

ILX V

Operating Manual



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 RoHS Directive (2011/65/EU)



Carl Valentin GmbH

Neckarstraße 78 – 86 u. 94
78056 Villingen-Schwenningen

Phone +49 7720 9712-0
E-Mail info@carl-valentin.de
Internet www.carl-valentin.de

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1 Introduction

1.1 General Instructions

Basic information and warning references with the corresponding signal words for the danger level are as follows specified in this manual:



DANGER identifies an extraordinarily great and immediate danger which could lead to serious injury or even death.



WARNING identifies a possible danger could lead to serious bodily injury or even death if sufficient precautions are not taken.



WARNING of cutting injuries.

Pay attention that cutting injuries caused by blades, cutting devices or sharp-edged parts are avoided.



WARNING of hand injuries.

Pay attention that hand injuries caused by closing mechanical parts of a machine/equipment are avoided.



WARNING of hot surfaces.

Pay attention so as not to come into contact with hot surfaces.



CAUTION indicates a potentially dangerous situation which could lead to moderate or light bodily injury or damage to property.



NOTICE gives you tips. They make a working sequence easier or draw attention to important working processes.



Gives you tips on protecting the environment.



Handling instruction



Optional accessories, special fittings

Datum

Information in the display

1.2 Intended Use

The printing system is a state-of-the-art device which complies with the recognized safety-related rules and regulations. Despite this, a danger to life and limb of the user or third parties could arise and the printing system or other property could be damaged while operating the device.

The printing system may only be used while in proper working order and for the intended purpose. Users must be safe, aware of potential dangers and must comply with the operating instructions. Faults, particularly those which affect safety, must be remedied immediately.

The printing system is solely intended to print suitable media which have been approved by the manufacturer. Any other or additional use is not intended. The manufacturer/supplier is not liable for damage resulting from misuse. Any misuse is at your own risk.

Intended use includes heeding the operating manual, including the maintenance recommendations/regulations specified by the manufacturer.

1.3 Product Description

Labels, textiles and plastic material can be printed with high resolution both in dispenser mode and in passage mode. The assembly of the printing system is possible in horizontal and vertical position and owing to its demountable and displaceable control panel the printing system can be integrated in almost each packaging process without any problems.

The printing system can be used in thermal as well as in thermal transfer applications.

With eight vector fonts, six bitmap fonts and six proportional fonts the printing system has a large selection of different font types. It can be printed inverse, in italic format or 90 degrees turned fonts.

The handling of our durable printing systems is easy and comfortable. The parameter settings are made with the keys of the foil keyboard. At each time the graphic display shows the status.

Time-saving firmware update is possible by interface. As default, the printing system is equipped with a serial, USB and Ethernet interface. The printing system automatically recognizes by which interface it is controlled.

2 Safety Instructions

The printing system is designed for power supply systems of 100 ... 240 V AC. Connect the printing system only to electrical outlets with a ground contact.



NOTICE!

The protective earthing conductor of the socket is to be examined by a qualified technician.

Couple the printing system to devices using extra low voltage only.

Before making or undoing connections, switch off all devices involved (computer, printer, accessories etc.).

Operate the printing system in a dry environment only and do not get it wet (sprayed water, mist etc.).

Do not operate the printing system in explosive atmosphere and not in proximity to high voltage power lines.

Operate the printing system only in an environment protected against abrasive dust, swarf, and other similar impurity.

Maintenance and servicing work can only be carried out by trained personnel.

Operating personnel must be trained by the operator based on the operating manual.

Depending on use, ensure that clothing, hair, jewellery and similar personal items do not contact the exposed rotating parts and/or the moving parts.



NOTICE!

With the printing system (due to construction) the requirements of EN 62368-1 regarding fire protection casing are not fulfilled. These must be ensured by the installation into the end device.

The print unit and parts of it (e.g. motor, printhead) can get hot during printing. Do not touch the printhead during operation. Cool down the print unit before changing material, removal or adjustment.

Never use highly inflammable consumables.

Carry out only the actions described in these operating instructions. Any work beyond this may only be performed by the manufacturer or by agreement with the manufacturer.

Unauthorized interference with electronic modules or their software can cause malfunctions.

Other unauthorized work or modifications to the printing system can endanger operational safety.

Always have service work done in a qualified workshop, where the personnel have the technical knowledge and tools required to do the necessary work.

There are warning stickers on the printing systems that draw your attention to dangers. Therefore, the warning stickers are not to be removed as then you and others cannot be aware of dangers and may be injured.

Before installing the printing module in the system, the commissioning engineer must ensure that the statutory safety regulations are observed and the necessary safety devices are installed.

**NOTICE!**

When mounting an optional label applicator, the applicable safety regulations must be observed.

All isolating safety equipment must be installed before starting up the printing system.

**DANGER!**

Danger to life and limb from power supply!

⇒ Do not open the casing.

**Installation position
(option: applicator)****CAUTION!**

Depending on the installation position, when swiveling the applicator it may descend uncontrollably and hit the ILX V, potentially damaging the printing system.

⇒ When swiveling the applicator, it must be manually supported by hand depending on the installation position.

2.1 Operating Conditions

Before initial operation and during operation these operating conditions must be observed to guarantee safe and interference-free service of our printing systems.

Therefore, please carefully read these operating conditions.

Shipment and storage of our printing systems are **only** allowed in original packing.

Installation and initial operation of printing systems is only allowed if operating conditions are **fulfilled**.

Initial operation, programming, operation, cleaning and service of our printing systems are only recommended after careful study of our manuals.

Operation of printing systems is only allowed by trained people.



NOTICE!

Perform training regularly. Content of the training are chapter 2.1 (Operating Conditions), chapter 2.1 (Loading Media) and chapter 9 (Maintenance and Cleaning).

These instructions are also valid for someone else's equipment supplied by us.

Only use original spare and exchange parts.

Please contact the manufacturer with respect to spare/wear parts.

Conditions for installation place

The installation place of printing system should be even, free of vibration and currents of air are to be avoided.

The printing systems must be installed to ensure optimal operation and service.

Installation of power supply

The installation of the power supply to connect our printing systems must be effected according to the international rules and regulations, especially the recommendations of one of the three following commissions:

- International Electronic Commission (IEC)
- European Committee for Electrotechnical Standardisation (CENELEC)
- Verband Deutscher Elektrotechniker (VDE)

Our printing systems are constructed according to VDE and must be connected to a grounded conductor. The power supply must be equipped with a grounded conductor to eliminate internal interfering voltage.

Technical data of power supply

Power line voltage and power line frequency: See type plate

Allowable tolerance of power line voltage:
+6 % ... -10 % of nominal value

Allowable tolerance of power line frequency:
+2 % ... -2 % of nominal value

Allowable distortion factor of power line voltage: $\leq 5\%$

Anti-interference measures

In case your net is infected (e.g. by using thyristor-controlled machines) anti-interference measures must be taken. You can use one of the following possibilities:

- Provide separate power supply to our printing systems.
- In case of problems please connect capacity-decoupled isolation transformer or similar interference suppressor in front of our printing systems.
-

**NOTICE!**

This is a machine of type A. This machine can cause interferences in residential areas; in this case it can be required from operator to accomplish appropriate measures and be responsible for it.

Connecting lines to external machines

All connecting lines must be guided in shielded lines. Shielding must be connected on both sides to the corner shell.

It is not allowed to guide lines parallel to power lines. If a parallel guiding cannot be avoided a distance of at least 0.5 m has to be observed.

Temperature of lines between: $-15 \dots +80\text{ }^{\circ}\text{C}$.

It is only allowed to connect devices which fulfil the request 'Safety Extra Low Voltage' (SELV). These are generally devices which are checked corresponding to EN 62368-1.

Installation of data lines

The data cables must be completely protected and provide with metal or metallised connector housings. Shielded cables and connectors are necessary, to avoid radiant emittance and receipt of electrical disturbances.

Allowable lines

Shielded line:

4 x 2 x 0,14 mm² (4 x 2 x AWG 26)

6 x 2 x 0,14 mm² (6 x 2 x AWG 26)

12 x 2 x 0,14 mm² (12 x 2 x AWG 26)

Sending and receiving lines have to be twisted in pairs.

Maximum line length:

interface V 24 (RS-232C): max. 3 m (with shielding)

USB: max. 3 m

Ethernet: max. 100 m

Input/Output: max. 3 m

Power supply line: max. 2 m

Air convection

To avoid inadmissible heating, free air convection must be ensured.

Limit values

Protection according to IP: 20

Ambient temperature °C (operation): min. +5 max. +40

Ambient temperature °C (transport, storage): min. -25 max. +60

Relative air humidity % (operation): max. 80

Relative air humidity % (transport, storage): max. 80
(bedewing of printing systems not allowed)

Guarantee

We do not take any responsibility for damage caused by:

- Ignoring our operating conditions and operating manual.
- Incorrect electric installation of environment.
- Building alterations to our printing systems.
- Incorrect programming and operation.
- Not performed data protection.
- Using of not original spare parts and accessories.
- Natural wear and tear.

When (re)installing or programming our printing systems please control the new settings by test running and test printing. Herewith you avoid faulty results, reports and evaluation.

Only specially trained staff is allowed to operate the printing systems.

Control the correct handling of our products and repeat training.

We do not guarantee that all features described in this manual exist in all models. Caused by our efforts to continue further development and improvement, technical data might change without notice.

By further developments or regulations of the country illustrations and examples shown in the manual can be different from the delivered model.

Please pay attention to the information about admissible print media and the notes to the printer maintenance, to avoid damages or premature wear.

We endeavoured to write this manual in an understandable form to give you as much information as possible. If you have any queries or if you discover errors, please inform us to give us the possibility to correct and improve our manual.

3 Technical Data

3.1 ILXV V 56/8, 80/8, 54/12, 81/12

	ILX V 56/8	ILX V 80/8	ILX V 54/12	ILX V 81/12
Print resolution	200 dpi	200 dpi	300 dpi	300 dpi
Max. print speed	350 mm/s ¹ 400 mm/s ²	350 mm/s ¹ 400 mm/s ²	350 mm/s ¹ 400 mm/s ²	350 mm/s ¹ 400 mm/s ²
Print width	56 mm	80 mm	54 mm	81 mm
Passage width	60 mm	90 mm	60 mm	90 mm
Printhead	Flat Type	Flat Type	Flat Type	Flat Type
Labels				
Labels or continuous material	on rolls: paper, cardboard, textile, synthetics			
Material weight	max. 220 g/m² (larger on demand)			
Min. label width	20 mm			
Min. label height	15 mm			
Max. label height	3000 mm			
Max. roll diameter	Internal rewinder: 150 mm External unwinder: 330 mm (option)			
Min. core diameter	40 mm / 76 mm			
Winding	outside or inside			
Label sensor	transmission			
Transfer Ribbon				
Ink	outside or inside			
Max. roll diameter	Ø 80 mm			
Core diameter	25.4 mm / 1"			
Max. ribbon length	450 m			
Max. width	55 mm	85 mm	55 mm	85 mm
Dimensions (mm)				
Width x height x depth	211x281x375	234x281x375	211x281x375	234x281x375
Weight	10.6 kg	11.1 kg	10.6 kg	11.1 kg
Electronics				
Processor	TI Sitara ARM Cortex A8, 1GHz 32kB ICache, 32kB DCache up to 2000 Mips			
RAM	512 MB			
Slot	for SD card			
Battery cache	for Real-Time clock (storage of data with shutdown)			
Warning signal	acoustic signal when error			
Interfaces				
Serial	RS-232C (up to 115200 Baud)			
USB	2.0 High Speed Slave			
Ethernet	10/100 Base T, LPD, RawIP-Printing, DHCP, HTTP, FTP			
2 x USB Host	on the back for: keyboard, USB memory stick			
WLAN (option)	USB-WLAN-Stick			

¹ = thermal transfer

² = thermal direct

Operation Data	
Nominal voltage	100 ... 240 V AC / 50-60 Hz
Max. power consumption	250 VA
Nominal current	2.5 A
Fuse values	T5A 250 V
Operating temperature	5 ... 40 °C
Humidity	max. 80 % (not condensing)
Operation Panel	
Keys	test print, function menu, quantity, SD Card, feed, enter, 4 x cursor
LCD display	graphic display 132 x 64 pixel – white backlight
Settings	
	date, time, shift times 20 language settings (others on demand) label and device parameters, interfaces, password protection, variables
Monitoring	
Stop printing if	end of ribbon / end of labels / printhead open
Status report	extensive status print with information about settings e.g. print length counter, runtime counter, photocell interface and network parameters, printout of all internal fonts and all supported bar codes
Fonts	
Font types	6 Bitmap fonts, 8 Vector fonts/TrueType fonts, 6 proportional fonts other fonts on demand
Character sets	Windows 1250 up to 1257, DOS 437, 850, 852, 857, UTF-8 all West and East European Latin, Cyrillic, Greek and Arabic (option) characters are supported other character sets on demand
Bitmap fonts	size in width and height 0,8 ... 5,6 zoom 2 ... 9, orientation 0°, 90°, 180°, 270°
Vector fonts/TrueType fonts	size in width and height 1 ... 99 mm variable zoom, orientation 0°, 90°, 180°, 270°
Font attributes	depending on character font – bold, Italic, inverse, vertical
Font width	variable
Bar Codes	
1D bar codes	2/5 Industrial, Codabar, Code 128, Code 128A, Code 128B, Code 2/5 interleaved, Code 39, Code 39 extended, Code 93, EAN 13, EAN 8, EAN Add-on, GS1-128, Identcode, ITF 14, Leitcode, Pharmacode, PLANET (Postal Alpha Numeric Encoding Technique), PostNet, PZN 7, PZN 8, UPC-A, UPC-E, USPS Intelligent Mail
2D bar codes	Aztec Code, CODABLOCK F, DataMatrix, GS1 DataMatrix, MAXICODE, PDF 417, QR Code
Composite bar codes	GS1 DataBar Expanded, GS1 DataBar Limited, GS1 DataBar Omnidirectional, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional, GS1 DataBar Truncated
	all bar codes are variable in height, module width and ratio. orientation 0°, 90°, 180°, 270° Optionally with check digit and human readable line.
Software	
Configuration	ConfigTool
Process control	Loftware
Label software	Labelstar Office Lite, Labelstar Office
Windows driver	Windows 8.1® - Windows 10® 32/64 Bit, Windows 11® Windows Server 2016® - Windows Server 2022®

3.2 ILX V103/8, 104/8, 106/12, 106/24, 108/12

	ILX V 103/8	ILX V 104/8	ILX V 106/12	ILX V 106/24	ILX V 108/12
Print resolution	203 dpi	203 dpi	300 dpi	600 dpi	300 dpi
Max. print speed	350 mm/s ¹ 400 mm/s ²	350 mm/s ¹ 400 mm/s ²	350 mm/s ¹ 400 mm/s ²	100 mm/s	350 mm/s ¹ 400 mm/s ²
Print width	104 mm	104 mm	105.7 mm	105.7 mm	108.4 mm
Passage width	116 mm	116 mm	116 mm	116 mm	116 mm
Printhead	Flat Type	Flat Type	Flat Type	Flat Type	Flat Type
Labels					
Labels or continuous material	on rolls: paper, cardboard, textile, synthetics				
Material weight	max. 220 g/m² (larger on demand)				
Min. label width	25 mm				
Min. label height	15 mm				
Max. label height	3000 mm				
Max. roll diameter	Internal rewinder: 150 mm External unwinder: 330 mm (option)				
Min. core diameter	40 mm / 76 mm				
Winding	outside or inside				
Label sensor	transmission				
Transfer Ribbon					
Ink	outside or inside				
Max. roll diameter	Ø 80 mm				
Core diameter	25.4 mm / 1"				
Max. ribbon length	450 m				
Max. width	110 mm				
Dimensions (mm)					
Width x height x depth	263 x 281 x 375				
Weight	11.5 kg				
Electronics					
Processor	TI Sitara ARM Cortex A8, 1GHz 32kB ICache, 32kB DCache up to 2000 Mips				
RAM	512 MB				
Slot	for SD card				
Battery cache	for Real-Time clock (storage of data with shutdown)				
Warning signal	acoustic signal when error				
Interfaces					
Serial	RS-232C (up to 115200 Baud)				
USB	2.0 High Speed Slave				
Ethernet	10/100 Base T, LPD, RawIP-Printing, DHCP, HTTP, FTP				
2 x USB Host	on the back for: keyboard, USB memory stick				
WLAN (option)	USB-WLAN-Stick				

¹ = thermal transfer

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Operation Data	
Nominal voltage	100 ... 240 V AC / 50-60 Hz
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Humidity	max. 80 % (not condensing)
Operation Panel	
Keys	test print, function menu, quantity, SD Card, feed, enter, 4 x cursor
LCD display	graphic display 132 x 64 pixel – white backlight
Settings	
	date, time, shift times 20 language settings (others on demand) label and device parameters, interfaces, password protection, variables
Monitoring	
Stop printing if	end of ribbon / end of labels / printhead open
Status report	extensive status print with information about settings e.g. print length counter, runtime counter, photocell interface and network parameters, printout of all internal fonts and all supported bar codes
Fonts	
Font types	6 Bitmap fonts, 8 Vector fonts/TrueType fonts, 6 proportional fonts other fonts on demand
Character sets	Windows 1250 up to 1257, DOS 437, 850, 852, 857, UTF-8 all West and East European Latin, Cyrillic, Greek and Arabic (option) characters are supported other character sets on demand
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Vector fonts/TrueType fonts	size in width and height 1 ... 99 mm variable zoom, orientation 0°, 90°, 180°, 270°
Font attributes	depending on character font – bold, italic, inverse, vertical
Font width	variable
Bar Codes	
1D bar codes	2/5 Industrial, Codabar, Code 128, Code 128A, Code 128B, Code 2/5 interleaved, Code 39, Code 39 extended, Code 93, EAN 13, EAN 8, EAN Add-on, GS1-128, Identcode, ITF 14, Leitcode, Pharmacode, PLANET (Postal Alpha Numeric Encoding Technique), PostNet, PZN 7, PZN 8, UPC-A, UPC-E, USPS Intelligent Mail
2D bar codes	Aztec Code, CODABLOCK F, DataMatrix, GS1 DataMatrix, MAXICODE, PDF 417, QR Code
Composite bar codes	GS1 DataBar Expanded, GS1 DataBar Limited, GS1 DataBar Omnidirectional, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional, GS1 DataBar Truncated
	all bar codes are variable in height, module width and ratio. orientation 0°, 90°, 180°, 270° Optionally with check digit and human readable line.
Software	
Configuration	ConfigTool
Process control	Loftware
Label software	Labelstar Office Lite, Labelstar Office
Windows driver	Windows 8.1® - Windows 10® 32/64 Bit, Windows 11® Windows Server 2016® - Windows Server 2022®

Standard equipment

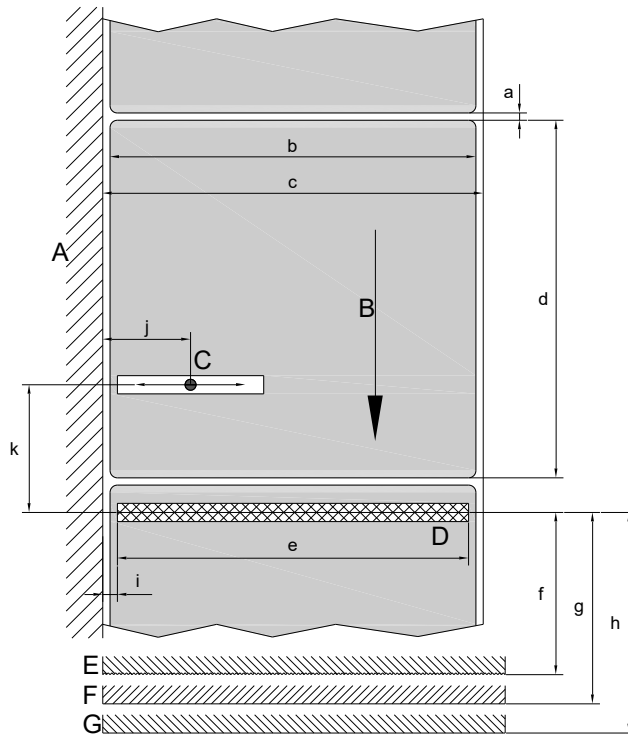
- Dispenser unit
- Real time clock with printout date and time
Automatic daylight-saving time
Storage of data with shutdown
- Variables: link field, counter, date/time, currency and shift variable, SD data
- Thermal direct or thermal transfer version
- Right and left version
- Dispenser I/O
- CVPL protocol and ZPL II® protocol
- Label photocell transmission
- Slot for SD card

Optional equipment

- Unwinder
(max. outside diameter 330 mm)
- Label applicator APX V
- Wipe-on modules WMX
- Label photocell transmission and reflexion from bottom
- Label prewarning
- Fixing flange
- Product sensor
- Signal lamp
- Carrier plate extension
- Distribution box
- Protective cover
- SD card
- USB-WLAN-Stick

3.3 Details Printing System / Sensors /Labels

Details of printing system



- A = Label guiding material edge
- B = Label direction
- C = Label photocell transmission and reflexion
- D = Thermal printhead/focal line
- E = Tear-off edge
- F = Dispenser edge
- G = Cutter edge

Figure 1

	Name	Dimensions		
		ILX V 5X	ILX V 8X	ILX V 10X
a	label distance / gap length	≥ 2 mm		
b	label width	see Technical Data		
c	liner width	see Technical Data		
d	label height	see Technical Data		
e	printing width	see Technical Data		
f	distance focal line ↔ tear-off edge	not available		
g	distance focal line ↔ dispenser edge	25 mm		
h	distance focal line ↔ cutter edge	not available		
i	distance first dot ↔ material edge			
	ILX V 54/12	2.9 mm		
	ILX V 56/8	2.0 mm		
	ILX V 80/8		3.0 mm	
	ILX V 81/12		2.3 mm	
	ILX V 103/8			2.0 mm
	ILX V 104/8			2.0 mm
	ILX V 106/12			2.0 mm
	ILX V 106/24			2.0 mm
	ILX V 108/12			2.0 mm
j	distance label photocell transmission and reflexion ↔ material edge	0 – 44.5 mm		
k	distance label photocell transmission and reflexion ↔ focal line	55.2 mm		

3.4 Control Inputs and Outputs

With a maximum of 16 control inputs and outputs which, in the following, are also referred to as ports, different functions of the printing system can be triggered, and operating states can be displayed.

The ports are provided by a D-Sub bushing (26pin HD) at the rear panel of the printing system and are galvanically isolated from protective earth (PE) with an optocoupler semi-conductor route.

Each port can be configured as input and as output. This function, however, is predefined in the printer software and cannot be changed by the user.

The following parameters can be changed and set by using the menu: debounce times and high or low active.

Printing systems, internal circuitry

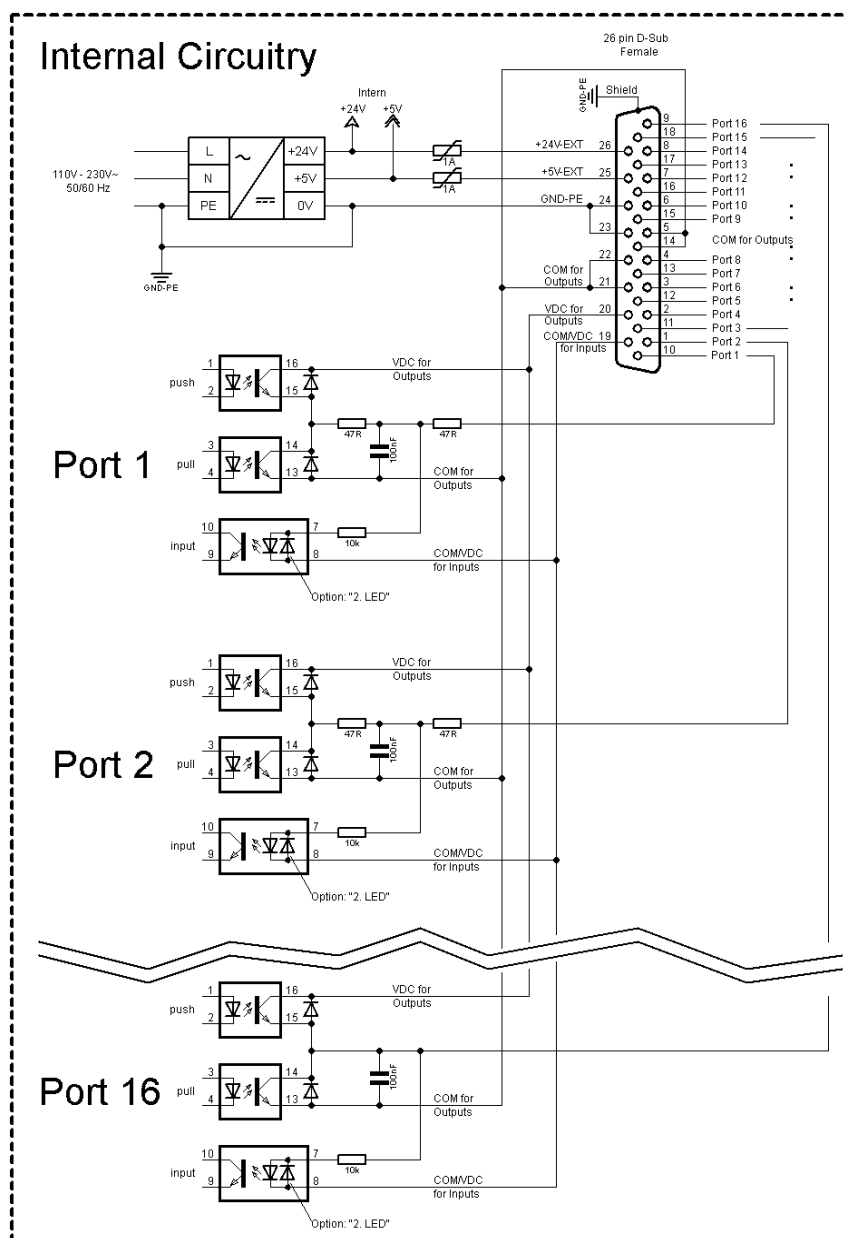


Figure 2

Configuration of D-Sub socket

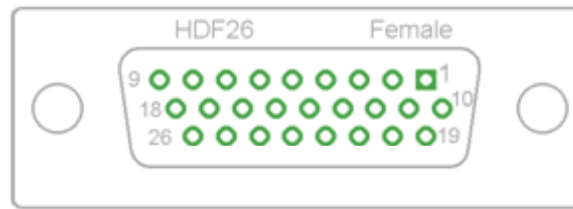


Figure 3

Cable identification

Number	Color
1	white
2	brown
3	green
4	yellow
5	grey
6	pink
7	blue
8	red
9	black
10	violet
11	grey-pink
12	red-blue
13	white-green
14	brown-green
15	white-yellow
16	yellow-brown
17	white-grey
18	grey-brown
19	white-pink
20	pink-brown
21	white-blue
22	brown-blue
23	white-red
24	brown-red
25	white-black
26	brown-black

Port 1 to Port 16 = Assignment for I/O Profile *Std_Label*

Identification	Pin	Description / Function
Port 1	10	Print start (Input)
Port 2	1	Reprint last printed label (Input)
Port 3	11	Counter Reset (Input)
Port 4	2	Option applicator only: Start application (Input)
Port 5	12	Error reset (Input)
Port 6	3	Cancel all print jobs (Input)
Port 7	13	Label prewarning (Input)
Port 8	4	External release signal (Input)
Port 9	15	Error (Output)
Port 10	6	Print order active (Output)
Port 11	16	Dispenser photocell: Label exists at dispenser photocell (Output)
Port 12	7	Single print (Output)
Port 13	17	Ready (Output)
Port 14	8	Option applicator only: Ready for application (Output)
Port 15	18	Option scanner only Bar code not readable (Output)
Port 16	9	End of ribbon / End of label
COM/VDC for Inputs	19	Common reference potential of all control inputs. 'COM/VDC for Inputs' is usually connected with the (-) terminal of the control voltage and the control inputs are switched to active (+). With the option '2nd LED', 'COM/VDC for Inputs' can optionally be connected with the (+) terminal of the control voltage. Then, the control inputs are switched to active (-).
VDC for Outputs	20	Common supply connection of all control outputs. 'VDC for Outputs' must be connected with the (+) terminal of the control voltage. Never leave 'VDC for Outputs' open even if no output is used.
COM for Outputs	5,14 21,22	Common reference potential of all control outputs. 'COM for Outputs' must be connected with the (-) terminal of the control voltage. Never leave 'COM for Outputs' open even if no output is used.
GND-PE	23,24	'GND-PE' is the reference potential of the '+5 VDC EXT' and '+24 VDC EXT' voltages provided by the printing system. 'GND-PE' is printer internally connected with protective earth (PE).
+ 5 VDC EXT	25	5 Volt DC output for external use. Max. 0.5 A. This voltage is provided from direct printing system and can be used e.g. as control voltage. Never apply any external voltage to this output.
+ 24 VDC EXT	26	24 Volt DC output for external use. Max. 0.5 A. This voltage is provided from direct printing system and can be used e.g. as control voltage. Never apply any external voltage to this output.

Port 1 to Port 16 = Assignment for I/O Profile *StdFileSelLabel*

Identification	Pin	Description / Function
Port 1	10	Print start (Input)
Port 2	1	Error reset (Input)
Port 3	11	Number of the file to load Bit 0 (Input)
Port 4	2	Number of the file to load Bit 1 (Input)
Port 5	12	Number of the file to load Bit 2 (Input)
Port 6	3	Number of the file to load Bit 3 (Input)
Port 7	13	Number of the file to load Bit 4 (Input)
Port 8	4	Number of the file to load Bit 5 (Input)
Port 9	15	Error (Output)
Port 10	6	Print order active (Output)
Port 11	16	Dispenser photocell: Label exists at dispenser photocell (Output)
Port 12	7	Printing (Output)
Port 13	17	Ready (Output)
Port 14	8	No function
Port 15	18	Option scanner only: Bar code not readable (Output)
Port 16	9	Transfer ribbon prior warning (Output)

Port 1 to Port 16 = Assignment for I/O Profile *AppI*

Identification	Pin	Description / Function
Port 1	10	Print start (Input)
Port 2	1	Reprint last printed label (Input)
Port 3	11	Counter reset (Input)
Port 4	2	Option applicator only: Start application (Input)
Port 5	12	Error reset (Input)
Port 6	3	Cancel all print jobs (Input)
Port 7	13	Label advance warning (Input)
Port 8	4	External release signal (Input)
Port 9	15	Error (Output)
Port 10	6	Print order active (Output)
Port 11	16	Option applicator only: Pad in final position below (Output)
Port 12	7	Printing (Output)
Port 13	17	Ready (Output)
Port 14	8	Option applicator only: Ready for application (Output)
Port 15	18	Option applicator only: Pad is in printing position (Output)
Port 16	9	Transfer ribbon prior warning (Output)

Port 1 to Port 16 = Assignment for I/O Profile *Std_Machine*

Identification	Pin	Description / Function
Port 1	10	Print start (Input)
Port 2	1	No function
Port 3	11	No function
Port 4	2	Option applicator only: Start application (Input)
Port 5	12	No function
Port 6	3	No function
Port 7	13	Label advance warning (Input)
Port 8	4	External release signal (Input)
Port 9	15	Error (Output)
Port 10	6	No function
Port 11	16	No function
Port 12	7	Single print (Output)
Port 13	17	Ready (Output)
Port 14	8	Option applicator only: Ready for application (Output)
Port 15	18	No function
Port 16	9	Transfer ribbon end / Label end (Output)

Port 1 to Port 16 = Assignment for I/O Profile *Appl_Machine*

Identification	Pin	Description / Function
Port 1	10	Print start (Input)
Port 2	1	No function
Port 3	11	No function
Port 4	2	Option applicator only: Start application (Input)
Port 5	12	No function
Port 6	3	Cancel all print jobs (Input)
Port 7	13	Label advance warning (Input)
Port 8	4	External release signal (Input)
Port 9	15	Error (Output)
Port 10	6	No function
Port 11	16	Option applicator only: Pad in final position below (Output)
Port 12	7	Single print (Output)
Port 13	17	Ready (Output)
Port 14	8	Option applicator only: Ready for application (Output)
Port 15	18	Option applicator only: Pad is in printing position (Output)
Port 16	9	Transfer ribbon end / Label end (Output)

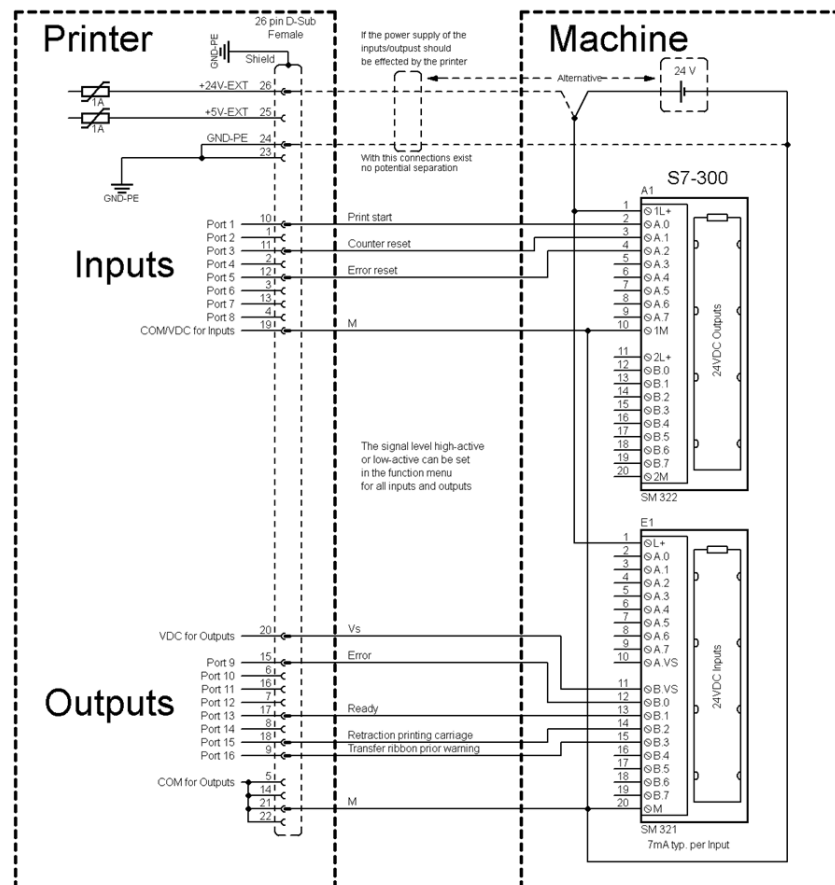
Technical data

Plug Connector	
Type	D-Sub connector High Density 26-pin. / Connector
Manufacturer	W+P-Products
Reference number	110-26-2-1-20
Output Voltages (connected with GND-PE)	
+ 24 V / 0.5 A*	Fuse: Polyswitch / 30 V / 1 A
+ 5 V / 0.5 A*	Fuse: Polyswitch / 30 V / 1 A
Port 1 - 15	
Input	
Voltage	5 VDC ... 24 VDC
Impedance	47Ω + (100nF 10 kΩ)
Output	
Voltage	5 VDC ... 24 VDC
Impedance	47Ω + (100nF 10 kΩ 47Ω)
Current max.	High +15 mA Low -15 mA
Port 16	
Input	
Voltage	5 VDC ... 24 VDC
Impedance	100nF 10 kΩ
Output	
Voltage	5 VDC ... 24 VDC
Impedance	100nF 10 kΩ
Current max.	High +500 mA (Darlington BCP56-16) Low - 500 mA (Darlington BCP56-16)
Optocoupler	
Output	TCMT4106, CTR 100 % - 300 %, Vishay or TLP281-4(GB), CTR 100 % - 600 %, Toshiba
Input	TCMT4106, CTR 100 % - 300 %, Vishay or TLP281-4(GB), CTR 100 % - 600 %, Toshiba
Input Option 2nd LED	TCMT4600, CTR 80 % - 300 %, Vishay or TLP280-4, CTR 33 % - 300 %, Toshiba

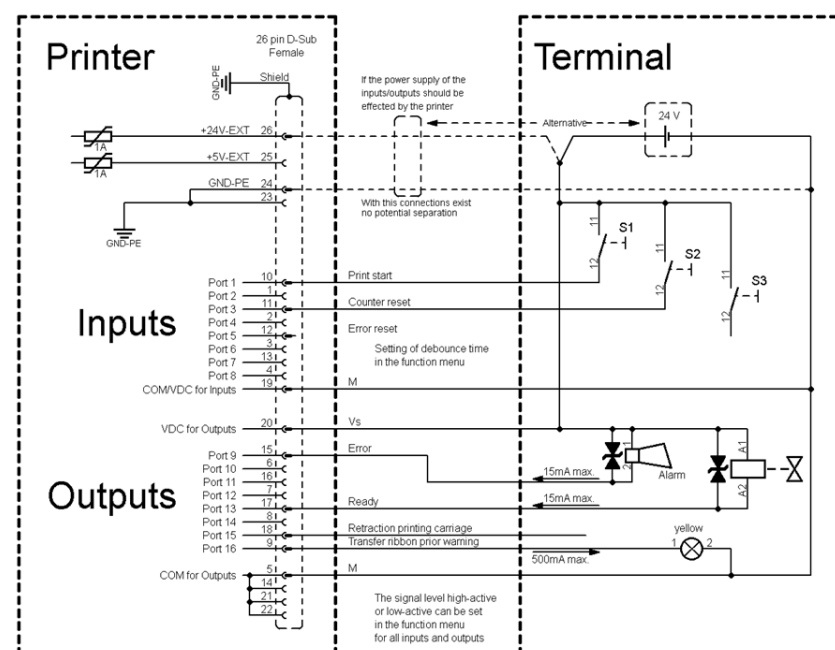
* max. sum for all connected electric loads

Example 1

Device connection to a machine with S7-300 SPS.

**Figure 4****Example 2**

Device connection to an operating panel.

**Figure 5**

Example 3

Device connection version if 'Option: 2. LED'.

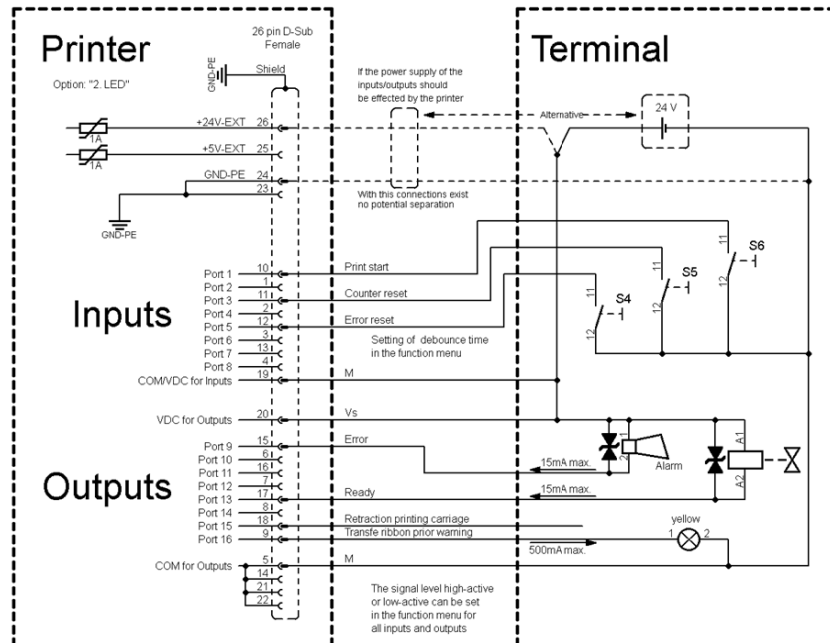


Figure 6

Precautions

When connecting a reed contact with a control input, the contact must have a switching capacity of min. 1 A to prevent the contact from sticking due to the inrush current. As an alternative, a suitable resistor can be connected in series.

If one of the printer's internal voltages '+5 VDC EXT' or '+24 VDC EXT' is used, an external fuse e.g. 0.5 AF, should be additionally installed to protect the printer electronics.

In the event of an inductive load, an antiparallel connected diode, for instance, must be used to discharge the induction energy.

To minimize the influence of leakage currents at control outputs, a resistor must, depending on what is connected, be installed in parallel with the load.

To avoid any damage to the printing system, the max. output currents must not be exceeded or outputs short-circuited.

4 Installation

Unpack the printing system

- ⇒ Lift the printing system on the bottom and remove it from the carton.
- ⇒ Check the printing system for transport damage.
- ⇒ Remove the foam transportation safeguards near the printhead.
- ⇒ Check delivery for completeness.

Scope of delivery

- Printing system with integrated dispensing edge.
- Power cable.
- Data cable for USB interface.
- I/O accessories (female connectors for I/O).
- Empty core, mounted on transfer ribbon rewinder.
- Product Safety Guide.



NOTICE!

Retain the original packaging for subsequent transport.

4.1 Installation Positions



CAUTION!

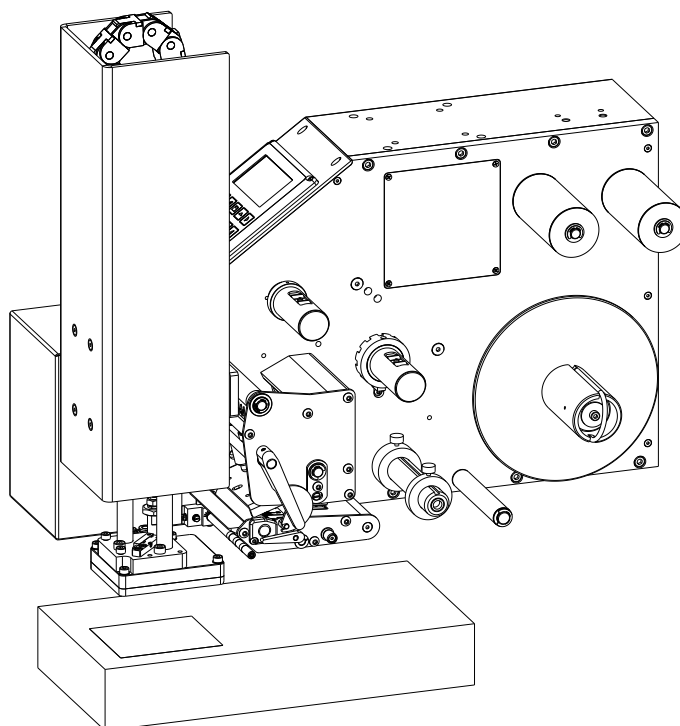
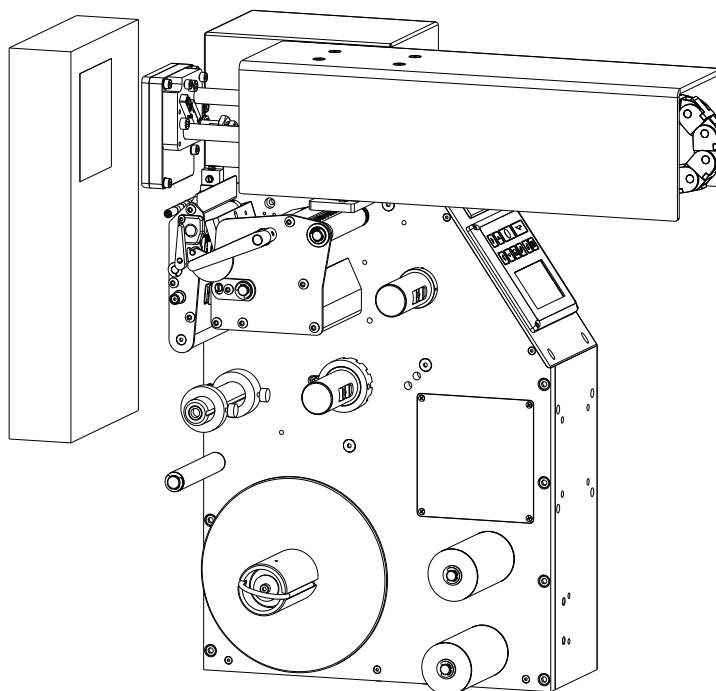
Depending on the installation position, when swiveling the applicator it may descend uncontrollably and hit the ILX V, potentially damaging the printing system.

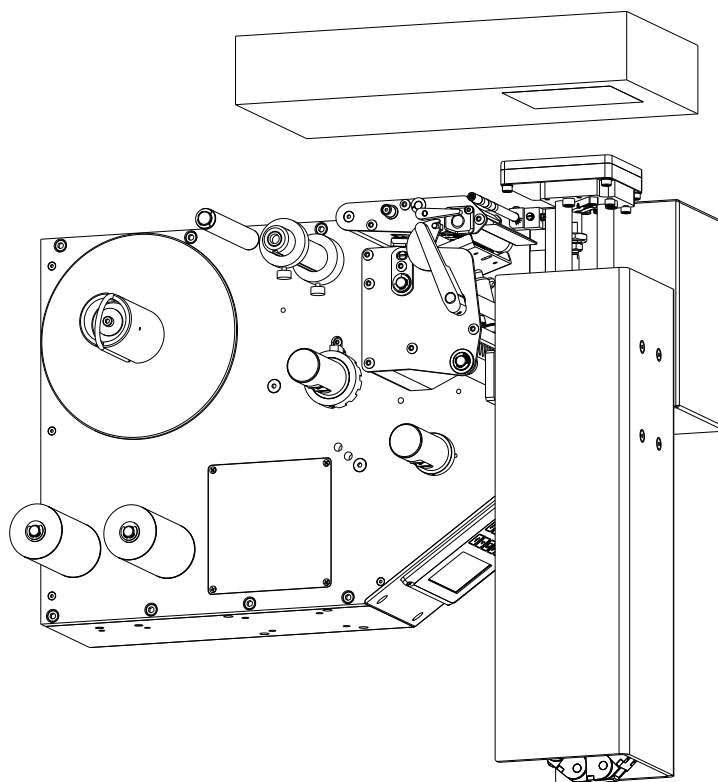
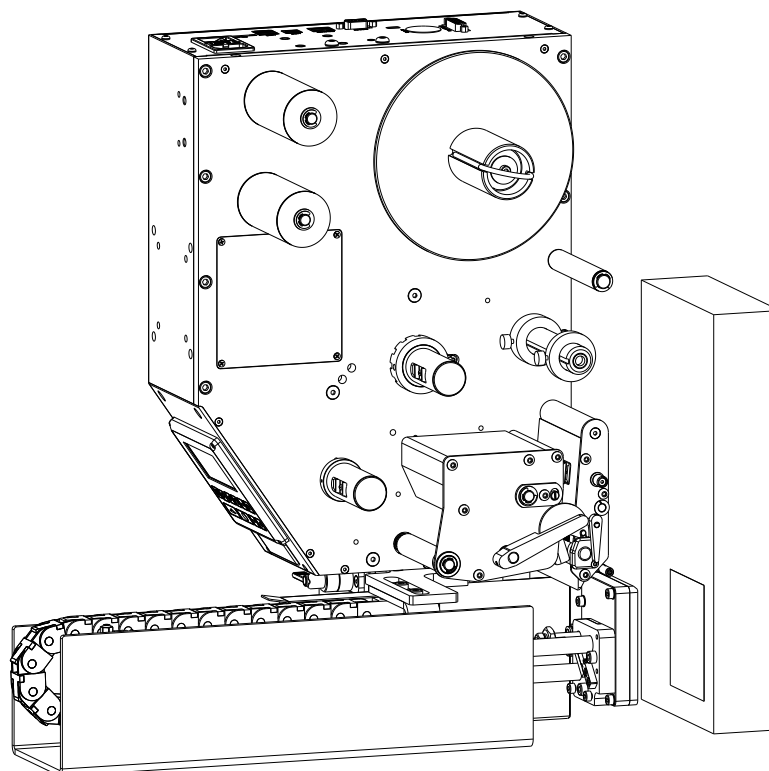
- ⇒ When swiveling the applicator, it must be manually supported by hand depending on the installation position.

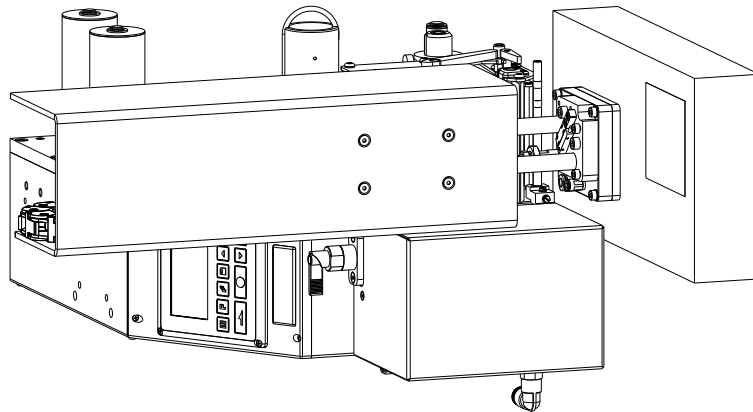


NOTICE!

All models of the printing system can be installed rotated vertically by up to 360° or installed in horizontal position.

Installation position 0°**Figure 7****Installation position 90°****Figure 8**

**Installation position
180°****Figure 9****Installation position
270°****Figure 10**

Horizontal installation position**Figure 11****4.2 Set up the Printing System****CAUTION!**

The printing system and the print media can be damaged by moisture and water.

- ⇒ Set up the printing system only in a dry place protected from sprayed water.

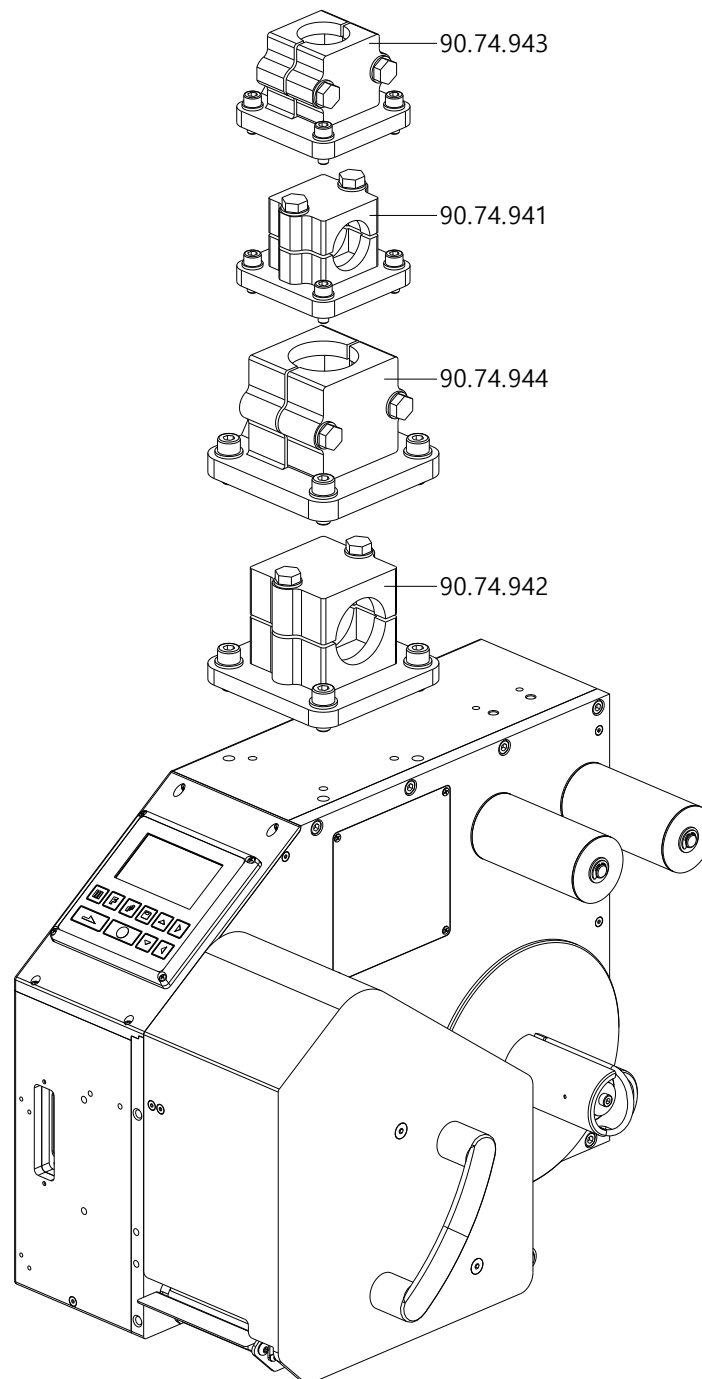
Mount the printing system

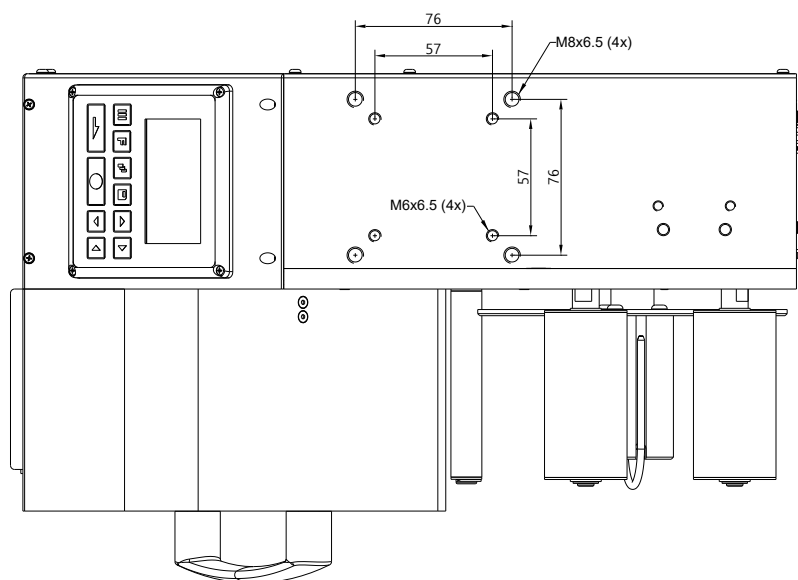
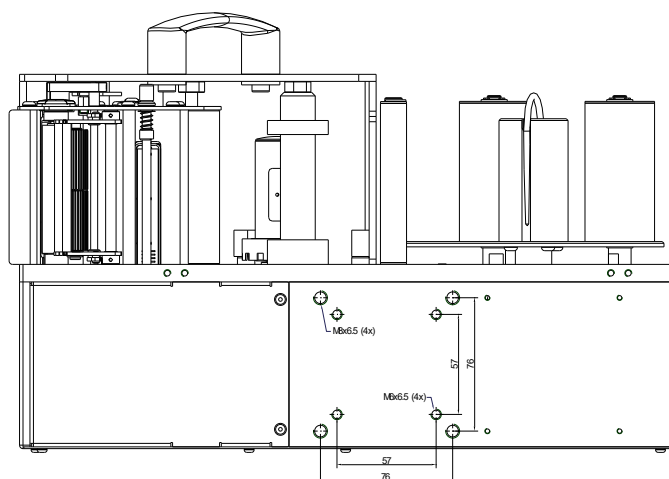
On the cover plate and base plate of the printing system there are two different mounting ports for flange versions, to integrate the printing system hanging in the production line.

**CAUTION!**

Damage to the printing system because of inadequate mounting. If the printing system is not correctly fastened, then there is a danger that it falls out from the supporting construction. This could result in injury.

- ⇒ The printing system must be fitted on a supporting construction for proper use.
- ⇒ Use suitable screws which can support the weight of the printing system.

Flange versions**Figure 12**

**Mounting port
at the top****Figure 13****Mounting port
at the bottom****Figure 14**

Schematic overview of the machine environment

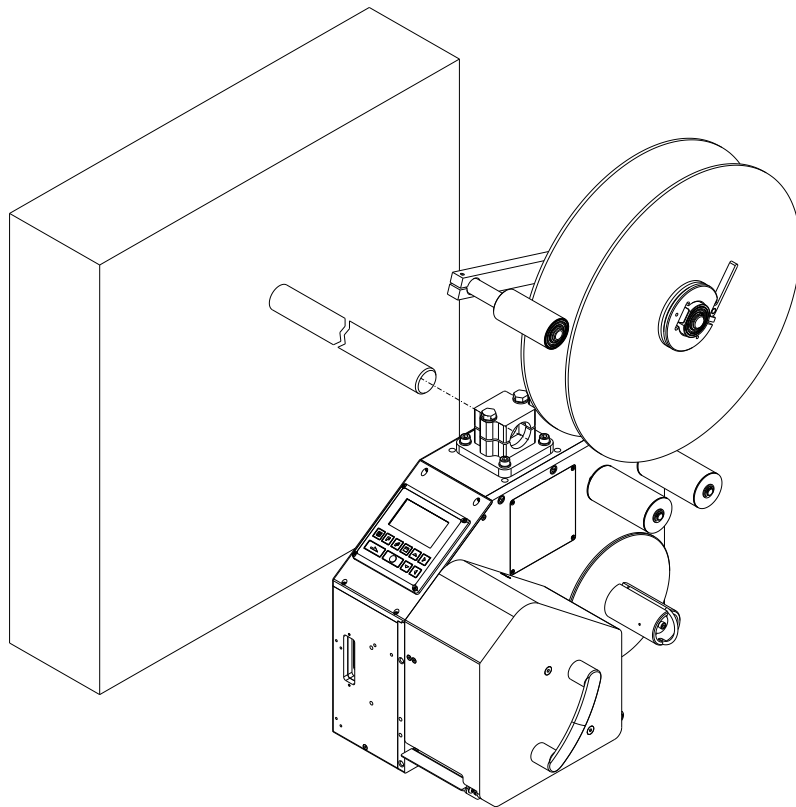


Figure 15

4.3 Connect the Printing System

Connect to the power supply

The printing system is equipped with a versatile power supply unit. The device may be operated with a mains voltage of 100 ... 240 V AC 50-60 Hz without any adjustments or modifications.



CAUTION!

The printing system can be damaged by undefined switch-on currents.

- ⇒ Set the power switch to '0' before plugging in the printing system.
- ⇒ Insert the power cable into the power connection socket.
- ⇒ Insert the plug of power cable into a grounded electrical outlet.

Connect to a computer or computer network



NOTICE!

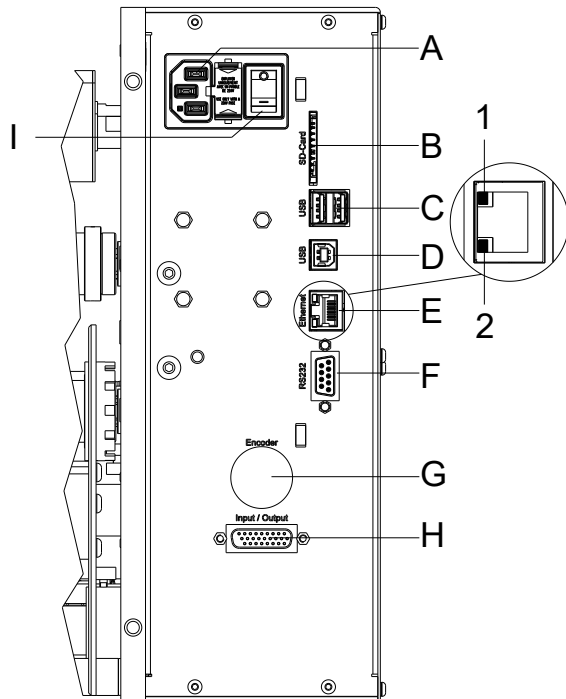
Insufficient or missing grounding can cause faults during operation.

Ensure that all computers and connection cables connected to the printing system are grounded.

- ⇒ Connect the printing system to a computer or network with a suitable cable.

4.4 Connector Pin Assignment (Back Side)

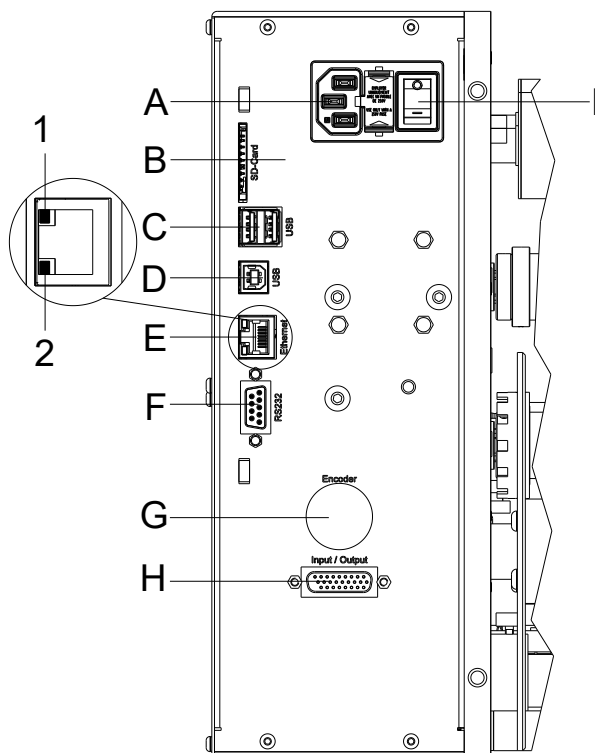
Right version



- A Power supply
- B Slot for SD card
- C 2 x USB host
- D USB interface
- E Ethernet 10/100
 - 1 = LED green
Lighting = Speed 100 MBit
Off = Speed 10 MBit
 - 2 = LED orange
Lighting = Connection active
Flashing = Data transfer
Off = No connection
- F Serial interface RS-232
- G Encoder connection (option)
- H External output/input
- I Power On/Off switch

Figure 16

Left version



- A Power supply
- B Slot for SD card
- C 2 x USB host
- D USB interface
- E Ethernet 10/100
 - 1 = LED green
Lighting = Speed 100 MBit
Off = Speed 10 MBit
 - 2 = LED orange
Lighting = Connection active
Flashing = Data transfer
Off = No connection
- F Serial interface RS-232
- G Encoder connection (option)
- H External output/input
- I Power On/Off switch

Figure 17

4.5 Switch On and Off the Printing System

After all connections are completed, switch on the printing system.

The main menu appears which shows the printer type, current date and time.

4.6 Initial Operation of Printing System

After switching on the printing system, the main menu appears which shows the printer type, current date and time.

Insert label material and transfer ribbon (see chapter 5. Loading Media, page 37).

Go to menu *Label layout*, select the menu item *Measure label* and start measuring (see chapter 6.4 Label Layout, page 49).

Press the key  to finish measuring.



NOTICE!

To enable correct measuring, at least two complete labels have to be passed through (not for continuous labels).

During measuring the label and gap length small differences can occur. Therefore, the values can be set manually in menu *Label layout/Label and Gap*.

5 Load Media

5.1 Load Label Roll



NOTICE!

As for the electrostatic unloading the thin coating of the thermal printhead or other electronic parts can be damaged, the label material should be antistatic. The use of wrong materials can lead to printer malfunctions, and the guarantee can expire.

Example: right version

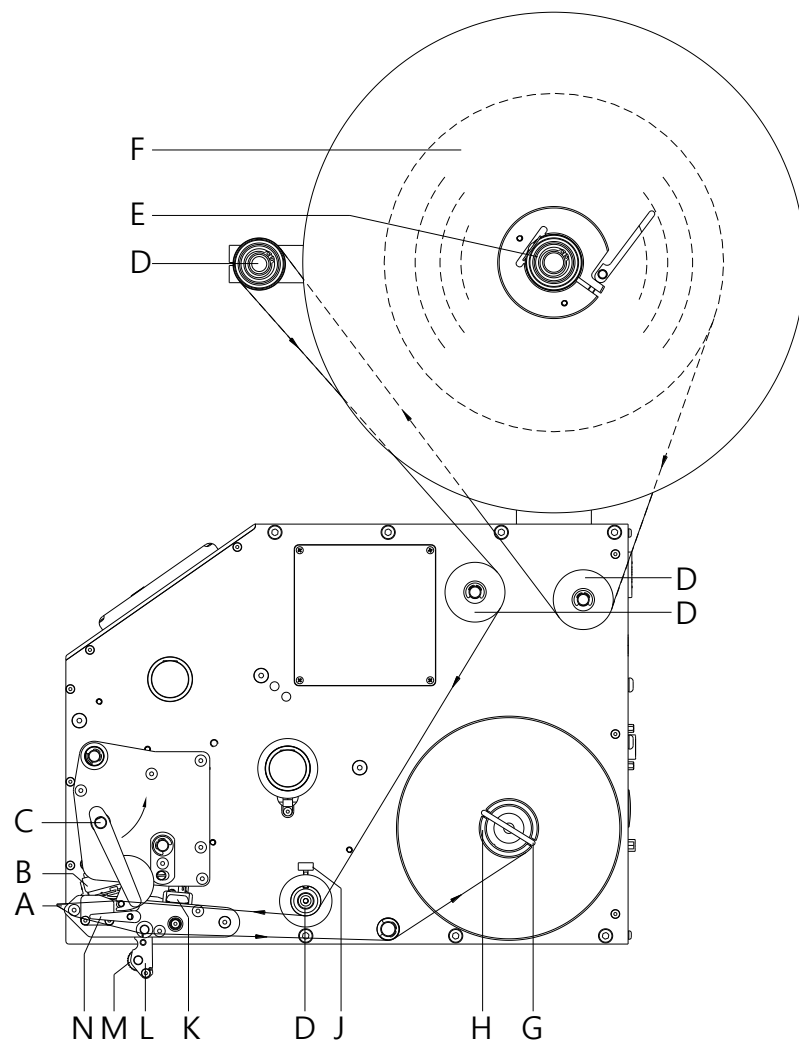


Figure 18

1. Open the printhead (B) by turning the pressure lever (C) anticlockwise.
2. Remove the outside label mounting plate (F).
3. Load the label roll with inner winding onto the unwinding roll (E).
4. Attach the label mounting plate (F).

5. Guide the label material around the reversing shafts (D). Pay attention that the label runs through the photocell (K).
6. To move the printhead (B) down, turn the pressure lever (C) in clockwise direction until it locks.
7. Adjust the adjusting ring (J) of the label guiding to the width of material.
8. Press the key  to start a test print or release a measuring procedure to determine the exact position of the label beginning.
9. Enter the offset value in the menu *Dispenser I/O*.
10. Turn the locking lever (N) upward in clockwise direction and at the same time turn the dispensing compensator down (L).
11. Strip some labels from the backing paper and lead the backing material over the dispensing edge (A) and between the plastic roll (M) and the dispensing compensator-shaft (L).
12. Press again the dispensing compensator (L) to the top until it locks.
13. Fix the backing paper at the rewinding unit (H) with a clamp (G).

5.2 Load Transfer Ribbon



NOTICE!

For the thermal transfer printing method it is necessary to load a ribbon, otherwise when using the printing system in direct thermal print it is not necessary to load a ribbon. The ribbons used in the printing system have to be at least the same width as the print media. In case the ribbon is narrower than the print media, the printhead is partly unprotected and this could lead to early wear and tear.

Example: right version

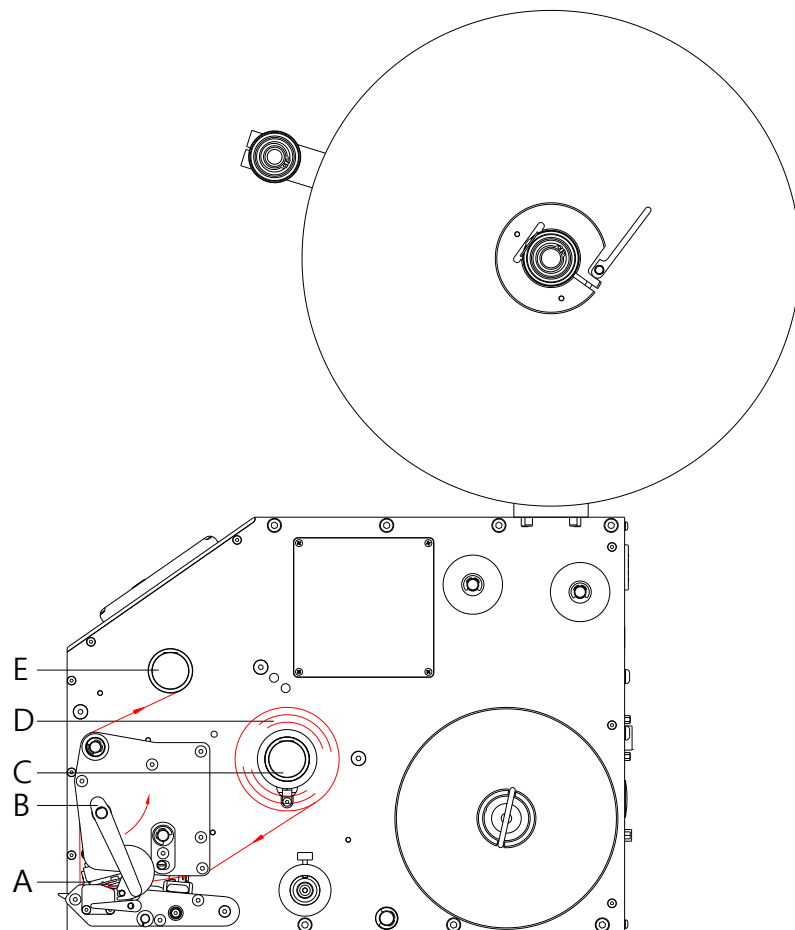


Figure 19



NOTICE!

Before a new transfer ribbon roll is loaded, the printhead must be cleaned using printhead and roller cleaner (97.20.002). For detailed information, please see page 90.

The handling instructions for the use of Isopropanol (IPA) must be observed. In the case of skin or eye contact, immediately wash off the fluid thoroughly with running water. If the irritation persists, consult a doctor. Ensure good ventilation.

1. Open the printhead (A) by turning the pressure lever (B) anticlockwise.



caution!

Risk of scraping when inserting the transfer ribbon res.
when removing the used transfer ribbon!

⇒ Be careful with the spring steel plate edges!

2. Load the transfer ribbon roll (D) with outer winding onto the unwinding roll (C).
3. Place an empty ribbon roll on the winding roll (E) and lead the transfer ribbon below the printhead (A).
4. Fix the beginning of transfer ribbon with an adhesive tape at the empty core of the rewinding roll (E). Please observe the rotation direction of the transfer ribbon rewinding anticlockwise.
5. To move the printhead (A) down, turn the pressure lever (B) in clockwise direction until it locks.



NOTICE!

As for the electrostatic unloading the thin coating of the thermal printhead or other electronic parts can be damaged, the transfer ribbon should be antistatic.

The use of wrong materials can lead to printing system malfunctions, and the guarantee can expire.



CAUTION!

Folds when using transfer ribbon with coating inside because of the limited retracting movement.

⇒ Use transfer ribbon with coating outside.



CAUTION!

Impact of electrostatic material on people!

⇒ Use antistatic transfer ribbon because electrostatic discharge can occur when removing.

5.3 Increase the Clamping Force for Ribbon Roll



notice!

The use of high-quality transfer ribbon with a cardboard core is recommended. A sample ribbon roll is included in the scope of delivery. The spring plates of the transfer ribbon roll on the rewinding/unwinding unit are designed to this quality at the factory.

Delivery state of the spring plates of the transfer ribbon roll

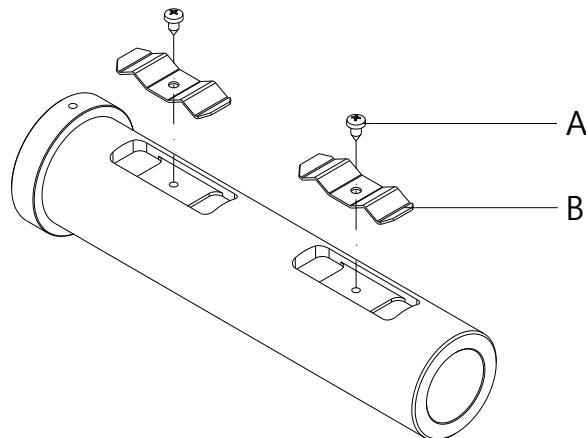


Figure 20

If other transfer ribbons are used, it can occur that the clamping force of the spring plates (B) is not sufficient, to position the rolls surely and to protect it against rotating.

Increase the clamping force

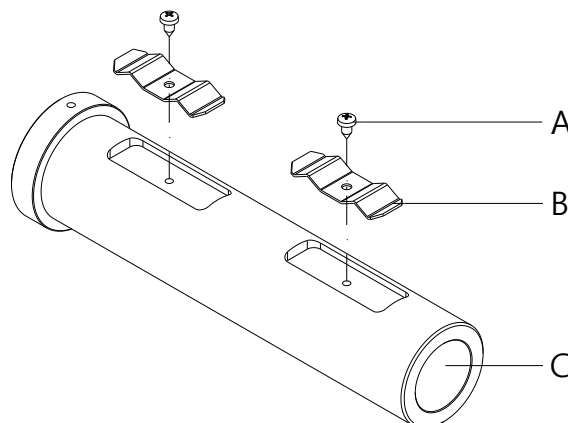


Figure 21

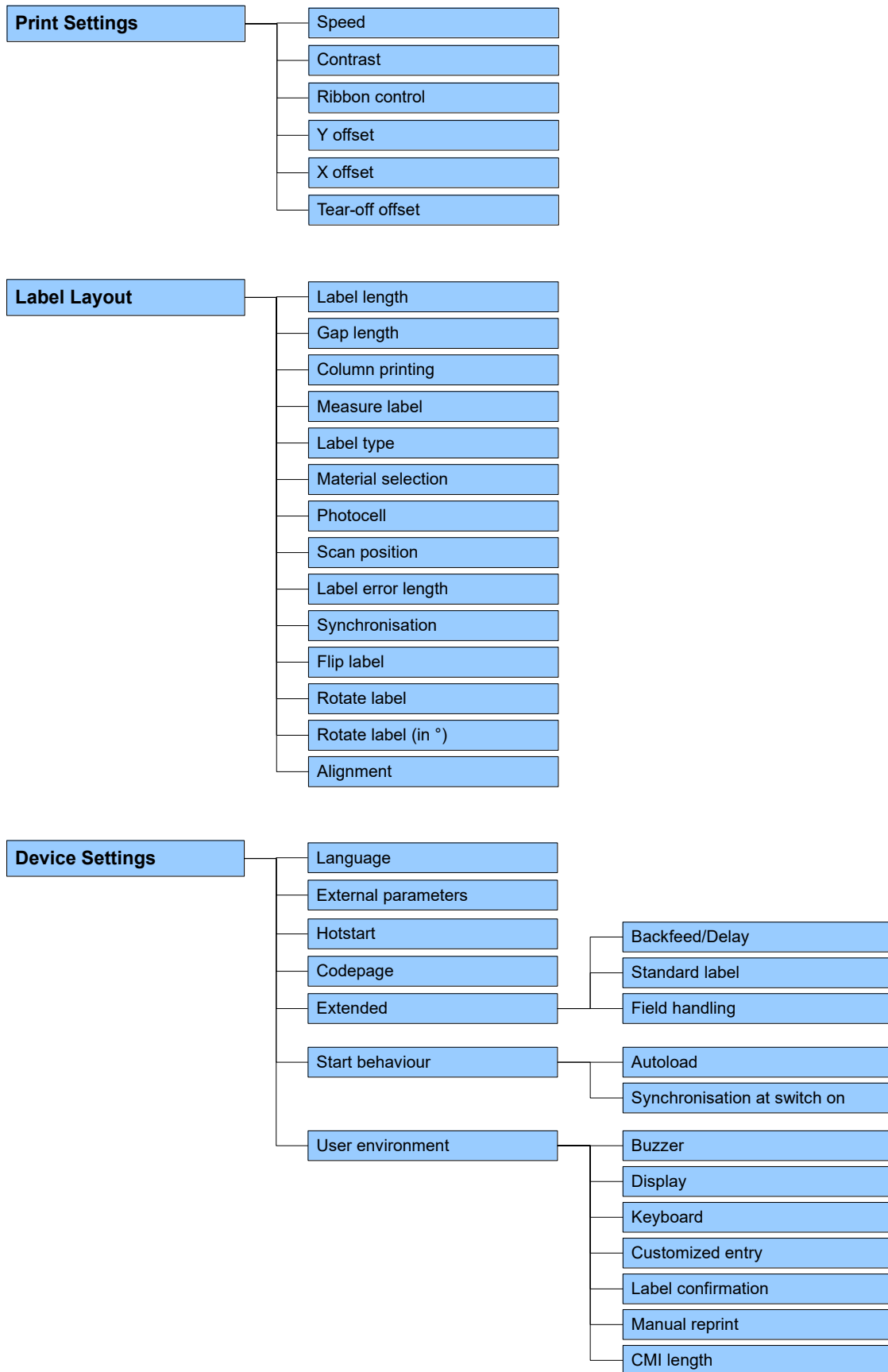
1. Remove the screws (A) and spring plates (B).
2. Turn the transfer ribbon roll (C) 180° until the other two alternative grooves are visible.
3. Fasten the spring plates (B) with the screws (A).
4. Insert the transfer ribbon roll (C) and empty cardboard core on the rewinding/unwinding unit. Check firm position!

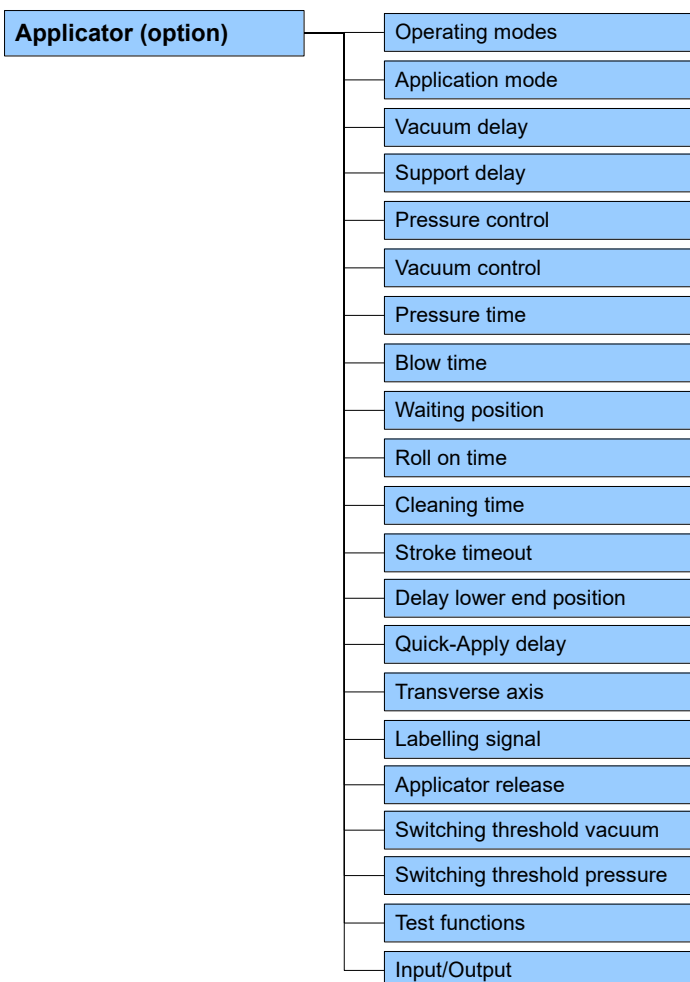
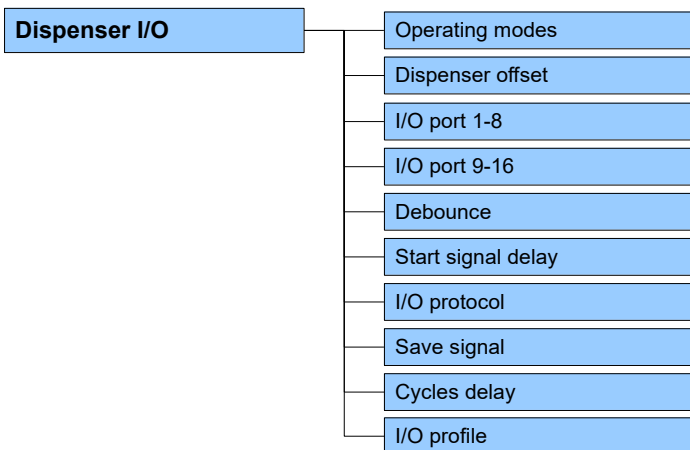
6 Function Menu

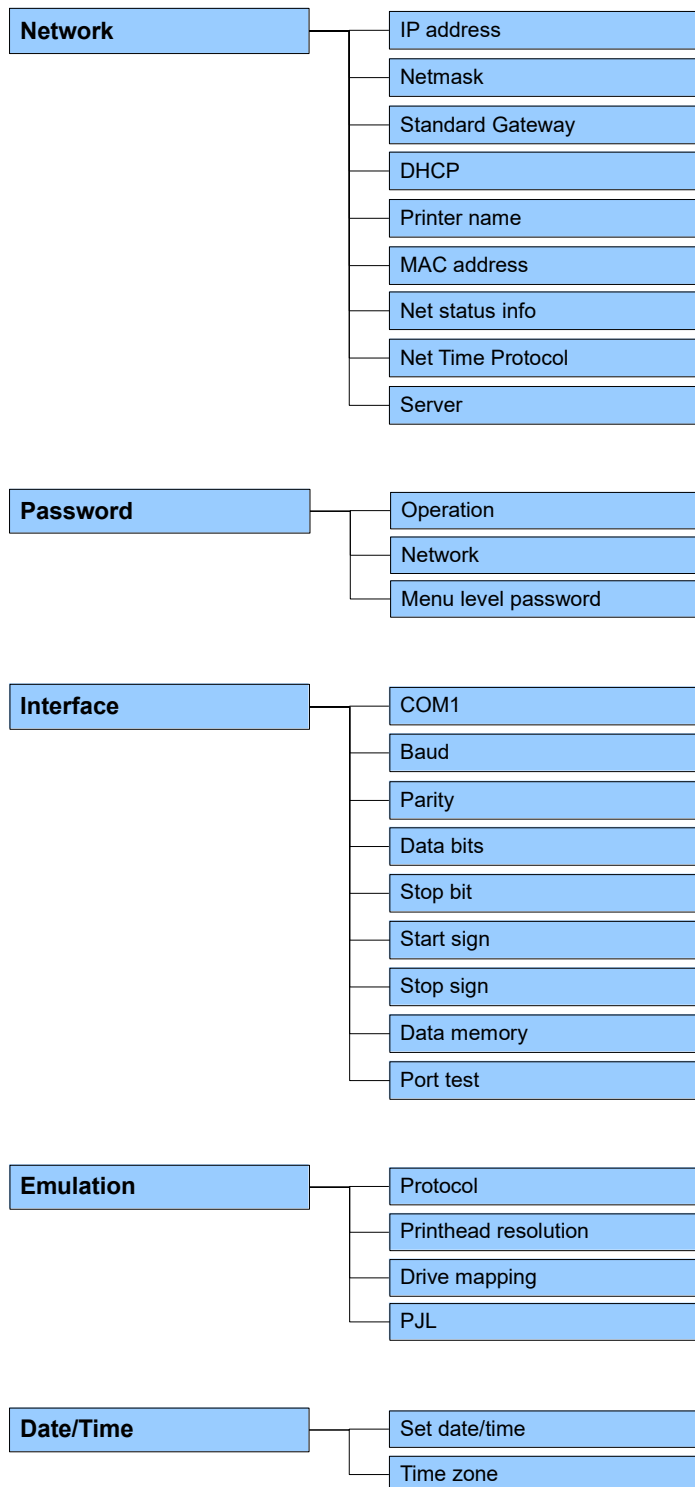
6.1 Operation Panel

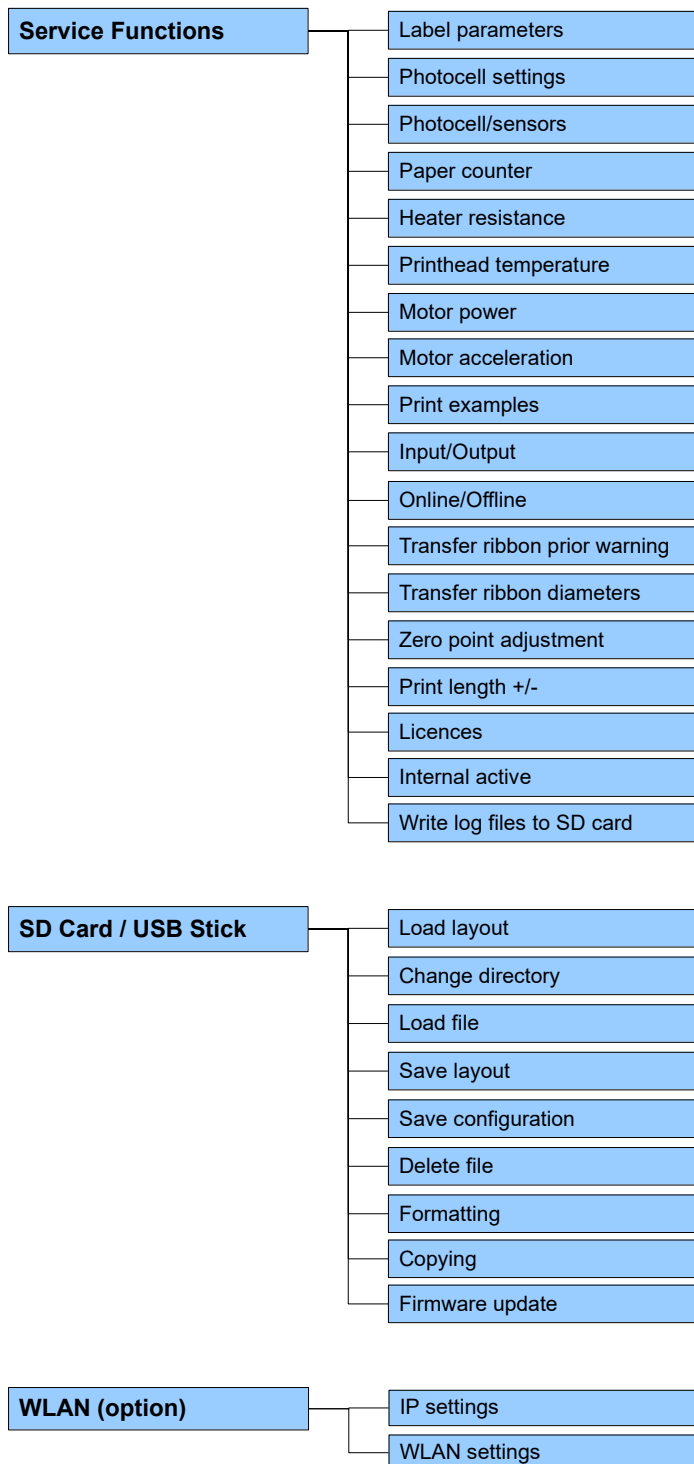
	The top line of the graphic display shows the printing system type.
	The graphic display shows information about the current printing system status and the print order, reports errors and shows the device settings in the menus.
	Back to the main menu. Start a test print. Delete a stopped print order.
	Change to the function menu. In function menu: one menu item back.
	Change to the quantity (number of pieces) menu. Press keys  and  to select the number of labels that should be printed.
	Change to the menu of the SD card.
	In main menu: feed of one label. In function menu: skip to the next menu item.
	Confirm settings and modifications. Stop and continue current print orders. Delete a stopped print order with key  . No further label of the print order is printed.
	Return to the previous input field. Press keys  and  to change the values.
	Skip to the next input field. Press keys  and  to change the values.
	Increase figure at the cursor position.
	Decrease figure at the cursor position.

6.2 Menu Structure









6.3 Print settings

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  to select the menu *Print settings*.

Speed

Indication of print speed in mm/s (see chapter Technical data, page 13). The print speed can be determined for each print order anew. The setting of print speed affects also the test prints.

Contrast

Indication of value to set the print intensity when using different materials, print speeds or printing contents.

Value range: 10 % ... 200 %.

Step size: 10 %.

Press the key  to move to the next menu item.

Ribbon control

Examination if the transfer ribbon roll is to end or if the ribbon was torn at the unwinding roll. The current print order is interrupted, and an Error Message appears at the printing system display.

Off: The ribbon control is deselected, i.e. the printing system continues without an error message.

On, weak sensibility (default): The printing system reacts at approx. 1/3 more slowly to the end of the transfer ribbon.

On, strong sensibility: The printing system reacts immediately to the end of the transfer ribbon.

Press the key  to move to the next menu item.

Y displacement

Indication of initial point displacement in mm.

Displacement of the complete print in paper direction. With positive values the print in paper direction starts later.

Value range: -30.0 ... +90.0.

Press the key  to move to the next menu item.

X displacement

Displacement of the complete print transverse to the paper direction.

The displacement is possible only up to the edges of the printing zone and is determined by the width of the focal line in printhead.

Value range: -90.0 ... +90.0.

Press the key  to move to the next menu item.

Tear-off

Indication of value to which the last label of a print order is moved forward and is moved back to the beginning of label at a new print start. Labels can be torn off after ending the print order without a label loss by tearing up.

Default value: 12 mm.

Value range: 0 ... 50.0 mm.

6.4 Label Layout

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Label layout* is displayed.

Press the key  to select the menu.

Label length	Indication of label length in mm (see chapter Technical data, page 13).
Gap length	Indication of distance between two labels in mm (not for continuous labels). Minimum value: 1 mm. Press the key  to move to the next menu item.
Column printing	Indication of width of one label as well as how many labels are placed side by side (see chapter 11.1 Column Printing, page 113). Press the key  to move to the next menu item.
Measure label	Press key  to start measuring. The printing system stops automatically after termination of measuring. The determined values are displayed and saved. Press the key  to move to the next menu item.
Label type	Generally adhesive labels are set. Press key  to select continuous labels. If the menu item <i>Label length/Gap length</i> contains a gap value, this value is added to the label length. Press the key  to move to the next menu item.
Material selection	Selection of the label used and the transfer ribbon material. Press the key  to move to the next menu item.
Photocell	Selection of the used photocell. The selection of transmission photocell normal or transmission photocell inverse is possible (see chapter 11.4 Photocells, page 117).
Scan position (AP)	Entry of percental label length by that the label end is searched. Marks onto the label can be skipped.

	Press the key  to move to the next menu item.
Label error length	In case an error occurs, indication after how many mm a message appears in the display. Value range: 1 mm ... 999 mm.
Synchronization	On: If a label is missing on the liner an error message is displayed. Off: Missing labels are ignored, i.e. it is printed into the gap. Press the key  to move to the next menu item.
Flip label	The axis of reflection is in the middle of the label. If the label width was not transferred to the printing system, automatically the default label width i.e. the width of the printhead is used. It is recommended to use labels with the same width as the printhead. Otherwise, this can cause problems in positioning. Press the key  to move to the next menu item.
Rotate label	According to standard the label is printed ahead with a rotation of 0°. If the function is activated, the label is rotated by 180° and printed in reading direction. Press the key  to move to the next menu item.
Rotate label (in °)	Corresponding to the parameter <i>Rotate label</i>, the label can be turned in 90° steps. NOTICE! Only printer internal objects (text, lines and barcodes) can be turned. The rotation of graphics is not possible. Press the key  to move to the next menu item.
Alignment	The adjustment of label is effected only after <i>Flip/Rotate label</i>, i.e. the adjustment is independent of the functions <i>Flip label</i> and <i>Rotate label</i>. Left: The label is aligned at the left-most position of printhead. Centre: The label is aligned at central point of printhead. Right: The label is aligned at right-most position of printhead.

6.5 Device Settings

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Device settings* is displayed.

Press the key  to select the menu.

Press the key  to move to the next menu item.

Language

Selection of language in which you want to display the text in the display. Now the following languages are available: German, English, French, Spanish, Finnish, Czech, Portuguese, Dutch, Italian, Danish, Polish, Greek, Hungarian, Russian, Chinese (option), Ukrainian, Turkish, Swedish, Norwegian, Estonian.

Press the key  to move to the next menu item.

External parameters

Label dimension only: The parameters for label length, gap length and label width can be transferred to the printer. All other parameter settings are to be made directly at the printer.

On: Sending parameters such as print speed and contrast via our label creation software to the printing system. Parameters which are set directly at the printing system before are no longer considered.

Off: Only settings made directly at the printing system are considered.

Press the key  to move to the next menu item.

Hotstart

On: Continue an interrupted print order after switching on the printing system anew.

Off: After switching off the printing system the complete data is lost (see chapter 11.2, page 114).

Press the key  to move to the next menu item.

Codepage

Indication of the font used in the device. The following possibilities are available:

Codepage 1252 West European (former ANSI)

Codepage 437 English

Codepage 850 Western European

Codepage 852 Slavic

Codepage 857 Turkish

Codepage 1250 Central and East European

Codepage 1251 Cyrillic

Codepage 1253 Greek

Codepage 1254 Turkish

Codepage 1257 Baltic

WGL4

Please find the tables referring to the above-mentioned character sets on www.carl-valentin.de/Downloads.

**Device Settings
Extended**

Press the key  to select the menu item.

Press the key  to move to the next menu item.

Backfeed

The backfeed was optimized in the operating mode dispenser. Now, when driving into the offset, the following label is 'pre-printed' if possible and therefore the backfeed of label is not necessary and time can be saved.

Delay

The adjustable deceleration time is only for mode 'backfeed automatic' of importance (see chapter 11, page 113).

Press the key  to move to the next menu item.

Standard label

On: If a print order is started without previous definition of label, the standard label is printed.

Off: If a print order is started without previous definition of label, an error message appears in the display.

Press the key  to move to the next menu item.

Field handling

Off: The complete print memory is deleted.

Keep graphic: A graphic res. a TrueType font is transferred to the printing system once and stored in the internal memory of printing system. For the following print order only the modified data is transferred to the printing system. The advantage is the saving of transmitting time for the graphic data.

The graphic data created by the printing system itself (internal fonts, bar codes, ...) is generated only if they are changed. The generating time is saved.

Delete graphic: The graphics res. TrueType fonts stored in the internal memory of the printing system are deleted but the other fields are kept.

Restore graphic: At the end of the print order the printed order can again be started at the printing module. All graphics and TrueType fonts are again printed.

**NOTICE!**

Exception: With column printing always full columns must be printed (number of pieces always multiple of the columns). Deleted columns are not restored.

Press the key  to return to the previous menu item.

Start Behaviour

Press the key  to select the menu item.

Press the key  to move to the next menu item.

Autoload

On: A label which was loaded once from SD card can be loaded again automatically after a restart of printing system.

Procedure: The used label is saved onto SD card. The label is loaded from an SD card and printed. After switching the printing system Off and again On, the label is loaded from SD card automatically and can be printed again. Press the key  to start the print with input of number of labels.

**NOTICE!**

The last loaded label from SD card is always again loaded after a restart of printing system.

Off: After a restart of printing system, the last label used must be again loaded manually from the SD card.

**NOTICE!**

A common use of the functions Autoload and Hotstart is not possible. For a correct Autoload procedure the Hotstart must be deactivated in the printing system.

Press the key  to move to the next menu item.

Synchronzation at print start

Off: The synchronization is disabled, i.e. the measuring and label feed have to be released manually.

Measure: After switching on the device, the loaded layout is automatically measured.

Feed: After switching on the device the layout is synchronized to the beginning of layout. For this one or multiple layouts are advanced.

Press the key  to return to the previous menu item.

User Environment

Press the key  to select the menu item.

Press the key  to move to the next menu item.

Buzzer

On: An acoustic signal is audible when pressing a key.

Value range: 1 ... 7.

Off: No signal is audible.

Display

Setting of display contrast.

Value range: 45 ... 75.

Press the key  to move to the next menu item.

Keyboard layout

Selection of region for the desired keyboard layout. The following possibilities are available: German, English, French, Greek, Spanish, Swedish, US American, Russian.

Customized entry	Press the key  to move to the next menu item. Off: No question appears at the display. In this case the stored default value is printed. On: The question referring the customized variable appears once before the print start at the display. Auto: The questions referring the customized variable and the quantity query appear after every printed layout. Auto without quantity query: The question referring to the customized variable appears after every layout without additional query for the quantity.
Label confirmation	Press the key  to move to the next menu item. On: A new print order is only printed after confirmation at the device. An already active continuing print order is printed as long as the confirmation is effected at the device. Off: No query appears at the display of printing system.
Manual reprint	Press the key  to move to the next menu item. Yes: In case an error occurs, and printing system is in stopped mode then you can reprint the last printed labels by means of the keys  and . No: Only blank labels were advanced.
CMI length	Press the key  to move to the next menu item. If the print is interrupted in the label, at the printhead this could lead to a small interruption in the printout, showing a fine white line onto the label. To avoid this, a value for the minimum backfeed can be set (0 – 1 mm) at which the label material is moved backwards. At the next print start the free range is overprinted. The setting of CMI length has only an influence on the selection of backfeed mode 'optimized backfeed'.

6.6 Dispenser I/O



NOTICE!

To operate the printing system in dispenser mode a print order must be started, and the printing system must be in 'waiting' mode.

Switch on the printing system and the display shows the main menu.

Press key  to access the function menu.

Press key  until the menu *Dispenser I/O* is displayed.

Press key  to select the menu.

In the upper line of display, the operating mode can be selected.

Offset

In the line below, the dispenser I/O offset (approx. 24.5 mm) can be set.

Press the key  to move to the next operating mode.

Operating modes

Off:

It is printed without the labels are dispensed.

I/O static:

The input signal evaluated, i.e. it is printed as long as the signal exists. The number of labels which was entered at the print start is printed.

The set dispenser offset is not taken into consideration.

I/O static continuous:

For description of this operating mode, see I/O static.

Continuous means that it is printed as long as new data is transferred via interface

The set dispenser offset is not taken into consideration.

I/O dynamic:

The external signal is evaluated dynamically, i.e. is the printing system in 'waiting' mode a single label is printed at each signal changing. After the print the set dispenser offset is executed, i.e. a backfeed is effected.

I/O dynamic continuous:

For description of this operating mode, see I/O dynamic.

Continuous means that it is printed as long as new data is transferred via interface.

Photocell:

The printing system is controlled via photocell. The printing system prints automatically a label if the user takes away the label at the dispensing ledge. The print order is finished when the target number of labels is reached.

Photocell continuous:

For description of this operating mode, see Photocell.

Continuous means that it is printed as long as new data is transferred via interface.

Additional parameters for Dispenser I/O

After selection of desired Dispenser I/O operating mode, press the key  to select additional parameters.

I/O Port 1-8 and I/O Port 9-16

Definition of port functions. 2 signs show the current setting for each port.

The first sign specifies the following:

- I = Port operates as Input
- O = Port operates as Output
- N = Port has no function (not defined)

These settings cannot be modified.

The second sign specifies the following:

- + = Active signal level is 'high' (1)
- = Active signal level is 'low' (0)
- x = Port is deactivated
- & = Function is executed at each change of the signal level
- s = Status can be enquired/influenced by interface
- = The internal function of printing system is deactivated.

The modification of the signal level is only taken into consideration for the operating modes I/O static, I/O dynamic, I/O static continuous and I/O dynamic continuous.

Press the key  to move to the next menu item.

Debounce

Indication of debounce time of the dispenser input. The setting range of the debounce time is between 0 and 100 ms.
In case the start signal is not clear then you can debounce the input by means of this menu item.

Press the key  to move to the next menu item.

Start signal delay

Indication in time per second of the delay for the start signal.
Value range: 0.00 ... 9.99.

Press the key  to move to the next menu item.

I/O protocol

Indication of interface at which the modifications of input signals and output signals (I/O) are sent.

Press the key  to move to the next menu item.

Save signal

On: The start signal for the next label can already be released during printing the current label. The signal is registered from the printing system. The printing system starts printing the next label immediately after finishing the current one. Therefore, time can be saved, and performance be increased.

Off: The start signal for the next label can only be released if the current label is printed to the end and the printing system is again in 'waiting' state (output 'ready' set). If the start signal was released already before, so this is ignored.

	Press the key  to move to the next parameter.
Cycles/Delay	Indication of number of labels that are printed per start signal and the delay in ms between each label. Value range - Cycles: 1 ... 9 Value range - Delay: 0 ... 3000 ms
	Press the key  to move to the next parameter.
I/O Profile	Selection of the available configurations <i>Std_Label</i> (factory setting), <i>StdFileSelLabel</i> , <i>Appl</i> , <i>Std_Machine</i> or <i>Appl_Machine</i> (see chapter 3.3, page 18).

6.7 Network

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Network* is displayed.

Press the key  to select the menu.

IP address	Each participant must have a 32-bit address. The IP address is separated by full stops and arranged into four parts. Each part has a number range of 0 ... 255. Press the key  to move to the next menu item.
Network mask	In connection with the IP address of the printer, the netmask determines which IP addresses this device searches in the own network. Press the key  to move to the next menu item.
Standard gateway	The IP address of the network gateway. If the IP address was referred to by DHCP then DHCP is shown in brackets. Press the key  to move to the next menu item.
DHCP	DHCP allows the automatic referring of the network parameters IP address, network mask and standard gateway of a DHCP server which must be installed in the network. Press the key  to move to the next menu item.
Printer name	The name of the installed printer in the network. The printer name in connection with DHCP can be used to respond to the printer. If DHCP is active and the name of the printer is changed, the printer logs out itself at the DHCP server and afterwards the printer logs in again. After changing the printer name, the printer can have a new IP address. Press the key  to move to the next menu item.
MAC address	The MAC address (Media Access Control) is the hardware address of each individual network adapter and serves for the clear identification of the printer in network.

Press the key  to move to the next menu item.

Network Time Protocol

NTP Active

On: The NTP function is active

Off: The NTP function is deactivated, i.e. no synchronisation takes place.

NTP Serv IP Addr: IP address of the NTP server.

NTP Serv Name: A name can be entered as an alternative or in addition to the IP address. If both are specified, the server with the best connection is selected and the other is used as backup.

NTP Status:

Disabled: No connection to NTP server or the NTP function is switched off. Switch on NTP and check availability of NTP IP address and/or NTP name.

Example:

1 2 u 150 256 -0.0s

1. value: (1): NTP connection: <0: Error; 0: No NTP connection; 1: NTP connection established

2. value: (2): Server stratum (see general NTP documentation on the internet)

3. value: (u): Server type (u: unicast, b: broadcast, l: local clock, s: symmetric peer)

4. value: (150): Seconds counter since last update

5. value: (256): Update interval in seconds

6. value: (-0.0s): Time deviation in seconds

NTP Sync Now (Synchronise NTP now):

When executing this action, an immediate time synchronisation is performed. This function is used to test the function of the NTP server.

Example

Change the time, select the function NTP Sync Now and confirm. The NTP client will set the time correctly again.

Date/Time:

With this function, the NTP function can be tested and controlled.

Press the key  to move to the next menu item.

Server

All servers can be enabled or disabled, except those on ports 9100 / 9099.

6.8 Password

Switch on the label printer and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Password* is displayed.

Press the key  to select the menu.

With a password different functions can be blocked for the operator. There are different applications with which such password protection can be used reasonably. To receive a most flexible password protection, the printer functions will be divided into several function groups.

Because of these different function groups, the password protection is very flexible. The printer can be adjusted best to its actual order, as only certain functions are blocked.

Operation

Password

Entering a 4-digit numeric password.

Press the key  to move to the next menu item.

Protection configuration

Printer settings can be changed (contrast, speed, operating mode, ...). The password protection prevents modifications at the printer settings.

Press the key  to move to the next menu item.

Protection favorites

Password protection prevents access to the favorites.

Press the key  to move to the next menu item.

Protection memory card

With the functions of the memory card, labels can be stored, loaded, etc. The password protection must decide if no access or only readable access on SD card is allowed.

No protection: No password protection

Userview only: Only reading access

Protected: Access blocked

Press the key  to move to the next menu item.

Protection Printing

In case the printer is connected to a PC, it can be useful that the user is not able to produce a print manually. So, password protection prevents that prints can be produced manually.

Press the key  to move to the next menu item.

To execute a blocked function, first the valid password has to be entered. If the correct password is entered, then the desired function can be executed.

Network

Password

Entering a 15-digit password. The password can consist of alphanumeric and special characters.

Press the key  to move to the next menu item.

Protection HTTP

Communication by HTTP can be avoided.

Press the key  to move to the next menu item.

Protection Telnet

The settings of the Telnet service cannot be changed.

Press the key  to move to the next menu item.

Protection remote access

The password protection prevents the remote control of the printer.

Press the key  to move to the next menu item.

To execute a blocked function, first the valid password must be entered. If the correct password is entered, then the desired function can be executed.

Menu level password

An additional password can be needed to carry out service work. The 4-digit password can be set by using the keys  and . The settings can be changed by using *ConfigTool*.

6.9 Interface

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Interface* is displayed.

Press the key  to select the menu.

COM1 / Baud / P / D / S

COM1:

0 - serial interface Off.

1 - serial interface On.

2 - serial Interface On, no error message occurs in case of a transmission error.

Baud:

Indication of bits which are transferred per second (speed of data transfer).

Value range: 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

P = Parity:

N - No parity; E - Even; O - Odd

Please observe that the settings correspond to those of the direct printing system.

D = Data bits:

Setting of data bits.

Value range: 7 or 8 Bits.

S = Stop bits:

Indication of stop bits between bytes.

Value range: 1 or 2 stop bits.

Press the key  to move to the next menu item.

Start sign / End sign

SOH: Start of data transfer block → Hex format 01

ETB: End of data transfer block → Hex format 17

Two different start / end signs can be set. The settings are normally SOH = 01 HEX and ETB = 17 HEX. Several host computers cannot process these signs and therefore SOH = 5E HEX and ETB = 5F cannot be set.

Press the key  to move to the next menu item.

Data memory

Standard: After starting a print order, the printing system buffer receives data as long as it is filled.

Advanced: During a current print order data is received and processed.

Off: After starting a print order no more data is received.

Press the key  to move to the next menu item.

Porttest

Check whether the data are transferred via the interface.

Press the keys  and  to select standard (on). Press the  key and the data sent via any port (COM1, USB, TCP/IP) is printed.

6.10 Emulation

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Emulation* is displayed.

Press the key  to select the menu.

Protocol

CVPL: Carl Valentin Programming Language

ZPL: Zebra® Programming Language

Change between CVPL protocol and ZPL II® protocol.

Press the key  to confirm the selection.

The direct printing system performs a restart and ZPL II® commands are transformed into CVPL commands internally by the direct printing system and then executed by the device.

In the menu *Protocol*, press the key  to move to the next menu item.

Printhead resolution

At activated ZPL II® emulation the printhead resolution of the emulated device must be set, e.g. 11.8 Dot/mm (= 300 dpi).



NOTICE!

If the printhead resolution of the Zebra® printer differs from that of the Valentin device, then the size of objects (e.g. texts, graphics) complies not exactly.

Press the key  to move to the next menu item.

Drive mapping

The access to Zebra® drives

B: SD card

E: Flash drive

R: RAM disk (standard drive, if not indicated)

is rerouted to the corresponding Valentin drives

A: SD

R: RAM disk

U: USB stick

This can be necessary if the available space on the RAM disk (at present 512 KByte) is not sufficient or if bitmap fonts are downloaded to the device and stored permanently.



NOTICE!

As the build-in fonts in Zebra® printers are not available in Valentin devices this can cause small differences in the text image.

Press the key  to move to the next menu item.

PJL (Printer Job Language)

The processing of PJL commands (Hewlett Packard® Print Job Language) can be switched On/Off. Status information relating to the print order can be queried.

6.11 Date & Time

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Date/Time* is displayed.

Press the key  to select the menu.

Setting of date and time

The upper line of display shows the current date, the second line the current time. Press the key  or  to move to the next input field. Press the key  or  to increase or decrease the figures at the cursor position.

Press the key  to move to the next menu item.

Time Zone

Press the key  to confirm the menu item.

Region

Press the key  or  to select the region.

The following possibilities are available: Europe, Pacific, Africa, America, Asia, Atlantic, Australia.

Press the key  to confirm the selection. Then you move to the next submenu.

City

Press the key  or  to select the city. Press the key  to confirm, the selection.

6.12 Service Functions



NOTICE!

So that the distributor and the manufacturer, in case of service, can offer fast support the necessary information such as selected parameters can be taken directly from the service functions menu of the device.

Switch on the printing system and the display shows the main menu.

Press the key to access the function menu.

Press the key until the menu *Service functions* is displayed.

Press the key to select the menu.

Label parameters

Indication of label parameters in Volt.

A: Indication of minimum value.

B: Indication of maximum value.

C: Indication of trigger level. The value is ascertained while measuring and can be changed.

Press the key to move to the next menu item.

Photocell configuration

This function enables definition of photocell levels.

In case of problems while positioning or measuring of label, levels for label photocell can be set manually. Make sure that a large hub as possible (above the label >3 V, above the gap <1 V) is set.

Press the key to move to the next menu item.

Photocell parameters

DLS: Indication of transmission photocell level in Volt.

RLS: Indication of reflexion photocell level in Volt.

SLS: Indication of peel off photocell level in Volt.

TR: Indication of transfer ribbon photocell status (either 0 or 1).

Press the key to move to the next menu item.

Paper counter

D: Indication of printhead attainment in meters.

G: Indication of printing system attainment in meters.

Press the key to move to the next menu item.

Heater resistance

To achieve high print quality, the indicated Ohm value must be set after an exchange of printhead.

Press the key to move to the next menu item.

Printhead temperature

Indication of printhead temperature. The printhead temperature corresponds normally to the room temperature. In case the maximum printhead temperature is exceeded, the current print order is interrupted, and an error message appears at the printing system display.

	Press the key  to move to the next menu item.
Motor Power	Setting how much power the feed motor must provide under high load. A modification is recommended if the material used is not fed correctly or if there are displacements in the printout. Eco: Reduced torque of the feed motor. The setting is suitable for low print speeds and light label rolls. Normal: The setting is suitable for print speeds up to 300 mm/s in conjunction with the option applicator. Maximum: Maximum torque of the feed motor. The setting is suitable for maximum available speed and heavy label rolls in conjunction with a label dispenser. Press the key  to move to the next menu item.
Motor Acceleration	The parameter setting specifies how quickly the feed motor should accelerate. Value range: 1 ... 5 Default: 2 Press the key  to move to the next menu item.
Print examples	Settings = Printout of all printing system settings such as speed, label and transfer ribbon material. Bar codes = Printout of all available bar code types. Fonts = Printout of all available font types. Press the key  to move to the next menu item.
Input	Indication of input signal level which depends on the set <i>I/O Profile</i> (see page 57). 0 = Low 1 = High Press the key  to move to the next menu item.
Output	Indication of signal level which depends on the set <i>I/O Profile</i> (see page 57). 0 = Low 1 = High Press the key  to move to the next menu item.
I/O Status	Relevant results are counted and registered in RAM memory. The protocols get lost after switching off the device. RInt = Real Interrupts The start input impulses are counted directly at the Interrupt. Dbnc = Debounced The start input impulses that are longer than the set debounce time are counted. Only these start impulses can lead to a print. If a start impulse is too short, no print is released. This is recognized by the fact that RInt is counted, Dbnc not.

NPrn = Not Printed

The debounced start input impulses that have not led to a print are counted. Causes: no active print order, print order stopped (manually or because of an error) or the printing system is still active with the processing of a print order.

PrtStrtReset = The counters are reset.

PrtStrtTime = Measured length of the last start impulse in ms.

Press the key  to move to the next menu item.

Online / Offline

This function is activated e.g. if the transfer ribbon is to be changed. It is avoided that a print order is processed although the module is not ready. If the function is activated, then press the key  to change between Online and Offline mode. The respective state is indicated in the display.

Standard: Off

Online: Data can be received by interface. The keys of the foil keyboard are only active, if you changed in the Offline mode with the key .

Offline: The keys of the foil keyboard are still active but received data are not processed. If the module is again in Online mode, then new print orders can be again received.

Press the key  to move to the next menu item.

Transfer ribbon advance warning

Before the end of transfer ribbon, a signal is sent by the control output.

Warning diameter

Setting of transfer ribbon advance warning diameter.

In case you enter a value in mm then a signal appears via control output when reaching this diameter (measured at transfer ribbon roll).

Ribbon advance warning mode

Warning: When reaching the transfer ribbon advance warning diameter, the corresponding I/O output is set.

Reduced print speed: Speed on which the printing speed is to be reduced.

Error: The printing system stops when reaching the transfer ribbon advance warning diameter with the message 'too less ribbon'.

Reduced print speed

Setting of the reduced print speed in mm/s. This can be set in the limits of the normal print speed.

Press the key  to move to the next menu item.

Zero point adjustment in Y direction

Indication of value in 1/100 mm.

After replacing the printhead - the print cannot be continued at the same position on the label; the difference can be corrected in printing direction.



NOTICE!

The value for zero point adjustment is set ex works. After replacing the printhead, only service personnel are allowed to set this value anew.

**Zero point adjustment
in X direction**

Press the key  to move to the next menu item.

Indication of value in 1/100 mm.

After replacing the printhead - the print cannot be continued at the same position on the label; the difference can be corrected across the printing direction.

**NOTICE!**

The value for zero point adjustment is set ex works. After replacing the printhead, only service personnel are allowed to set this value anew.

Press the key  to move to the next menu item.

Print length +/-

Indication of print layout correction in percent.

By mechanical influences (e.g. label roll size) the print layout can be printed increased and reduced to its original size.

Value range: +10.0 % ... -10.0 %

Press the key  to move to the next menu item.

**Write log files to
memory card**

The printing system logs different events internally. In case of service, the error cause can be located faster.

With this command, different log files are saved on an existing storage medium (memory card). After the 'Finish' message the storage medium can be removed.

The files are in directory 'log':

LogMemErr.txt: Logged errors with additional information such as date/time and file name/line number (for developers).

LogMemStd.txt: Logging of selected events.

LogMemNet.txt: Data latest send via port 9100.

Parameters.log: All printer parameters in human readable form.

TaskStatus.txt: Status of all printer tasks.

The files *LogMemErr.txt* and *LogMemStd.txt* are written in circle, i.e. old contents are overwritten. The entry logged last is marked with „---“.

6.13 Main Menu

Switch on the printing system and the display shows the main menu. The main menu shows information such as device type, current date and time, version number of firmware and the used FPGA.

The selected display is shown for a short time, then the indication returns to the first information.

Press the key  to move to the next information display.

7 Options

7.1 Label Applicator

Switch on the printing system and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *Label applicator* is displayed.

Press the key  to select the menu.

Press the key  to move to the next mode.

Operating modes

Off: The print order is processed without using the applicator.

Stamp on:

The label remains in a fixed position. The label is pressed directly onto the product.

Blow on:

The pad moves to a pre-adjusted position approximately 10 mm away from the product. The label is blown onto the product by an air jet stream. The print and apply cycle perform in a fixed position or in linear movement of the product.

Roll on:

The label is dispensed and moved until touching the roller of the roll-on pad. In the labelling position, this roll is pressed onto the product. Then the label is applied and rolled on by the movement of product.

Press the key  to move to the next parameter.

Application mode

The applicator can be operated in two different ways concerning the order of printing and labelling within one labelling cycle.

Print-Apply:

The print of a label is released by an external start signal. At the same time, the vacuum on the pad as well as the supporting air from the blow tube are switched on. If the label is printed and picked up completely from tamp, the supporting air is switched off and the lift cylinder is controlled to move the pad down towards the labelling position. A sensor signals when the labelling position is reached.

Following, the vacuum is switched off and the label is transferred to the product. After applying the label, the lift cylinder is so controlled that the pad is again moved back to the starting position. Now the labelling cycle is finished.

Apply-Print:

At the beginning of the cyclic operation 'Apply-Print' the first label is printed immediately and passed to the pad.

The pad with the printed label is in starting position and the vacuum at the pad is switched on.

At start of the cyclic operation when sending the start signal, the first label is already on the pad. The following process is similar to the mode 'print-apply' but at the end of the cycle the next label is printed and picked up by the pad.

Now the labelling cycle is finished.

- Press the key  to move to the next parameter.
- Vacuum delay On**
- The vacuum is not switched on immediately at print start, but only after the label has been feeding for a certain period. This delay causes the label to run under the pad more easily, as it is not immediately sucked in and thereby slowed down.
- Value range: 0 ... 5000 ms
Step size: 10 ms
Default: 0 ms
- Press the key  to move to the next parameter.
- Vacuum delay Off**
- The vacuum is not switched off immediately when the lower end position is reached, but only after the label has been pressed for a certain period. This delay ensures that the label does not move underneath the pad during stamping.
- Value range: 0 ... 5000 ms
Step size: 10 ms
Default: 0 ms
- Press the key  to move to the next parameter.
- Support delay On**
- The supporting air from the blow tube is not immediately switched on at print start but only if the label has covered a distance. This delay helps to prevent a turning or swinging at the front of the label and consequently avoids faults when the label is being picked up from printing system.
- Value range: 0 ... 2500 ms
Step size: 0 ms
Default: 0 ms
- Press the key  to move to the next parameter.
- Support delay Off**
- Delayed to the process of the label being picked up, the supporting air is switched off.
- In many cases, after being picked up by the pad the label edge may still stick on the liner. This may affect the accuracy of the label positioning or even cause faults in the labelling. Therefore, switching off the air blow delayed can be useful to separate the label from liner and neatly place the label on the surface of pad.
- Value range: 0 ... 2500 ms
Step size: 10 ms
Default: 500 ms
- Press the key  to move to the next parameter.
- Pressure control**
- With activated compressed air control, with help from a compressed air sensor it is checked at each labelling cycle if the compressed air fits with the valve block. If no compressed air is presented, the labelling cycle is stopped, and the error message 'compressed air' is displayed.
- If the parameter 'pressure control' is set to Off, the error treatment as described above will not be effected. This can be especially helpful for the initial operation of the labelling system.
- For standard operation, set the parameter to On.

	Press the key  to move to the next parameter.
Vacuum control	The label transfer from printing system to applicator is controlled by a vacuum sensor. If the transfer of label fails, the sucking holes on the pad will not be covered by the label and therefore no vacuum can originate on the pad. Afterwards an error message appears, and the label strip will be fed back. If the parameter 'vacuum control' is set to Off, the error treatment as described above will not be effected. This can be especially helpful during adjustments, because the immediate backfeed will be cancelled and therefore it is easier to check the reasons for the faulty transfer. For standard operation, set the parameter to On. Press the key  to move to the next parameter.
Pressure time	This parameter is only active if the operating mode 'stamp on' is selected. The time can be adjusted while the stamp is kept in the labelling position for applying the label onto the goods. Press the key  to move to the next parameter.
Blow time	This parameter is only active if the operating mode 'blow on' is selected. The time can be adjusted, while the blowing air is switched on for transferring the label onto product. Value range: 0 ... 2500 ms Step size: 10 ms Default: 100 ms Press the key  to move to the next parameter.
Waiting position	This parameter is only active if the operating mode 'blow on' and mode 'apply-print' are selected. Waiting position up: In cyclic mode the pad with the printed label waits in the labelling position near the dispensing edge of printing system for the external start signal. Waiting position down: In cyclic mode the printed label is transported to the labelling position at the end of a cycle. So the next cycle begins with blowing up the label. Press the key  to move to the next parameter.
Roll on time	This parameter is only active if the operating mode 'blow on' is selected. The time can be adjusted while the roll-on pad is stopped in labelling position. Value range: 0 ... 5000 ms Step size: 10 ms Default: 0 ms Press the key  to move to the next parameter.
Cleaning time	This parameter is only active if the operating mode 'blow on' and 'roll on' are selected. The time can be adjusted for the cleaning period of pad after application procedure. Value range: 0 ... 2500 ms Step size: 10 ms Default: 100 ms

Stroke timeout	Press the key  to move to the next parameter. Moving up and down of pad. If the pad does not reach the corresponding final position within the set time, then an error message appears ('final position above' at moving up and/or 'final position below' at moving down). Value range: 0 ... 5000 ms Step size: 10 ms Default: 0 ms
Delay lower end position	Press the key  to move to the next parameter. The reaching of the lower end position within the labelling cycle is not checked immediately after the start of the downward movement, but only when the pad has moved downwards for a certain time. This ignores a mistaken release of the lower end position (e.g. by inertia of the pad). Value range: 0 ... 1000 ms Step size: 10 ms Default: 0 ms
Quick-Apply delay	Press the key  to move to the next parameter. Only with available option quick-apply: With this function, the travel speed of the cylinder may be reduced before it hits the product. The time until the delay begins may be set. The exhaust throttle (bottom) on the cylinder must be opened completely for this. Value range: 0 ... 2500 ms Step size: 10 ms Default: 0 ms
Transverse axis	Press the key  to move to the next parameter. Only with available option transverse axis: This function allows you to set if the pad makes a transversal movement before the upwards movement, and/or accordingly after the upwards movement back into the print position. If the parameter 'transverse axis' is set to On, in each case a transverse movement takes place. At setting Off, no transversal movement takes place, and the application procedure begins in the print position.
Labelling signal	Press the key  to move to the next parameter. If printing and applying of the label are separately released, a separate signal for applying the label can be activated (port 4, start applying). Off: No labelling signal is used, i.e. after printing the label and takeover onto the pad, the applying procedure begins immediately. Print position: After printing the label and takeover onto the pad, the printer waits in print position for the labelling signal. Labelling position: After printing the label and takeover onto the pad, the pad makes a transversal movement into the labelling position. There the printer waits for the labelling signal. With applicators without transversal axis, this setting is identical with the setting 'print position'.

	Press the key  to move to the next parameter.
Applicator release	The behaviour of the applicator when switching on the printer is set. Off: After the printer is switched on, the applicator is moved to the initial position without confirmation in the initialization phase. On: After the printer is switched on, the applicator is only moved to the initial position in the initialization phase after the release has been shown on the display. Press the key  to move to the next parameter.
Setting of switching threshold for vacuum control	Vac = Vacuum valve On: Vacuum valve is switched On Off: Vacuum valve is switched Off V = Vacuum setting range Value range: 0 ... 255 Step size: 5 Default: 0 InputV = Tamp control 0 – Label is not detected on the tamp 1 – Label is detected on the tamp Press the key  to move to the next parameter.
Setting of switching threshold for pressure control	P = Setting range Pressure Value range: 0 ... 255 Step size: 5 Default: 0 InputP = Pressure control 0 – Pressure below the set pressure 1 – Pressure above the set pressure Press the key  to move to the next parameter.
Test functions	Stroke adjust The arrester can be adjusted, and the stroke speed can be set. The pad makes a stroke movement and returns to the basic position after reaching the lower end position. Press the key  to start the stroke movement. Press the key  to move to the next parameter.
Input/Output	This menu serves for the applicator setup as well as for error tracing. Input signals of the applicator can be monitored, and output signals can be set or reset separately. Press the key  or  to select the corresponding output for set/reset the output signals. Press the key  or  to set/reset the corresponding output.

Input signals

- I₁ = Pre-dispense key
1 = key pressed
0 = key not pressed
- I₂ = Final position up
1 = pad in final position up
0 = pad not in final position up
- I₃ = Final position down
1 = pad in final position down
0 = pad not in final position down
- I₄ = Compressed air
1 = compressed air available
0 = no compressed air available
- I₅ = Vacuum
1 = vacuum at pad available
0 = no vacuum at pad available
- I₆ = Final position right
1 = pad in final position right
0 = pad not in final position right
- I₇ = Final position left
1 = pad in final position left
0 = pad not in final position left

Output signal

- O₁ = Move pad downwards
1 = On
0 = Off
- O₂ = Move pad upwards
1 = On
0 = Off
- O₃ = Transverse right
1 = On
0 = Off
- O₄ = Transverse left
1 = On
0 = Off
- O₅ = Blowing air
1 = On
0 = Off
- O₆ = Supporting air
1 = On
0 = Off
- O₇ = Vacuum
1 = On
0 = Off

7.2 WLAN

Switch on the print module and the display shows the main menu.

Press the key  to access the function menu.

Press the key  until the menu *WLAN* is displayed.

Press the key  to select the menu.

The menu item WLAN can only be selected if a WLAN stick was recognized at switching on the print module.

For more information, please see the separate manual.

8 SD Card / USB Memory Stick

8.1 General Information

On the back side of the printing system is the slot for the SD card and the USB port for inserting the USB memory stick.

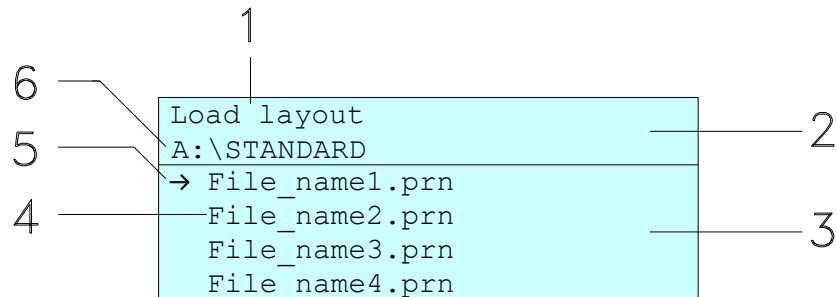
The mass storage menu (memory menu) permits access to SD cards or USB memory sticks attached to the printing system. Among loading and saving labels simple operations of contents are possible such as deleting files/directories, copy files/directories or formatting.



NOTICE!

In case of a malfunction of the original memory medium it is recommended to copy the most important data by means of a commercial Card Reader.

8.2 Display Structure



1 = Current function

2 = 2-lined header

3 = Scroll range

4 = File names / directory names

5 = Marking of the selected file (cursor)

6 = Current path (drive:\directory)

The two-line header (2) contains the current function name (1) and the current path (6).

The four-line scroll range indicates a list of files/directories. The first entry (marked with an arrow) is the active one. To this file/directory and/or these files/directories refer to all actions.



NOTICE!

Three drives are available.

A:\ indicates the SD card.

U:\ indicates the USB memory stick.

(only one stick can be inserted)

R:\ indicates the RAM (ZPL Emulation).

8.3 Navigation

The memory menu is operated with the keys of the foil keyboard of the control unit or with different function keys of an attached USB keyboard.

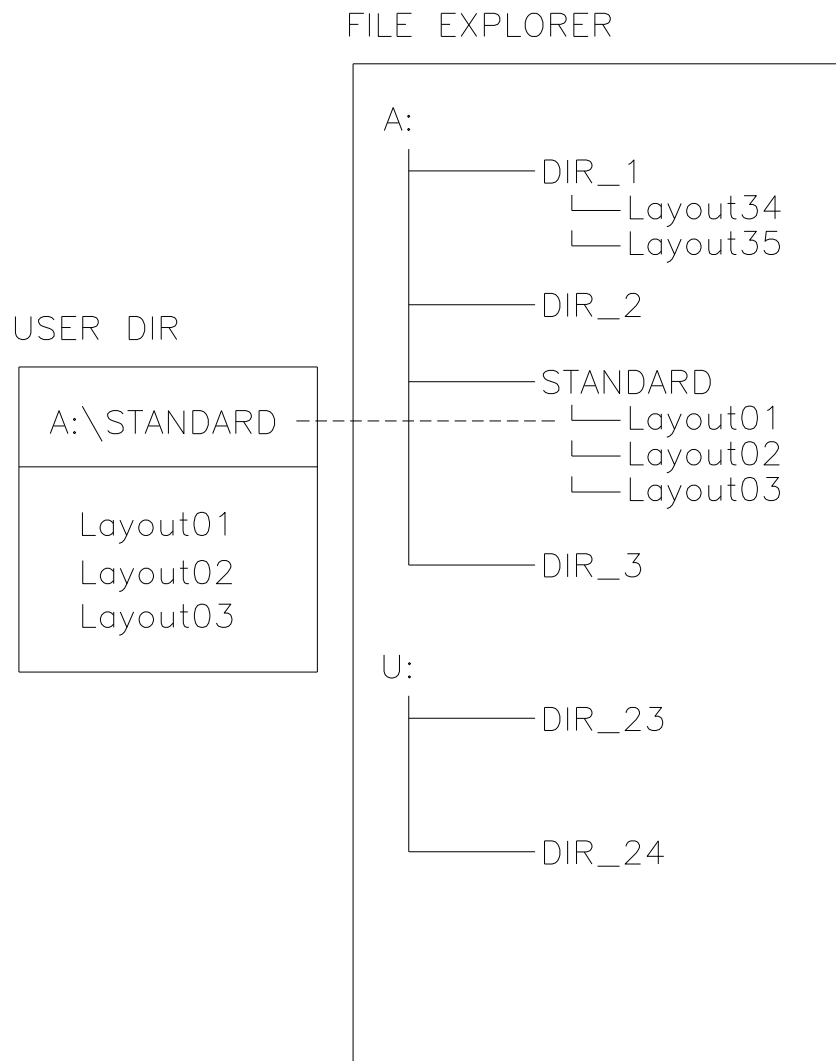
		Return to the previous menu.
		Function <i>Load layout</i> : Change to the File Explorer. File Explorer: Change to the 'context menu'.
		Select a file/directory if a multiple selection is possible.
		Main menu: Access to the memory menu. File Explorer: Create a new file.
		Start the current function for the active file/directory.
		Change to the superordinate directory.
		Change to the currently marked directory.
		In the current directory scroll upwards.
		In the current directory scroll downwards.

8.4 Define User Directory



NOTICE!

A user directory is to be defined:
before using and/or navigating through the memory menu.
if formatting of SD card is effected at PC and thus the
STANDARD directory was not created automatically.



The user directory is the root directory in which the user saves usually the most frequently used files/layouts. The use of the user directory allows quick and direct access to the files saved in the defined user directory. The definition of a user directory saves thus a long search of the file to be printed.

Press the key  to access the memory menu.

Press the key  to call the File Explorer.

File Explorer A:\	Context Menu A:
[Drives] →<STANDARD> <DIR_1>	→Set as user dir Format Copy

Press the keys , , ,  to select the directory.

Press the key  to display all available functions.

Select the function *Set as user dir* and press key  to confirm the selection.

Press the key  until the printing system is back in the main menu.

At the next start of the memory menu the selected directory is displayed as user directory.

8.5 Load Layout

Loads a layout within a defined user directory. The function allows quick access to the desired layout as only layout files are displayed and directories hidden.

Load layout A:\STANDARD
→File_name1.prn File_name2.prn File_name3.prn File_name4.prn

Press the key  to access the memory menu.

Press the keys , , ,  to select the layout to be printed.

Press the key  to confirm the selection.

The display shows automatically the window to insert the number of copies which are to print.

Select the number of copies which are to be printed.

Press the key  to start the print order.



NOTICE!

The directory can NOT be changed. A change of directory MUST be made in the File Explorer with the function *Change directory*.

8.6 File Explorer

The File Explorer is the file manager of the printing system. The File Explorer provides the main functions for the user interface of memory menu.

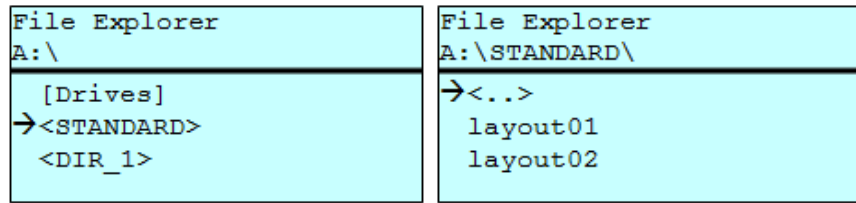
In the user directory, press the key **F** to access the File Explorer.

Following functions are available:

- Change drive and/or directory
- Load file
- Save layout and/or configuration
- Delete file(s)
- Format SD card
- Copy file(s)

Change drive/directory

Selection of drive and/or directory in which the files are saved.



Press the key **□** to access the memory menu.

Press the key **F** to call the File Explorer.

Press the keys **↑**, **↓**, **←**, **→** to select the directory.

Press the key **●** to confirm the selection.

The selected directory is now displayed.

Load file

Loads a file. This can be a configuration saved before, a layout, etc.

```
Load file
A:\STANDARD\
<...>
→ layout01
  layout02
```

Press the key  to access the memory menu.

Press the key  to call the File Explorer.

Press the keys  and  to select the file.

Press the key  to load the selected file.

If the selected file is a layout, then the number of copies to print can be entered immediately.

Save layout

Saves the currently loaded layout under the selected name.

```
Save file
A:\STANDARD
→ Save layout
  Save config.
noname
```

Press the key  to access the memory menu.

Press the key  to call the File Explorer.

Press the key  to move to the menu *Save file*.

Select the function *Save/ layout* and confirm the selection with the key .

If a USB keyboard is attached a new file name for *noname* can be assigned.

Save configuration

Saves the complete, current configuration under the selected name.

```
Save file
A:\STANDARD
Save layout
→ Save config.
config.cfg
```

Press the key  to access the memory menu.

Press the key  to call the File Explorer.

Press the key  to move to the menu *Save file*.

Select the function *Save configuration* and press the key  to confirm the selection.

If a USB keyboard is attached a new file name for *config.cfg* can be assigned.

Delete file(s)

Deletes one or more files and/or directories irrevocably. With the deletion of a directory both the contained files and the subdirectories are deleted.

File Explorer A:\STANDARD\ layout01 *	Context menu 2 objects marked
→ layout02 *	→ Delete
layout03	Copying
layout04	

Press the key  to access the memory menu.

Press the key  to call the File Explorer.

Press the keys  and  to select the file.

Press the key  to mark the files which are to be deleted. The marked entries are listed with *. Repeat this procedure until all desired files and/or directories are marked for deletion.

Press the key  to call the context menu.

Select the function *Delete* and confirm the selection with the key .

**NOTICE!**

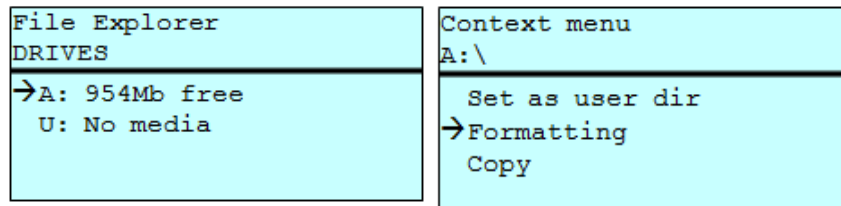
The deleting procedure is irreversible!

Format memory card

Formats irrevocably the memory card.

**NOTICE!**

USB sticks cannot be formatted at the printing system!



Press the key  to access the memory menu.

Press the key  to call the File Explorer.

Select the drive which is to format with the navigation keys.

Press the key  to call the context menu.

Select the function *Format* and press the key  to confirm the selection.

Copy memory card

Creates a duplicate of the original file and/or the original directory to make changes independently of the original.

File Explorer	Context menu
A:\STANDARD\	2 objects marked
layout01 *	Delete
→ layout02 *	→ Copying
layout03	
layout04	

Press the key  to access the memory menu.

Press the key  to call the File Explorer.

Press the keys  and  to select the file.

Press the key  to mark the files which are to be copied. The marked entries are listed with *. Repeat this procedure until all desired files and/or directories are marked for copying.

Press the key  to call the context menu.

Select the function *Copy* and confirm the selection with the key .

Select Destination
DRIVES
→ A: 954Mb free

Select the target storage with the navigation keys and press the key  to confirm the selection.

8.7 Firmware Update

Procedure

On the SD card / USB memory stick a directory is created in which the necessary update files are stored (*firmware.prn*, *data.prn*). By means of the function *Load file* the file *firmware.prn* is selected/loaded. In the first step the printing system executes the firmware update. After the necessary restart automatically the file *data.prn* is loaded. In this way the remaining components were updated. is After a renewed restart the update procedure is finished.

8.8 Filter

For certain functions a filter mask or a file name of a file which is to be saved can be entered. This input is indicated in the path line. The filter mask can be used to search for specific files. For example, with the input of 'L' only the files are listed whose character string starts with 'L' (regardless of upper and lower cases).

Without filter

```
Load layout
A:\STANDARD
→First_file.prn
  Layout_new.prn
  Sample.prn
  12807765.prn
```

With filter

```
Load layout
L
→Layout_new.prn
```

9 Maintenance and Cleaning



DANGER!

Risk of death by electric shock!

⇒ Before opening the housing cover, disconnect the printing system from the mains supply and wait for a moment until the power supply unit has discharged.



CAUTION!

Risk of injury when cleaning.

⇒ Pay attention to sharp edges.



NOTICE!

When cleaning the printing system, it is recommended to wear personal protective equipment such as safety goggles and gloves.

Maintenance plan

Maintenance task	Frequency
General cleaning (see section 9.1, page 88).	As necessary.
Clean the transfer ribbon drawing roller (see section 9.2, page 89).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the pressure roller (see section 9.3, page 89).	Each time the label roll is changed or when the printout and label transport are adversely affected.
Clean the printhead (see section 9.4, page 90).	Direct thermal printing: Each time the label roll is changed. Thermal transfer printing: Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the label photocell (see section 9.5, page 91).	When replacing the label roll.
Replace the printhead (see section 9.6, page 92).	In case of errors in printout.



NOTICE!

The handling instructions for the use of Isopropanol (IPA) must be observed. In the case of skin or eye contact, immediately wash off the fluid thoroughly with running water. If the irritation persists, consult a doctor. Ensure good ventilation.

**WARNING!**

Risk of fire by easily inflammable label soluble!

- ⇒ When using label soluble, dust must be completely removed from the printing system and cleaned.

9.1 General Cleaning

**CAUTION!**

Abrasive cleaning agents can damage the printing system!

- ⇒ Do not use abrasives or solvents to clean the outer surface of the printing system.
- ⇒ Remove dust and paper fuzz in the printing area with a soft brush or vacuum cleaner.
- ⇒ Clean the outer surfaces with an all-purpose cleaner.

9.2 Clean the Transfer Ribbon Drawing Roller

A soiled drawing roller can lead to reduced print quality and can affect transport of material.

1. Remove labels and transfer ribbon from the printing system.
2. Remove deposits with roller cleaner and a soft cloth.
3. If the roller appears damaged, replace it.
4. Reload labels and transfer ribbon.

9.3 Clean the Pressure Roller

A soiled pressure roller can lead to reduced print quality and can affect transport of material.

**CAUTION!**

Pressure roller can be damaged!

- ⇒ Do not use sharp or hard objects to clean the pressure roller.

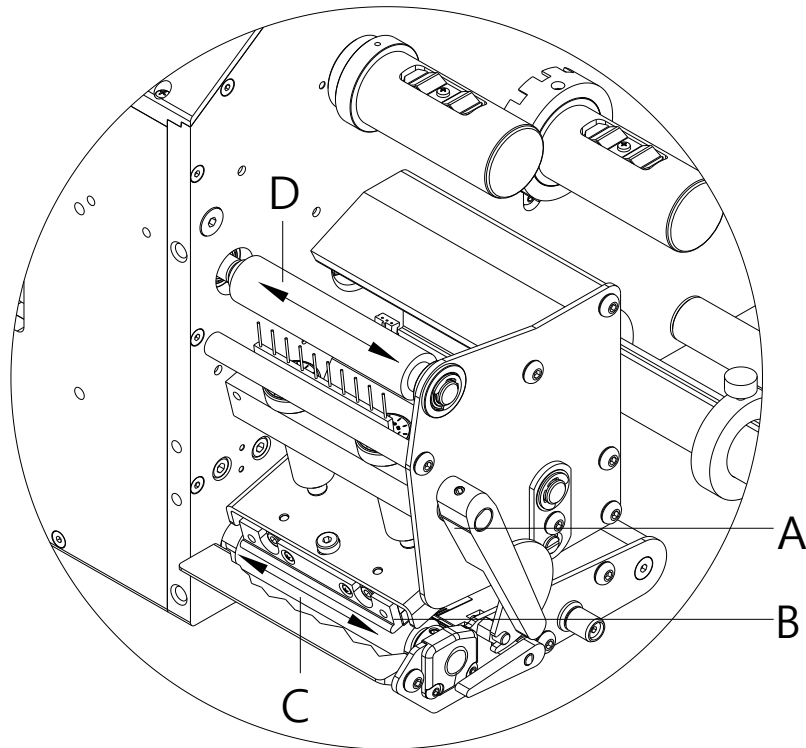


Figure 22

1. Turn the lever (A) counter-clockwise to lift up the printhead (B).
2. Remove labels and transfer ribbon from the printing system.
3. Remove deposits with the roller cleaner and a soft cloth.
4. Turn the roller (C + D) manually step by step to clean the complete roller (only possible when printing system is switched off, as otherwise the step motor is full of power, and the roller is kept in its position).
5. Reload labels and transfer ribbon.
6. To move the printhead (B) down, turn the lever (A) in clockwise direction until it locks.

9.4 Clean the Printhead



CAUTION!

Risk of injury from the hot printhead!

- ⇒ Make sure the printhead has cooled down before cleaning.

Printing can cause accumulation of dirt at printhead e.g. by colour particles of transfer ribbon, and therefore it is necessary to clean the printhead in regular periods depending on operating hours, environmental effects such as dust etc.



CAUTION!

Printhead can be damaged!

- ⇒ Do not use sharp or hard objects to clean the printhead.
- ⇒ Do not touch the protective glass layer of the printhead.

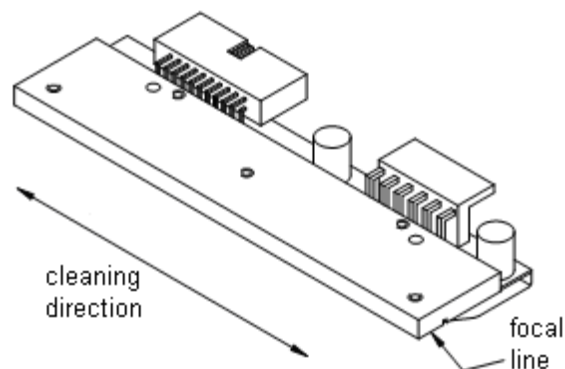


Figure 23

1. Turn the lever (A, Figure 22) anticlockwise to lift up the printhead.
2. Remove labels and transfer ribbon.
3. Clean the printhead surface with special cleaning pen or a cotton swab dipped in pure alcohol.
4. Before using the printing system, let the printhead dry for about two to three minutes.
5. Reload labels and transfer ribbon.
6. To move the printhead down, turn the lever (A, Figure 22) in clockwise direction until it locks.

9.5 Clean the Label Photocell



CAUTION!

Label photocell can be damaged!

- ⇒ Do not use sharp or hard objects or solvents to clean the label photocell.

The label photocell can be soiled with paper dust. This may affect label scanning.

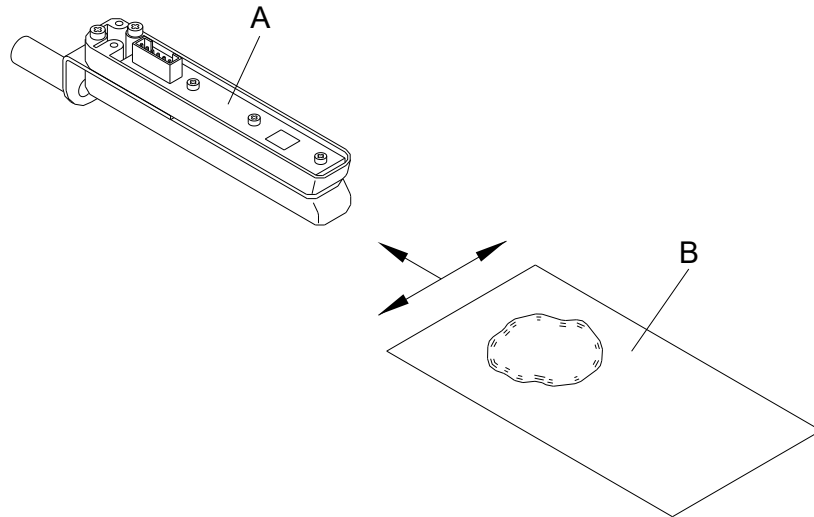


Figure 24

1. Turn the lever (A, Figure 22) counter-clockwise to lift up the printhead.
2. Remove labels and transfer ribbon from the printing system.
3. Blow out the photocell (A) with pressure gas spray. Observe strictly the instructions on the spray can!
4. Clean the label photocell (A) additionally with a cleaning card (B) before soaked in pure alcohol. Move the cleaning card from one side to the other (see illustration).
5. Reload the labels and transfer ribbon (see chapter 5 Loading Media, page 37).
6. To move the printhead down, turn the lever in clockwise direction until it locks.

9.6 Replace the Printhead (General Information)



NOTICE!

The printhead (D) is preinstalled on a head plate (A) and precisely aligned at the factory. Do not loosen the screws (G) under any circumstances.

ILX V 56/8, 80/8, 54/12, 81/12

ILX V 103/8, 104/8, 106/12, 106/24, 108/12

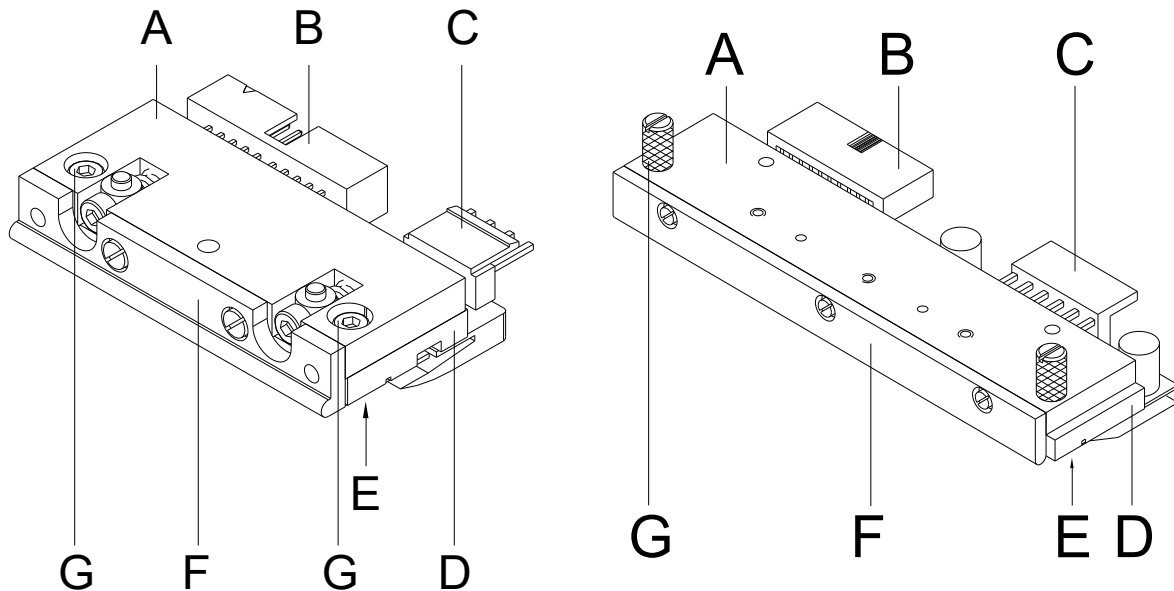


Figure 25

- A Head plate
- B Plug connection
- C Plug connection
- D Printhead
- E Focal line
- F Guiding
- G Screw



CAUTION!

The printhead can be damaged by static electricity discharges and impacts!

- ⇒ Ground your body, e.g. by wearing a grounded wristband.
- ⇒ Do not touch contacts on the plug connections (B, C).
- ⇒ Do not touch printing line (E) with hard objects or your hands.

9.7 Replace the Printhead

ILX V 56/8, 80/8,
54/12, 81/12

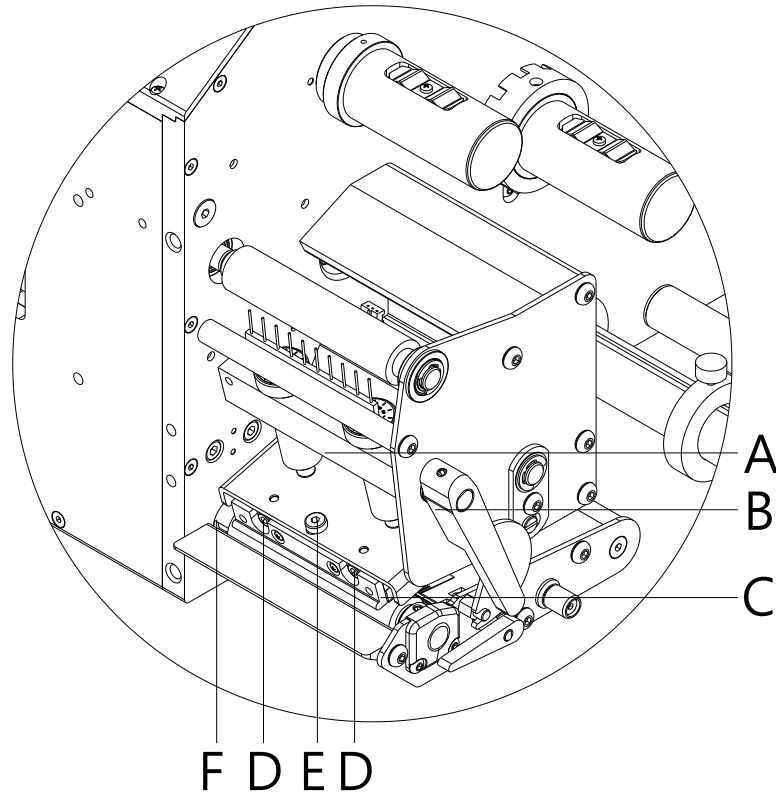


Figure 26

Remove the printhead

1. Remove labels and transfer ribbon from the printing system.
2. When the printhead is closed, loosen the fixing screw (E).
3. Turn the lever (B) counter-clockwise to lift up the printhead (C).
4. If the printhead (C) is not disengaged on the pressure roller, continue loosen the fixing screw (E).
5. Remove the printhead carefully to the front until you can reach the plug connections.
6. Remove the plug connections and then remove printhead (C).

Install the printhead

1. Attach the plug connections.
2. Position the printhead in printhead mounting bracket in such a way that the pins are secured in the corresponding holes in the head plate.
3. Lightly keep the printhead mounting bracket on the pressure roller with one finger and check for correct positioning of the printhead.
4. Screw in the fixing screw (E) and tighten it.
5. Reload labels and transfer ribbon (see chapter 5 Loading Media, page 37).
6. To move the printhead (C) down, turn the lever (B) in clockwise direction until it locks.
7. Check the resistance value on the type plate of printhead and if necessary, change the value in the menu *Service functions/Heater resistance*.

**ILX V 103/8, 104/8,
106/12, 106/24, 108/12**

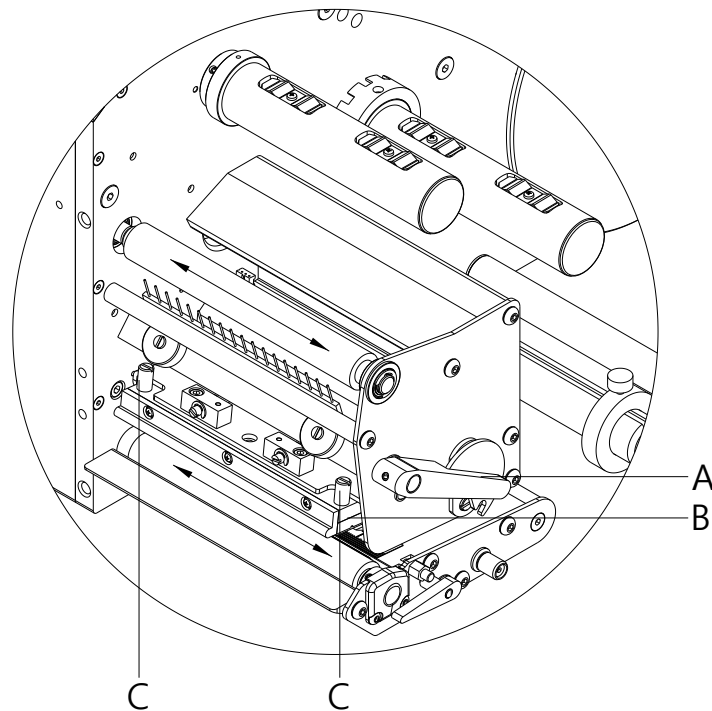


Figure 27

Remove the printhead

1. Remove labels and transfer ribbon from the printing system.
2. When the printhead is closed, loosen the knurled screw (C).
3. Turn the lever (A) counter-clockwise to lift up the printhead (B).
4. If the printhead (B) is not disengaged on the pressure roller, continue loosening the knurled screws (C).
5. Remove the printhead (B) carefully to the front until you can reach the plug connections.
6. Remove the plug connections and then remove the printhead (B).

Install the printhead

1. Attach the plug connections.
2. Position the printhead (B) in the printhead mounting bracket in such a way that the pins are secured in the corresponding holes in the intermediate layer.
3. Lightly keep the printhead mounting bracket on the pressure roller with one finger and check for correct positioning of the printhead.
4. Screw in the knurled screw (C) and tighten it.
5. Reload labels and transfer ribbon (see chapter 5 Loading Media, page 37).
6. To move the printhead (B) down, turn the lever (A) in clockwise direction until it locks.
7. Check resistance value on the type plate of printhead and if necessary, change the value in the menu *Service functions/Heater resistance*.

9.8 Adjust the Printhead

ILX V 56/8, 80/8,
54/12,81/12

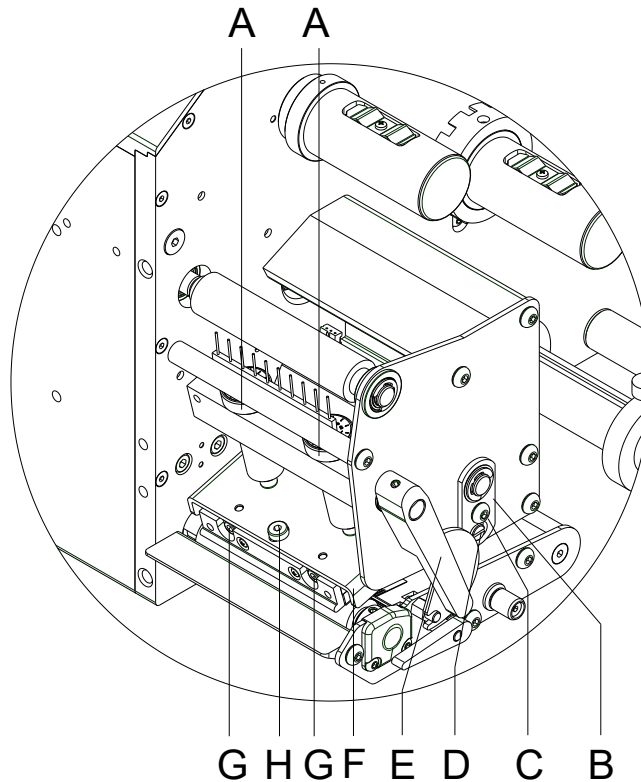


Figure 28

Parallelism



NOTICE!

An important characteristic for a high-quality print is the parallelism of the focal line of the thermal printhead to the pressure roll. Because the position of focal line of the printhead depends on fluctuations caused by production, it is necessary to adjust the parallelism.

1. Loosen the fixing screw (H) with a hexagon key by approx. ¼ rotations.
2. Adjust the parallelism with the adjusting screws (G).
Clockwise = printhead moves forwards
Counter-clockwise = printhead moves backwards
3. Adjust parallelism as long as the printing result comes up to your full expectation.
4. Tighten again the fixing screw (H).
5. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

**Pressure balance
right/left****NOTICE!**

After adjusting parallelism and no even strong pressure exists over the complete print width, by means of a plate (B, Figure 28) you can set the balance.

1. Loosen the screw (C, Figure 28) with a screwdriver by approx. ¼ rotations.
2. To achieve a pressure balance, turn the eccentric bolt (D, Figure 28) as long as the printing result comes up to your full expectation.
3. Tighten again the screw (C, Figure 28).
4. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure**NOTICE!**

Change the head contact pressure with the screws (A, Figure 28) at the inside and outside of the printhead. Increasing the pressure of the head contact leads to an improvement of the print image density on the corresponding side and to a shifting of the ribbon feed path in the corresponding direction.

**CAUTION!**

Damage of printhead by unequal use!

⇒ Only change the factory settings in exceptional cases.

The selection of the smallest value can optimize the life cycle of printhead.

1. Turn the pressure screws (A, Figure 28) to change the pressure of printhead.
2. Turning of pressure screws (A, Figure 28) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory settings.
3. Turning of pressure screws (A, Figure 28) exactly one rotation from the right stop position counter-clockwise results in the factory settings.

**NOTICE!**

It is importantly that the knurled button which is coated with protective lacquer is not removed from the pressure screw as otherwise the above-mentioned settings are faulty.

ILX V 103/8, 104/8,
106/12, 106/24, 108/12

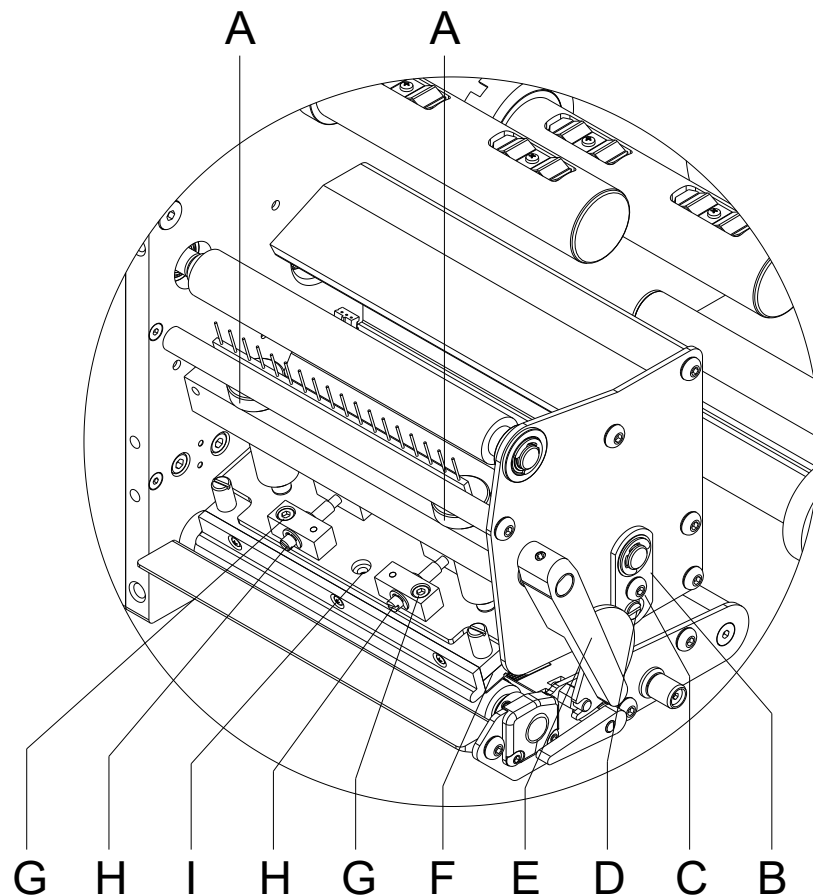


Figure 29

Parallelism



NOTICE!

An important characteristic for a high-quality print is the parallelism of the focal line of the thermal printhead to the pressure roll. Because the position of focal line of the printhead depends on fluctuations caused by production, it is necessary to adjust the parallelism.

1. Loosen the fixing screw (G) with a hexagon key by approx. $\frac{1}{4}$ rotations.
2. With the screws (H) the parallelism of the focal line of printhead to the pressure roller can be aligned.
Turning clockwise moves the printhead backward.
3. Start a test print.
4. If the horizontal lines in the test grid are not parallel with the label edges, continue adjusting the parallelism with the screws (H).
5. While maintaining parallelism, adjust the screws (H) alternately to achieve the best possible image quality.
Differences in the density between the two sides are still acceptable.
6. Tighten again the fixing screws (G).

Pressure balance right/left



NOTICE!

After adjusting parallelism and no even strong pressure exists over the complete print width, by means of a plate (B, Figure 29) you can set the balance.

5. Loosen the screw (C, Figure 29) with a screwdriver by approx. ¼ rotations.
6. To achieve a pressure balance, turn the eccentric bolt (D, Figure 29) as long as the printing result comes up to your full expectation.
7. Tighten again the screw (C, Figure 29).
8. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure



NOTICE!

Change the head contact pressure with the screws (A, Figure 29) at the inside and outside of the printhead. Increasing the pressure of the head contact leads to an improvement of the print image density on the corresponding side and to a shifting of the ribbon feed path in the corresponding direction.



CAUTION!

Damage of printhead by unequal use!

⇒ Only change the factory settings in exceptional cases.

The selection of the smallest value can improve the life cycle of printhead.

4. Turn the pressure screws (A, Figure 29) to change the pressure of printhead.
5. Turning of pressure screws (A, Figure 29) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory setting.
6. Turning of pressure screws (A, Figure 29) exactly one rotation from the right stop position counter-clockwise results in the factory settings.



NOTICE!

It is importantly that the knurled button which is coated with protective lacquer is not removed from the pressure screw as otherwise the above-mentioned settings are faulty.

10 Error Correction

Error message	Cause	Remedy
1 Line too high	Line rises completely or partly over the upper edge of label.	Move line down (increase Y value). Check rotation and font.
2 Line too low	Line rises completely or partly over the bottom edge of label.	Move line up (reduce Y value). Check rotation and font.
3 Character set	One or several characters of the text are not available in the selected font.	Change text. Change font.
4 Unknown BC type	Selected code is not available.	Check code type.
5 Illegal rotation	Selected rotation is not available.	Check rotation.
6 CV font	Selected font is not available.	Check font.
7 Vector font	Selected font is not available.	Check font.
8 Measuring label	While measuring no label was found. Set label length is too large.	Check label length and if labels are inserted correctly. Restart measuring anew.
9 No label found	No label available. Soiled label photocell. Labels not inserted correctly.	Insert new label roll. Check if labels are inserted correctly. Clean the label photocell.
10 No ribbon	During the print order the ribbon roll becomes empty. Defect at the transfer ribbon photocell.	Change transfer ribbon. Check transfer ribbon photocell (service functions).
11 COM FRAMING	Stop bit error.	Check stop bits. Check baud rate. Check cable (printer and PC).
12 COM PARITY	Parity error.	Check parity. Check baud rate. Check cable (printer and PC).
13 COM OVERRUN	Loss of data at serial interface (RS-232).	Check baud rate. Check cable (printer and PC).

Error message	Cause	Remedy
14 Field number	Received line number is invalid.	Check sent data. Check connection PC - printer.
15 Length mask	Invalid length of received mask statement.	Check sent data. Check connection PC - printer.
16 Unknown mask	Transferred mask statement is invalid.	Check sent data. Check connection PC - printer.
17 Missing ETB	No end of data found.	Check sent data. Check connection PC - printer.
18 Invalid character	One res. several characters of the bar code is res. are not valid.	Change bar code data. Change font.
19 Invalid statement	Unknown transferred data record.	Check sent data. Check connection PC - printer.
20 Invalid check digit	For check digit control the entered res. received check digit is wrong.	Calculate check digit anew. Check code data.
21 Invalid SC code	Selected SC factor is invalid for EAN res. UPC.	Check SC factor.
22 Invalid number of digits	Entered digits for EAN res. UPC are invalid < 12; > 13.	Check number of digits.
23 Type check digit	Selected check digit calculation is not available in the bar code.	Check calculation of check digit. Check bar code type.
24 Invalid extension	Selected zoom factor is not available.	Check zoom factor.
25 Offset sign	Entered sign is not available.	Check offset value.
26 Offset value	Entered offset value is invalid.	Check offset value.
27 Printhead temperature	Printhead temperature is too high. Defective printhead sensing device.	Reduce contrast. Change printhead.
28 Cutter error	With cut an error occurred. Paper jam.	Check label run. Check cutter run.

Error message	Cause	Remedy
29 Invalid parameter	Entered data do not correspond to the characters allowed from the application identifier.	Check code data.
30 Application Identifier	Selected application identifier is not available in GS1-128.	Check code data.
31 HIBC definition	Missing HIBC system sign. Missing primary code.	Check definition of HIBC code.
32 System clock	Real Time Clock function is selected but the battery is empty. Defective RTC.	Change battery. Change RTC component.
33 No SD interface	Interrupted connection CPU - SD card. Defective SD card interface.	Check connection CPU - SD card interface. Check SD card interface.
34 No print memory	Not enough print memory available.	Check SD assembly on CPU.
35 Printhead open	At start of a print order the printhead is open.	Close the printhead and start print order anew.
36 BCD invalid format	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
37 BCD overflow	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
38 BCD division	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
39 FLASH ERROR	Flash component error.	Run a software update. Change CPU.
40 Length command	Invalid length of the received command statement.	Check data sent. Check connection PC - printer.
41 No drive	SD card not found / not correctly inserted.	Insert SD card correctly.
42 Drive error	Impossible to read SD card (faulty).	Check SD card, if necessary, change it.

Error message	Cause	Remedy
43 Unformatted	SD Card not formatted.	Format SD card.
44 Delete directory	Attempt to delete the actual directory.	Change directory.
45 Invalid path	Too long indication of path.	Indicate a shorter path.
46 Drive write-protected	Memory card is write-protected.	Deactivate write protection.
47 Directory not file	Attempt to indicate a directory as file name.	Correct your entry.
48 File already open	Attempt to change a file during an access is active.	Select another file.
49 No file/directory	File does not exist on SD card.	Check file name.
50 Invalid file name	File name contains invalid characters.	Correct entry of name, remove special characters.
51 Internal file error	Internal file system error.	Please contact your distributor.
52 Root full	The max. number (64) of main directory entries is reached.	Delete at least one main directory entry and create subdirectories.
53 Drive full	Maximum SD card capacity is reached.	Use new SD card, delete no longer required files.
54 File/directory exists	The selected file/directory already exists.	Check name, select a different name.
55 File too large	During copying procedure not enough memory space onto target drive available.	Use a larger target card.
56 No update file	Errors in update file of firmware.	Start update file anew.
57 Invalid graphic file	The selected file does not contain graphic data.	Check file name.
58 Directory not empty	Attempt to delete a not empty directory.	Delete all files and sub-directories in the desired directory.
59 No SD interface	No SD card drive found.	Check connection of SD card drive. Contact your distributor
60 No media	No SD card is inserted.	Insert SD card in the slot.

Error message	Cause	Remedy
61 Webserver error	Error at start of web server.	Please contact your distributor.
62 Wrong PH FPGA	The direct print module is equipped with the wrong FPGA.	Please contact your distributor.
63 End position	The label length is too long. The number of labels per cycle is too much.	Check label length res. the number of labels per cycle.
64 Zero point	Defective photocell.	Change photocell.
65 Compressed air	Pressure air is not connected.	Check pressure air.
66 External release	External print release signal is missing.	Check input signal.
67 Column too wide	Wrong definition of column width res. number of columns.	Reduce the column width res. correct the number of columns.
68 Scanner	The connected bar code scanner signals a device error.	Check the connection scanner/printer. Check scanner (dirty).
69 Scanner NoRead	Bad print quality. Printhead completely soiled or defective. Print speed too high.	Increase contrast. Clean printhead or exchange (if necessary). Reduce print speed.
70 Scanner data	Scanned data does not correspond to the data which is to print.	Exchange printhead.
71 Invalid page	As page number either 0 or a number > 9 is selected.	Select a number between 1 and 9.
72 Page selection	A page which is not available is selected.	Check the defined pages.
73 Undefined page	The page is not defined.	Check the print definition.
74 Format user guiding	Wrong format for customized entry.	Check the format string.
75 Format date/time	Wrong format for date/time.	Check the format string.
76 Hotstart SD	No SD card found.	If option hotstart was activated, a SD card must be inserted. Switch off the printer before inserting the memory card.

Error message	Cause	Remedy
77 Flip/Rotate	Selection of print of several columns and mirror/rotate.	It is only possible to select one of both functions.
78 System file	Loading of temporary hotstart files.	Not possible.
79 Shift variable	Faulty definition of shift times (overlapping times).	Check definition of shift times.
80 GS1 Databar	General GS1 Databar error.	Check definition and parameter of GS1 Databar code.
81 IGP error	Protocol error IGP.	Check sent data.
82 Time generation	Printing creation was still active at print start.	Reduce print speed. Use printers' output signal for synchronization. Use bitmap fonts to reduce generating time.
83 Transport protection	Both DPM position sensors (start/end) are active.	Displace zero point sensor Check sensors in service functions menu
84 No font data	Font and web data is missing.	Run a software update.
85 No layout ID	Layout ID definition is missing.	Define layout ID onto the label.
86 Layout ID	Scanned data does not correspond to defined ID.	Wrong label loaded from SD card.
87 RFID no label	RFID unit cannot recognize a label.	Displace RFID unit or use an offset.
88 RFID verify	Error while checking programmed data.	Faulty RFID label. Check RFID definitions
89 RFID timeout	Error at programming the RFID label.	Label positioning. Faulty label.
90 RFID data	Faulty or incomplete definition of RFID data.	Check RFID data definitions.
91 RFID tag type	Definition of label data does not correspond with the used label.	Check storage partitioning of used label type
92 RFID lock	Error at programming the RFID label (locked fields).	Check RFID data definitions. Label was already programmed.

Error message	Cause	Remedy
93 RFID programming	Error at programming the RFID label.	Check RFID definitions.
94 Scanner timeout	The scanner could not read the bar code within the set timeout time. Defective printhead. Wrinkles in transfer ribbon. Scanner wrong positioned. Timeout time too short.	Check printhead. Check transfer ribbon. Position scanner correctly, corresponding to the set feeding. Select longer timeout time.
95 Scanner layout difference	Scanner data does not correspond to bar code data.	Check adjustment of scanner. Check scanner settings / connection.
96 COM break	Serial interface error.	Check settings for serial data transmission as well as cable (printer-PC).
97 COM general	Serial interface error.	Check settings for serial data transmission as well as cable (printer-PC).
98 No software printhead FPGA	No printhead-FPGA data available.	Please contact your responsible distributor.
99 Load software printhead FPGA	Error when programming printhead-FPGA.	Please contact your responsible distributor.
100 Upper position	Option applicator Sensor signal up is missing.	Check input signals / compressed-air supply.
101 Lower position	Option applicator Sensor signal down is missing).	Check input signals / compressed-air supply.
102 Vacuum plate empty	Option applicator Sensor does not recognize a label at vacuum plate).	Check input signals / compressed-air supply.
103 Start signal	Print order is active but device not ready to process it.	Check start signal.
104 No print data	Print data outside the defined label. Selection of wrong module type (design software).	Check selected module type. Check selection of left/right version.

Error message	Cause	Remedy
105 Printhead	No original printhead is used.	Check the used printhead. Contact your distributor.
106 Invalid Tag type	Wrong Tag type. Tag data do not match the Tag type in the printer.	Adapt data or use the correct Tag type.
107 RFID inactive	RFID module is not activated. No RFID data can be processed.	Activate RFID module or remove RFID data from label data.
108 GS1-128 invalid	Transferred GS1-128 bar code is invalid.	Verify bar code data (see GS1-128 bar code specification).
109 EPC parameter	Error at EPC calculation.	Verify data (see EPC specification).
110 Housing open	When starting the print order, the housing cover is not closed.	Close the housing cover and start the print order anew.
111 EAN.UCC code	Transferred EAN.UCC code is invalid.	Verify bar code data (see corresponding specification).
112 Print carriage	Printing carriage does not move.	Check gear belt (possibly broken).
113 Applicator error	Option applicator Error while using applicator.	Check applicator.
114 Left position	Option applicator Left final position switch is not in correct position.	Check LEFT final position switch for correct function and position. Check function of pneumatics for cross traverse.
115 Right position	Option applicator Right final position switch is not in correct position.	Check RIGHT final position switch for correct function and position. Check function of pneumatics for cross traverse.
116 Print position	Option applicator: The applicator is not in the print position when trying to print a label.	Check TOP and RIGHT final position switch for correct function and position. Check pneumatics for function
117 XML parameter	The parameters in the XML file are not correct.	Please contact your responsible distributor.

Error message	Cause	Remedy
118 Invalid variable	Transferred variable is invalid with customized entry.	Select correct variable without customized entry and transfer it.
119 No ribbon	During the print order the ribbon roll becomes empty. Defect at the transfer ribbon photocell.	Change transfer ribbon. Check transfer ribbon photocell (service functions).
120 Wrong directory	Invalid target directory when copying.	Target directory must not be within the source directory. Check target directory.
121 No label PH2	No label found at the rear printhead (DuoPrint). Soiled label photocell. Labels not inserted correctly.	Insert new label roll. Clean the label photocell. Check if labels are inserted correctly.
122 IP occupied	The IP address was already assigned.	Assign a new IP address.
123 Print asynchronous	The label photocell do not work in the order as it is expected according to print data. The settings of the photocell are not correct. Settings of label size and gap size are not correct. No label found at the rear printhead. Soiled label photocell. Labels not inserted correctly.	Check label size and gap size. Check label photocell settings. Check correct loading of label material. Insert new label roll. Clean the label photocell. Check if labels are inserted correctly.
124 Speed too low	Print speed is too slow.	Increase the speed of customers' machine.
125 DMA buffer	Communication problem HMI.	Restart the printer.
126 UID conflict	Configuration RFID programming faulty.	Run RFID initialising.
127 Module not found	RFID module not available.	Check the RFID module connection. Please contact your responsible distributor.

Error message	Cause	Remedy
128 No release signal	No print release by higher-level control (customer machine).	Activate release signal at the higher-level control.
129 Wrong firmware	Firmware does not match the used printer type.	Use firmware that fits to the printer type. Please contact your responsible distributor.
130 Language missing	Language file for the set printer language is not available.	Please contact your responsible distributor.
131 Wrong material	Label material does not fit to printing data.	User label material with suitable label and/or gap length.
132 Invalid mark-up tag	Invalid mark-up formatting characters in text.	Correct the formatting characters in the text.
133 Script not found	LUA script file not found.	Check the file name.
134 Script failure	LUA script is incorrect.	Check the script.
135 Script user error	Error in LUA script user input.	Correct the input value.
136 No reprint available	No label data for reprinting available.	Send new label data to the printer.
137 Printhead short circuit	Electrical short at the printhead.	Check the used printhead. Please contact your distributor.
138 Too less ribbon	Transfer ribbon ends.	Change transfer ribbon.
139 Rewinder error	Label band is torn	Load a new label roll. Stick together the label band.
140 Rewinder motor blocked	External rewinder motor is blocked.	Switch off the printing system and check mechanical resistance. Change the full label roll.
141 Hardware error	A hardware component could not be found.	Please contact your responsible distributor.
142 No print mechanics	No print mechanics connected.	Check connection (print mechanics – control unit)
143 Printhead sensor	No signal change at the printhead photocell.	Check printhead photocell for proper functioning.
144 FreeType error	Problem with generating TrueType text.	Check print data.

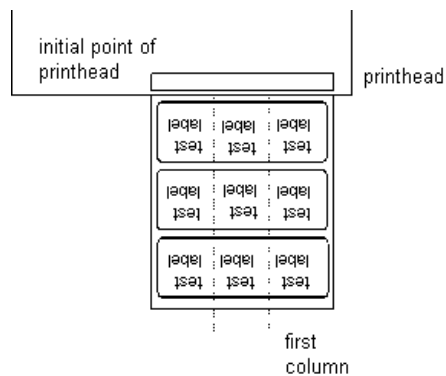
Error message	Cause	Remedy
145 -	Reserved	reserved
146 Unknown (see Log)	Internal error.	Check log files or send them to support.
147 Upper sensor	Upper limit sensor defective.	Check or replace the upper limit sensor.
148 Parameter	Parameter incorrectly formatted.	Check parameters.
149 QR code invalid	Invalid QR code parameters.	Check QR code parameters.
150 Short PH motor	Short circuit in the printhead motor.	Check printhead motor.
151 Wire PH motor	Wire break at the printhead motor.	Check the printhead motor connection.
152 Short TR motor	Short circuit in the transfer ribbon motor.	Check transfer ribbon motor.
153 Wire TR motor	Wire break at the transfer ribbon motor.	Check the transfer ribbon motor connection.

11 Additional Information

11.1 Column Printing

With this printing system several columns can be printed, i.e. the information of one column can be printed several times (depending on its width) on a label. Caused by this the use of the complete print width is possible, and the generating time is enormously reduced.

For example, four columns with a width of 25 mm or two columns with a width of 50 mm can be printed onto a label with a width of 100 mm. Please note that the first layout is always the one with the largest x coordinate, i.e. it has the largest distance to the printhead.



Setting the print of several columns

Press the key **F** to access the function menu.

Press the key **→** until the menu *Label layout* is displayed

Press the key **●** to confirm the selection.

Press key **→** until the menu item *Width/Columns* is displayed

Press the keys **▲** and **▼** to set the label width. The *Width* is the width of one column, e.g. 20.0 mm.

Press the keys **◀** and **▶** to arrive the *Column* input field.

Press the keys **▲** and **▼** to change the number of columns, e.g. four columns with a layout width of 20.0 mm.

Press the key **■** to start the print with input of number of labels and number of lines. The number of labels corresponds to the number of layouts that should be printed.

e.g. Columns: 3, Items: 4

label 6	label 5	label 4
label 3	label 2	label 1

The first four labels were printed but not labels 5 and 6.

11.2 Hotstart



NOTICE!

The data is saved onto SD card. Therefore the SD card is a condition for the *Hotstart* menu item.

The function *Hotstart* contains e.g. that in case of a power failure the currently loaded label can be further processed without any loss of data. Moreover, a print order can be interrupted and continued after switching on the printing system anew.



NOTICE!

At an active Hotstart all necessary data is stored on the SD card therefore do not remove the card during operation. When removing during operation, this causes the loss of all data on the SD card.

Save current label

In case the Hotstart function is set to on, at the start of a print order the data of the current label is saved to the corresponding directory of the SD card.

However the following conditions must be fulfilled:

- SD card inserted in drive A.
- SD card not write-protected.
- Enough free storage space onto SD card.

An error message appears in case these conditions are not fulfilled.

Save print order state

By switching off the printing system the state of the current print order is saved to the corresponding directory of the SD card.

However the following conditions must be fulfilled:

- SD card inserted in drive A.
- SD card not write-protected.
- Enough free storage space onto SD card.

Load label and print order state

When restarting the printing system (if the function *Hotstart* is activated) the saved label data and the status of print order were loaded from the corresponding file on the SD card. Because of this reason, when switching on the printing system a SD card must be inserted in the appropriate drive. If the data cannot be loaded an error message appears.

Start print order

In case at switching off the printing system a print order was active, then a print start is released automatically, and the required res. actual number of printed labels is refreshed. In case the print order was stopped at switching off the printing system, it is again set to the stopped mode after switching on the printing system anew. In case a customized entry was active during switching off the printing system, the window for the first customized variable is displayed.

Refresh variable counter

As in the intended file only the start values of the counter are saved, they are refreshed at a new start of the print order with the number of printed labels. Each counter is counted corresponding from its start value. Afterwards the position of the current and the next counter update are correctly set with the update intervals.

**NOTICE**

Make sure that in case graphics are onto the label they must be saved onto SD card.

11.3 Backfeed/Delay

Backfeed operating modes

In continuous dispenser mode (IO dynamic continuous, IO static continuous, IO photocell continuous) no optimised backfeed is possible. Because of the fact when changing the print order, then the current label in the offset sector is already printed from the old print order.

In the sector that is printed when preprint the following label, no date/time variable should be existing, because this could be refreshed before the next start impulse.

Standard

Peel off: After printing the label, it is driven into the dispenser offset and waited there, until the label was removed (photocell) or a new start signal is given (IO dynamic). Afterwards it is again backtracked to the beginning of label and then the next label is printed.

Automatic

Peel off: After printing the label, it is driven into the dispenser offset and then backtracked to the beginning of label either immediately or after the set delay time. When releasing a new start signal (IO dynamic) the next label is immediately printed.

No backfeed

Peel off: After printing the label, it is driven into the dispenser offset and there waited. When releasing a new start signal (IO dynamic) then the next label is immediately printed. Because the label is already in the offset, the label is only printed from beginning of offset position, i.e. at the definition of label an accordingly large range must be left free at the top margin of label, because these data are otherwise not printed.

Optimised backfeed

Peel off: After printing the label, during driving into dispenser offset the following label is 'pre-printed', if this is already available (generated). When releasing a new start signal (IO dynamic) the already 'pre-printed' label is printed to the end and when driving into the dispenser offset the following label is again 'pre-printed'. In case the following label is not yet available or at the last label of a print order, the dispenser offset is driven as until now, and then for the next label before printing the backfeed to the beginning of label is executed.

11.4 Photocells

Transmission photocell normal

For this photocell type the transmitter is at the top res. the receiver at the bottom, i.e. the infra-red light is sent from the top. In this way the label detection is also from the top. This photocell type is used for standard adhesive labels with gap.

Option: Reflexion photocell normal

For this photocell type the transmitter and receiver are at the bottom, i.e. the light is reflected by the label and taken over from the receiver. This photocell type is used for white (light) continuous labels with a black (dark) bar. The bar is the separator, i.e. it indicates the position of gap and in this way the label start.

Transmission photocell inverse

For this photocell type the transmitter is at the top res. the receiver at the bottom, i.e. the infra-red light is sent from the top. The label detection is, same as for the **transmission photocell normal**, from the top. However, it is printed differently as for normal photocells, in the translucent place; the printing system recognizes the opaque place as gap. This photocell type is used frequently when printing foils.



NOTICE!

When using transmission photocells inverse, the printing system must measure a difference of 2.5 V between translucent and opaque material. Otherwise the printing system does not recognize a difference between label and gap (bar).

Option: Reflexion photocell inverse

For this photocell type the transmitter and receiver are at the bottom, i.e. the light is reflected by the label and taken over from the receiver. This photocell type is used for black (dark) continuous labels with a white (light) bar. This bar is the separator, i.e. it indicates the position of gap and in this way the start of label.



NOTICE!

When using reflection photocells you should observe that the label printer cover is closed and in this way other light (e.g. working lamp) on the photocell is prevented.

12 Applicator Interface

Valves may be controlled, and limit position sensors may be prompted via different control inputs and outputs.

The control inputs and outputs are made available via a D-sub bushing (25 pins, female) on the front plate of the printing system and are NOT GALVANICALLY ISOLATED.

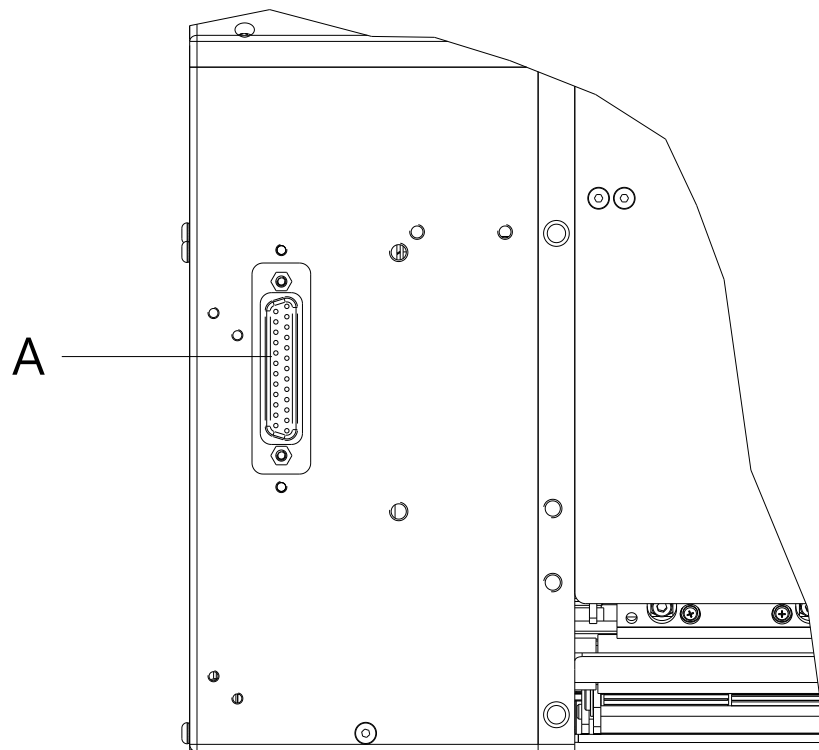


Figure 30

12.1 Printer Internal Circuitry

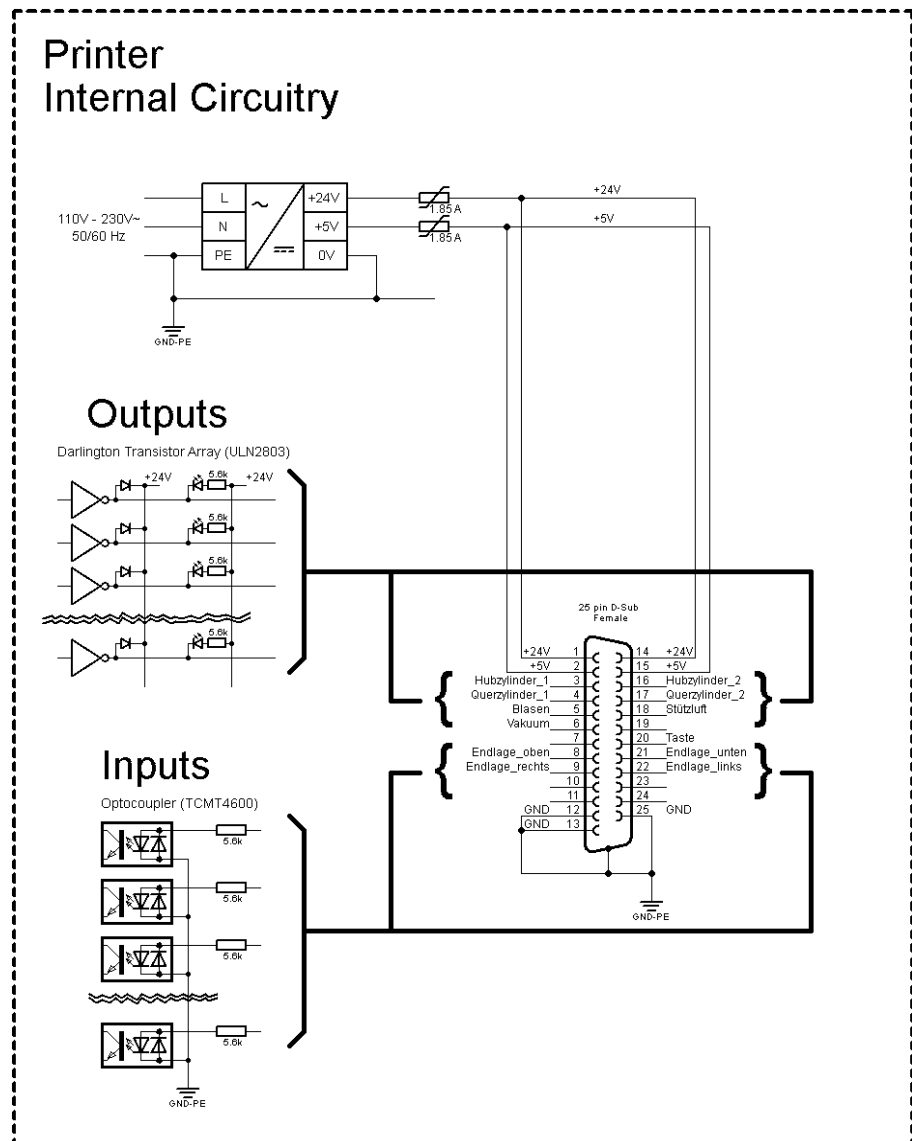


Figure 31

12.2 Pin Assignment D-Sub Bushing

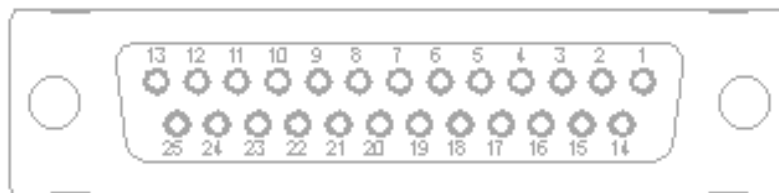


Figure 32

Signal assignment

Pin	Signal	Pin	Signal	Description / Function
1	24V	14	24V	24 Volt DC output for external use max 0.5 A.
2	5V	15	5V	5 Volt DC output for external use max 0.5 A.
3	Stroke cylinder 1	16	Stroke cylinder 2	Outputs (open Collector) 24 V / 0,1 A
4	Lateral cylinder 1*	17	Lateral cylinder 2*	
5	Blow on	18	Supporting air	
6	Vacuum	19		
7		20	Switch	Digital inputs 24 V
8	Top end position	21	Bottom end position	
9	Right end position	22	Left end position	
10		23	Vacuum control	
11	Pressure control	24		
12	GND	25	GND	GND-PE
13	GND			

* Option, on demand only

Technical data

Connection plug	
Type	D-Sub connector 25 pin / connector
Producer/distributor	MPE Garry / Schukat
Order no.	LPBL25RZM
Output tensions (connected with GND-PE)	
+ 24 V / 0.5 A*	Fuse: Polyswitch / 30 V / 1.85 A
+ 5 V / 0.5 A*	Fuse: Polyswitch / 30 V / 1.85 A
Digital outputs	
Driver	ULN2803A (open Collector)
Voltage	24 VDC
Current max	-0,1A
Impedance	Pull up 5,6 kΩ
Digital inputs	
Optocoupler	TCMT4600, CTR 80 % - 300 %
Voltage	24 VDC
Impedance	5,6 kΩ
Analogue inputs (optional, on demand only)	
OP	LMV393
Voltage	0..5 VDC
Impedance	>100 kΩ

* max. sum for all connected electric loads

12.3 Examples

Example 1

Device connection to a machine with S7-300 SPS.

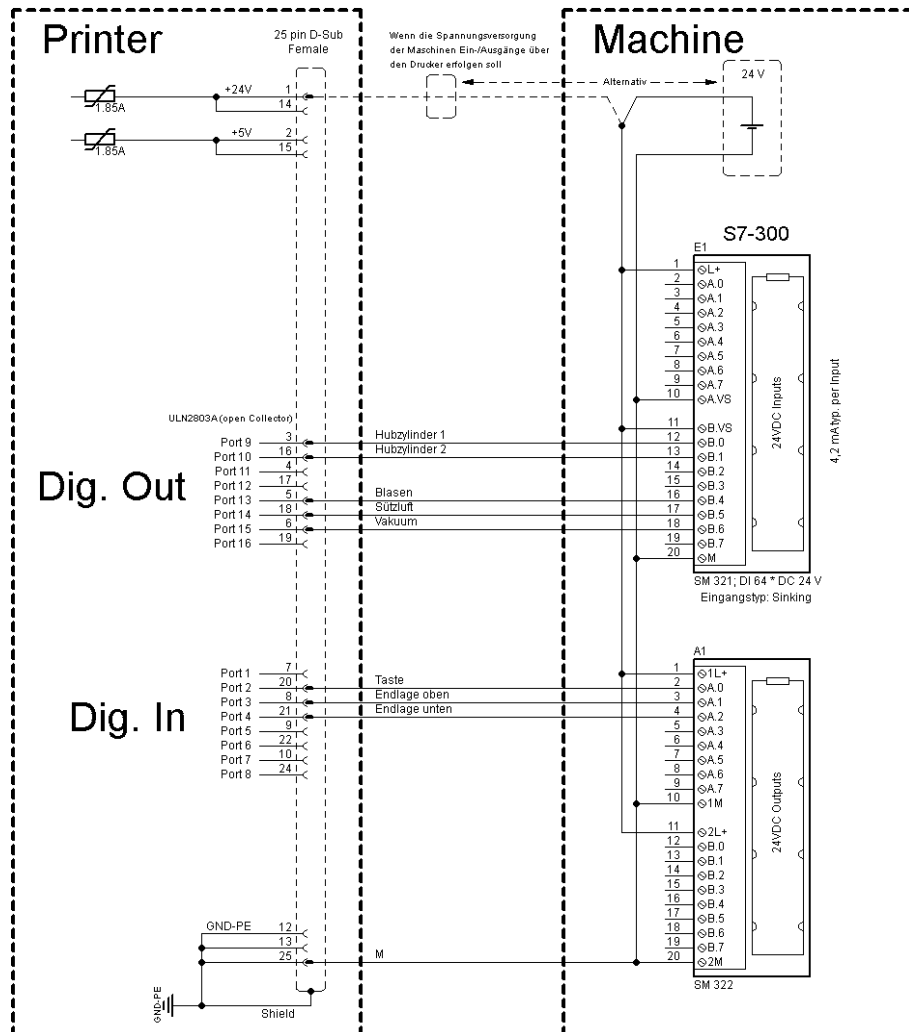


Figure 33

Example 2

Device connection to an applicator.

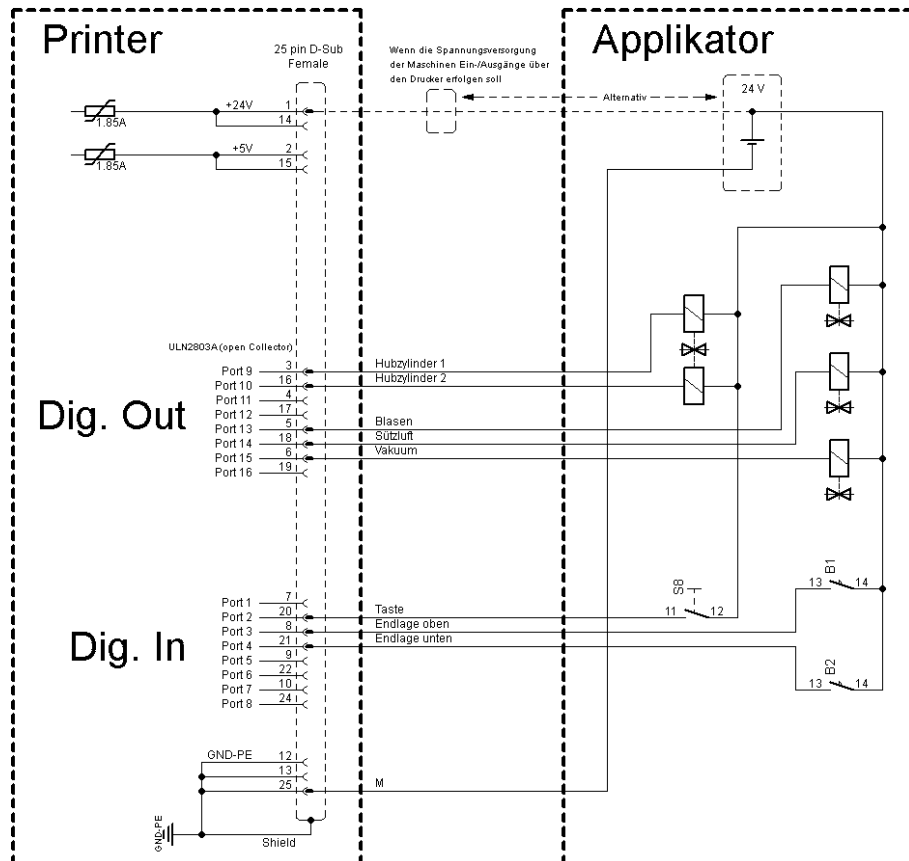
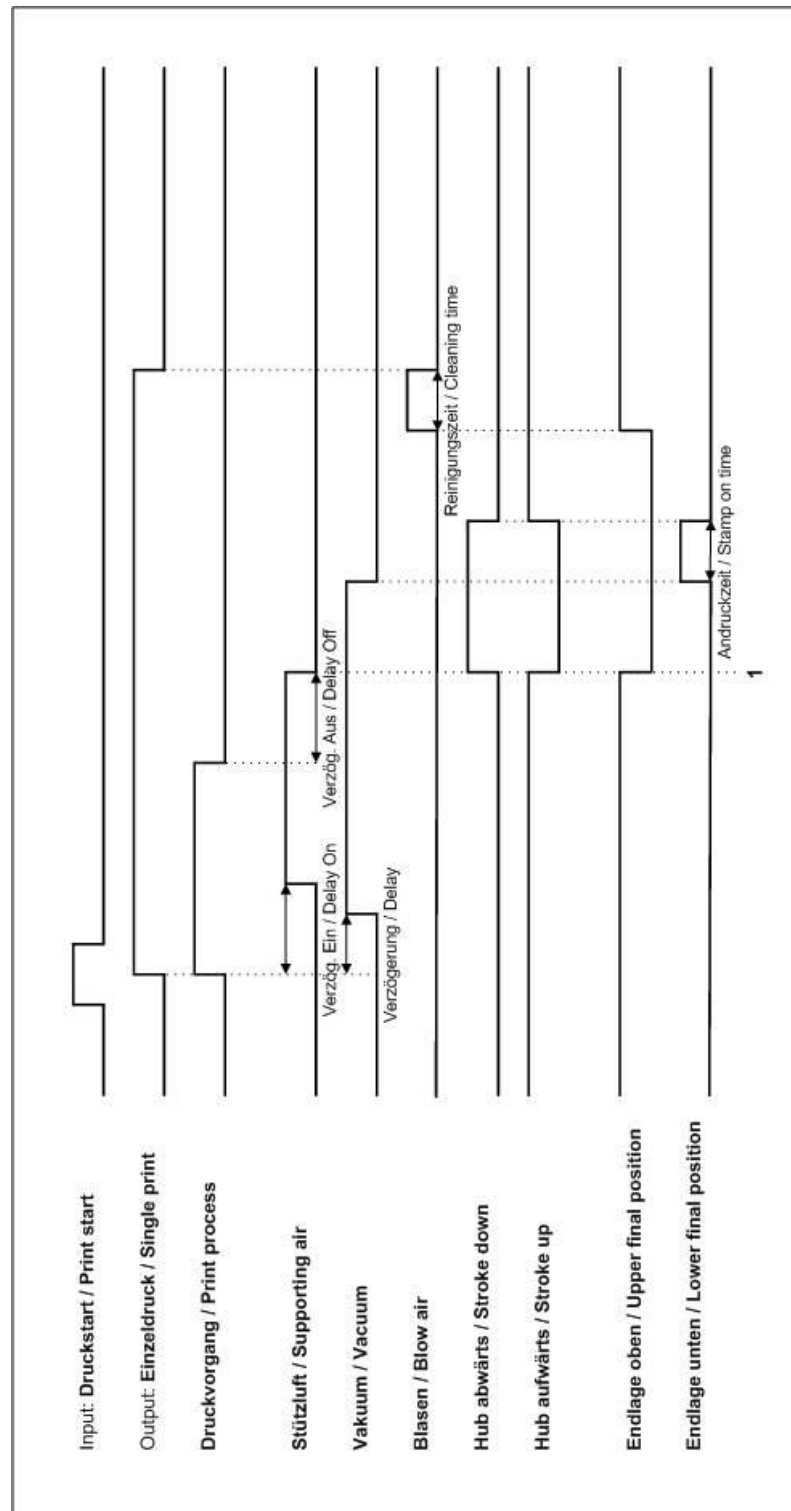


Figure 34

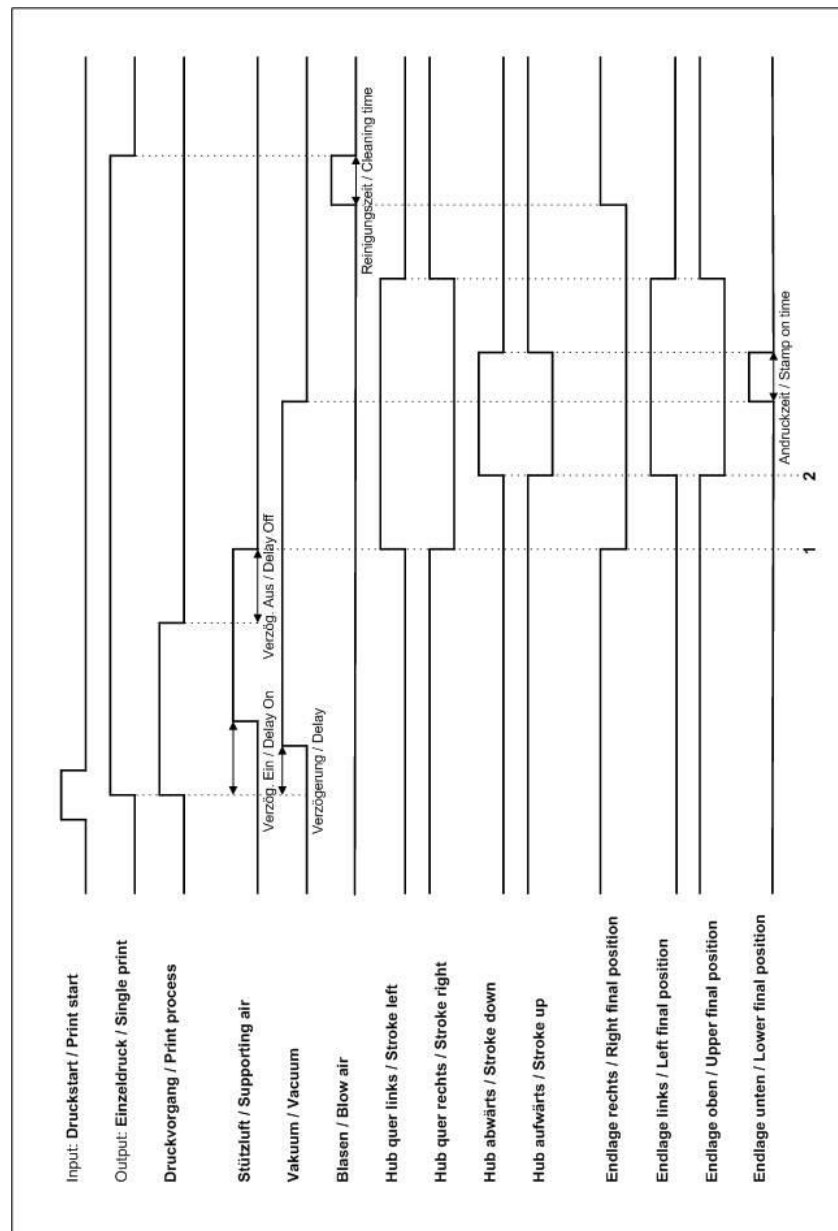
13 Signal Diagrams

13.1 Print – Apply (w/o transverse axis)



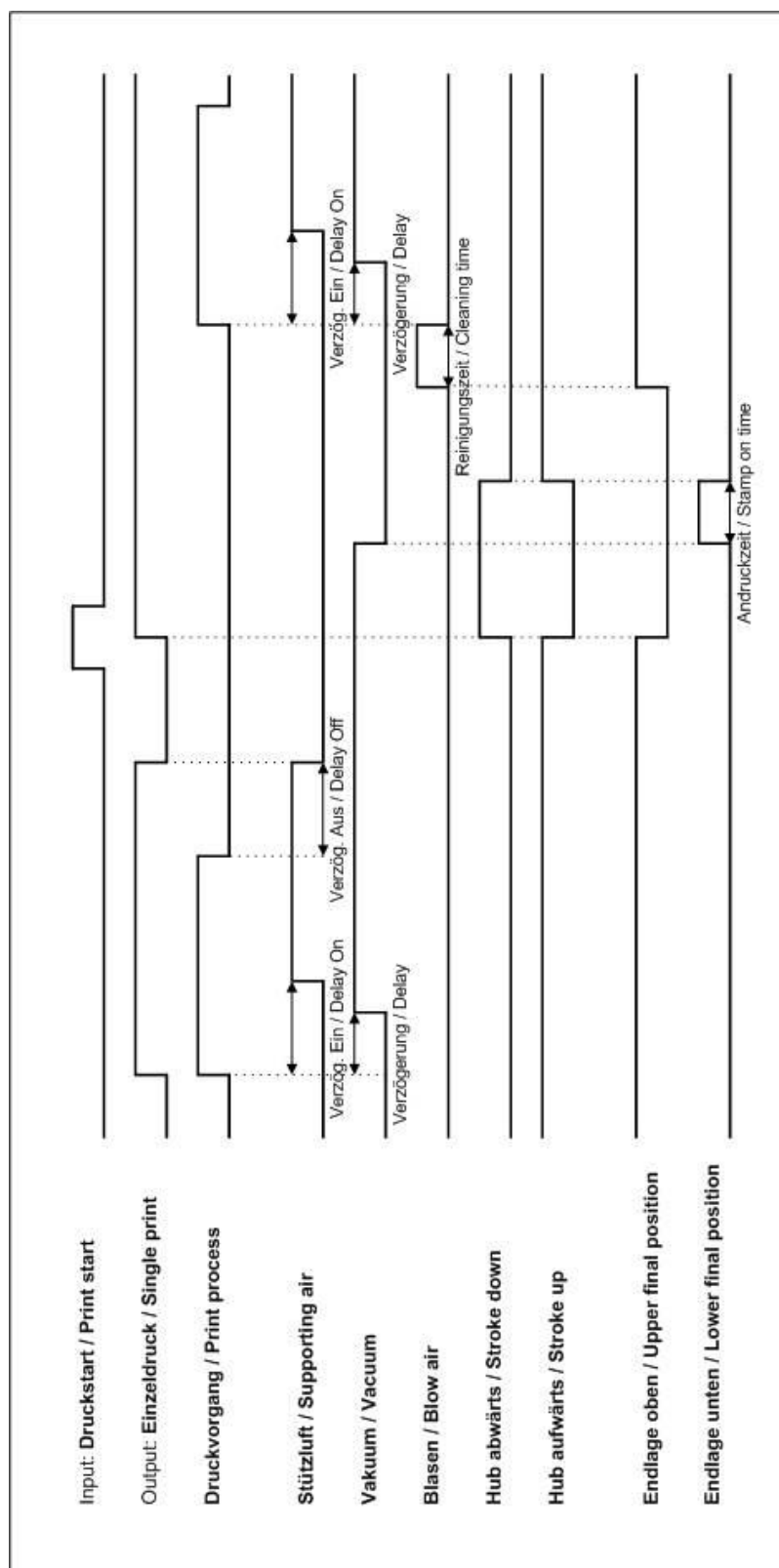
(1) At labelling signal = print position/labelling position, the printer waits here in the print position (identical with the labelling position) for the signal 'applying start' before the label is applied.

13.2 Print – Apply (with transverse axis)

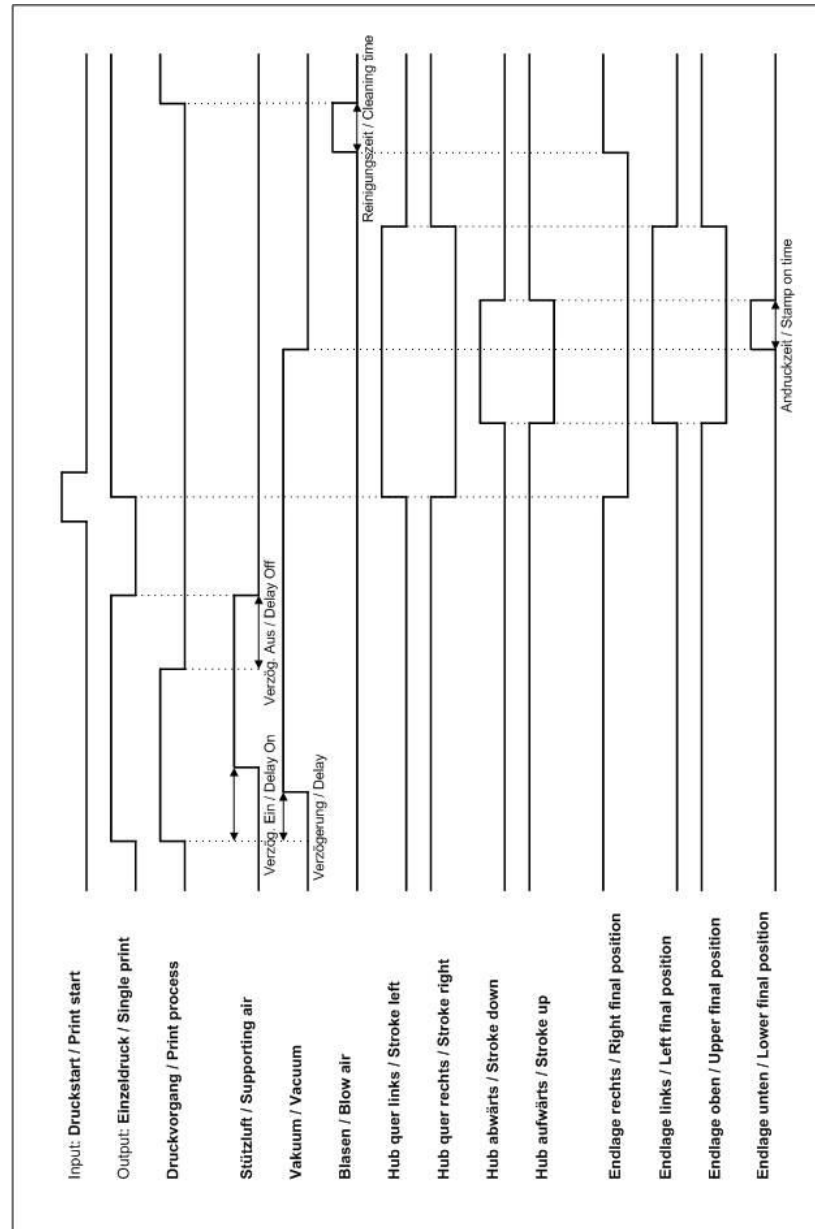


- (1) At labelling signal = print position, the printing system waits in this position for the signal 'Start Applying' before the transverse movement is carried out and the label is applied.
- (2) At labelling signal = labelling position, the printing system waits in the labelling position for the signal 'Start Applying' before the label is applied.

13.3 Apply – Print (w/o transverse axis)



13.4 Apply – Print (with transverse axis)



14 Pressure Control/Vacuum Control

The applicator preparation provides all necessary control signals to connect an applicator to the printing system. In case pressure control/vacuum control is needed, the following steps are to be observed.



NOTICE!

At a Valentin applicator, the pressure control and vacuum control is already installed and configured. The following explanations for the connection of pressure control and vacuum control, are only for external applicators.

The external sensors can be connected by the D-Sub connector according to the pin assignment (see chapter 12.2, page 117). Please note that the used sensors have the required output signal.

14.1 Electrical Properties

Analog signal	Min [V]	Typ [V]	Max [V]	Note
VAC-IN (vacuum sensor)	0.5	1 – 4	+5	After carrying the label to the pad plate, the vacuum value is verified. If the value is below the switching threshold, the error message ' Vacuum plate empty' is displayed.
AIR-IN (pressure sensor)	0.5	1 – 4	+5	The compressed air is verified after each label print. If the value is below the switching threshold, the error message 'Compressed air' is displayed.

For the setting of switching threshold for the sensors, the following points are to be observed:

Setting of switching threshold vacuum control

Press the key **F** to access the function menu.

Press the key  until the menu *Label applicator* is displayed.

Press the key  to select the menu.

Press the key  until the menu item shown below is reached.

ILX V 54/12		
Vac	V	InputV
Off	145	0

With the keys  or  set the the vacuum valve to On.

Place the label which is to be printed below the pad so that all suction holes are covered by the label. By the applied vacuum, the label remains under the pad.

In case of correct operation, the InputV should represent the value 1 (see display).

ILX V 54/12		
Vac	V	InputV
On	145	1

Otherwise, the switching threshold of the vacuum sensor must be set by the setting range of *VacuumV* so that the switching threshold changes from 0 to 1. For this, use the keys  or  to switch to the setting range of VacuumV. Use the keys  and  to increase or decrease the value.

Remove the label from the pad. The input value *InputV* should indicate the value 0. If a label is sucked again to the pad, the value should change to 1.

ILX V 54/12		
Vac	V	InputV
On	145	0

Switching limit InputV = 0

Vacuum is switched On
(Vac = 1)

The system recognizes that no label is under the pad

ILX V 54/12		
Vac	V	InputV
On	145	1

Switching limit InputV = 1

Vacuum is switched On
(Vac = 1)

The system recognizes that a label is under the pad

Setting of switching threshold compressed air control

Press the key **F** to access the function menu.

Press the key  until the menu *Label applicator* is displayed.

Press the key  to select the menu.

Press the key  until the menu item shown below is reached.

```

ILX V 54/12
-----
P      InputP
100      0
  
```

The air pressure is set to a minimum pressure of 2.5 bar. The input value *InputP* should now represent value 1 (see display).

```

ILX V 54/12
-----
P      InputP
100      1
  
```

Otherwise, the switching threshold of the pressure sensor must be set using the setting range *InputP* so that the switching threshold changes from 0 to 1. Use the keys  and  to increase or decrease the value.

The air pressure is set to < 2.5 bar. The input value *InputP* should now represent the value 0. If the air pressure is set to > 2.5 bar, the value should again change to 1.

```

ILX V 54/12
-----
P      InputP
100      0
  
```

Switching limit pressure sensor
InputP = 0

The system recognizes that the minimum pressure of 2.5 bar is not set

```

ILX V 54/12
-----
P      InputP
100      1
  
```

Switching limit pressure sensor
InputP = 1

The system recognizes that the working pressure is $\geq 2,5$ bar

14.2 Precautions

When connecting a reed contact with a control input, the contact must have a switching capacity of min. 1 A to prevent the contact from sticking due to the inrush current. As an alternative, a suitable resistor can be connected in series.

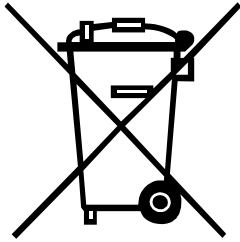
If one of the printing system's internal voltages '+5 VDC EXT' or '+24 VDC EXT' is used, an external fuse e.g. 0.5 AF, should be additionally installed to protect the printing system electronics.

In the event of an inductive load, an antiparallel connected diode, for instance, must be used to discharge the induction energy.

To minimize the influence of leakage currents at control outputs, a resistor must, depending on what is connected, be installed in parallel with the load.

To avoid any damage to the printing system, the max. output currents must not be exceeded or output shortened.

15 Environmentally-Friendly Disposal



Manufacturers of B2B equipment are obliged to take back and dispose of old equipment that was manufactured after 13 August 2005. As a principle, this old equipment may not be delivered to communal collecting points. It may only be organized, used and disposed of by the manufacturer. Valentin products accordingly labelled can therefore be returned to Carl Valentin GmbH.

This way, you can be sure your old equipment will be disposed of correctly.

Carl Valentin GmbH thereby fulfils all obligations regarding timely disposal of old equipment and facilitates the smooth reselling of these products. Please understand that we can only take back equipment that is sent free of carriage charges.

The electronics board of the printing system is equipped with a battery. This must only be discarded in battery collection containers or by public waste management authorities.

Further information on the WEEE directive is available on our website www.carl-valentin.de.

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Carl Valentin GmbH
Neckarstraße 78 – 86 u. 94
78056 Villingen-Schwenningen
Phone +49 7720 9712-0
info@carl-valentin.de
www.carl-valentin.de

