

Thermal Transfer Printer

a2
Gemini

Operator's Manual





Gesellschaft für

Computer- und Automations-

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A2 Gemini

Thermal Transfer Printer Operator's Manual



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Table of Contents

Trademarks 5

1. Product Description 6

 General Information 6

 Printers Types 6

 Compliances 7

 Technical Specifications 8

 Options 10

 Print Media 11

 Software 15

2. General Safety Instructions 16

3. Unpacking 16

 Delivery Contents 16

 Removing the Securing Devices 17

4. Printer Component Location 18

5. Connecting the Printer 23

 Connection to a Computer 23

 Connection to Power Supply 24

6. Navigator Pad 25

7. Media Loading 26

 General Information 26

 Preparation for Tear-Off Mode / Rewind Modes 27

 Loading Labels 28

 Loading Labels from Roll 28

 Adjustment of the Printhead Support 33

 Loading Fanfold Labels 34

 Loading Transfer Ribbon 36

 Adjustment of the Transfer Ribbon 38

8. Installing and Using the Software 39

 Introduction 39

 Installation Information 39

 Updates 39

 The Gemini Control Panel Application 40

 Test Print 41

 Printer Setup 42

 Printing from Windows Applications 46

9. Error Messages	47
10. Maintenance / Cleaning	48
General Cleaning	48
Cleaning the Print Roller	48
Cleaning the Printhead	49
Cleaning the Label Edge Sensor	50
11. Replacing Assembly Units	51
Replacing the Printhead	51
Replacing the Print Roller and the Rewind Assist Roller	54
12. Problem Solution	56

Index

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Trademarks

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1. Product Description

1. Product Description

General Information

The **A2 Gemini** is an innovative printer designed to work only in a Windows™ environment. Printer configuration and control is provided by the Gemini Control Panel Application running under Windows. The **A2 Gemini** driver allows printing from almost any Windows application, such as MS Word™, Write, WordPad, Access® and Visual Basic™, as well as Lotus® Approach®, Paradox® and dBASE® among others. Bar code labels can be created with existing Windows applications using the special barcode fonts built into the driver, eliminating the need for special labeling software.

A2 Gemini uses the true type fonts available with your Windows applications, and accepts all graphic types supported by Windows, resulting in exceptional flexibility in font and graphic choices. Fonts and graphics are downloaded as needed with the high-speed bi-directional Centronics interface, providing an exceptionally quick time to first label printing.

The **A2 Gemini** is built to work only with Windows, and takes full advantage of Windows features. Its simple design requires a minimum of effort and expertise for loading and maintaining the printer. From configuration and setup to ongoing operation, use of the online Gemini Control Panel Application simplifies the operator's job. Extensive Online Help is provided covering all features and functions available within the Control Panel Application and Printer Setup. In addition, help topics covering 'Printing from Windows Applications' and 'Barcode and Symbology information' are included.

The modular design of the **A2 Gemini** guarantees efficient service.

A label/tag cutter is available as additional accessory.

Printer Types

The printers of the **A2 Gemini** family are available in three variations:

A2/200 Gemini :

The device is equipped with a tear-off plate to aid the removal of the labels or continuous material by hand after printing.

A2/200R Gemini:

The printer is equipped with an internal rewind and may be used to rewind short runs in the printer.

A2/200P Gemini:

This printer type is prepared for operation in peel-off mode. Therefore the printer is equipped with internal rewind, dispense plate and present sensor.

Compliances

The device complies with the following safety regulations :

CE : The printer complies with the following safety requirements

- EC Low Voltage Directive (73/23/EEC)
- EC Machinery Directive (98/37/EEC)
- EC Electromagnetic Compatibility Directive (89/336/EEC)

FCC : The device complies with the requirements of the FCC regulations part 15 for class A computers. Under disadvantageous circumstances, the operation of these devices may cause interference with radio or TV reception, which has to be eliminated by the operator.

WARNING !

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

1. Product Description

Technical Specifications

Printhead

Printhead Type :	Direct thermal or thermal transfer
Printhead Model :	Thin film transfer printhead
Printhead Resolution :	203 dpi = 8 dots / mm
Number of dots/line :	832
Print speed :	2, 3, 4 ips (50, 75, 100 mm/s)
Print width :	4.1 in (104 mm)

Media

Material :	Standard Labels and Cardboard / Tags Direct Thermal, Thermal Transfer and various Synthetics including: thermal transfer plaincoated papers, vinyl, Mylar, metalized paper, non-woven fabric, fine woven fabric, thermal visible light scannable paper, infrared scannable paper, thermal ticket/tag stock, thermally sensitive plastic stock.
Media Type :	die cut labels, continuous paper
Media Winding :	face-in or face-out on the roll
Supply roll Diameter :	up to 8.2 in (210 mm)
Core diameter :	1.5 to 3 in (38.1-76 mm)
Material Thickness :	0.003 to 0.012 in (0.07-0.3 mm)
Weight :	up to 300 g/sqm
Material Width :	4.7 in (120 mm)
Media Width :	.5 to 4.6 in (12-116 mm)
for peel-off mode :	1 to 4.6 in (25-116 mm)
Media Height :	.2 to 9.8 in (5-250 mm)
for peel-off mode :	.5 to 7.9 in (12-200 mm)
Internal Rewinder :	to rewind media or liner in dispense mode
Core Diameter :	1.5 in (38.1 mm)
Rewind Diameter :	up to 5.7 in (145 mm)
Label side :	out

Transfer Ribbon

Ink side :	in or out
Outer Diameter :	up to 3.1 in (80 mm)
Core Diameter :	1 in (25 mm)
Length :	up to 1480 ft (450 m)
Width :	up to 4.5 in (114 mm)

1. Product Description

Media Edge Sensor

Distance to paper edge : .16-2.3 in (4-57,5 mm)
Material recognition : Gap sensor ("see-through"), Bottom-reflective sensor

Electronics

Processor : Motorola 68HC11
Memory (RAM) : 256 KB
Navigator Pad : with FEED, PAUSE and CANCEL function

Interfaces

Parallel : High-speed bi-directional Centronics
Peripheral connector : for cutter / present sensor

Fonts

Available fonts : Dependent on font selected, as supported by Microsoft Windows.
Character Sets : All character sets supported by Microsoft Windows.
Label Rotation: Portrait and Landscape, Reverse Portrait and Reverse Landscape with Flip Format option

Graphics

Graphic file types: All monochrome graphic types supported in Windows.

Barcodes

Linear codes : Code 39, Code 39MOD43, Code 93, Code 128 B,C, Codabar, Interleaved 2/5, Interleaved 2/5MOD10, MSI, Postnet, EAN 8, EAN 13, EAN/UPC App. 2, EAN/UPC App. 5, UPC A, UPC E0, UPC E1, UCC, NW7
2-D codes : Data Matrix, PDF417, QR-Code

Control / Test

Driver settings :
Print method : Direct Thermal / Thermal Transfer
Print mode : Batch Mode / Demand Mode
Material : Die cut label / Continuous material
Orientation: Flip 180°
Portrait / Landscape
Print speed, Heat setting,
Label offset, Presentation position,
Number of labels, Fast Print
Stop of print : Ribbon out
Paper out
Printhead too hot
Test option : Test print started from Gemini Control Panel
Status indication : Number of labels left in printer
Out of labels / Out of ribbon
Printer state - paused or not paused
Demand Mode indication
Miscellaneous error messages

1. Product Description

Others

Dimensions :	Size : 10.8 in (274mm) H : 9.5 in (242mm) W : 17.6 in (446mm)
Weight :	22 lb. (10 kg)
Operating voltage :	230 V~ / 50 Hz or 115 V~ / 60 Hz
Environment :	
Operation :	at 50° to 95°F (10 to 35°C) at a humidity of 30 to 85%
Transport :	at -13° to 158° F (-25 to +70°C) at a max. humidity of 95% non-condensing
Storage :	at 41° to 104° F (5 to 40 °C) at a humidity of 5 to 85%

Software

Windows Printer Driver :	for Windows 95/98/ME for Windows NT4.0/2000/XP
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Options

Cutter Unit

With the cutter unit installed, labels or continuous media (up to 200 g/sqm) may be cut when desired. For cutter operation, the printers firmware will extend the label for cutting based on specified displacements, then automatically backfeed the label, so that after making a cut, the label roll will be repositioned and ready for printing the next label.

The cutter is powered directly by the printers peripheral connector.

Label Design Software - EASYLABEL for Windows

EASYLABEL® labeling software allows you to drive your printer and create a full range of label formats with a minimum of effort. EASYLABEL runs under all versions of Microsoft Windows® on IBM and Compatible PC's.

For further information about EASYLABEL, please contact your **A2 Gemini** distributor

Print Media

The **A2 Gemini** printer can be run in a direct thermal or thermal transfer mode.

For direct thermal mode, the label material must be specifically designed for this use. The printout is created directly on the paper, as the paper reacts with the heat of the printhead and results in the darkening of the material.

Driving the printer in thermal transfer mode requires standard paper labels and the addition of thermal transfer ribbons. The printout is created by heating the ribbon with the printhead, resulting in a transfer of color from the ribbon onto the labels.

A2 Gemini allows for regulating the required heat setting through the software, which offers a wide range of printing possibilities.

The **A2 Gemini** is able to print on labels and continuous media, with a maximum supply roll diameter of 8.2" (210mm). The minimum core diameter is 1.5" (38.1mm).

Top of form (label edge) detection is accomplished with a moveable photocell, which is driven by the internal processor of the **A2 Gemini**. The photocell does an automatic measurement of the used material. No additional adjustments are required.

The following pages contain more detailed information and specifications which apply depending on the print method to be used.

For information of specific materials you may wish to use, check with your local distributor. Not every material is suitable for quality direct thermal or thermal transfer printing. The surface of the material is very often the main factor, but not the only factor determining suitability. There are many materials available for labeling and your local distributor can offer suggestions to meet your particular needs.

1. Product Description

Print Media for Direct Thermal Printing

The material to be printed must comply with certain important specifications to ensure a quality print image and to avoid damage or extra wear to the printhead.

Using the label stock which we have tested and recommended ensures the best treatment of the printhead. In the event that your label stock will be supplied by another manufacturer, the following points should be noted with regard to the use of thermal paper:

1. The surface coating/quality must sufficiently cover the thermo-reactive coating to ensure that the printhead does not become damaged. If the surface coating is too thin, the printhead can become pitted due to microscopically small "explosions" resulting when the chemical reaction of the thermal coating takes place. The result is that the printhead can rapidly become damaged.
2. The surface of the label should be very smooth to avoid a "sandpaper" type effect on the printhead.
3. Choose label stock which can be printed with the lowest possible thermal value. The greater the thermal value required, the greater wear on the printhead. Additionally, when the thermal value is high, the time required for the printhead to heat up and cool down can have an adverse effect on the quality of print, especially when a fast print speed is desired.

Print Media for Thermal Transfer Printing

The thermal transfer process makes possible the use of many different materials for printing, such as normal paper, cardboard, polyester film, etc.



NOTICE !

The print results depend to a great degree on a suitable combination of label material and transfer ribbon. The label surface dictates which transfer ribbon will provide the best print results, and which ribbon cannot. An unsuitable match of label material to ribbon type can be responsible for an extremely poor print quality.

Your Dealer can give you expert advice as to which combination of materials will best meet your requirements. Your Dealer can also assist you by testing the different materials you may be considering for your labeling needs.

Label / Tag Media Specifications

Label and tag media to be used by **A2 Gemini** must conform to the following specifications:

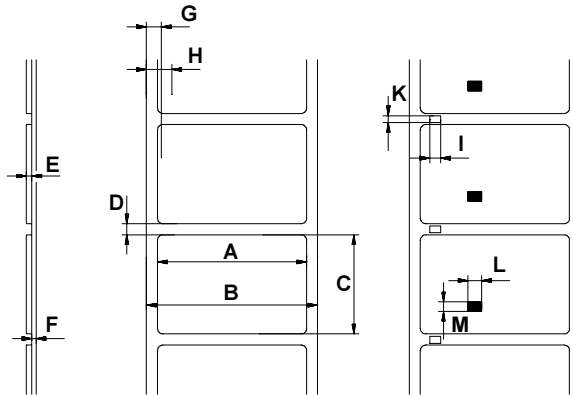


Fig. 1 Media Specifications

Item		MINIMUM	MAXIMUM
A	Label width	.5 (12)	4.6 (116)
	Peel-off mode	1 (25)	4.6 (116)
B	Backing width	1 (25)	4.7 (120)
C	Label length	.2 (5)	9.8 (250)
	Peel-off mode	.5 (12)	7.9 (200)
D	Gap between labels	.08 (2)	9.8 (250)
E	Label thickness	.003 (.07)	.012 (.3)
F	Thickness of backing material	.003 (.07)	.012 (.3)
G	Distance of the first printing position from the edge of the backing paper	.08 (2)	
H	Distance of the label sensor from the edge of the backing paper	.16 (4)	2.3 (57.5)
I	Width of the perforation mark	.2 (5)	-
K	Height of the perforation mark	.08 (2)	.1 (25)
L	Width of the reflective mark	.2 (5)	-
M	Height of the reflective mark	.08 (2)	-

Table 1 Media values are displayed in inches (values in brackets are mm)

1. Product Description

Transfer Ribbon

The choice of transfer ribbon plays an important role in the quality of print image that can be produced, and it also directly affects the longevity of the printhead.



CAUTION !

Poor quality transfer ribbon can lead to premature deterioration of the printhead !

The ribbon material must be as anti-static as possible. This is because the extremely thin surface coating on the printhead can be damaged by a build up of electrostatic charges. The temperature tolerance of the material must be extremely high in order to avoid the transfer ribbon melting directly onto the printhead. The temperature increase which results from the printing cycle must be dissipated over the label and the transfer ribbon. Poor quality transfer ribbon often has only a limited ability to dissipate the heat. This can contribute to overheating of the printhead, despite electronic protection against overheating.

Poor quality transfer ribbon also tends to partially shed its ink coating, causing the printhead and sensors to accumulate dirt. In addition, with some transfer ribbons, the back coating can flake or smudge, leaving traces on the printhead. All of these effects contribute to lowering the print quality to below desired standards.

Numerous tests have been conducted with a very large number of different transfer ribbons and we recommend only ribbons supplied by reputable manufacturers. A variety of different transfer ribbons can sometimes be used for a particular type of label stock. The quality of print is determined by the correct combination of these materials.



NOTICE !

When choosing material, make sure the transfer ribbon is slightly wider than the width of the label backing.

The presence of transfer ribbon is sensed by the rotational movement control of the transfer ribbon unwinder, rather than with photocell sensors. As a result, ribbons that have a thinner coating or those with a colored coating can be used without problems.

The possibility of printing labels up to the absolute end of the ribbon is restricted by the length of the uncoated "trailer", which attaches the end of the ribbon to the core.



NOTICE !

Make certain before purchasing transfer ribbon that the "trailer" (see above) is not more than 2.3in (60mm) long.

Software

There are several methods to create formats and to send them to the printer. Below, a short explanation of the most common methods is given.

Windows Printer Driver and Gemini Control Panel

Windows Printer drivers are available for the **A2 Gemini** printer. You can find these drivers in the delivery contents of the printer.

The printer can be operated from any Windows Application that supports Windows Printer drivers using the **A2 Gemini** Windows Printer driver. The graphical user interface allows for easy creation of label formats. However, the functionality depends on the chosen application and how each product supports Windows Printer drivers. A help file is included with the drivers to explain the usage and limitations when using certain Windows applications.

The Control Panel Application is necessary to provide control of the printer. It is possible to print to the **A2 Gemini** without having started this application. But, without it, there would be no way to check status, see error messages, check number of labels remaining and so on. Detailed information on the options currently provided with the Gemini Control Panel is available through Online Help.

Label Software

There are several Windows Applications that are designed to create labels. These programs are more suited to the requirements of label printing than standard Windows Applications. In some cases these programs use the Windows Printer Driver.

Some applications, for example EASYLABEL, have integrated internal drivers to operate the printers of the A series. These applications offer the best solution for creating and printing labels.

2. General Safety Instructions



CAUTION !

- The printer is built exclusively to print die-cut labels, continuous media, and similar materials as listed in Technical Specifications in Chapter 1.
- Connect the printer only to an outlet with the correct voltage.
The **A2 Gemini** is configured for either a 115V or 230V power supply, which can be switched using the input voltage selector at the back of the printer. Connect only to a power outlet with a **grounded** contact.
- The printer must only be connected to devices which have extra low voltage.
- Power must be OFF before plugging in any accessory, connecting to a computer and before performing any maintenance on the printer. Also turn the power off on all appliances before disconnecting from the printer.
- Do not expose the printer to any moisture, or use in damp or wet areas.
- The printer will operate with the cover open if necessary. This is not recommended, as it might allow debris to collect on the printhead surface. If the printer must be operated with the cover open, extra care must be taken to avoid allowing hair, jewelry, clothing, etc. near the moving parts.
- During the print process the printhead will become hot. Use extra caution when touching the printhead. Do not touch the printing surface of the printhead with your hand!
- Any adjustments or repairs which are not described in this manual, should only be carried out by an authorized service technician.

WARNING !

To avoid possible electric shock, do not open the backside cover!



3. Unpacking

Delivery Contents

Please inspect the **A2 Gemini**'s packaging and contents immediately after receipt for possible damage during shipment.



NOTICE !

Be sure to preserve the original packaging for possible later shipment!

The shipping container will contain the following standard components:

- **A2 Gemini** Thermal Transfer Printer
- Cardboard Core for the transfer ribbon rewinder.
- Tear-off plate (for **A2/200 Gemini only**)
- Rewind Guide Plate (for **A2/200R Gemini only**)
- Dispense Plate and Present Sensor (for **A2/200P Gemini only**)
- Power Cord
- Operator's Manual
- Windows Printer Driver
- Fuses for operation at alternative operating voltage (see page 24).

Removing the Securing Devices

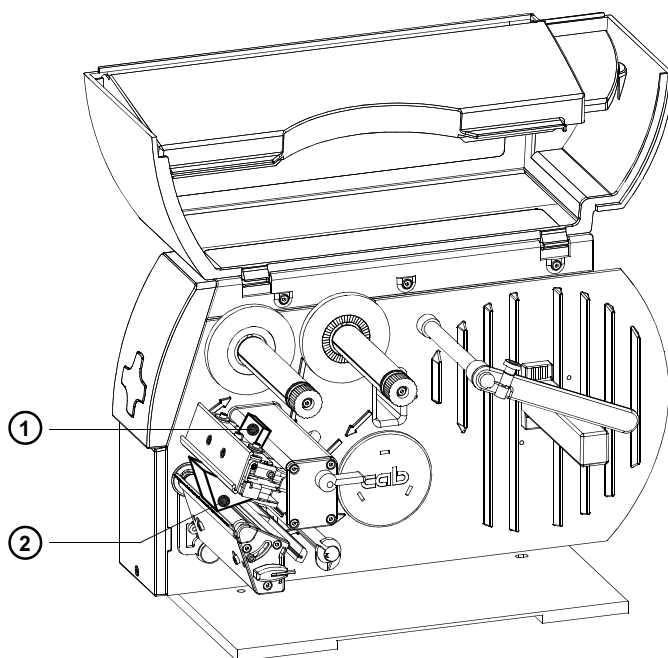


Fig. 3 Removing the Securing Devices

1. Place the printer on a solid flat surface.
2. Open the cover.
3. Remove the securing devices (1, 2).

4. Printer Component Location

4. Printer Component Location

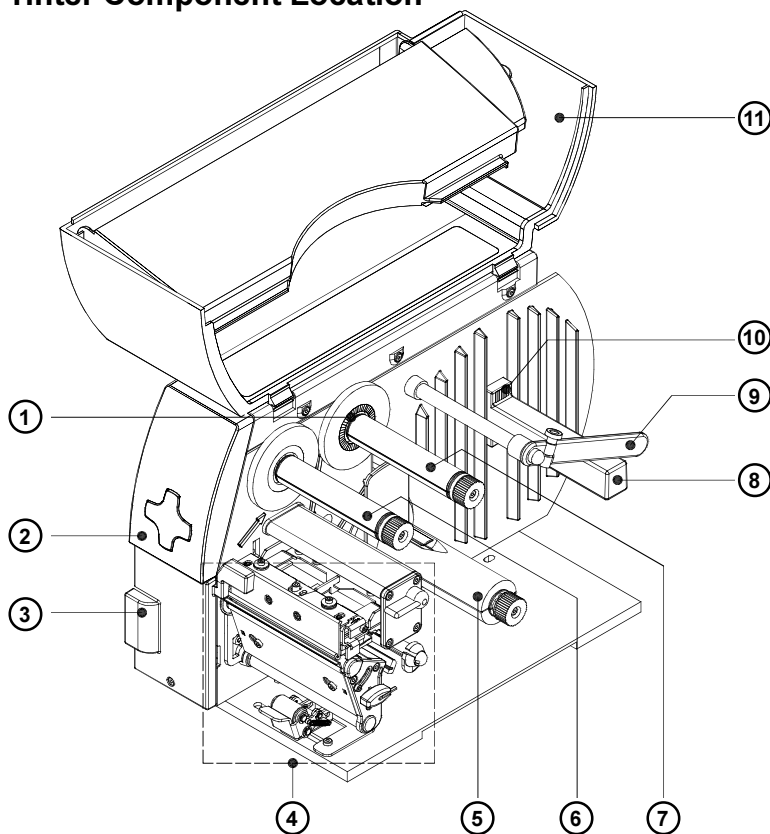


Fig. 4a General View

- 1 - Warning label "End of Ribbon"
- 2 - Navigator pad with keys
- 3 - Present sensor (only **A2/200P Gemini**)
- 4 - Print mechanism
- 5 - Internal rewinder (not for **A2/200 Gemini**)
- 6 - Ribbon take up hub
- 7 - Ribbon supply hub
- 8 - Media hub
- 9 - Media retainer
- 10 - Warning label "End of paper"
- 11 - Cover

4. Printer Component Location

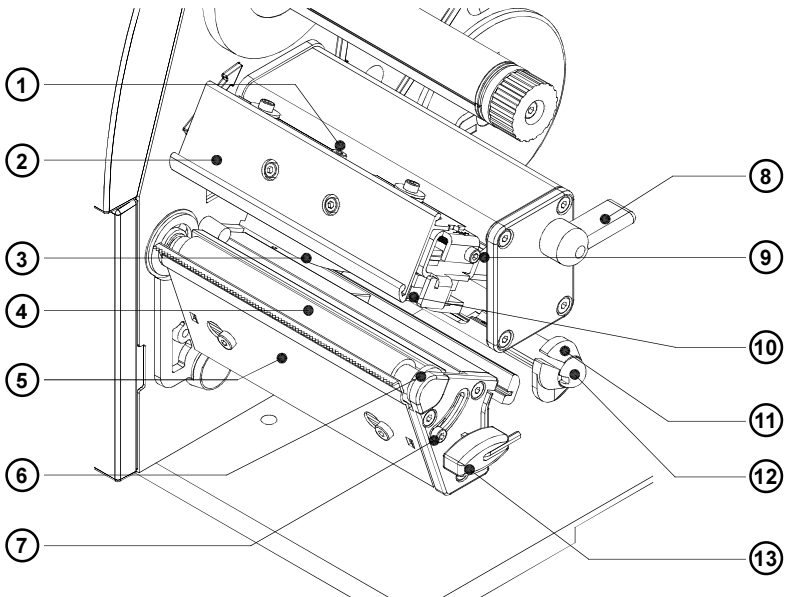


Fig. 4b Print Mechanism A2/200 Gemini with printhead open

- 1 - Printhead locking screw
- 2 - Ribbon shield
- 3 - Label edge sensor
- 4 - Media feed roller
- 5 - Tear-off plate
- 6 - Printhead support
- 7 - Screw for adjusting printhead
- 8 - Printhead lever
- 9 - Screw to adjust the ribbon shield
- 10 - Thermal printhead
- 11 - Media guide
- 12 - Guide axle
- 13 - Allen key for service

4. Printer Component Location

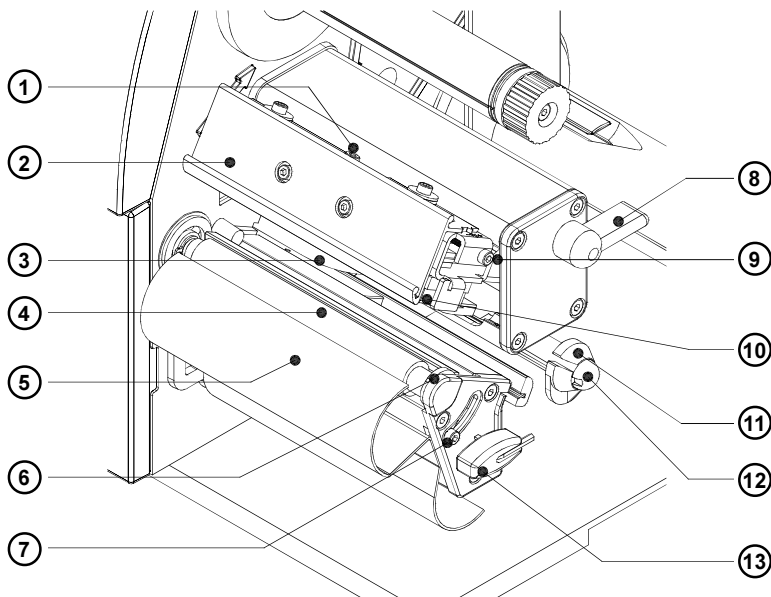


Fig. 4c Print Mechanism A2/200R Gemini with printhead open

- 1 - Printhead locking screw
- 2 - Ribbon shield
- 3 - Label edge sensor
- 4 - Media feed roller
- 5 - Rewind guide plate
- 6 - Printhead support
- 7 - Screw for adjusting printhead
- 8 - Printhead lever
- 9 - Screw to adjust the ribbon shield
- 10 - Thermal printhead
- 11 - Media guide
- 12 - Guide axle
- 13 - Allen key for service

4. Printer Component Location

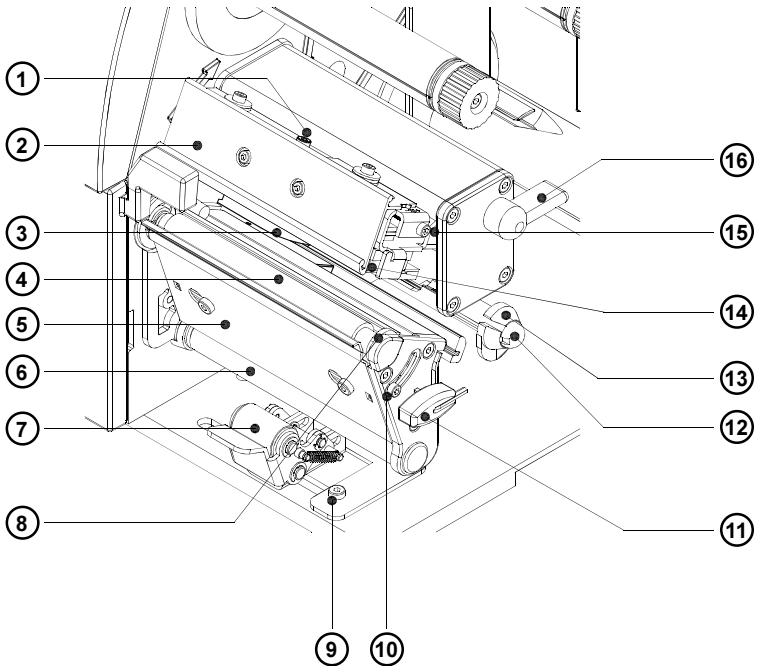


Fig. 4d Print Mechanism A2/200P Gemini with printhead open

- 1 - Printhead locking screw
- 2 - Ribbon shield
- 3 - Label edge sensor
- 4 - Media feed roller
- 5 - Dispense plate
- 6 - Rewind assist roller
- 7 - Locking system
- 8 - Printhead support
- 9 - Screw for adjusting locking system
- 10 - Screw for adjusting printhead support
- 11 - Allen key
- 12 - Guide axle
- 13 - Media guide
- 14 - Thermal printhead
- 15 - Screw to adjust the ribbon shield
- 16 - Printhead lever

4. Printer Component Location

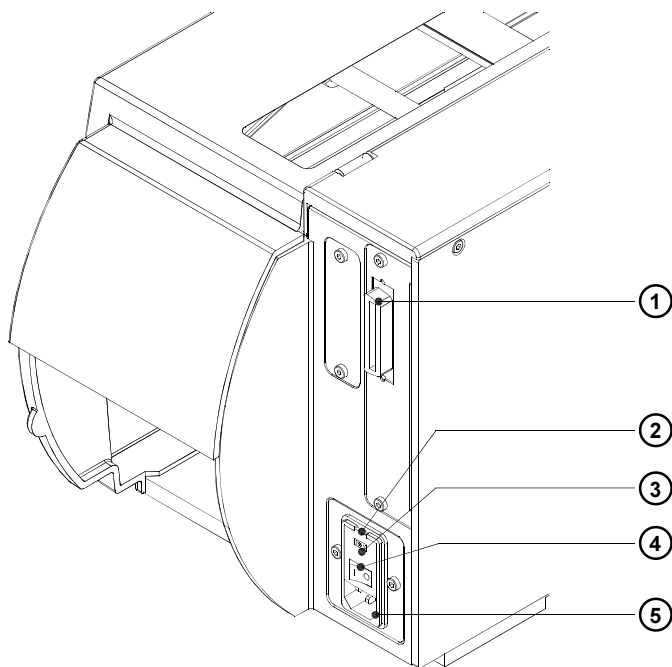


Fig. 4e Back View

- 1 - Bi-directional parallel interface
- 2 - Input voltage selector cover
- 3 - Input voltage selector / Fuse holder
- 4 - Power switch
- 5 - Power supply connector

5. Connecting the Printer



CAUTION !

Make sure the printer is located where the unit or the operator cannot come in contact with water. Otherwise it could cause damage to the printer.

Connection to a Computer

The A2 Gemini is fitted with a Centronics parallel interface which uses a 36-pin port (1).

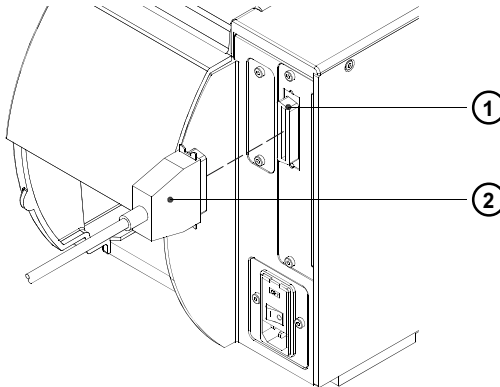


Fig. 5a Computer Connection

Obtain a standard parallel cable in a length suited to your needs (not exceed 10 feet in the length) and use it to connect the printer to your computer.



NOTICE !

Ensure that the interface cable is correctly grounded.

5. Connecting the Printer

Connection to Power Supply

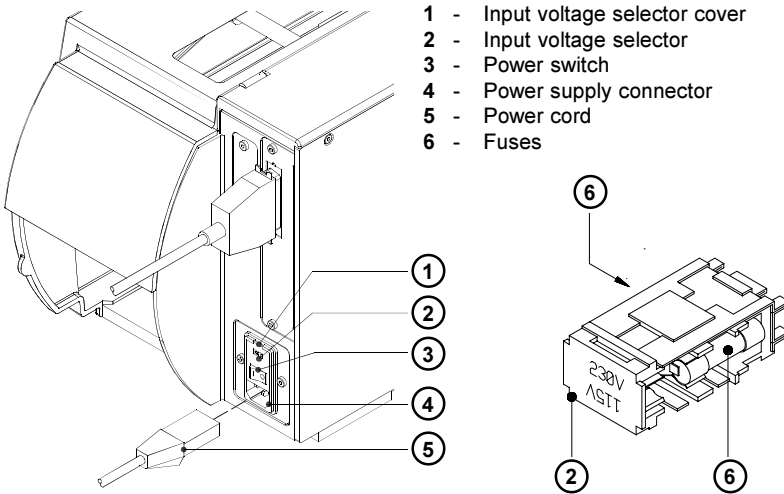


Fig. 5b Power Supply

A2 Gemini is designed for use with 230 V A.C/ 50 Hz or 115V A.C/ 60 Hz.



CAUTION !

Before connecting the printer to the power supply, make sure that the voltage selected on the power supply module of the printer is the same as your main power supply !

To change the voltage setting, open the cover (1) and remove the voltage selector (2) from the power unit.

If you have to change the operating voltage of your printer the fuses at the voltage selector need replacing as stated below :

230 V : T1,6A

115 V : T3,15A

Slide the voltage selector back into the power supply module so that the correct voltage is visible in the cover window.

Connect the printer to a **grounded** outlet.

Switch the printer ON with the power switch (3).

If the FEED key on the navigator pad does not light up, check the fuses inserted in the power supply module.

6. Navigator Pad

The Navigator Pad allows the operator the ability to control the most important functions directly on the printer, e.g. to pause and continue or to cancel print jobs on demand.
 The printer also may be controlled by the Gemini Control Panel software (see chapter 8).

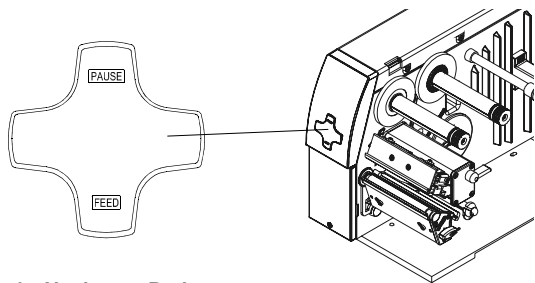


Fig. 6a Navigator Pad

The Navigator Pad has two integrated keys. The function and operation of the **PAUSE** key and the **FEED** key depends on the current printer state.

Key	Description	Function
FEED	on	Pressing the key performs a label feed.
PAUSE	on	Printer is in the mode PRINT Short pressing: Interrupts the print job (switches in the mode PAUSE) Pressing >1s: Cancels the current print job (Function Cancel)
	slow blinking	Printer is in the mode PAUSE Short pressing: Continues the print job Pressing >1s: Cancels the current print job (Function Cancel)
	rapid blinking	Printer is in the mode ERROR Short pressing: Continues the print job Pressing >1s: Cancels the current print job (Function Cancel)

7. Media Loading

General Information



1. Pay attention to the specifications of the material indicated in chapter 1.
2. When using the printer for the first time or using label media with a different width, make sure to adjust the printhead support as well as the position of the label edge sensor.
3. There are warning labels on the media hub and on the ribbon supply hub which will be visible if the material is getting low. When these warning labels are visible, prepare to replace the material soon.
 - 1 - Warning label "End of Ribbon"
 - 2 - Warning label "End of Paper"
4. If you do not use the printer for an extended period of time, lift the printhead to avoid possible flattening of the print roller.
5. If you want to move or ship the printer to another location, remove the media and the ribbon from the printer.

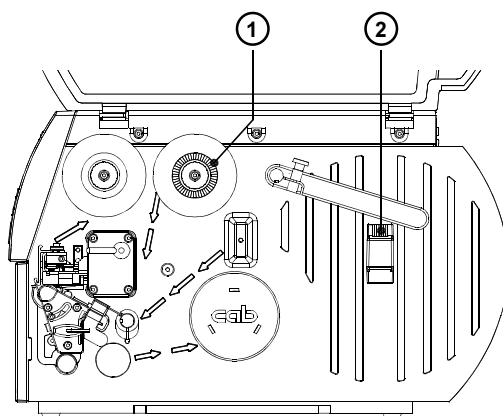


Fig. 7a Warning Labels

Preparation for Tear-Off Mode / Rewind Mode

The printer type **A2/200R Gemini** is supplied with a mounted rewind guide plate (1), preparing it for use in rewind mode.

With the optional tear-off plate the printer also may be operated in tear-off mode. For this purpose the rewind guide plate (1) must be replaced by the tear-off plate (3).

A2/200P Gemini is prepared for the dispense mode. After mounting the optional tear-off or rewind guide plate the printers also may be operated in tear-off or rewind mode.

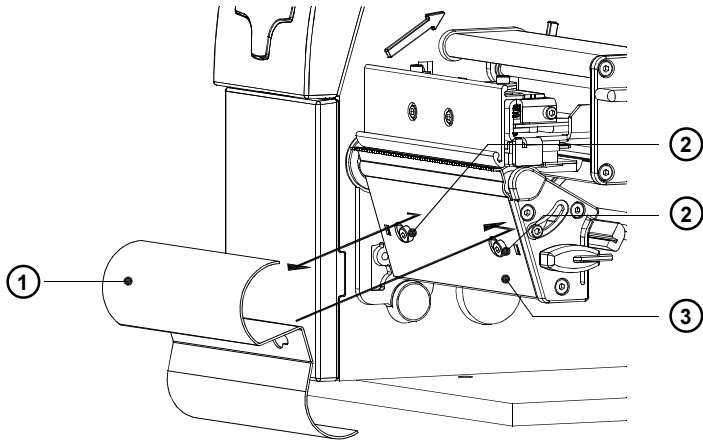


Fig. 7b Exchange Rewind Guide Plate / Tear-Off Plate

1. Open the cover.
2. Loosen the two screws (2).
3. Slide the rewind guide plate (1) to the right as far as possible to remove the rewind guide plate from the printer.
4. Place the slotted holes on the tear-off plate (3) over the screws (2) on the front of the printer and slide the plate to the left until it stops.
5. Tighten the two screws (2).

7. Media Loading

Loading Labels

Loading Labels from Roll

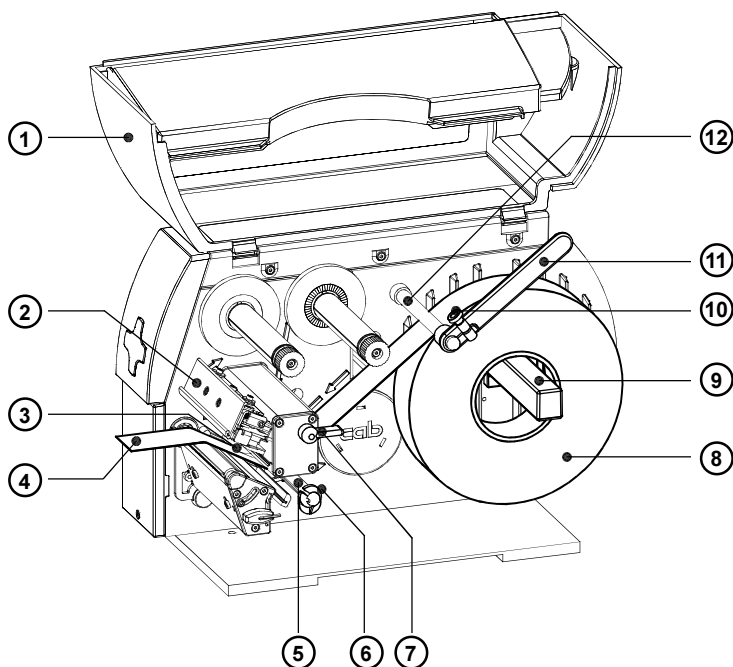


Fig. 7c Label Loading in Tear-off Mode

1. Open the cover (1).
2. Loosen the knurled screw (10), swing the media retainer (11) upwards and slide it out as far as possible.
If you are using material that is the same width as the previous material, just swing the media retainer (11) upwards.
3. Place the media roll (8) onto the media hub (9) and unwind a strip of media (4) from the media roll. When operating in the rewind or peel-off mode make sure that the strip is long enough to reach the internal rewriter by guiding it through the whole print mechanism and underneath of it. Make sure the labels between the media hub and the print mechanism are facing up. Slide the roll onto the media hub (9) until it stops.

4. Swing the media retainer (11) downwards until it touches the media hub (9). Push the media retainer against the supply role until it rests against the label media. Tighten the knurled screw (10).
5. Raise the printhead assembly (2) by rotating the lever (7) clockwise until it stops.
6. Slide the media guide ring (6) outward, allowing enough clearance for the label stock's width when loaded.
7. Slide the media strip underneath the axle (5) and through the adjustable photocell assembly (3) until it comes out of the front of the printer. If you are using labels that are wound-in, please make sure that you slide the media strip over the internal rewind hub (13). In figure 7d the feed path for labels wound-out is represented by a solid line, and the feed path for wound-in labels is represented by a broken line.

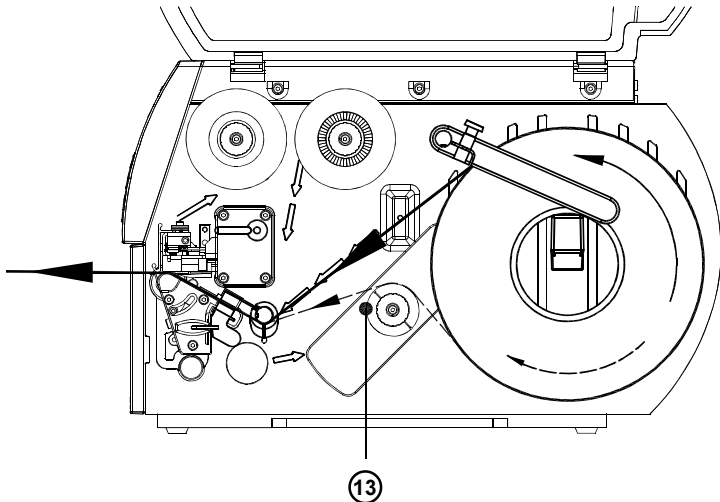


Fig. 7d Feed Path in Tear-off Mode

8. Slide the media guide ring (6) inward until it lightly touches the side of the media strip.

7. Media Loading

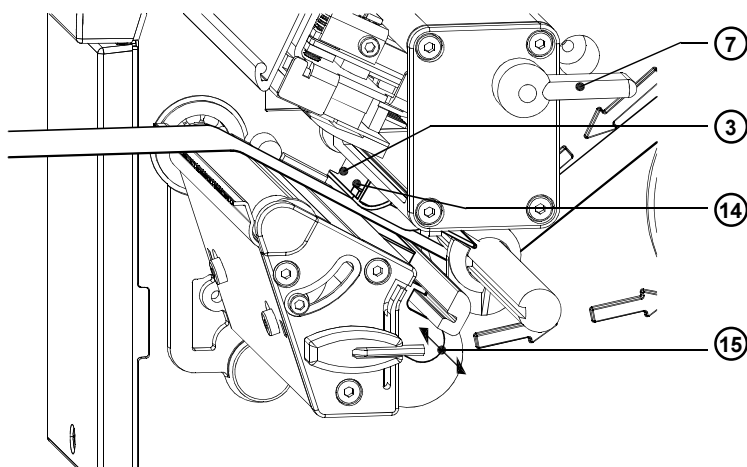


Fig. 7e Adjustment of the Label Edge Sensor

9. To accommodate a variety of print jobs, the position of the label edge sensor (3) can be adjusted until it is at the proper sensing position. It is important to ensure that the sensor (14) itself (the position of which is indicated by a notch in the sensor housing) is positioned so that the space between the labels can be recognized by the photocell. In the case of labels which have an unconventional shape (ie. not square or rectangular), the photo cell should be positioned at the leading edge of the label. Adjustment of the sensor is performed by sliding the handle (15) in and out.
10. Lower the printhead by rotating the lever (7) counter-clockwise until it locks.
11. When the printer is operated in rewind mode continue with point 12. When the printer is operated in peel-off mode continue with point 13.

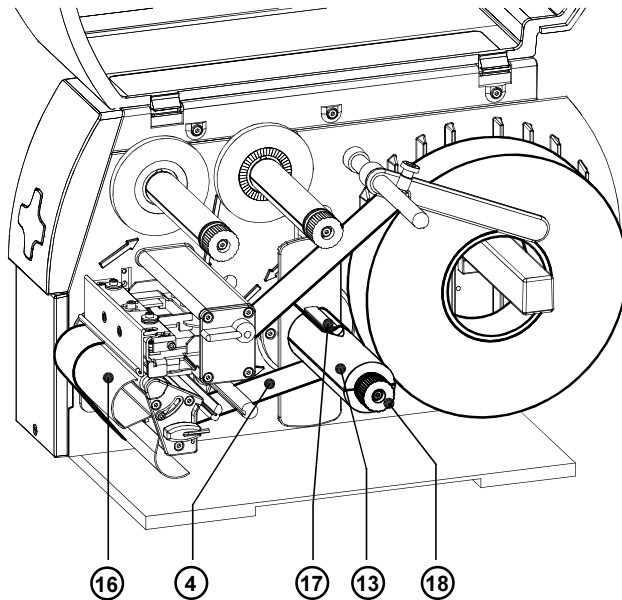


Fig. 7f Loading Labels from Roll in Rewind Mode

12. In rewind mode, the tear-off plate must be replaced with the rewind guide plate (16). Then, slide the media strip (4) around the rewind guide plate (16) to the internal rewind hub (13) as shown in figure 7f. Slide the strip under the clamps (17) that are located on the internal rewind hub (13). Hold the internal rewind hub (13) and rotate the nut (18) counter-clockwise until it is tight. The media strip will now be fastened to the internal rewind hub (13). Rotate the internal rewind hub (13) counter-clockwise to tighten the media strip.

7. Media Loading

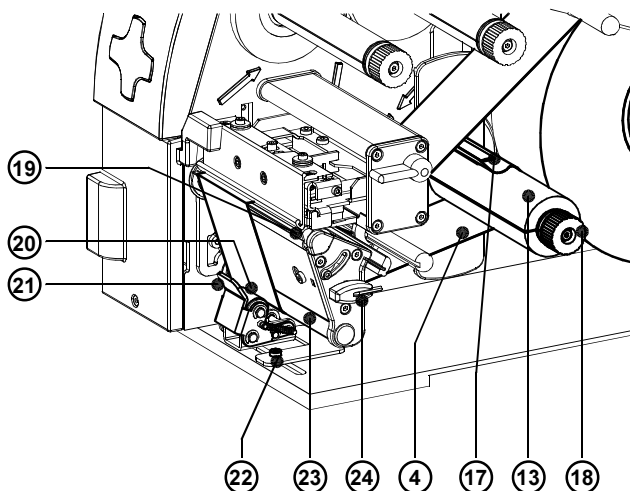


Fig. 7g Loading Labels from Roll in Peel-off mode

13. For peel-off mode swing the locking system (21) away from the rewind assist roller (23).
14. Then, slide the media strip (4) around the dispense plate (19) to the internal rewind hub (13) as shown in figure 7g. Slide the strip under the clamps (17) that are located on the internal rewind hub (13). Hold the internal rewind hub (13) and rotate the nut (18) counter-clockwise until it is tight. The media strip will now be fastened to the internal rewind hub (13). Rotate the internal rewind hub (13) counter-clockwise to tighten the media strip.
15. Loosen the screw (22) using the Allen key (24). Align the locking system (21) including the pinch roller (20) by sliding it sideways. The alignment is correct if the pinch roller (20) is placed in the middle of the label strip.
16. Swing the locking system (21) to the rewind axle (23) and tighten the screw (22).
17. For further informationen about operating in the peel-off mode see appendix A.

Adjustment of the Printhead Support

When printing narrow label stock (width less than 2.5" or 60 mm), it is possible that the printhead will come into direct contact with the printing roller in the area where there is no media.



CAUTION !

The printhead touching the print roller could lead to premature failure on the printhead or the print roller!

This can also cause the printhead to be at a slight angle to the media, leading to a variation in the darkness of the print across the label.

This fault can be corrected by adjusting the printhead support :

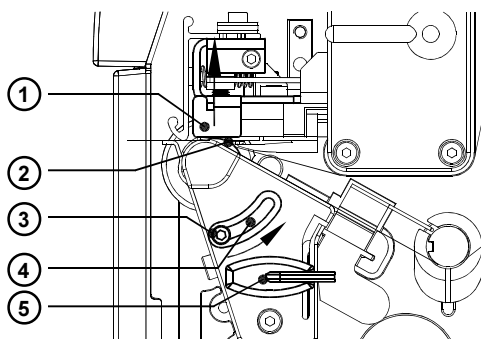


Fig. 7h Adjustment of the Printhead Support

1. The current position of the printhead support (2) is shown by the position of the screw (3) in the elongated hole (4).
2. For wide media the screw position shown in figure 7h is recommended. In this position the printhead support (2) is not used.
3. For narrow media, it is necessary to adjust the printhead support. In this case insert a second strip of a label at the outer side of the print roller and close the printhead. Loosen the screw (3) using the Allen key (5) and slide it slowly in the arrow direction until the printhead support (2) touches the printhead mounting (1).
4. Tighten the screw (3).
5. Remove the second label strip.



NOTICE !

Incorrect adjustments of the printhead support may cause wrinkles in the transfer ribbon.

7. Media Loading

Loading Fanfold Labels

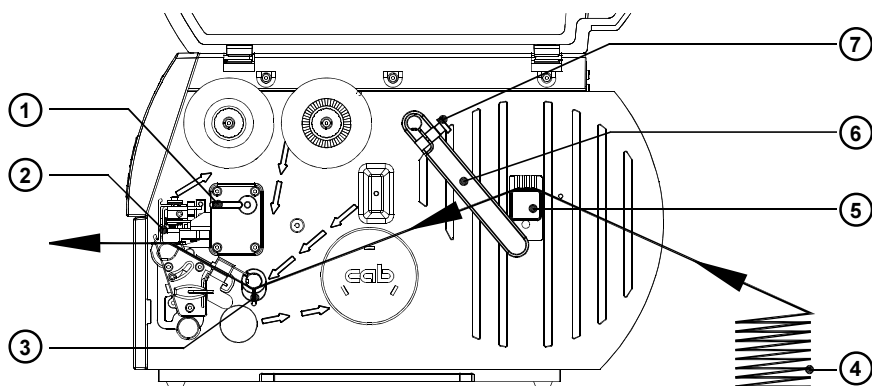


Fig. 7i Loading Fanfold Labels

1. Open the cover.
2. Loosen the knurled screw (7) and slide the media guide (6) to its outermost position. Rotate the media guide (6) downwards past the media retainer (5).
3. Place the stack of media (4) behind the printer. Make sure the labels on the media strip are facing up.
4. To raise the printhead assembly (2), rotate the lever (1) clockwise until it stops.
5. Slide the media guide ring (3) outward, allowing enough clearance for the media's width when loaded.
6. Slide the media strip through the printer as shown in figure 7i.
7. Adjust the label edge sensor so, that the sensor can recognize the space between the labels respectively the reflective or the perforation mark.
8. Slide the media guide (6) inward until it lightly touches the side of the media strip. Rotate the media guide (6) upwards against the media retainer (5) and tighten the knurled screw (7).

9. Slide the media guide ring (3) inward until it lightly touches the side of the media strip.
10. Lower the printhead by rotating the lever (1) counter-clockwise until it stops.



NOTICE !

When printing narrow label stock please activate the printhead support as described in the previous chapter !

7. Media Loading

Loading Transfer Ribbon

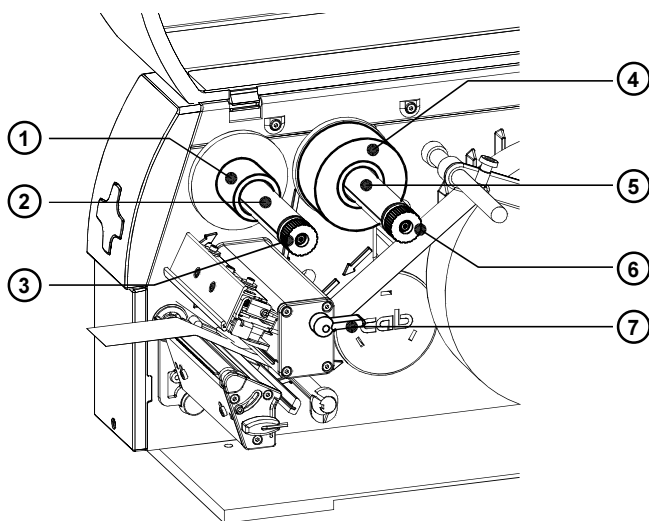


Fig. 7k Loading Transfer Ribbon



NOTICE !

For direct thermal printing no transfer ribbon is needed !

1. Rotate the printhead lever (7) clockwise until it stops to raise the printhead.
2. Slide the roll of transfer ribbon (4) as far as possible onto the ribbon supply hub (5).



NOTICE !

Note which side of the transfer ribbon is coated with ink! The inked side is generally the dull side of the transfer ribbon. When the ribbon is inserted, the inked side must not be placed in contact with the printhead! In figure 7l the solid line represents ribbon with ink on the inner side, and the broken line represents ribbon with ink on the outer side.

3. Rotate the knurled knob (6) counter-clockwise to clamp the roll of transfer ribbon (4) onto the ribbon supply hub (5).

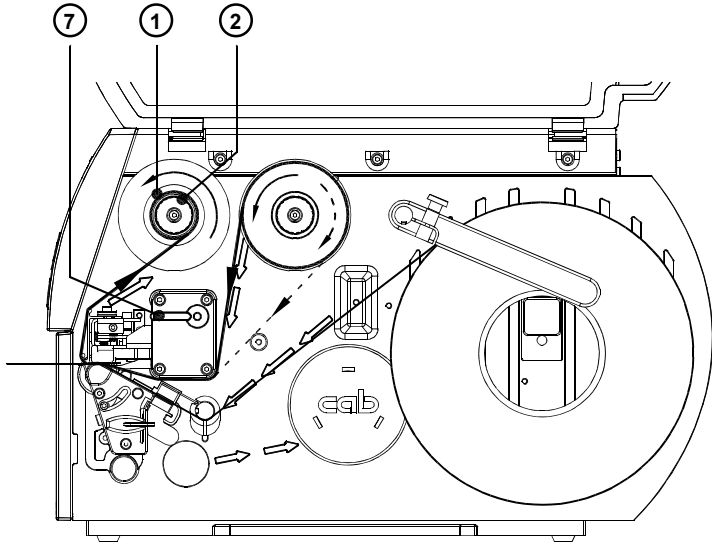


Fig. 7I Path of Transfer Ribbon

4. Slide a cardboard core (1) onto the ribbon take up hub (2). Clamp the core by rotating the knurled knob (3) counter-clockwise.
5. Feed the transfer ribbon along the path as shown in figure 7I and attach it to the cardboard core (1) using a piece of tape or a label.
6. Turn the ribbon take up hub (2) counter-clockwise until the ribbon is taut and without any wrinkles.
7. Rotate the printhead lever (7) counter-clockwise until it stops, thereby locking the printhead into position.

Adjustment of the Transfer Ribbon

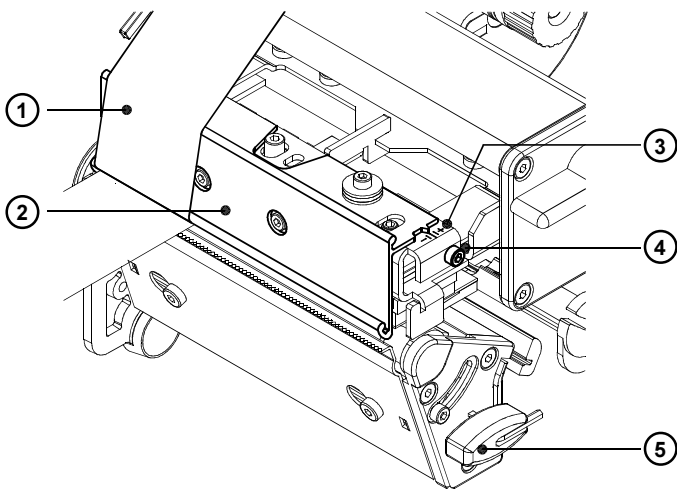


Fig. 7m Adjustment of the Transfer Ribbon

In the event that wrinkles appear in the transfer ribbon (1), which cause an inconsistent print image, the transfer ribbon shield (2) can be adjusted to remove the wrinkles. The adjustment should be done during the printing process.

1. The current position is visible on the scale (3).
2. To change the position, rotate the screw (4) using the Allen key (5). Rotating it in the direction of "+" will tighten the transfer ribbon the inner edge of the transfer ribbon. Rotating it in the direction of "-" will tighten the outer edge of the transfer ribbon.

To eliminate the wrinkles, tighten the side where the wrinkles are originating.

8. Installing and Using the Software

Introduction

The diskette(s) provided with the printer includes installation files to install the following:

1. **A2 Gemini** Windows Printer Driver - The interface between the printer and your Windows application, which also provides the capability of printing barcodes using its special built-in fonts.
2. Barcode Display Font - Provides a general representation of a barcode on the screen to assist in field placement during label design (Not intended as an accurate representation)
3. Gemini Control Panel Application - Provides control of the printer and current print job.

A2 Gemini drivers are available for Windows 95/98/ME as well as for Windows NT 4.0/2000/XP.

Installation Information

Depending on the Windows version used, the **A2 Gemini** Printer software needs to be installed through

either : the setup program of the software package

or : via the Add Printer Wizard.

Detailed information regarding the installation of the **A2 Gemini** Printer software are to find in the "readme.txt" file of the applicable software package.

Updates

Updates for the **A2 Gemini** Printer software are available on the internet at :

<http://www.cabgmbh.com>


8. Installing and Using the Software

The Gemini Control Panel Application

The Control Panel Application is necessary to provide control of the printer. It is possible to print to the **A2 Gemini** without having started this application. But, without it, there would be no way to check status, see error messages, check number of labels remaining, and so on. Detailed information on the options currently provided with the Gemini Control Panel is available through Online Help, and will not be included here.



NOTICE !
The functions "Form Feed", "Pause" and "Cancel" also can be released by pressing the appropriate keys on the Navigator Pad on the printer (see chapter 6).

To start the application, (double-)click on the Gemini program group, then (double-) click on the **A2 Gemini** icon . Once started, this application should be left open as long as the printer is turned on.

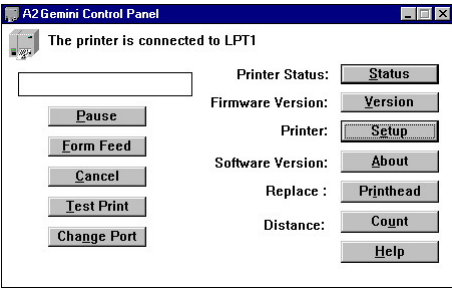


Fig. 8 a Startup window of the Gemini Control Panel under Windows 95, Windows 98 and Windows ME

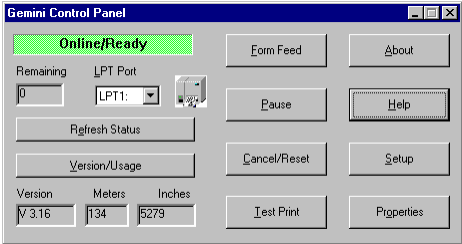


Fig. 8 b Startup window of the Gemini Control Panel under Windows NT4.0, Windows 2000 and Windows XP

A2 Gemini - Test Print

To prepare for a test print, load media (labels, continuous paper) and a transfer ribbon (if applicable), which extends over the entire print width of the printer. The test print will be printed with the heat level and the print speed set in the Printer setup.

The test print on the **A2 Gemini** Label Printer is available by clicking the 'Test Print' button in the Gemini Control Panel Window (Figure 8a,b).

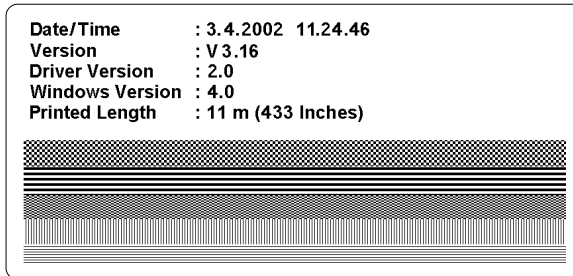


Fig. 8 c A2 Gemini -Test Print (Windows NT4.0)

The Test Print contains a test pattern and the following information:

Date / Time :

The current date and time.

Version / Firmware Version :

The **A2 Gemini's** current firmware version.

Driver Version :

The current version of the **A2 Gemini** Windows printer driver.

A2 Gemini Control Panel Version :

The current version of the Gemini Control Panel software.

Windows Version :

The version of Windows the Gemini Control Panel software is running on.

Print Length :

The total length in inches and meters that the **A2 Gemini** Printer has printed.

8. Installing and Using the Software

Printer Setup

Printer Setup is performed on an as-needed basis. Generally, when any printer is installed, various options such as operating mode or paper size may need to be modified from the default setting. With the **A2 Gemini**, in addition to the usual printer default values, barcode symbology selection should be made. The **A2 Gemini** driver provides a long list of available symbologies in various ratios and multipliers. From this list, you must select those symbologies that should be made available to your Windows applications. Detailed information on the features and options currently available in Printer Setup is available through Online Help, and will not be included here.

Printer Setup can be reached in a variety of ways. This can take place from Windows Control Panel-Printers group, or from various application software in the Printer Setup function. In addition, the Gemini Control Panel application provides the most convenient, direct access to Printer Setup.

Printer Setup Windows under Windows 95, Windows 98 and Windows ME

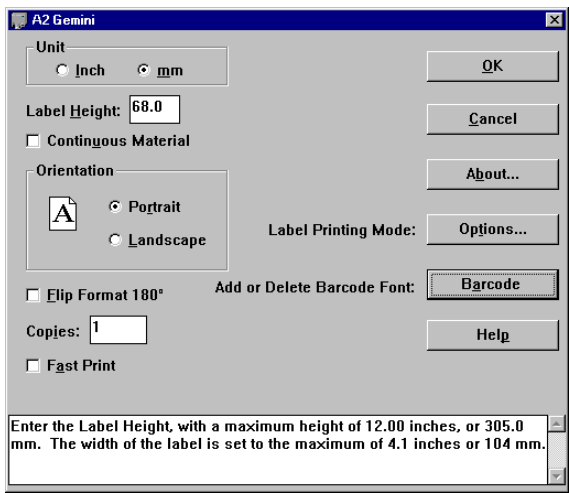


Fig. 8 d Printer Setup - Main Window under Windows 95, Windows 98 and Windows ME

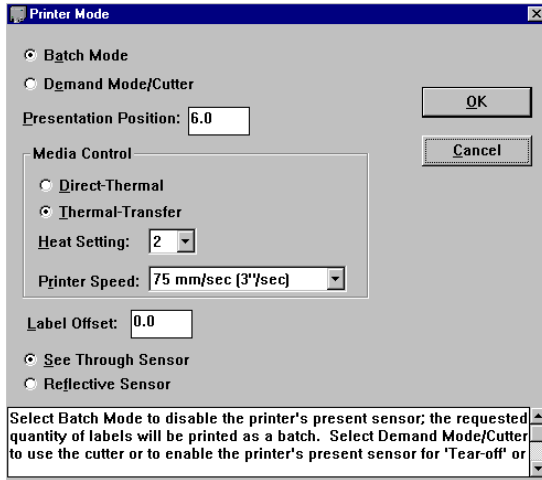


Fig. 8 e Printer Setup - Printer Mode Window
under Windows 95, Windows 98 and Windows ME

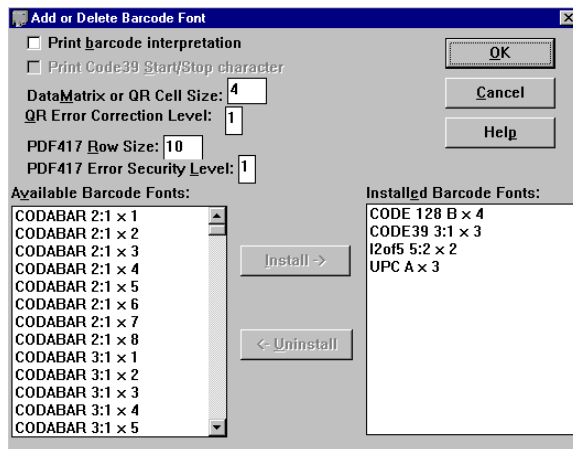


Fig. 8 f Printer Setup - Add or Delete Barcode Font Window
under Windows 95, Windows 98 and Windows ME

8. Installing and Using the Software

Printer Setup Windows under Windows NT 4.0 / Windows 2000 / Windows XP

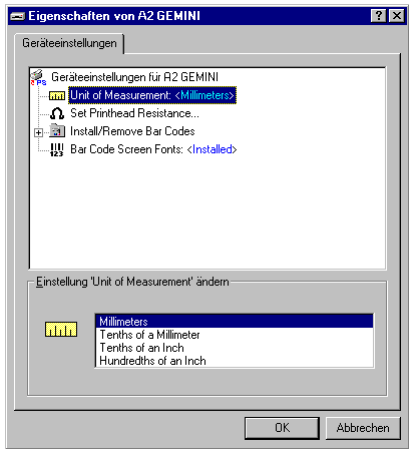


Fig. 8 g **Printer Setup - Printer Properties Window**
under Windows NT 4.0 / Windows 2000 / Windows XP
Window accessible from Gemini Control Panel by the
"Properties" button only

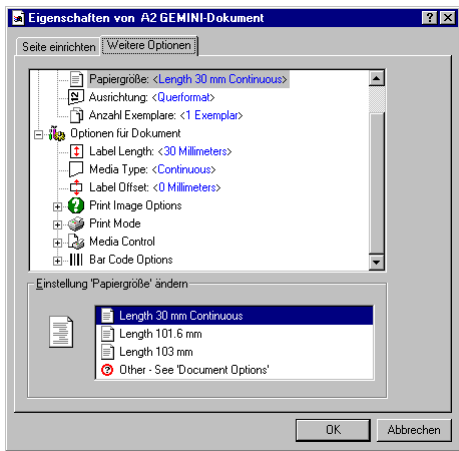


Fig. 8 h **Printer Setup - Document Properties Window**
under Windows NT 4.0 / Windows 2000 / Windows XP
(Overview)

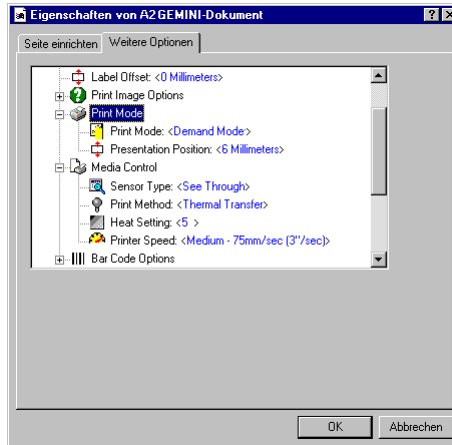


Fig. 8 i Printer Setup - Document Properties Window under Windows NT 4.0 / Windows 2000 / Windows XP Section "Print Mode and Media Control "

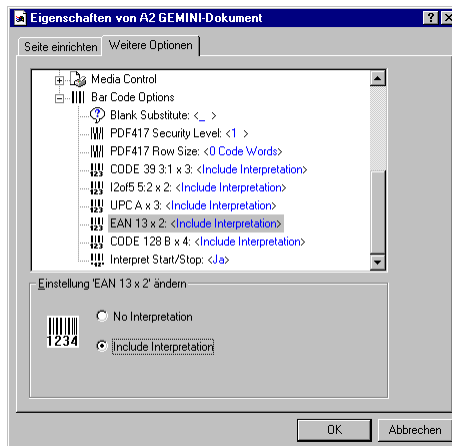


Fig. 8 k Printer Setup - Document Properties Window under Windows NT 4.0 / Windows 2000 / Windows XP Section "Bar Code Options"

8. Installing and Using the Software

Printing from Windows Applications

Printing to the **A2 Gemini** is accomplished in the same manner as printing to any other Windows installed printer. The **A2 Gemini** must be selected as the default printer by using either Windows Control Panel-Printers or the application in use. What can be printed and how printing is initiated is then dependent on the application being used.

The following is a general description of the steps required to print a label:

1. Select the **A2 Gemini** as the default printer.
2. Start the Gemini Control Panel Application by (double-)clicking the icon, then minimized if desired.
3. Specify the label size, processing mode, etc. with Printer Setup.
4. In your Windows Application, set the margins to 0 and set the page size to match the label size specified in Printer Setup.
5. Design the label, considering the label's dimensions, even if your application does not display a work area that matches the actual label size.
Place text, graphics and barcode fields within the dimensions of your label.
6. If possible, use Print Preview to assist in proper field placement.
7. Print a single test label to see actual layout and size of the fields. This is the only way to see an accurate representation of barcode fields.

The ease with which a label can be designed, and the results that can be achieved, depend directly on the software being used. The range of software types, including word processors, databases, spreadsheets and graphic applications, offers a similarly wide range in results.

To assist the user in designing labels, variety of topics is available in the **A2 Gemini's** Online Help. These topics include general tips and techniques that are independent of the specific software being used. Also included are observations and tips regarding label design and printing with specific Micro-soft® and other vendor applications.

9. Error Messages

If an error occurs while operating the **A2 Gemini**, a message box is displayed on the screen and the printer is paused. Additionally, an error is indicated by a **rapid blinking** **[PAUSE]** key on the printer's Navigator Pad.

After solving the problem, the print job is continued by clicking OK in the error message window or by pressing the **[PAUSE]** key on the Navigator Pad. However, if the problem still exists, the message box will reappear.

The following table contains a reference of error messages, possible causes and solutions to the problems.

Error message	Possible cause	Solution
The printer is out of label stock	Label material has run out.	Insert new supply roll, click OK.
	Label is not inserted properly in the label sensor photo cell.	Check paper edge, then click OK
The printer is out of ribbon	Ribbon has run out.	Insert a new ribbon.
	Printer is loaded with thermal labels for direct thermal mode, and no ribbon is loaded, but the software is set for transfer printing.	Cancel print job. Correct software for direct thermal mode. Start a new print job.
Can not find gap	The label format size specified in the software is different from the actual label size.	Cancel print job, change label format setting in the software and start new print job.
	Continuous (endless) media is loaded, but the software is not set for continuous media.	Cancel print job. Correct the media type to continuous (endless) in the software. Start a new print job.
The printer cutter is jammed	Refers to the optional cutter. The cutter is unable to cut the labels and stays in an undefined position	Switch printer off and on again. Start a new print job. If error recurs, use a thinner label material.
The printhead is overheated	The printer has sensed an overheating condition in the printhead, and has not been able to compensate successfully by decreasing the heat setting internally.	The printer will wait until the printhead has cooled sufficiently, then it will automatically resume printing. After clicking OK, no other operator action is required.

Table 9 Error messages

10. Maintenance / Cleaning

The **A2 Gemini** thermal transfer printer requires very little maintenance.

Most important, clean the printhead on a regular basis. This will ensure a high quality printed image. It also reduces the amount of wear of the printhead. Aside from that, the only other servicing required is to clean the outside of the printer occasionally.



WARNING !

Before starting any maintenance, power OFF the printer and disconnect the printer from the outlet!

General Cleaning

During the normal operation of the printer, particles of dust and paper can accumulate inside the printer. Remove these particles with a soft brush or a vacuum.

The cover of the printer can be cleaned with a standard cleanser.



CAUTION !

Do not use abrasive cleaners or solvents !

Cleaning the Print Roller

Accumulations of dirt on the print roller can lead to impaired media transport.

Clean the roller as follows :

1. Open the printhead.
2. Remove the media from the printer.
3. Remove all deposits with a rubber roller cleaner and a soft cloth.

Cleaning the Printhead

During printing, the thermal printhead will accumulate dirt such as paper dust or particles of color from the ribbon. This accumulation can cause a deterioration of the print quality (contrast difference of the label, appearance of clear vertical stripes). To correct or avoid these types of problems, the printhead should be cleaned at regular intervals:

Direct Thermal Printing : every media roll change

Thermal Transfer Printing : each ribbon change



CAUTION !

Do not use sharp objects for cleaning the printhead !

Do not touch the protective layer of the printhead with your hands!

Clean the printhead as follows :

1. Open the printhead as far as possible.
2. Remove the media and ribbon from the printer.
3. Clean the surface of the printhead with a cleaning pen, or use a cotton swab dipped in isopropyl alcohol.
4. Let the printhead dry approximately 2 to 3 minutes before powering-on and restarting the printer.

Cleaning the Label Edge Sensor

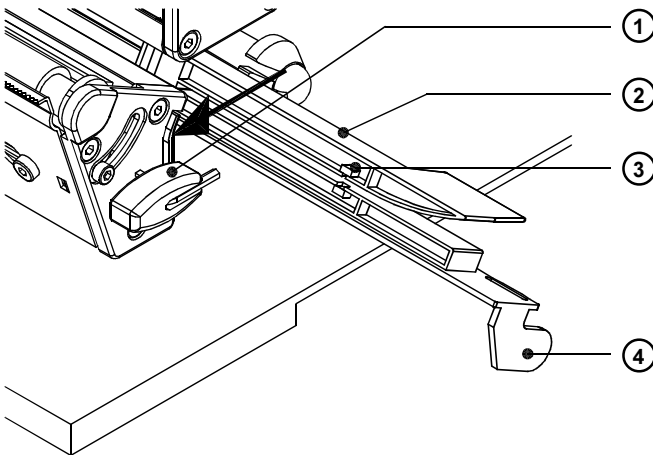


Fig. 10 Cleaning the Label Edge Sensor

During operation of the printer, paper dust can accumulate on the label edge sensor. In some cases, this may lead to problems when sensing the media. If this is the case, you should clean the label edge sensor.



CAUTION !

Do not use solvents to clean the label edge sensor!
Do not use sharp objects to clean the optical sensor!

1. Remove the media from the printer.
2. Press the latch (1) in the direction of the arrow in figure 10.
3. Continue pressing the latch and pull the label edge sensor (2) with the handle (4) to its outermost position.
4. Clean the label edge sensor and its optical sensors (3) with a soft brush or a cloth dipped in isopropyl alcohol.
5. Slide the label edge sensor back into its original position.

11. Replacing Assembly Units

Replacing the Printhead

The printer is designed so the printhead replacement can be completed without making any mechanical adjustments.



CAUTION !

The printhead (2) is attached and aligned on a head plate (3). Do not loosen the screws (1), that attach the printhead to the head plate.

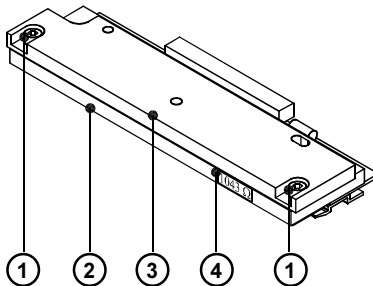


Fig. 11a Printhead

There is a small label (4) on the printhead with the printhead resistance value preceding the ohm (Ω) sign. The printhead resistance can vary between 900 and 1200 Ω . That variation influences the print density.



NOTICE !

Before mounting the new printhead note down the printhead resistance ! To avoid an unintentional variation of the print density adapt the printer to the new printhead ! For that purpose enter the new resistance value at the Gemini Control Panel (see page 40) !

11. Replacing Assembly Units

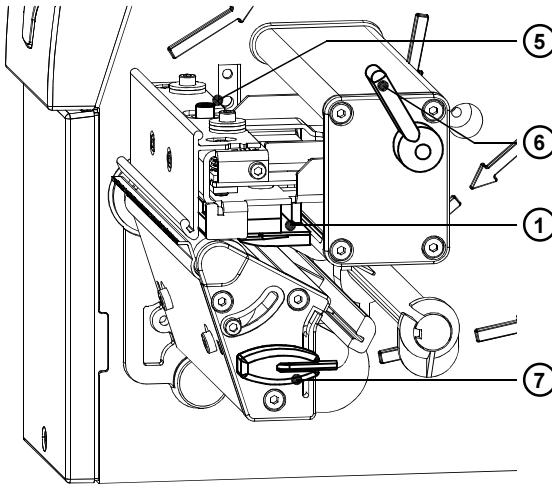


Fig. 11 b Changing Printhead I



WARNING !

Unplug the power cord from the power source before starting!



CAUTION !

Protect the printhead against damage by electrostatic dischargement !

- Put the printer on to a grounded conductive surface !
- Ground yourself during printhead replacement for example using a grounded wrist-strap !
- Do not touch the connector pins of the printhead by naked hands !

Make sure the glass surface on the printhead is not touched by sharp objects or your hand!

1. Remove the media from the printer.
2. Swing the lever (6) to the position shown in figure 11b. In this position, the printhead assembly is unlocked but still lying on the print roller.
3. Loosen the printhead locking screw (5) using the Allen key (7).
4. To lift the printhead assembly, swing the lever (6) clockwise until it stops.

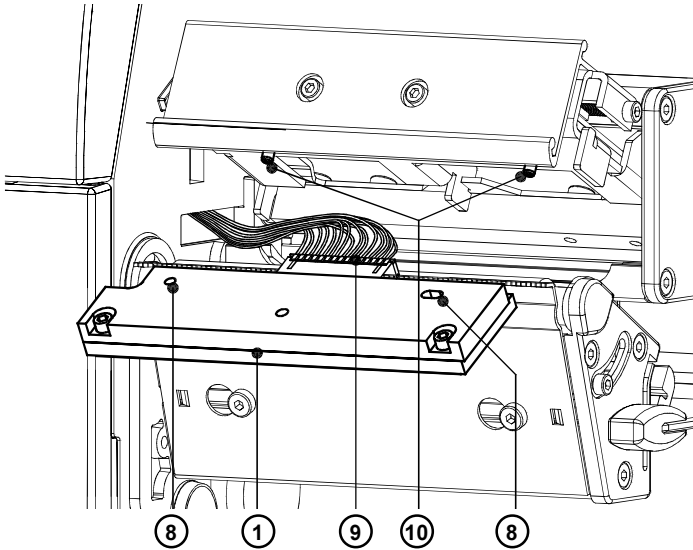


Fig. 11 c Changing Printhead II

5. Remove the printhead (1) from the pins (10) on the printhead carriage.
6. Carefully unplug the printhead (1) from the connector of the printhead cable (9).
7. Connect the new printhead to the cable.
8. Place the printhead into the assembly and insert the holes (8) onto the pins (10).
9. Tighten the locking screw (5) by hand. Check that the printhead is completely secured in the printhead carriage.
10. Swing the lever (6) again into the position shown in figure 11b.
11. Tighten the locking screw (5) completely. Do not over-tighten the locking screw (5).
12. Switch on the printer.
Enter the new printhead resistance value under Windows 95 / 98 / ME in the Gemini Control Panel, Replace Printhead function or under Windows NT 4.0 / 2000 / XP in the Gemini Control Panel, Printer Properties, Set Printhead Resistance function.

11. Replacing Assembly Units

Replacing the Print Roller and the Rewind Assist Roller



NOTICE !

There is described the replacement of the print roller and the rewind assist roller for the printer type A2/200P Gemini in this chapter. The replacement of the print roller at the other types of A2 Gemini printers must be done the same way !

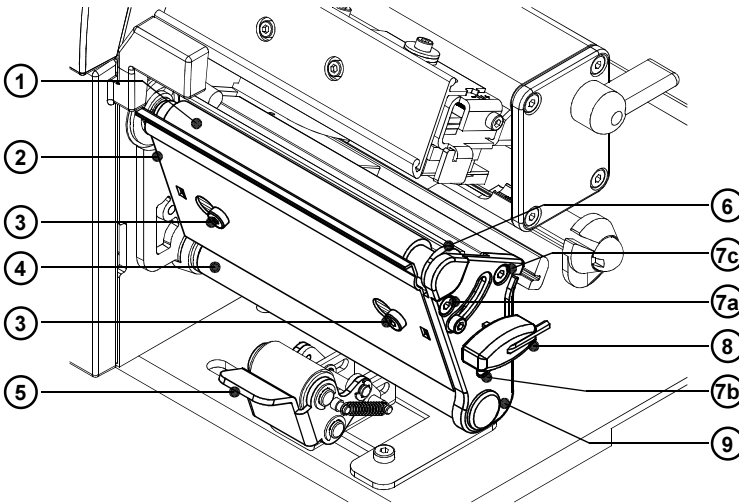


Fig.11d Changing Print Roller and Rewind Assist Roller I



WARNING !

Unplug the power cord from the power source before starting!

1. Lift the printhead up and swing the locking system (5) away from the rewind assist roller (4). Remove the media from the printer.
2. Take the Allen key (8), loosen the screws (3) and remove the dispense plate (2).
3. Remove the three screws (7).
4. Remove the plate (9) and the printhead support (6) from the axle of the print roller (1) and the rewind assist roller (4).

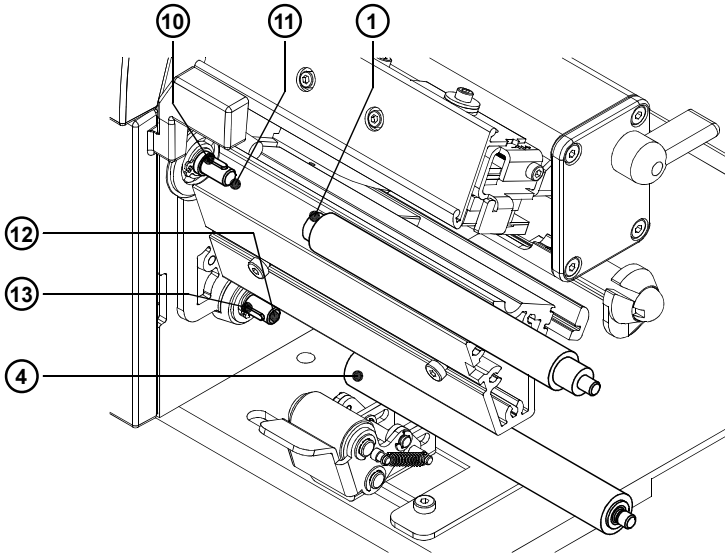


Fig. 11e Changing Print Roller and Rewind Assist Roller II

5. Remove the print roller (1) or the rewind assist roller from the respective shafts (11, 12).



CAUTION !

Before assembling the new roller check if the keys (10, 13) are placed correctly in the shafts (11,12) !

6. Slide the new print roller or rewind assist roller onto the appropriate shaft. Make sure the groove in the axle of the roller (1, 4) is aligned to the key (10, 13) on the shaft (11, 12).
7. Reinstall the plate (9) and printhead support (6).
8. Tighten the screws (7) a screw first, then the b screw and then the c screw.
9. Reassemble the dispense plate (2).

12. Problem Solution

The following information covers common printer problems and possible solutions. Additional troubleshooting information on both hardware and software related problems is available in A2 Gemini's Online Help.

Poor print quality - smears or voids appear within the printed image.

The printhead is dirty. Clean the printhead (Page 49)

The ribbon is creasing. Adjust the transfer ribbon feed (Page 38)

Poor print density - the image is too light or too dark.

The heat setting is too high or too low. Adjust the heat setting with Printer Setup.

The wrong ribbon/paper combination is being used. Check with your dealer for recommendations on media.

The resistance value has not been adjusted for the printhead currently installed. Check the value preceding the ohm (W) sign on the printhead and enter it under Windows 95 / Windows 98 / Windows ME in the Gemini Control Panel, Replace Printhead function or under Windows NT4.0 / Windows 2000 / Windows XP in the Gemini Control Panel, Printer Properties, Set Printhead Resistance function.

Print density is uneven - the image is light on one side of the label.

The printhead is adjusted for a narrow label.
Readjust the printhead support (Page 33).

Printer form feeds more than one label at a time

Media is loaded incorrectly. Make sure media is beneath the arm of the photocell assembly.

Label edge sensor photocell is dirty. Clean the sensor (Page 50).

Printer will not turn on

Voltage of the printer and power supply do not match. Check that the printer is configured for the correct power supply.

Fuse is blown. Remove the fuse holder from the power supply module and inspect or replace the fuses as needed.

Index

A

Adjustment of the label edge sensor 30
Adjustment of the printhead support 33,35
Adjustment of the transfer ribbon 38

B

Barcode 9,39,43,45
Barcode Display Font 39

C

Cancel 25,40
Centronics interface 22f.
Cleaning 48ff.
Cleaning the label edge sensor 50
Cleaning the printhead 49
Cleaning the print roller 48
Compliances 7
Conformity declaration 60
Connecting the printer 23f.
Connection to a computer 23
Connection to power supply 24
Copyright 3
Cutter 47
Cutter (Option) 10,47

D

Delivery contents 16
Demand mode 43,45
Dimensions 10
Dispense plate 6,21,54

E

Error messages 47
EU Conformity Declaration 60

F

Firmware-Version 41
Fonts 9
Form Feed 25,40
Fuse holder 22
Fuses 16,24,56

G

Gemini Control Panel 15,40ff.
Graphics 9

H

Heat Setting 43,45

I

Input voltage selector 22,24
Installing the software 39
Interface 9,22f.
Internal rewinder 6,18,20,26,28f.,31f.

L

Label edge sensor 8,30,50
Label/tag media specification 13
Loading labels 28ff.
Loading transfer ribbon 36f.
Locking system 21

M

Maintenance 48ff.
Material 8,11ff.
Media feed roller 19,21,54f.
Media hub 18,20,28ff.
Memory 9

N

Navigator pad 25

O

Operating voltage 10,24,56
Options 10
Orientation 43,45
Original packaging 16

P

Pause 25,40,47
Peel-off mode 6,30,32
Peripheral connector 9f.,18
Power supply connector 22,24
Power switch 22,24

Index

Present sensor 6,20
Printer component location 18ff.
Printer driver 15,39,41
Printer setup 42ff.
Printer types 6
Printhead 8,19,21,51ff.
Printhead locking lever 19,21
Printhead resistance value 51,53,56
Printhead support 19,21,33f.,56
Printhead type 8
Printing from Windows applications 46
Print media 11ff.
Print roller 19,21,54f.
Print quality 56
Print speed 8,43,45
Product description 6

R

Reflective Sensor 43,45
Rewind assist roller 21,54f.
Rewinder, internal 6,18,20,26,28f.,31f.
Rewind guide plate 27,31
Ribbon shield 19,21,38
Ribbon supply hub 18,20,26,36f.
Ribbon take up hub 18,20,26,36f.
Ribbon wrinkling 33,38

S

Safety instructions 16
Securing devices 17
See Through Sensor 43,45
Software 15

T

Tear-off mode 27ff.
Tear-off plate 6,19,27
Technical specification 8f.
Test print 41
Thermal printhead 19,21,49,51ff.
Transfer ribbon 8,14,36ff.

V

Voltage selector 22,24

W

Warning label "End of paper" 26
Warning label "End of ribbon" 26
Weight 10

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Bausteine mbH
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EU - Conformity Declaration

We declare herewith that as a result of the manner in which the machine designated below was designed, the type of construction and the machines which, as a result have been brought on to the general market comply with the relevant fundamental regulations of the EU Rules for Safety and Health. In the event of any alteration which has not been approved by us being made to any machine as designated below, this statement shall thereby be made invalid.

Description:

Transfer Printer

Type:

A2 Gemini

Applied EU Regulations and Norms:

- **EC Machinery Regulations**

- Machine Safety

98/37/EU

EN 292-2:1991

- **EC Low Voltage Regulations**

- Data and Office Machine Safety

73/23/EEC

EN 60950:1992+A1:1993

EN 60950+A2:1993+A3:1995

+A4:1997

- **EC Electromagnetic Compatibility Regulations**

- Threshold values for the Interference
of Data Machines

- Limits for harmonic current emission

89/336/EEC

EN 55022:1998

- Limits of voltage fluctuation and flicker

- Immunity characteristics-

Limits and methods of measurement

EN 61000-3-2:1995+A1:1998

+A2:1998+A14:1999:2000

EN 61000-3-3:1995

EN 55024:1998

Signed for, and on behalf of, the Manufacturer :

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Gesellschaft für Computer-
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Sömmerda, 10.04.02

Erwin Fascher
Managing Director