption of a print job at a particular page after a print interruption (e.g. paper jam). The data contained in the input buffer before the interruption are cleared.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Menu level 1 is selected. |
| [Status Sheet ] | Press the FEED ▲ or CUT ▼ key until [Cancel Job ] is displayed. |
| • • • | |
| [Cancel Job ] | |
| [Cancel Job ] | All data contained in the input buffer will be cleared. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.11. Printing the Menu Page

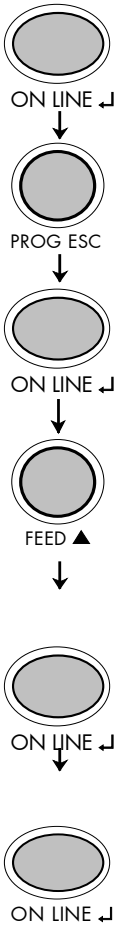
This function prints a survey of the available panel functions.
**Note:** When printing the menu page please use a large paper.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Menu level 1 is activated. |
| [Status Sheet ] | Press the FEED ▲ or CUT ▼ key until [Menu Page ] is displayed. |
| • • • | |
| [Menu Page ] | |
| [Menu Page ] | A menu structure presentation of the SOLID T4/T5/T6/T8 is printed out (compare chapter 5.6). |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.12. 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.

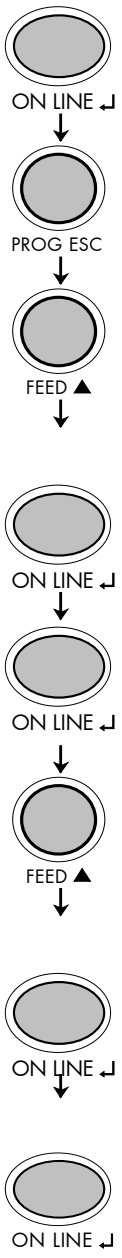



| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Menu level 1 is selected. |
| [Status Sheet ] | Press the FEED ▲ or CUT ▼ key until [Sliding Pattern ] is displayed. |
| • • • | |
| [Sliding Pattern ] | |
| [Sliding Pattern ] | A series of test prints is generated. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

The printing out of test prints can be stopped by pushing the PROG ESC key.

## 6.13. Data - Interface Selection

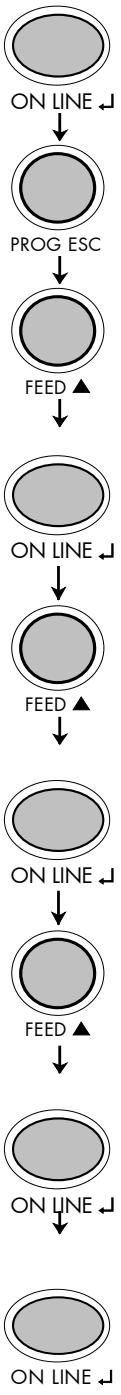
This function is used to determine the interface for print data transfer.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Configuration ] is displayed. |
| • • • | |
| [Configuration ] | |
| [Interface ] | |
| [SIA ] | Press the FEED ▲ or CUT ▼ key until the selected interface (e.g. Centronics) is displayed. |
| • • • | |
| [Centronics ] | |
| [Centronics ] | The Centronics interface is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.14. Emulation Selection

With this function you can change the active emulation.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Configuration ] is displayed. |
| [Configuration ] | |
| [Interface ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Emulation ] is displayed. |
| [Emulation ] | |
| [SOLID Standard ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired emulation (e.g. HP PCL 5) is displayed. |
| [HP PCL 5 ] | |
| [HP PCL 5 ] | The emulation HP PCL 5 is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

**Available Emulations:**

Standard:

MICROPLEX IDOL,
HP LaserJet (PCL 5),
Epson FX,
IBM Proprinter,
Diablo 630

Optional:

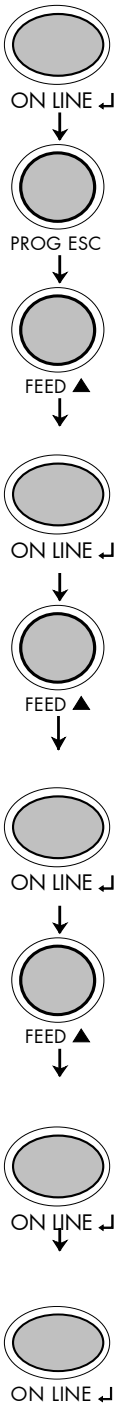
Kyocera Prescribe,
Express,
Printronix IGP/PGL,
HPGL (7475A),
QMS (Magnum) Code V,
DEC LN03+,
Tektronix 4010/4014,
Tally MT 6xx,
TIFF (CCITT group 4),
Bull MP6090,
XEROX XES,
Datamax

**Notice:**

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

## 6.15. Display Language Selection

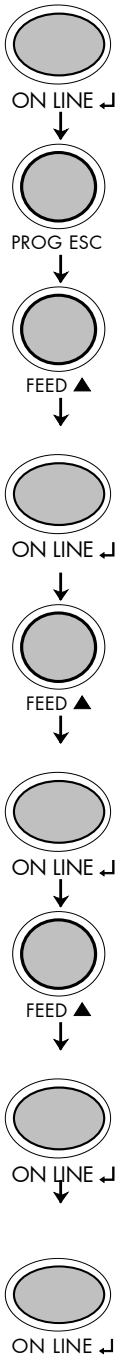
This function enables the user to determine the language for the display messages, the status sheet and the font list.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | |
| | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| | Press the FEED ▲ or CUT ▼ key until [Configuration ] is displayed. |
| • • • | |
| [Configuration ] | |
| [Interface ] | |
| | Press the FEED ▲ or CUT ▼ key until [Language ] is displayed. |
| • • • | |
| [Language ] | |
| [German ] | |
| | Press the FEED ▲ or CUT ▼ key until the desired language (e.g. English) is displayed. |
| • • • | |
| [English ] | |
| [English ] | The display language English is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.16. Transparent Code Adjustment

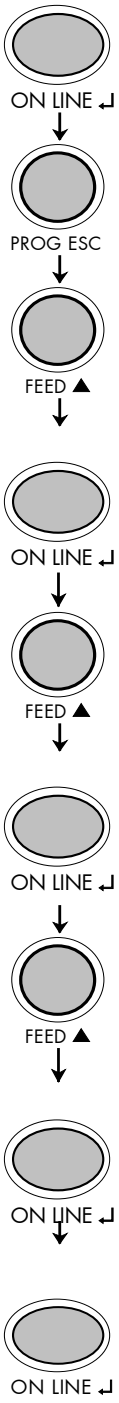
This function configures the transparent code. Using the transparent code enables you to initiate the commands of the page description language IDOL by **printable** characters. The transparent code pre-setting is 2625. These are the ASCII character codes (hexadecimal) for the characters &%.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Configuration ] is displayed. |
| • • • | |
| [Configuration ] | |
| [Interface ] | Press the FEED ▲ or CUT ▼ key until [Transparent Code ] is displayed. |
| • • • | |
| [Transparent Code ] | |
| [Digit1 2625] | The hexadecimal number for &% is preset. Pressing the FEED ▲ key changes the value of the current position (Digit 1 = last position, in this example: 5). Pressing the CUT ▼ key moves you to the next position. |
| • • • | |
| [Digit1 2626] | 2626 is selected as transparent code. From now on use the characters && before programming the IDOL commands. |
| [Digit1 2626] | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

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

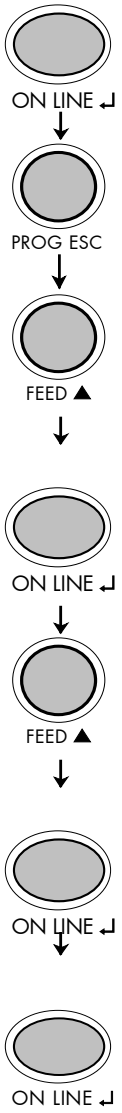
This function enables the user to choose the distribution of the available RAM memory between input buffer and macro/download memory.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Configuration ] is displayed. |
| [Configuration ] | |
| [Interface ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Input Buffer ] is displayed. |
| [Input Buffer ] | |
| [32 kB ] | Press the FEED ▲ or CUT ▼ key until the desired memory distribution is displayed. The input buffer size is specified in kilobyte (kB) or in percent of the installed memory. |
| • • • | |
| [100 kB ] | |
| [100 kB ] | 100 kB is selected as input buffer. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.18. Setting to Factory Default

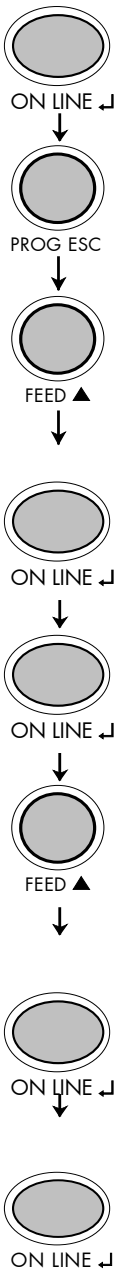
This function back-outs all configurations to factory defaults.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Configuration ] is displayed. |
| [Configuration ] | |
| [Interface ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Factory Default ] is displayed. |
| [Factory Default ] | |
| [Factory Default ] | The configuration is back-outed to factory defaults. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.19. Font Selection

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




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Page Menu ] is displayed. |
| [Page Menu ] | |
| [Font Number ] | |
| [Font 600 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired font number (e.g. *5507* Langeoog) is displayed. |
| [Font *5507* ] | |
| [Font *5507* ] | The font number *5507* Langeoog is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

The **SOLID T4, SOLID T5, SOLID T6 and SOLID T8 standard equipment** contains the following **fonts**:

| Font-no. | Font width | Font height | Font name |
|---|---|---|---|
| 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.

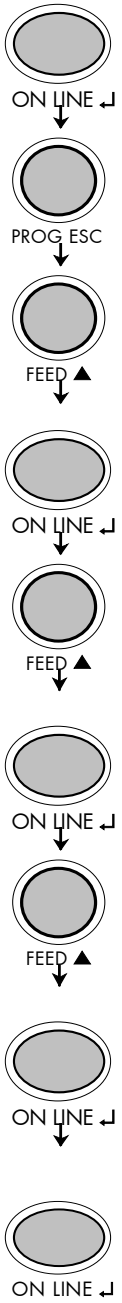
| | Font-no. | Font width | Font height | Font name |
|---|---|---|---|---|
| | 0050 | SC | | Plakatschrift |
| | 0590 | SC | | OCR /B |
| | 0591 | SC | | OCR /A |
| | 6600 | SC | | Juist Monospaced |
| PCL 5 compatible | 0699 | SC | | Kurilen |
| | 1700 | SC | | Kurilen Italic |
| | 1800 | SC | | Kurilen 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 Itali |
| | 9199 | P | SC | Tasmanien-II Bold Italic |
| | 9299 | P | SC | Tasmanien-II |
| | 9399 | P | SC | Tasmanien-II Italic |
| | 9499 | P | SC | Tasmanien-II Bold |

**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 chapter 6.7) to generate a list of all fonts installed to the printer.

## 6.20. Text Orientation Selection

This function selects the active text orientation.

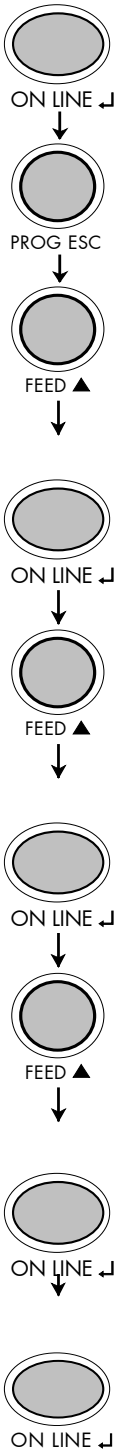



| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | |
| | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Page Menu ] is displayed. |
| [Page Menu ] | |
| [Font Number ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Orientation ] is displayed. |
| [Orientation ] | |
| [Orientation 0 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired orientation is displayed. |
| [Orientation 1 ] | |
| [Orientation 1 ] | The orientation 1 = landscape is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

Text orientation assignment:
Orientation 0 = Portrait (upright format)
Orientation 1 = Landscape (horizontal format)
Orientation 2 = Portrait upside down
Orientation 3 = Landscape upside down

## 6.21. Symbol Code Selection

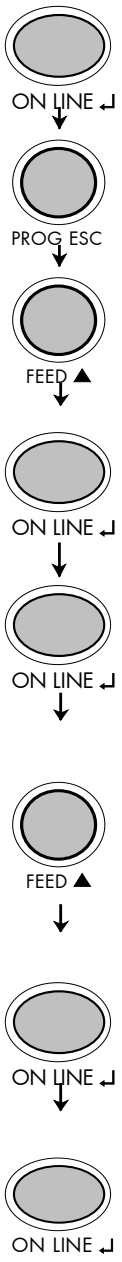
This function selects the active symbol code.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Page Menu ] is displayed. |
| [Page Menu ] | |
| [Font Number ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until [Symbol Code ] is displayed. |
| [Symbol Code ] | |
| [902, IBM PC-II ] | |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired symbol code is displayed. |
| [901, IBM PC-I ] | |
| [901, IBM PC-I ] | The symbol code 901, IBM PC-I is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.22. Paper Change and manual Material Transport (Paper Move)

Using this function you can start the material transport for a material change. In addition this function can be used to transport the print material stepwise (in or contrary to the print direction, this can be helpful to clear a paper jam).

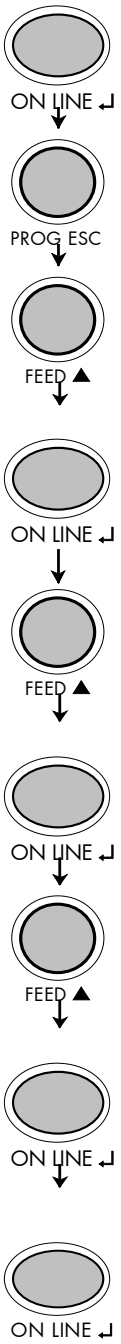



| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| • • • | |
| [Engine ] | |
| [Paper Move ] | |
| [Backward ] | The currently set transport direction is displayed. (As long as the ON LINE ↵ key is pressed the material is transported in the chosen direction ①). |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired transport direction is displayed. |
| [Paper Change ] | Operate the ON LINE ↵ key to start the course of transport movements to serve a paper change. |
| [Paper Change ] | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

① Return to the ON LINE mode from this menu level only via the PROG ESC key (compare chapter 5.6)

## 6.23. Print Speed Adjustment

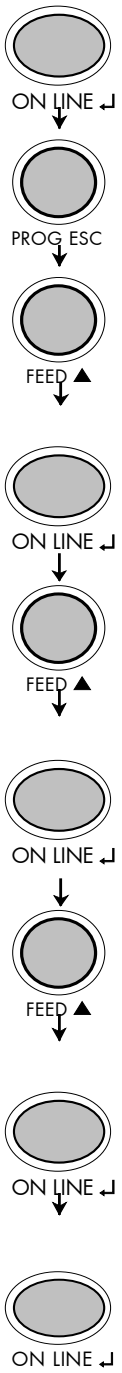
This function is used to change the print speed (adaptation to the actual used materials, e.g. to optimize the contrast of the printout). The setting range for the print speed is 4 inch/s to 12 inch/s.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu level 1 ] | Press the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| • • • | |
| [Engine ] | |
| [Paper Move ] | Press the FEED ▲ or CUT ▼ key until [Printspeed ] is displayed. |
| • • • | |
| [Printspeed ] | |
| [ 8 inch/s ] | The currently set value is displayed. |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired value is displayed. |
| [ 4 inch/s ] | |
| [ 4 inch/s ] | Here the print speed is reduced to 4 inch/s. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.24. Contrast (Density) Setting

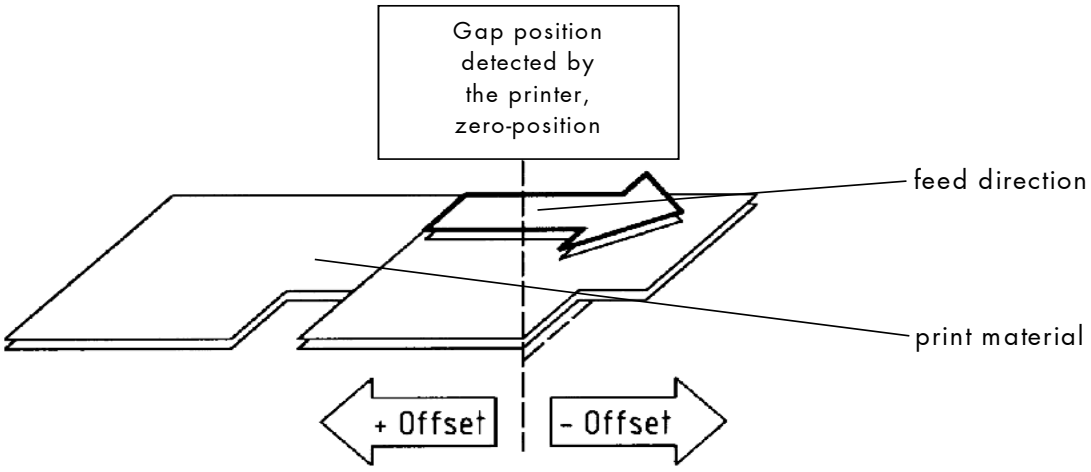
Using this function the print density (contrast) of the printed characters can be changed.

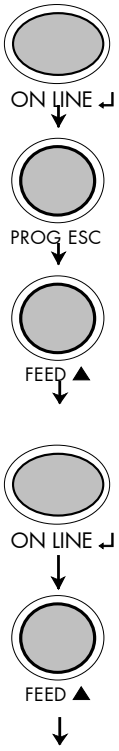



| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| • • • | |
| [Engine ] | |
| [Paper Move ] | Press the FEED ▲ or CUT ▼ key until [Contrast ] is displayed. |
| • • • | |
| [Contrast ] | |
| [Contrast: 85 % ] | The currently set value is displayed. |
| • • • | Press the FEED ▲ or CUT ▼ key to change the contrast. Values from 10% to 100% are settable. |
| [Contrast: 60 % ] | The contrast is reduced to 60 % (the density is decreased). |
| [Contrast: 60 % ] | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.25. Setting the Zero Position of the Material Feed (Sync Sensor Offset)

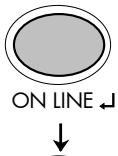
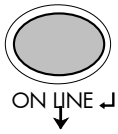
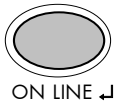
Using this function an offset from the detected paper feed zero-position (gap position) can be set in millimeter units.
By this the position of the printout and cut is adjusted relatively to the gap / perforation of the material.
Setting range: -15 to +240 mm.



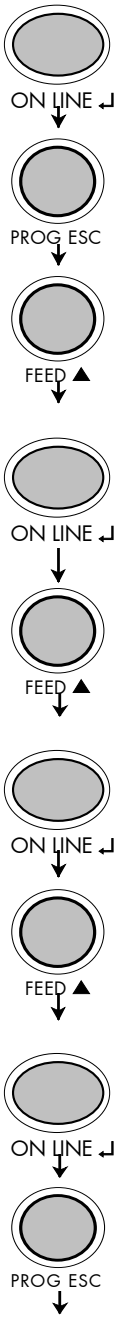

| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| • • • | |
| [Engine ] | |
| [Paper Move ] | Press the FEED ▲ or CUT ▼ key until [Sync.Sens.Offset ] is displayed. |
| • • • | |

The instructions are continued on the following page.

| | Panel display | Notes |
|---|---|---|
| | [Sync.Sens.Offset ] | |
|   | [Offset: + 0.0 mm ] | The currently set value is displayed. |
| | • • • | Press the FEED ▲ or CUT ▼ key until the desired offset is displayed. |
| | [Offset: - 5.0 mm ] | |
|   | [Offset: - 5.0 mm ] | The gap/perforation position is shifted 5 mm in feed direction by this offset. |
|   | | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.26. Setting the Sync Sensor Mode

With this function the gap detection mode is selected. The default setting is 'Automatic'. The 'Manual' mode enables the processing of materials with several varying contrast zones, which would otherwise falsely be measured as gaps. With the help of the accompanying panel function Sync.Sens.Level and Sync.S.Sensitiv. (see the following chapters) the contrast value measured by the gap detection can be defined specifically for the label material.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| • • • | |
| [Engine ] | |
| [Paper Move ] | Press the FEED ▲ or CUT ▼ key until [Sync.Sens.Mode ] is displayed. |
| • • • | |
| [Sync.Sens.Mode ] | |
| [Automatic ] | The currently set value is displayed. |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired sensor mode is displayed. |
| [Manual ] | |
| [Manual ] | The sensor mode manual is chosen. |
| • • • | The adjusting of the Sync sensor level is described in the following chapter. |

## 6.27. Setting the Sync Sensor Level

With this function the contrast value measured by the Sync sensor can be defined specifically for the label material (presupposition is the choice of the Sync sensor mode 'Manual', compare previous chapter). The adjusting of the Sync sensor level allows materials with high contrast proof points within the label to be processed, which would otherwise falsely be measured by the system. (Setting range of sensor level: 0 to 255).

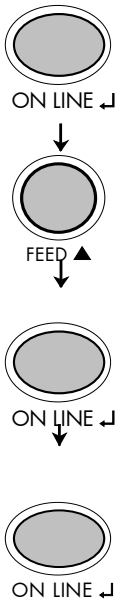
After selecting the panel function Sync.Sens.Level the contrast of the inserted material (in the range of the photoelectric sensor) is shown on the display of the operating panel.
For all various contrast zones of the used material contrast results shall be measured now (place the material within the photoelectric sensor and read the contrast values).

Example: Self-adhesive material with black bars lengthways across the label

| Zone of the inserted material: | Measured contrast value: |
|---|---|
| Masking paper | 30 |
| Masking paper + label | 60 |
| Masking paper + label + black bar | 190 |

The value 60 has to be used as Sync sensor level here.

A Sync sensor level of 60 means that all readings over 60 are ignored, therefore also the reading 190 at the black bar.




| Panel display | Notes |
|---|---|
| [Sync.Sens.Level ] | |
| [Level: 190 / 255 ] | The measured contrast value is displayed, behind the slash the currently set level is displayed. |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired sensor level is displayed. |
| [Level: 190 / 60 ] | |
| [Level: 190 / 60 ] | Confirm the new level value by pressing the ON LINE ↵ key. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

## 6.28. Setting the Sync Sensor Sensitivity

This function serves to adjust the sensitivity of the Sync sensor (photoelectric switch) to the gaps (perforations) of the actual used material.

Setting range for the sensitivity of the Sync sensor: 10 to 100 %.
The maximum sensitivity of 100 % has to be used for narrow gaps (perforations). The minimum sensitivity of 10 % has to be used for clearly detectable gaps.
The procedure of settings for this panel function [Sync.S.Sensitiv. ] is similar to the panel function Contrast (Density) Setting (compare chapter 6.24).

**Please pay attention to the following:**
A too high level of sensitivity can lead to gaps being detected that do not even exist (on proofs, material thickness fluctuations, perforations etc.).

## 6.29. Selecting the Light Sensor Type

The optional reflex photoelectric switch for labels with reflecting length markings, or the normal factory-fitted photoelectric switch for labels with transparent or register gaps (self-adhesive labels), must be defined according to the application.
The procedure of settings for this panel function [Light Sens.Type ] is similar to the panel function Setting the Sync Sensor Mode (compare chapter 6.26).

### Full-Size Photoelectric Switch

Adjustment range is the full material width.

Within the panel function Sync.Sens.Type please choose the sub-point Full Size.

### Reflex Photoelectric Switch

It is suitable for materials with reflecting markings.

Within the panel function Sync.Sens.Type please choose the sub-point Reflex.

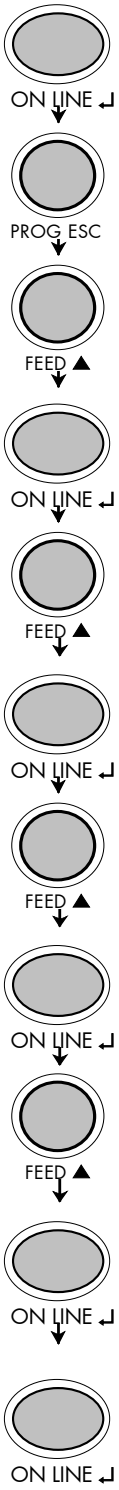
### Transparent Photoelectric Switch

It is suitable for labels with transparent or register gaps.

Within the panel function Sync.Sens.Type please choose the sub-point Punched.

## 6.30. Selecting the Cut Mode

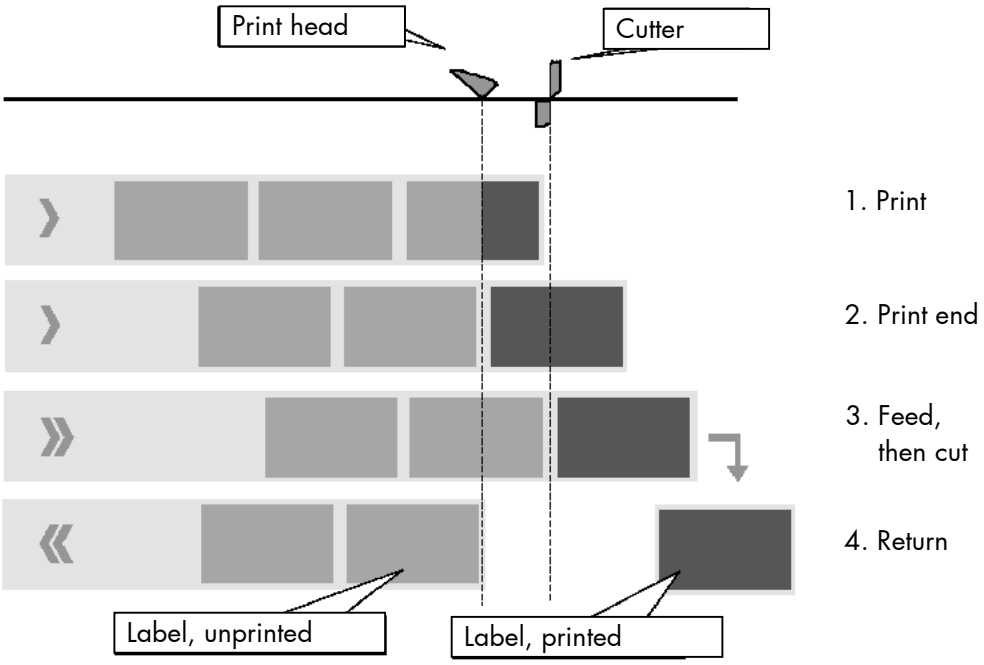
With this function the procedure for the label output and cut is defined.
This is only relevant if the cutter has been installed/selected.
The different cut modes are described on the following pages.




| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | |
| | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | |
| | Press the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| • • • | |
| [Engine ] | |
| [Paper Move ] | |
| | Press the FEED ▲ or CUT ▼ key until [Cutting Menu ] is displayed. |
| • • • | |
| [Cutting Menu ] | |
| [Cutting Pos. ] | |
| | Press the FEED ▲ or CUT ▼ key until [Cut Mode ] is displayed. |
| • • • | |
| [Cut Mode ] | |
| [Real 1:1 Mode ] | The currently set value is displayed. |
| | Press the FEED ▲ or CUT ▼ key until the desired cut mode is displayed. |
| • • • | |
| [Batch Mode ] | |
| [Batch Mode ] | The cut mode batch mode is selected. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

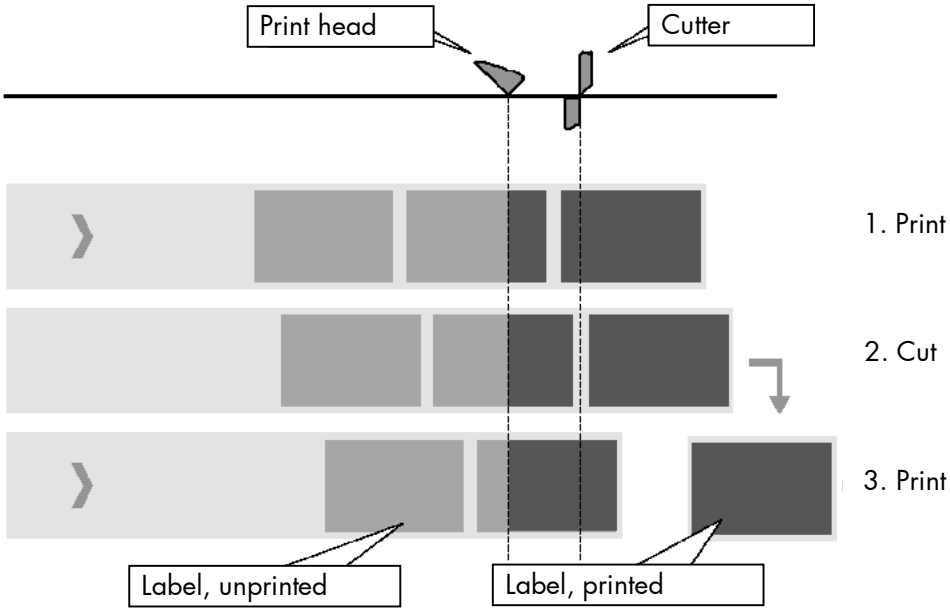
### Real 1:1 Mode

The whole surface of the label is printable. The label is pushed forward to the cutter for cutting. After the cut, the beginning of the next label is drawn back under the print head. This reduces the output volume (in relation to a certain time).



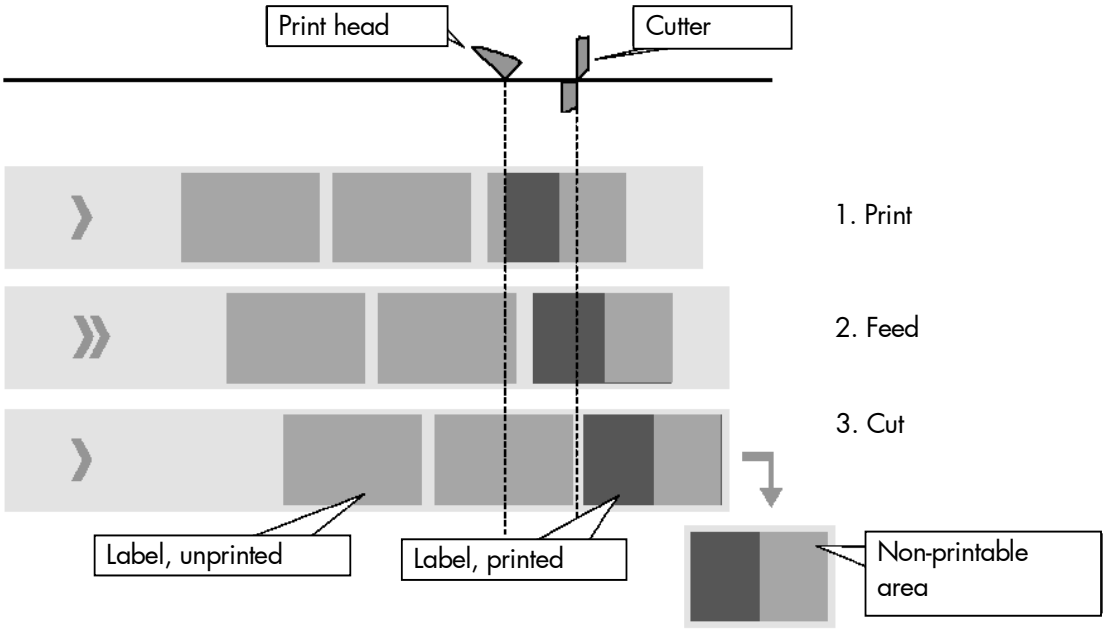
### Batch Mode

The whole surface of the label is printable. Cutting takes place during printing. This can result in brief interruptions within the print zone of the following label. The output volume is at its maximum level.
A material length greater 18 mm is required for the batch mode.



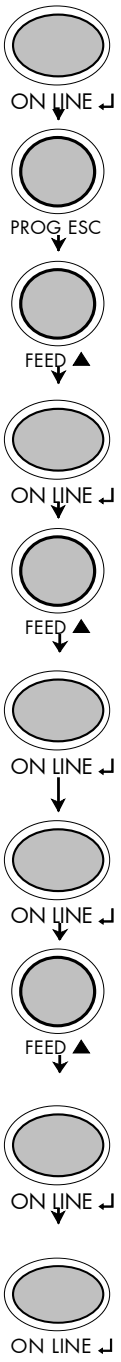
### Normal 1:1 Mode

In this mode cutting takes place during printing. As a result the first 18 mm of the label are not printable. These measurements correspond to the distance between print head and cutter. The output volume is at its maximum level.



## 6.31. Adjusting the Cutting Position

The cutting position② is identical to the detected gap position, i.e. with the perforation or the start of the label. With this function a fine setting of the cutting position is carried out.
The setting range for the offset is ± 2.0 mm.



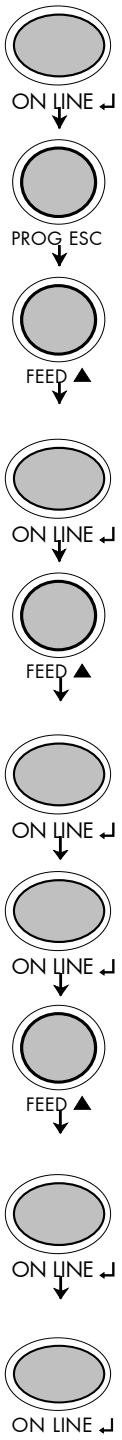

| Panel display | Notes |
|---|---|
| [ON LINE ] | Turn the printer OFF LINE with this key. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| • • • | |
| [Engine ] | |
| [Paper Move ] | Press the FEED ▲ or CUT ▼ key until [Cutting Pos. ] is displayed. |
| • • • | |
| [Cutting Menu ] | |
| [Cutting Pos. ] | |
| [Position: + 0.0 mm ] | The currently set value is displayed. |
| • • • | Press the FEED ▲ or CUT ▼ key until the desired offset is displayed. |
| [Position: - 0.5 mm ] | |
| [Position: - 0.5 mm ] | The cutting position is shifted 0.5 mm in feed direction. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

② This panel function is valid for printers equipped with a cutter (option).

## 6.32. Configuration of Network Parameters (f.e. IP Address)

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. |
| [OFF LINE ] | The PROG ESC key gives the user access to the menu structure. |
| [Menu Level 1 ] | Press the FEED ▲ or CUT ▼ key until [Network ] is displayed. |
| • • • | |
| [Network ] | |
| [Off ] | The currently set configuration is displayed. |
| • • • | Press the FEED ▲ or CUT ▼ key until [Manual ] is displayed. |
| [Manual ] | |
| [IP Address ] | Press the ON LINE ↵ key to set the IP address manually. |
| [192.168.002.002 ] | Pushing the FEED ▲ key changes the value of the current position (left digit first, in this example: 1). Pushing the CUT ▼ key moves you to the next position. |
| • • • | |
| [192.168.010.123 ] | |
| [192.168.010.123 ] | The new IP address is stored. |
| | Turn the printer ON LINE again: Press the ON LINE ↵ key longer than 2 seconds. |

**Notes:** If your network is using DHCP[1] , 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 chapter 5.6 Menu Structure).

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

[1] Dynamic Host Configuration Protocol: offers among other things a centralized address management.

# 7. Operator Maintenance

In order to run the printer 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 MICROPLEX trained operator. A not trained person is not allowed to perform these operations.

## 7.1. Printer Cleaning

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

For safety pull out the mains plug first. Make sure the elements 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.

For the following cleaning operations the concerning parts or modules have to be freely accessible. Because of this please perform the following operational steps first if necessary:

- ribbon removal (see chapter 4.3.3)

- media removal (see chapter 4.2.2)

After the cleaning operations please load the wanted consumables (again), see chapter 4: Handling of Consumables.

### 7.1.1. Printer Cabinet Cleaning

Soilings like dust, grease or similar things can be removed with a soft, lint-free cloth. If necessary the cloth can be moistured with water or a neutral detergent. Inside the printer dust or paper dust can be removed best with a soft (non-metallic) brush.

### 7.1.2. Printhead Cleaning

This maintenance operation should be done after each ribbon exchange or not later than the print quality is reduced (unwanted "lines" or "gaps" in the printout).

Please pay attention to the following:

- For the printhead cleaning there is no need to disassemble or remove the printhead.
- The printhead can be damaged by electrostatic charges. Therefore first of all touch a properly grounded part of the printer (f.e. the base plate of the printer).
- If the printhead is axially adjusted please mark the actual position before you start the cleaning work.

1. Unscrew the two thumb screws on the printhead mounting until the entire printhead mounting can be removed from the contact shaft.

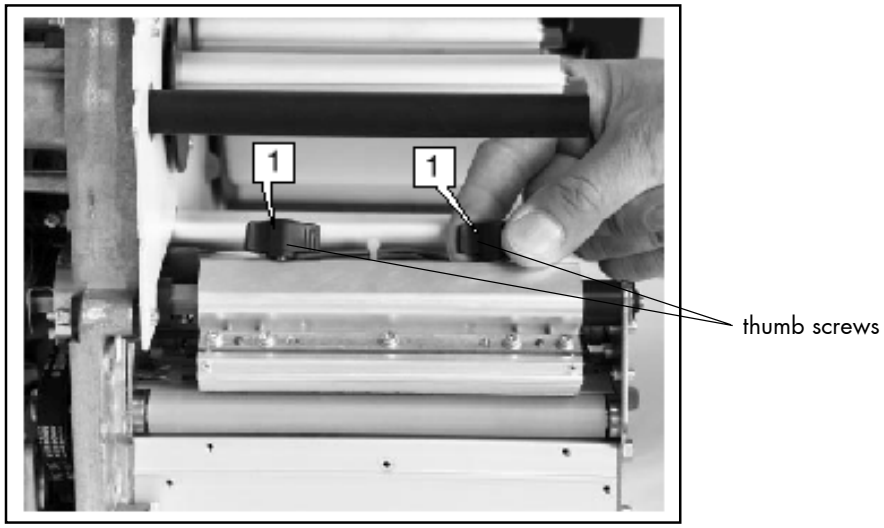



Fig. 7.1.2.a Loosening the thumb screws

2. For the printhead cleaning larger particles are to remove best with a soft (non-metallic) brush.
   For further cleaning use cotton-wool tips saturated with isopropyl alcohol (99.9 %).

3. After cleaning, return the printhead mounting to its old position and retighten the thumb screws.

### 7.1.3. Sensor Cleaning

The device is provided with three sensors to enable controlling of consumable movements.
The gap photoelectric switch and the reflex photoelectric switch are located "below" the printhead mounting.
The material end photoelectric switch is located on the inner red material feed on the print module.
For the cleaning of the gap/reflex photoelectric switches you have to unscrew the two thumb screws first until the entire printhead mounting can be removed from the contact shaft.

Please pay attention to the hints of chapter 7.1.2 !

Normally the sensor cleaning is possible with a soft lint-free cloth, if necessary alcohol saturated cotton-wool tips (see chapter 7.1.2) can be used.

### 7.1.4. Transport Roller Cleaning

The printer's transport rollers (feed roller and print roller and the transport rollers and plastic rollers, too) can be soiled by the print media (e.g. with adhesive residues).

For the following cleaning operations the hints of chapter 7.1.2 are valid, too !

Stickings can be removed best with a soft lint-free cloth saturated with isopropyl alcohol (99.9 %).
Make sure the concerning transport rollers have been cleaned on their whole extent so that there is no reason for irregular media transport after that.

## 7.2. Printhead Exchange

The lifetime of the printhead is up to 50,000 m
(if a contrast of 85% and "Setting 2" for the printhead pressure adjustment are chosen. See chapter 4.5, too).

Only use consumables being specially developed for this device. Using unsuitable consumables or excessive contact pressure can result in premature wearing of the printhead.

Only a MICROPLEX - trained operator is allowed to exchange the printhead.

The following operations have to be done to carry out the printhead exchange:

- Printhead removal and installation
- Input of head resistance
- Adjusting the right printhead pressure (see chapter 7.3)

The printhead is adjusted to the printhead mounting during manufacture. Therefore the printhead can only be replaced in conjunction with the printhead mounting.

### 7.2.1. Printhead Removal and Installation

1. Open the hood of the printer.

2. Switch off the printer and pull the power plug.

3. Remove the ribbon (see chapter 4.3.3).

4. Remove the printmedia (see chapter 4.2.2).

Please pay attention to the following:

- Wait at least 3 minutes after switching off the device before disassembling the printhead.
- The printhead can be damaged by electrostatic charges. Therefore first of all touch a properly grounded part of the printer (f.e. the base plate of the printer).
- The printhead may not be touched on the print bar or on the plug-in contacts.
- If the printhead is axially adjusted please mark the actual position at first.

5. Unscrew the two thumb screws on the printhead mounting until the entire printhead mounting can be removed from the contact shaft.

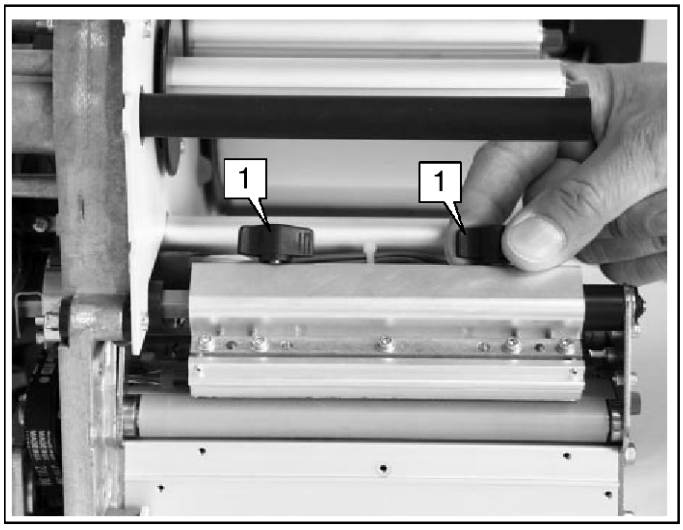



Fig. 7.2.1.a Unscrewing the two thumb screws

6. The printhead is provided with two lead wires. Pull out both plugs in a horizontal direction from the printhead.

7. Remove the old printhead from the device.

Fig. 7.2.1.b Removing the printhead

8. Take the **new printhead** and note the **resistance-value** printed on the new printhead due to the later setting (inscription: R = ..., value in Ohm).

9. Connect the new printhead to the printer using the two plug connections.

10. Place the new printhead onto the contact shaft in the same way the old one was positioned there (see figure 7.2.1.a).

11. Move the printhead to the right (old) axial position and tighten the thumb screws.

Following the printhead exchange the resistance value of the new printhead has to be set (see chapter 7.2.2 Input of Head Resistance)!

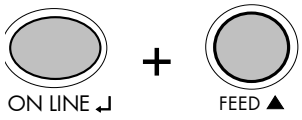
### 7.2.2. Head Resistance Value Setting

By using this function the head resistance has to be adjusted after a printhead exchange (Input of the new printhead's resistance value).

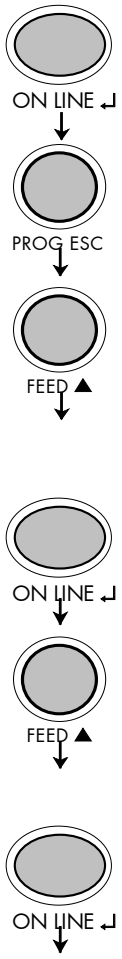
This setting has to be done first after turning the printer on.
It is not allowed to interrupt the settings by switching the printer off.

If the new printhead meets the requirements an automatically printhead identification happens.
By activating the "Head Resistance Value Setting" control panel function the automatically measured value is displayed.
In this case, an input or alteration of the head resistance value is not possible and not necessary, too.

Starting the printer in the **Service Mode:**

| | Panel display | Notes |
|---|---|---|
|   | | Before starting the printer the ON LINE ↵ key and the FEED ▲ key have to be pressed simultaneously. |
| Turn the printer on | | Turn the printer on and keep the keys ON LINE ↵ and FEED ▲ pressed until the message [Service Mode] is displayed **shortly**. |
| | [Service Mode ] | |
| | | Now the functions of the service mode are available (compare dashed areas in the Menu Structure of chapter 5.6). |

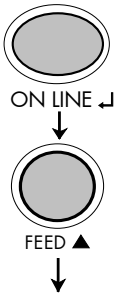
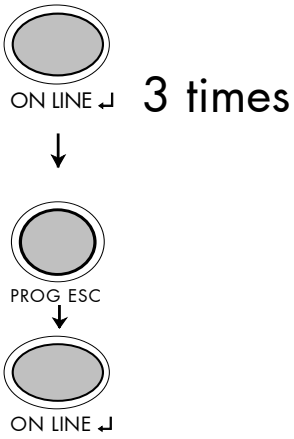
**Input** of the new printhead's **resistance value:**




| Panel display | Notes |
|---|---|
| [ON LINE ] | With this key the printer has to be turned OFF LINE. |
| [OFF LINE ] | |
| [Menu Level 1 ] | The PROG ESC key gives the user access to the menu structure. |
| • • • | Operate the FEED ▲ or CUT ▼ key until [Engine ] is displayed. |
| [Engine ] | |
| [Paper Feed ] | Operate the FEED ▲ or CUT ▼ key until [Service Mode ] is displayed. |
| • • • | |
| [Service Mode ] | |
| [Head Resistance] | |

The instructions are continued on the following page!

Attention: The input of an incorrect resistance value can cause a damage of the printhead!

| | Panel display | Notes |
|---|---|---|
| | [Head Resistance] | |
|   | [Digit1 xxxx] | **Input of head resistance:**<br>(xxxx = old value of head resistance)<br>With the FEED ▲ key the value of the actual digit can be changed (Digit 1 = last digit, in the following example: 3). With the CUT ▼ key you can switch to the next digit. |
| | • • • | |
| | [Digit4 1203] | In this example 1203 Ohm is selected for the head resistance. |
|   | [Saved! ] | The new value for the head resistance has to be saved permanently by operating the ON LINE ↵ three times. |
| | • • • | Operate the PROG ESC key until the name of the printer is displayed. |
| | [SOLID T8 ] | |
| | | The printer is turned ON LINE again. |

After having finished the settings described above, the **printer has to be turned off and on**.

## 7.3. Adjusting the Right Pressure Value

A correction of the pressure value is necessary, if the diameter of the new printmedia is bigger or smaller than the previous one. In addition the pressure value can be modified in order to adapt the characteristics of the consumables. An increase of the pressure value, for example, can improve the transfer of the image onto the printmedia.

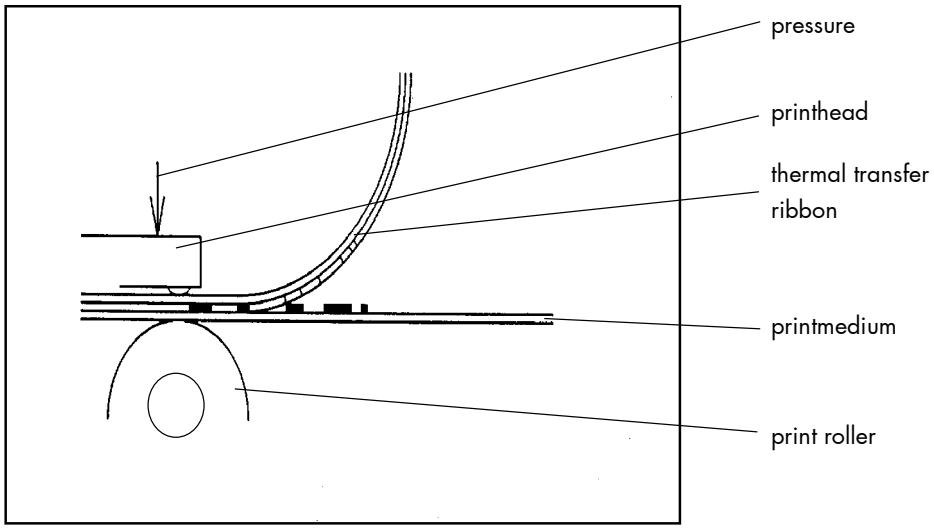



Fig. 7.3.a Principle view of the print process

The operation steps to perform are described in chapter 4.5 (Printhead Pressure Adjusting).

Please consider that increasing the pressure value will increase the friction between printhead, ribbon, printmedia and the print roller, too.
The abrasion of the concerning components (for example the printhead surface) will be accelerated considerably due to the increase of the pressure value.

If the print quality with a new printhead isn't even over the whole print width, an additional mechanical printhead adjustment is necessary.

This adjustment can be carried out by a service engineer or a MICROPLEX trained operator. A untrained person is not allowed to carry out these operations.

Attention: Wrong adjustments can cause a damage of the printhead!

# 8. Troubleshooting

## 8.1. Error Messages

| Panel display | Remedies |
|---|---|
| [Cover Open] | - close the printer hood |
| [Load Paper] | - insert a media (roll-fed media e.g.)<br>- make sure the media has been loaded correctly (compare chapter 4.2)<br>- clean the sensors (see chapter 7.1.3) |
| [FoilX Feed Err.] | - insert a ribbon<br>- make sure the ribbon has been loaded correctly (compare chapter 4.3) |
| [TT Mat. MoveX Err.] | - remove the jammed consumables (labels sticking together e.g.)<br>- see chapter 8.3, too: Incorrect media transport |

If the remedies above are not successful, please call a MICROPLEX authorized service engineer.

## 8.2. Reduced Print Quality

| Defect | Remedies |
|---|---|
| Printout too light | - check the print process selecting and correct it, if necessary (see chapter 6.1)<br>- check the ribbon transport (load the ribbon again, if necessary; see chapter 4.3)<br>- increase the contrast (see chapter 6.24)<br>- choose different consumables (adjust media to the ribbon resp. print process or vice versa, see chapter 4 and 6)<br>- check the environment conditions and correct them if necessary (admissible values for humidity, temperature etc., see chapter 2.3 and 9) |
| Printout too strong | - check the print process selecting and correct it, if necessary (see chapter 6.1)<br>- reduce the contrast (see chapter 6.24) |

| Defect | Remedies |
|---|---|
| Printout blurred or incomplete | - clean the printhead (see chapter 7.1.2)<br>- check the ribbon transport (load the ribbon again, if necessary; see chapter 4.3)<br>- the printhead has to be exchanged if, for example after a big printout performance the printout isn't correct any more (printhead exchange; see chapter 7.2) |

If the remedies above are not successful, please call a MICROPLEX authorized service engineer.

## 8.3. Incorrect Media Transport

| Defect | Remedies |
|---|---|
| Incorrect media transport<br>(no gap detection between labels e.g.) | - perform the basic operations<br>(see chapter 3)<br>- check if the media has been loaded correctly<br>(compare chapter 4.2)<br>- check if the ribbon has been loaded correctly<br>(compare chapter 4.3)<br>- clean the sensors<br>(see chapter 7.1.3)<br>- clean the transport rollers<br>(see chapter 7.1.4) |
| No straight transport of the consumables<br>(torsion or folding of the ribbon, e.g.) | - check if the ribbon has been loaded correctly<br>(compare chapter 4.3)<br>- check if the media has been loaded correctly<br>(compare chapter 4.2) |
| Paper Jam | in addition to the remedies above:<br>- operate the fan lever for the contact rollers to remove the paper<br>(see chapter 4.1)<br>- use the panel function Lift Printhead to lift the printhead<br>(see chapter 5.6 Menu Structure)<br>- check if the jammed consumables have been removed completely |

If the remedies above are not successful, please call a MICROPLEX authorized service engineer.

## 8.4. 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 occured 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 (chapter 6.10).

## 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
  (f.e.: external rewinder…).
- Remove the paper.
- Remove the ribbon, if one is loaded.
- Close the printhead.
- 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: | non-impact, thermal transfer printing / thermal direct printing | | | | |
| Print speed: | 4 up to 12 Inch / second | | | | |
| Resolution: | 300 dpi (dots per inch, horizontal and vertical) | | | | |
| | **SOLID T4** | **SOLID T5** | **SOLID T6** | **SOLID T8** | |
| Media width: | 25.4 to 113 | 25.4 to 154 | 30.2 to 185 | 100 to 254 | mm |
| max. Print width: | 106 | 128 | 160 | 213 | mm |
| Media thickness: | 0.2 to 0.9 mm | | | | |

Interfaces:
parallel: IEEE 1284 (Centronics), (MP-BUS, Second Centronics optional)
serial: RS232C, (RS422 optional)
USB 1.1
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)

| Dimensions: | **SOLID T4** | **SOLID T5** | **SOLID T6** | **SOLID T8** | |
|---|---|---|---|---|---|
| Width (W): | 320 | 345 | 370 | 420 | mm |
| Depth (D): | 490 | 490 | 490 | 490 | mm |
| Height (H): | 305 | 305 | 305 | 305 | mm |

| | | | | | |
|---|---|---|---|---|---|
| Weight: | appr. 18.5 (without consumables) | appr. 20.0 | appr. 21.5 | appr. 26.0 | kg |

Environment:
temperature: +5°C to +35°C (operating)
-20°C to +70°C (storage temperature)
relative atmospheric humidity: 45 to 75 % (without condensation)

Mains connection:
230 V AC, 50 Hz, (Europe, United Kingdom e.g.)
120 V AC, 60 Hz, (North America)

Power input: about 0.25 kW

## Costs per Page for MICROPLEX Print Systems

The term "costs per page" is the most frequently used one in connection with the purchase of a printer. Nevertheless this term is the one with the biggest lack of definition.
The distributors normally attach great importance to having small values for the costs per page. The user normally wants to have a value that is as realistic as possible.

There isn't any generally valid rule to calculate the costs per page. Therefore values given by different manufacturers are very often not comparable.

The values given by MICROPLEX are based on the utilization time of the so-called consumables of the printer. There isn't any generally valid rule for this calculation, either. Therefore MICROPLEX has fixed the definition of consumables as follows:

**1. Consumables**

Consumables are parts or substances which the user can exchange or refill without tools.

MICROPLEX understands by this definition that the user can decide by visible criteria when he should exchange or refill consumables. The working steps can be done by the user in accordance with the manual without the usage of tools.

Consumables can be different depending on the printer type.
The most important consumable for example is **toner**.

Usually the utilization time of these materials is given as a number of pages (DIN A4). These values often refer to the print density (3%, 4%, or 5%) which is given as an application specific parameter.
Usually a value of 5% print density is defined, very seldom is 4% used.
In the case of a low print density (e.g. 3%) the utilization time increases, in the case of a high print density (e.g. 10%) the utilization time is decreased.
**Therefore the utilization time is strongly dependant upon the application.**
Experience proves that in professional applications a print density of higher than 5% is usually reached. For a delivery note containing a form and some bar codes a print density of 8 - 10% is quite normal.

There are further parts that must be exchanged in addition to the consumables during the life time of a print system. MICROPLEX divides these additional parts into two categories:

**2. Application specific wearing materials**

Application specific wearing materials are parts which have to be exchanged by a service engineer or a trained operator. The criterias for the exchange aren't always easily recognizable for a user. Some of the criterias require measuring techniques or the experience of a service engineer or operator.
In a normal application, parts of this category are:
- fuser unit
- process unit (drum, OPC)
- ozone filter

**3. Spare parts**

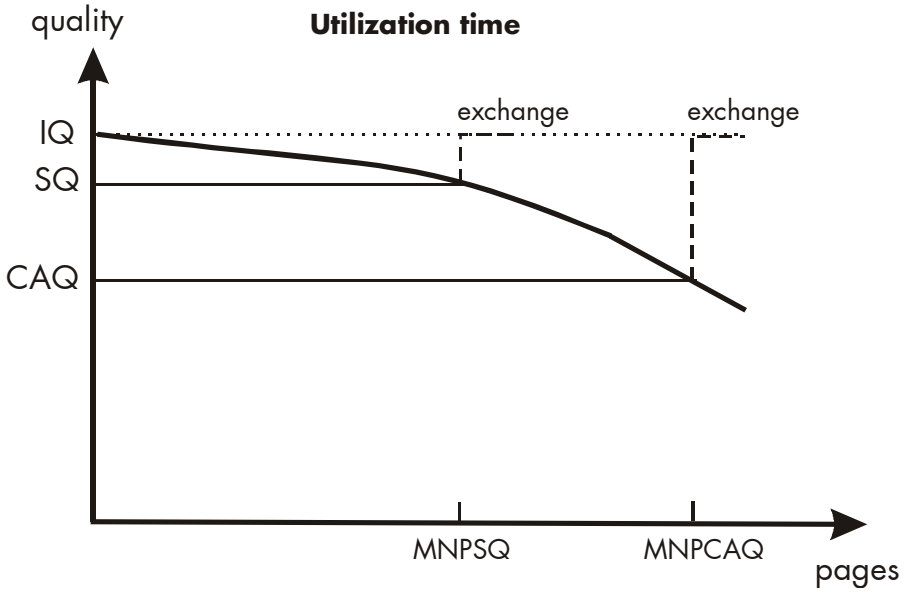
Spare parts are exchanged by the service engineer, when they fail.
Examples for spare parts are:
- couplings
- electronic assemblies
- rollers

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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