

SPE II

Operating Manual



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Carl Valentin printing systems comply with the following safety guidelines:

- Low-Voltage Directive (2014/35/EU)
- Electromagnetic Compatibility Directive (2014/30/EU)



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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

Date

Information in the display

1.2 Intended Use

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.

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, in particular those which affect safety, must be remedied immediately.

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.

1.3 Safety Instructions



WARNING!

The print mechanics is designed to be integrated into a machine. It is essential to ensure that national safety regulations are observed. Particular attention must be paid to the following points:

- ⇒ The print mechanics must be secured so that it is not possible to reach into the working area during the printing process.
- ⇒ It must be ensured that the required fire-protection device according to IEC 62368-1 is given (see chapter 6.4 in the IEC 62368-1).

The printing system is configured for a voltage from 110 ... 240 V AC. It has to be plugged into a grounded socket only.

**NOTICE!**

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

The printing system may only be operated in the commercial area by persons over the age of 14 who have been instructed in its use.

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 of 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 on the basis of 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.

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 upon 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.

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.

**DANGER!**

Danger to life and limb from power supply!

⇒ Do not open the casing.

**CAUTION!**

Two-pole fuse.

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

1.4 Decommissioning and Dismantling

**NOTICE!**

The decommissioning of printing system can only be carried out by trained staff.

**CAUTION!**

Danger of injury by imprudent handling when lifting or placing the printing system. Risk of crushing by unexpected linear movement of the printing carriage.

- ⇒ Do not underestimate the weight of the printing system (11... 13 kg).
- ⇒ Protect the printing system against uncontrolled movement.

2 Machine Overview

Flexible labelling of packaging foil is effected either by means of Windows printer driver or by our proven design software Labelstar Office.

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

The handling of our durable printing system is easy and comfortable. The device settings can be made by the integrated, intuitive touch-screen display.

By using most modern printhead technology, we ensure a high standard of print quality.

Time-saving firmware update is possible by interface. As default, the printing system is equipped with a serial, USB and Ethernet interface. Additionally, the printing system is equipped with an USB Host that permits the connection of an external USB keyboard and/or an USB memory stick. The print module automatically recognizes by which interface it is controlled.

Thanks to the large number of options and variations the printing system can be adapted to each task.

2.1 Print Mechanics

Right type

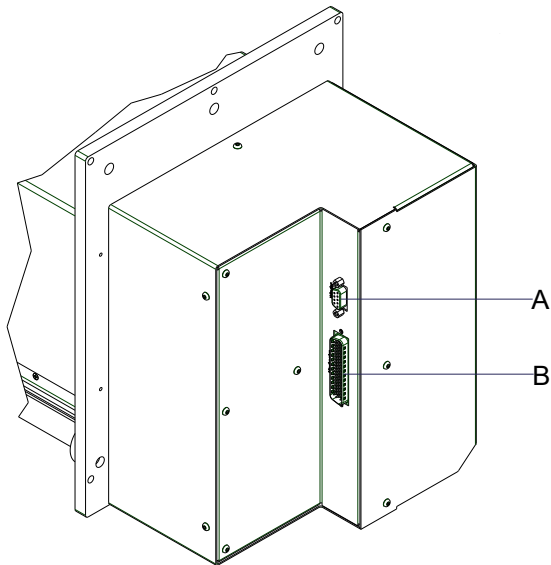


Figure 1

Left type

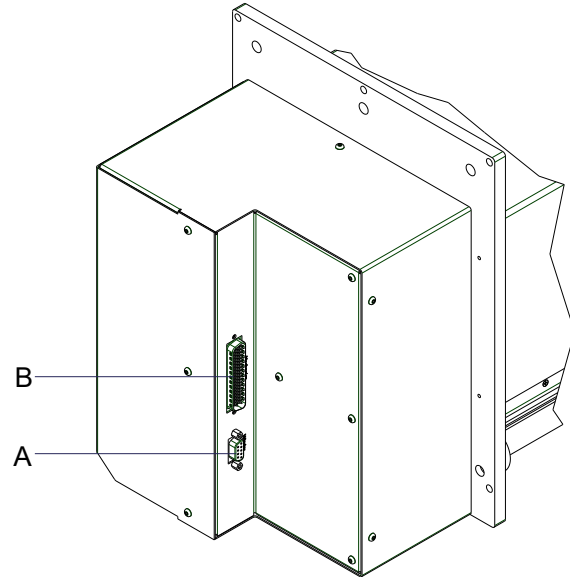


Figure 2

A Winder connection



CAUTION!

The printing system can be damaged by non-compliant winders.

⇒ Attach only winders of Carl Valentin.

B Connecting cable connection
print mechanics – control unit

2.2 Control Unit (Panel Enclosure)

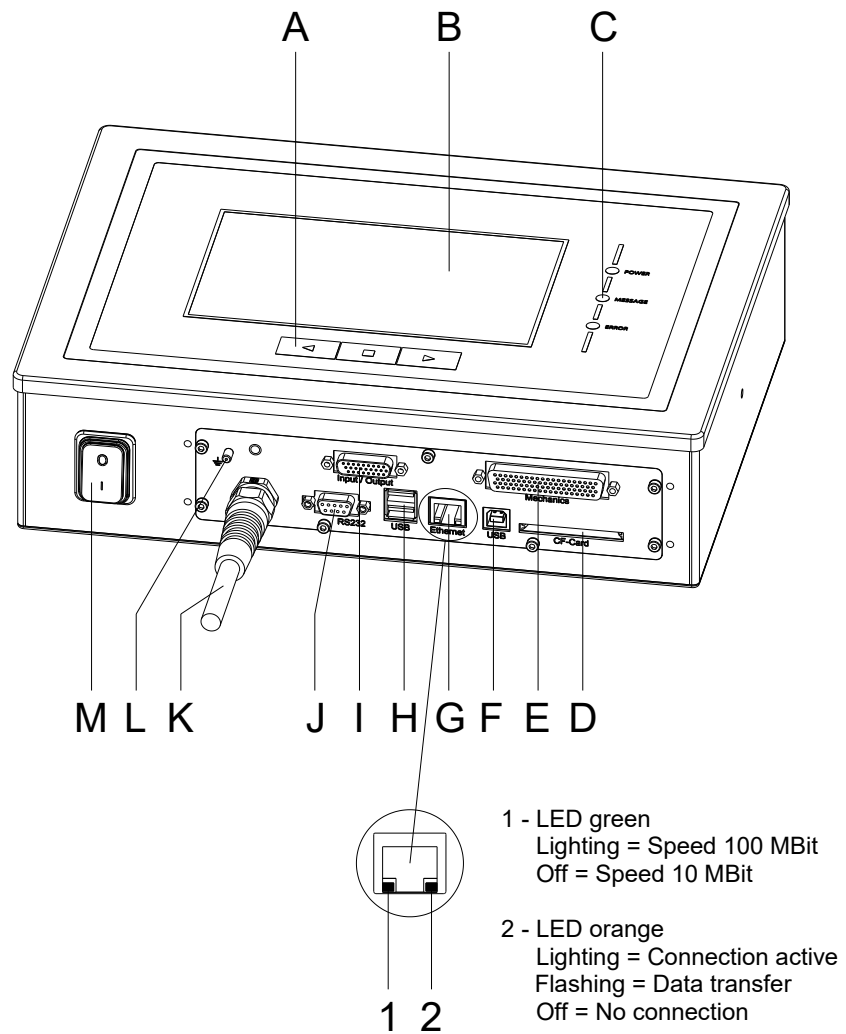


Figure 3

- A = Function keys
- B = Touch panel
- C = Status LED
- D = Slot for CF card
- E = Connecting cable connection
print mechanics – control unit
- F = USB port
- G = Ethernet interface
- H = USB host for USB keyboard and USB stick
- I = External inputs/outputs
- J = Serial interface RS 232
- K = Mains connection
- L = Grounding bolt
- M = Power switch

2.3 Control Unit (Desktop Enclosure)

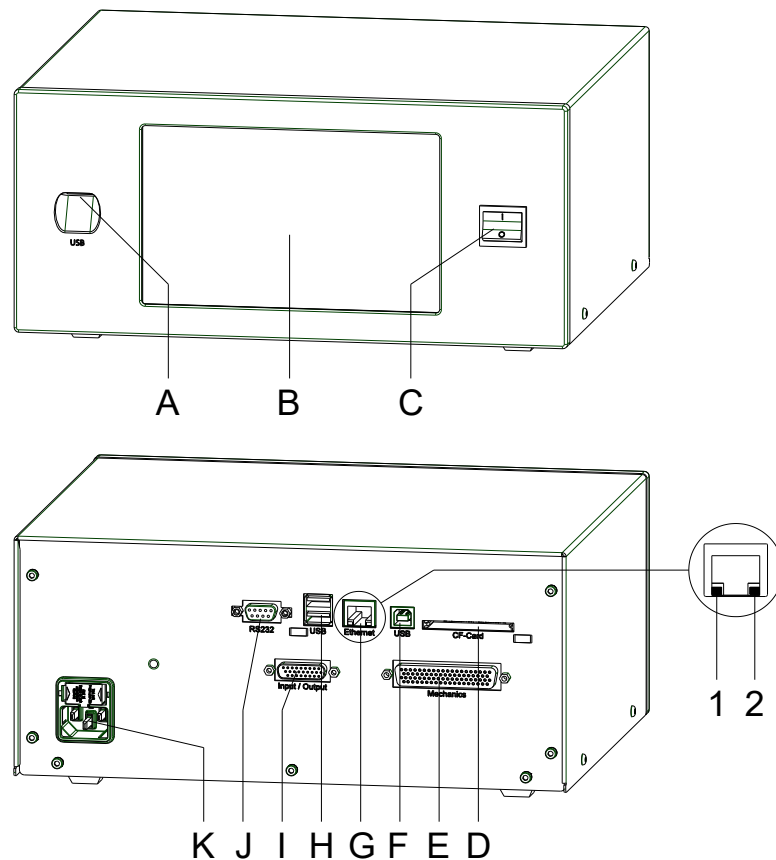


Figure 4

- A = USB host for USB keyboard and USB stick
- B = Touch panel
- C = Power switch
- D = Slot for CF card
- E = Connecting cable connection
print mechanics – control unit
- F = USB port
- G = Ethernet interface
 - 1 - LED green
Lighting = Speed 100 Mbit
Off = Speed 10 Mbit
 - 2 - LED orange
Lighting = Connection active
Flashing = Data transfer
Off = No connection
- H = USB host for USB keyboard and USB stick
- I = External inputs/outputs
- J = Serial interface RS 232
- K = Mains connection

3 Operating Conditions

Before initial operation and during operation these operating conditions have to 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 were **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 especially trained persons.



NOTICE!

Carry out regular training courses.

The content of the training are the chapters 3 (Operating Conditions), chapter 6 (Flat Type – Load Media), chapter 7 (Corner Type – Load Media) and chapter 9 (Maintenance and Cleaning).

These indications 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 the printing system should be even, free of vibration and currents of air are to be avoided.

The printing systems have to be installed to ensure optimal operation and servicing.

Installation of power supply

The installation of the power supply to connect our printing systems has to 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 Electro technical Standardisation (CENELEC)
- Verband Deutscher Elektrotechniker (VDE)

Our printing systems are constructed according to VDE and have to be connected to a grounded conductor. The power supply has to 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 have to be taken. Please 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.

Stray radiation and immunity from disturbance

Emitted interference according to EN 61000-6-3: 01-2007

Immunity according to EN 61000-6-2: 03-2006

**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 have to be guided in shielded lines. Shielding has to 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, in order to avoid radiant emittance and receipt of electrical disturbances.

Installation of data lines**Allowable lines**

Shielded line:	4 x 2 x 0,14 mm ² (4 x 2 x AWG 26) 6 x 2 x 0,14 mm ² (6 x 2 x AWG 26) 12 x 2 x 0,14 mm ² (12 x 2 x AWG 26)
Maximum cable length:	Interface V 24 (RS-232C) - 3 m (with shielding) USB - 3 m Ethernet - 100 m

Air convection

To avoid inadmissible heating, free air convection has to be ensured.

Limit values

Protection according 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 of 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 printing system maintenance, in order 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.

4 Technical Data

	SPE II 106/12	SPE II 106/24	SPE II 107/12	SPE II 108/12	SPE II 160/12	SPE II 162/12
Print resolution	300 dpi	600 dpi	300 dpi	300 dpi	300 dpi	300 dpi
Max. print speed	350 mm/s	100 mm/s	350 mm/s	350 mm/s	300 mm/s	300 mm/s
Print width	105.7 mm	105.6 mm	106.6 mm	108.4 mm	160 mm	162.6 mm
Passage width	116 mm	116 mm	116 mm	116 mm	176 mm	176 mm
Printhead	Flat Type	Flat Type	Corner Type	Flat Type	Corner Type	Flat Type
Acoustic Emission (measuring distance 1 m)						
Average sound power level	66,4 dB(A)	62,3 d(B)A	63,7 dB(A)	68,4 dB(A)	67,8 dB(A)	65,1 dB(A)
Labels						
Labels, continuous rolls or fan-fold	paper, cardboard, textile, synthetics					
Material weight	max 220 g/m² (larger on demand)					
Min label width	25 mm	25 mm	25 mm	25 mm	25 mm	50 mm
Min label height	15 mm	15 mm	15 mm	15 mm	15 mm	15 mm
Max label height	3000 mm	750 mm	3000 mm	3000 mm	2000 mm	2000 mm
Label sensors						
Standard	transmission					
Option	transmission and reflexion from bottom, transmission and reflexion from top, ultrasonic photocell					
Transfer ribbon						
Ink	außen/innen					
Roll diameter	Ø 90 mm					
Core diameter	25,4 mm / 1"					
Ribbon length	450 m	450 m	450 m	450 m	450 m	450 m
Ribbon width	110 mm	110 mm	110 mm	110 mm	163 mm	170 mm
Dimensions in mm (width x height x depth)						
Print mechanics	245 x 300 x 317				245 x 300 x 377	
Control unit	panel enclosure: 314 x 230 x 80 (without connection lines) desktop enclosure: 287x127x250 (without connecion lines)					
Weight						
Print mechanics	approx 11 kg				approx 13 kg	
Control unit	panel enclosure: approx. 5.5 kg (without connection lines) desktop enclosure: approx 4.5 kg (without connection lines)					
Connecion cable	approx 0.85 kg (print mechanics – control unit)					
Electronics						
Processor	High Speed 32 Bit					
RAM	16 MB					
Slot	for Compact Flash card Type I					
Battery cache	for Real-Time clock (storage of data with shut-down)					
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	connection for external USB keyboard and memory stick					

Operation data	SPE II 106/12	SPE II 106/24	SPE II 107/12	SPE II 108/12	SPE II 160/12	SPE II 162/12
Power supply	100 ... 240 V AC / 50-60 Hz					
Power consumption	400 VA					
Nominal current	4 ... 2 A					
Fuse values	2x T4A 250 V					
Temperature	5 ... 40 °C					
Humidity	max 80 % (non condensing)					
Operation Panel (touch-screen)						
Operating functions	favorites, function menu, memory card, print start, test print, feed, about menu					
Colour display	800 x 480 pixel, screen size 7"					
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					
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®					

Standard equipment

- 7" touch display
- Internal lighting of the print mechanics
- Left or right type
- Real time clock with printout date and time
Automatic daylight saving time
Storage of data with shut-down
- Variables: link field, counter, date/time, currency and shift variable, CF data
- Ribbon savings (107/12 and 160/12 only)
- Thermal or thermal transfer version
- Control input/output
- USB host for connection of an external USB keyboard and an USB memory stick
- Ethernet interface
- CVPL protocol and ZPL II® protocol
- Label photocell (transmission)
- Slot for CF card

Optionale equipment

- External rewinder for the carrier material
- External label unwinder
- Dispenser unit
- Reflexion photocell
- Ultrasonic photocell
- Labelstar Office

4.1 Control Inputs and Outputs

By means of 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 means of a D-Sub bushing (26pin HD) at the rear panel of the printing system and are galvanically isolated from protective earth (PE) by means of 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.

Printer internal circuit

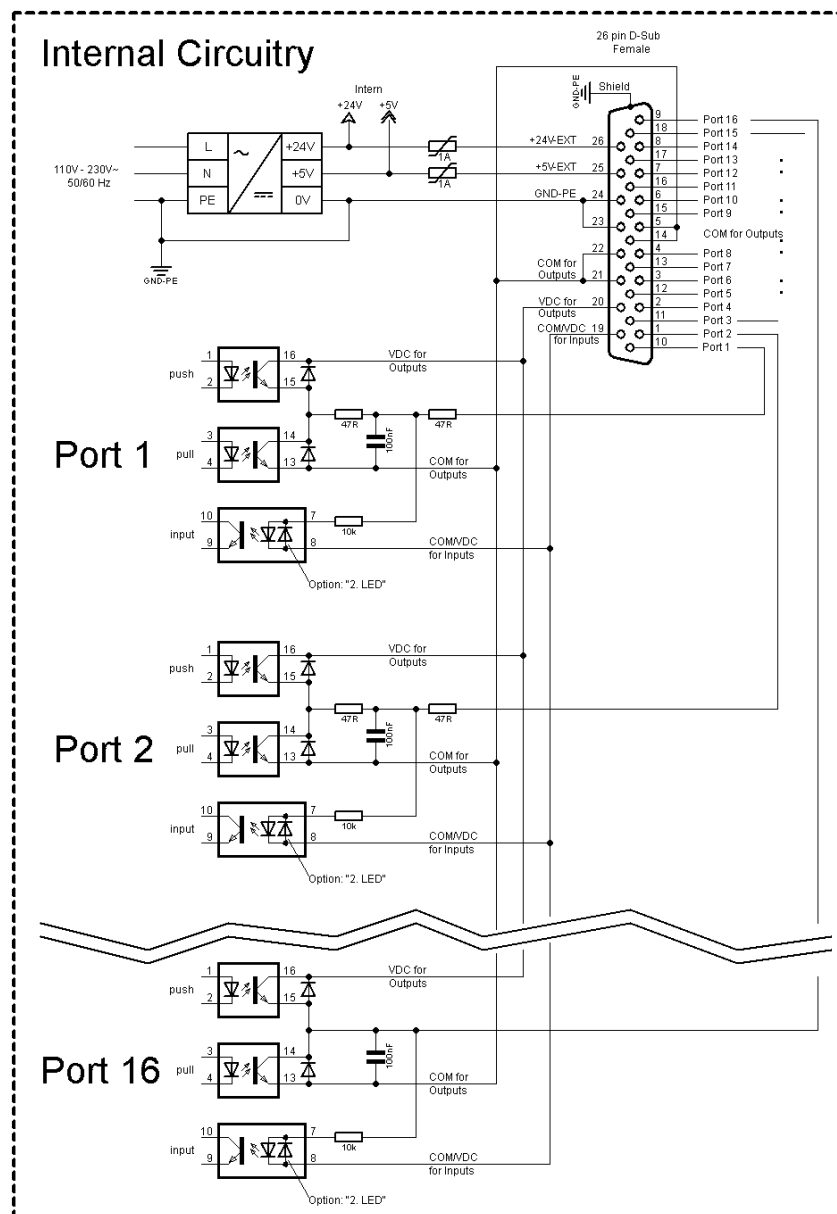


Figure 5

Configuration of D-Sub socket

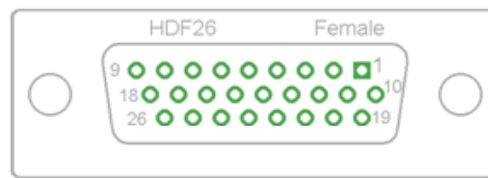


Figure 6

Cable identification

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	No assigned function
Port 5	12	Error reset (Input)
Port 6	3	Cancel all print jobs (Input)
Port 7	13	Label end sensor (Input)
Port 8	4	External release signal (Input)
Port 9	15	Error (Output)
Port 10	6	Print order activ (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	No assigned function
Port 15	18	No assigned function
Port 16	9	Prior warning for transfer ribbon end (Output)
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 (+). By means of 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. 1 A. This voltage is provided from 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. 1 A. This voltage is provided from 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 and cut (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 2 (Input)
Port 6	3	Number of the file to load 3 (Input)
Port 7	13	Number of the file to load 4 (Input)
Port 8	4	Number of the file to load 5 (Input)
Port 9	15	Error (Output)
Port 10	6	Print order active (Output)
Port 11	16	No function
Port 12	7	Printing (Output)
Port 13	17	Ready (Output)
Port 14	8	No function
Port 15	18	No function
Port 16	9	Transfer ribbon prior warning (Output)

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

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	No function
Port 8	4	No function
Port 9	15	Error (Output)
Port 10	6	Print order active (Output)
Port 11	16	No function
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 / 1 A	Fuse: Polyswitch / 30 V / 1 A
+ 5 V / 1 A	Fuse: Polyswitch / 30 V / 1 A
Port 1 - 15	
Input	
Tension	5 VDC ... 24 VDC
Impedance	$47\Omega + (100\text{nF} \parallel 10\text{ k}\Omega)$
Output	
Tension	5 VDC ... 24 VDC
Impedance	$47\Omega + (100\text{nF} \parallel 10\text{ k}\Omega \parallel 47\Omega)$
Current max.	High +15 mA Low -15 mA
Port 16	
Input	
Tension	5 VDC ... 24 VDC
Impedance	$100\text{nF} \parallel 10\text{ k}\Omega$
Output	
Tension	5 VDC ... 24 VDC
Impedance	$100\text{nF} \parallel 10\text{ k}\Omega$
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

Example 1

Device connection to a machine with S7-300 SPS.

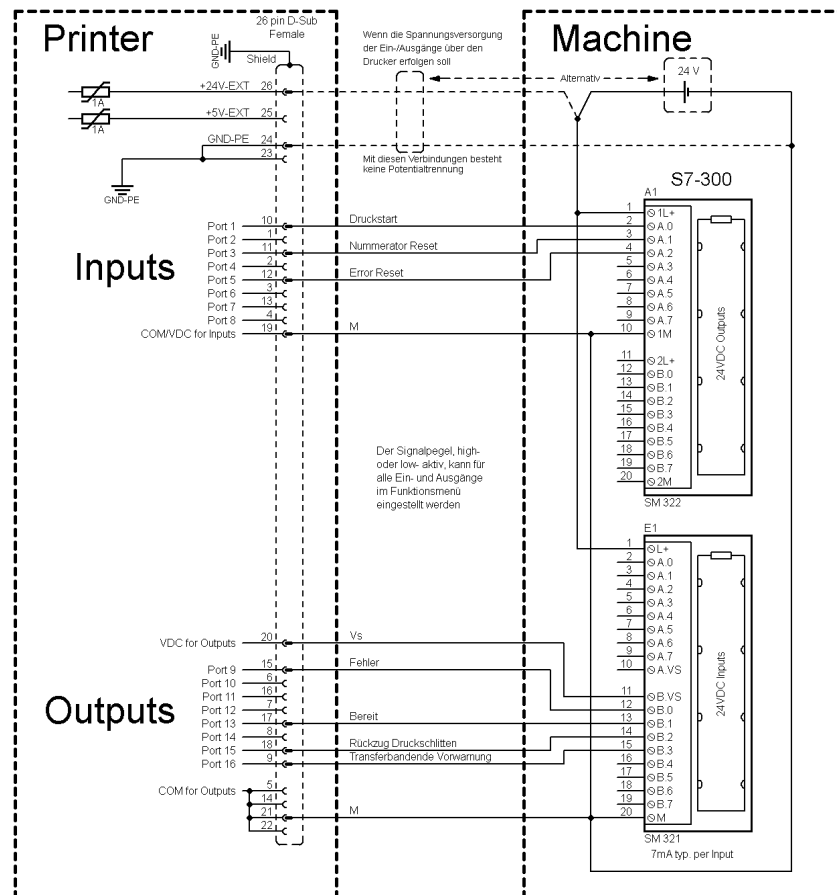


Figure 7

Example 2

Device connection to a operating panel.

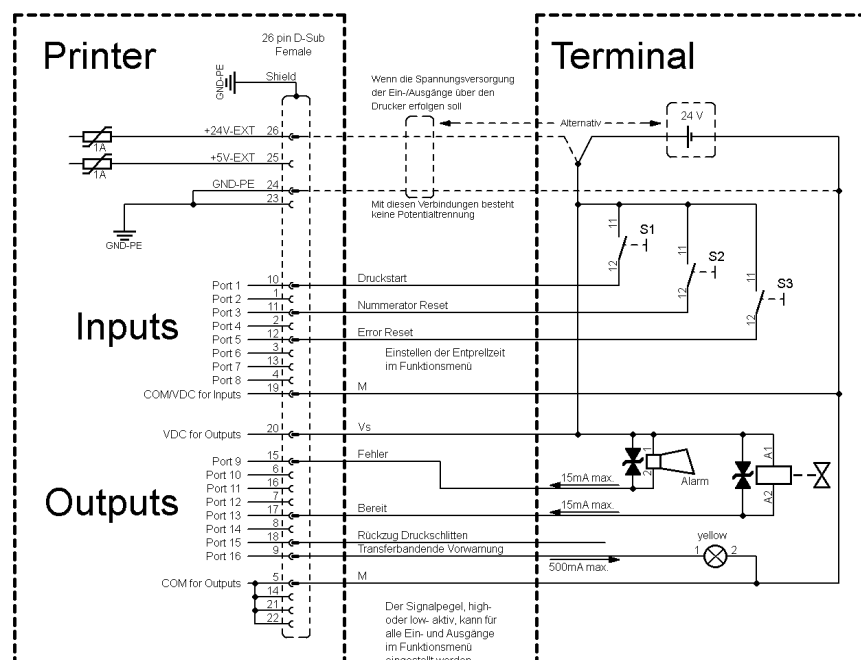
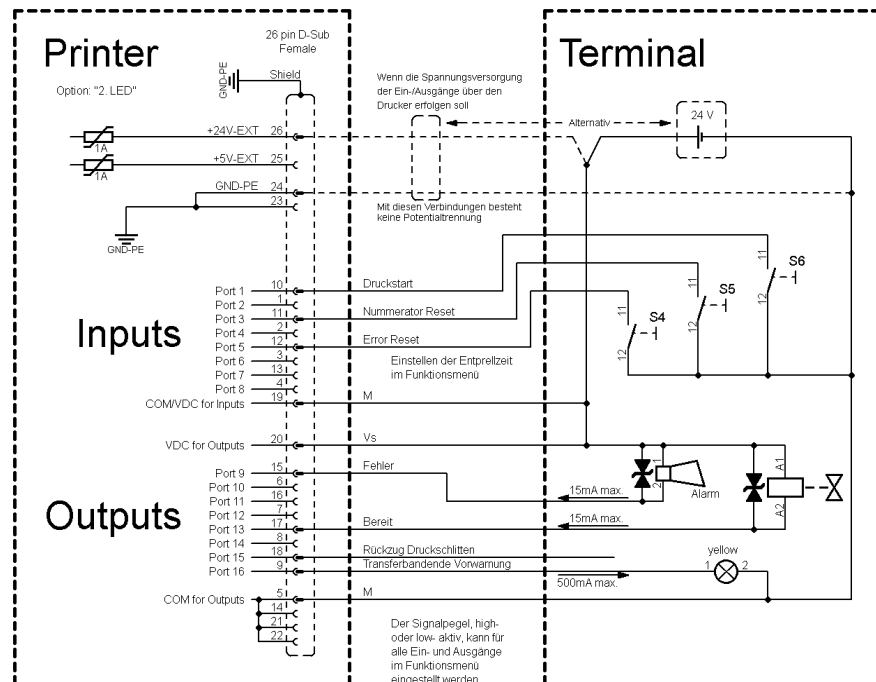


Figure 8

Example 3

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

**Figure 9****Precautions**

When connecting a reed contact with a control input, the contact must have a switching capacity of min. 1 A in order 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.

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

In order to avoid any damages to the printing system, the max. output currents must not be exceeded or outputs shorted.

5 Installation

Unpack the printing system

- ⇒ Lift the printing system on the bottom and remove the printing system from the carton.
- ⇒ Check the print mechanics and control unit for transport damages.
- ⇒ Check delivery for completeness.

Scope of delivery

- Print mechanics.
- Control unit with cable.
- Connecting cable.
- I/O accessories (mating connector for I/O).
- 1 roll (50 m) of transfer ribbon.
- Empty core, mounted on transfer ribbon rewinder.
- Printhead cleaning foil.
- Product Safety Guide.



NOTICE!

Retain original packaging for subsequent transport.

5.1 Install/Attach the Printing System at Machines



NOTICE!

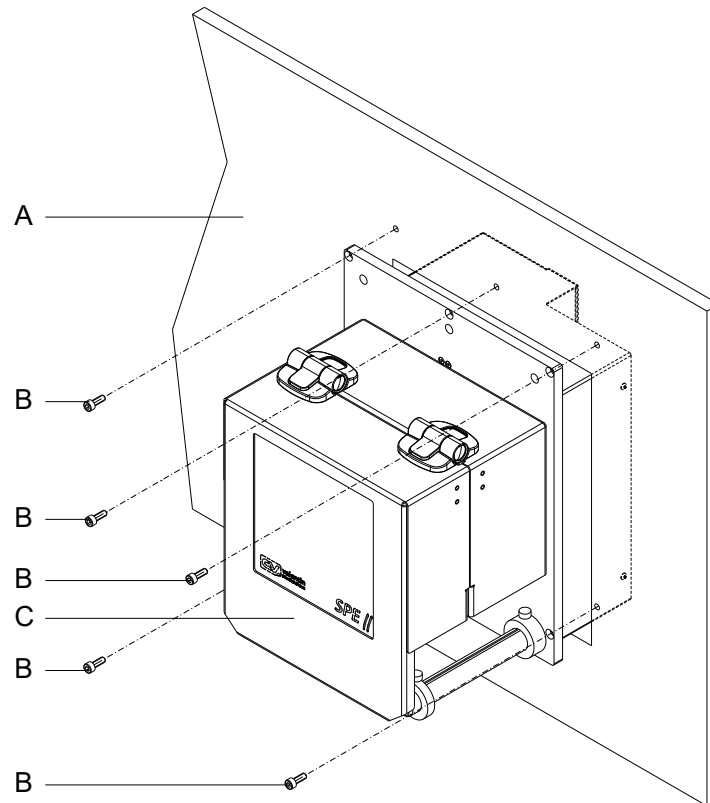
Only trained and qualified technical personnel may carry out mounting, maintenance and repair work in accordance to this instruction.



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.
- ⇒ Set up the print mechanics on a level, vibration-free and air draught-free surface.
- ⇒ Open the cover of print mechanics.
- ⇒ Remove the foam transportation safeguards near the printhead.

**Attachment of
printing system****Figure 10**

⇒ The printing system (C) is mounted on a suitable supporting structure (A) with five M5 fixing screws.

**CAUTION!**

Damage to the printing system due to insufficient fastening. There is a danger that the printing system will fall out of the supporting structure – if the printing system is not properly attached. This can cause injuries.

- ⇒ For proper operation, the printing system must be attached on a supporting structure.
- ⇒ Use suitable screws that can support the weight of the printing system.

5.2 Install the Control Unit (Panel Enclosure)

- At the side panels of the control unit (A) are two threads M5 which can be used for the attachment of the control unit at a machine. The maximum thread depth is 6 mm.
- At the back panel of control unit (A) are four threads M6 (C) in distance of 57 x 57 mm which can be used for the attachment of the control unit at a machine. The maximum thread depth is 8 mm.
- Ex works optionally a mounting bracket (E) is offered which can be used to the pivoting support of control unit (A) to the threaded holes (B). The mounting bracket can be fastened standing or hanging with four screws M6 (D) at a machine.
- Ex works optionally a fixing flange Ø 30 mm or a base clamp Ø 30 mm are offered which can be used to the support of the control unit (A) at the threaded holes (C). The clamping pieces (F) can be integrated into a piping system Ø 30 mm.

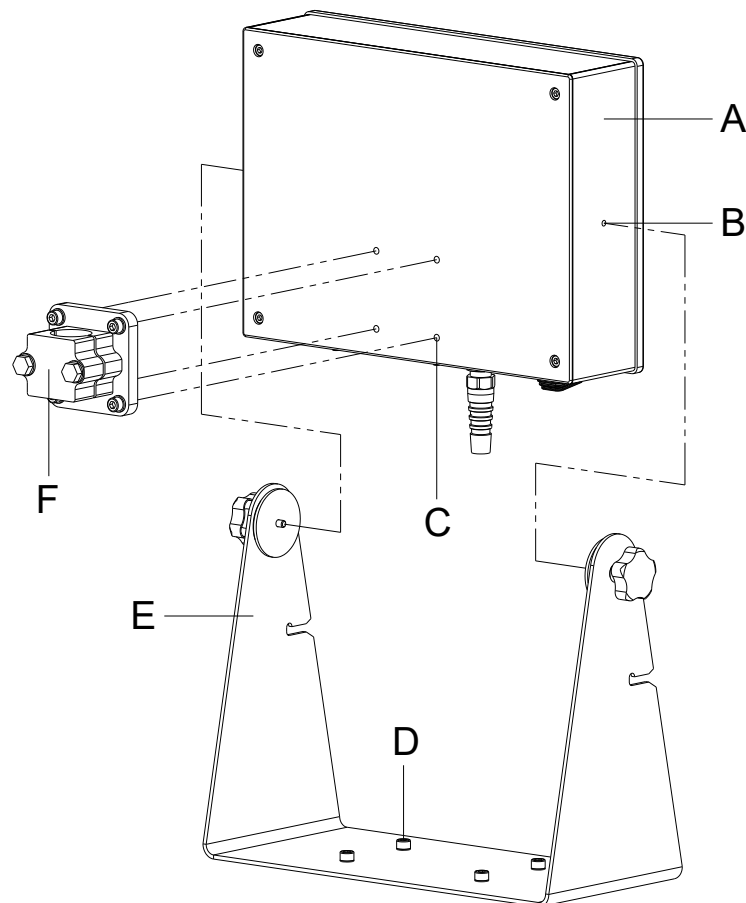


Figure 11

5.3 Install the Control Unit (Desktop Enclosure)

- On the underside of the control unit (A) there are four support feet (B), which are used to place the control unit on a flat surface.
- On the underside of the control unit (A) there are four M6 threads (D) at a distance of 57 x 57 mm, which can be used to attach the control unit to a machine. The maximum thread depth is 8 mm.
- A flange clamp piece Ø 30 mm or a foot clamp piece Ø 30 mm are optionally available ex works, which serve to accomodate the control unit (A) at the threaded holes (D). The clamping parts (C) can be integrated in a pipe system Ø 30 mm.

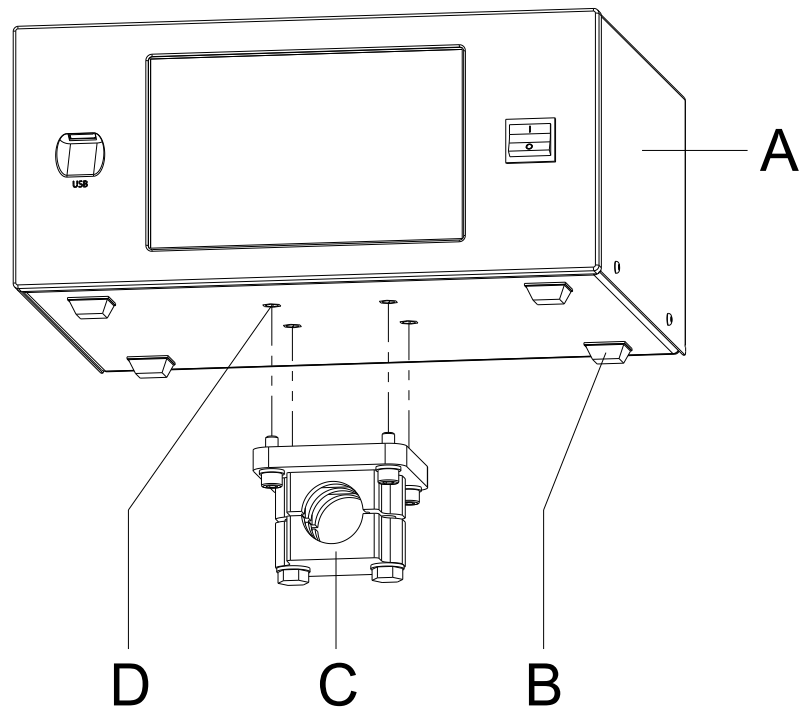


Figure 12

5.4 Install the Protective Cover for the Control Unit (Panel Enclosure)



NOTICE!

By mounting the optional protective cover, the protection class IP 65 according to DIN EN 60529 is achieved for the control unit of SPE II.

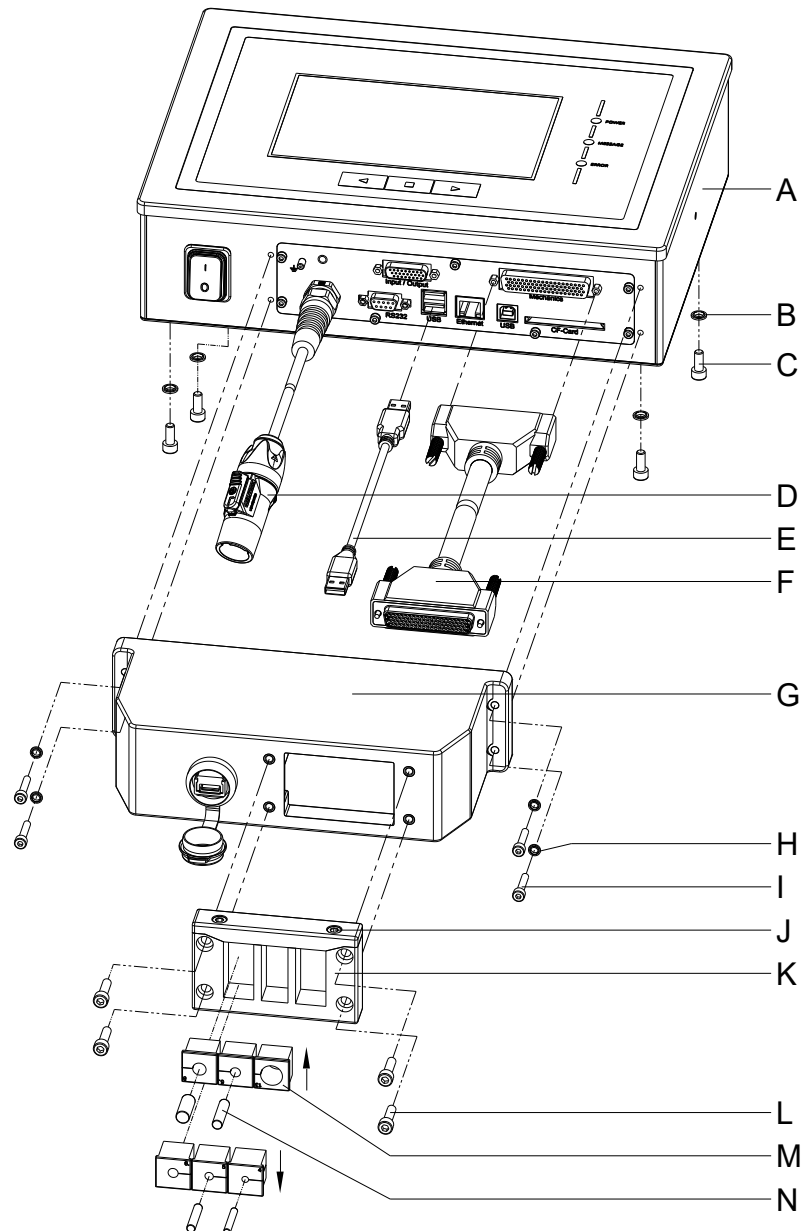


Figure 13

1. Successively remove the four screws (C) on the back on the control unit (A), slide on the sealing rings (B) and screw in the screws (C) again.
2. Connect the connection cable print mechanics/control unit (F) to the control unit (A).
3. If necessary, connect a connection cable for external inputs/outputs to the appropriate socket of the control unit (A).
4. If necessary, connect an Ethernet or USB data cable to the control unit (A).
5. Insert the USB data cable (E) on the inside of the protective cover (E) into the USB socket.
6. Guide the open end of the connection cable print mechanics / control unit (F) through the opening of the protective cover (G). The plug must be tilted sideways. Then guide the power cable (D) and if necessary, the data and I/O cable through the opening of the protective cover (G).
7. Guide the protective cover (G) in the direction of the control unit (A) until the USB data cable (E) can be connected to the control unit (A).
8. Screw the protective cover (G) to the control unit (A) with the four screws (I) and the sealing rings (H).
9. Remove the upper part of the cable entry strip (K) after removing the both screws (J).
10. Remove the cable grommets (M) that fit to the respective connection cables from the cable entry strip (K) and enclose the cables two to three centimeters in front of the protective cover (G).
11. Place the cable entry strip (K) in front of the protective cover and insert the cable grommets (M) with connection cables into the slots. The connection cable print mechanics/control unit (F) must be placed in the upper right corner and the power cable (D) should be placed on the bottom left (see **Fehler! Verweisquelle konnte nicht gefunden werden.**).

**NOTICE!**

The side of the cable entry strip (K) with the seal injected must point in the direction of the protective cover (G).

The smooth, even sides of the grommets (M) must face each other in the middle of the entry strip.

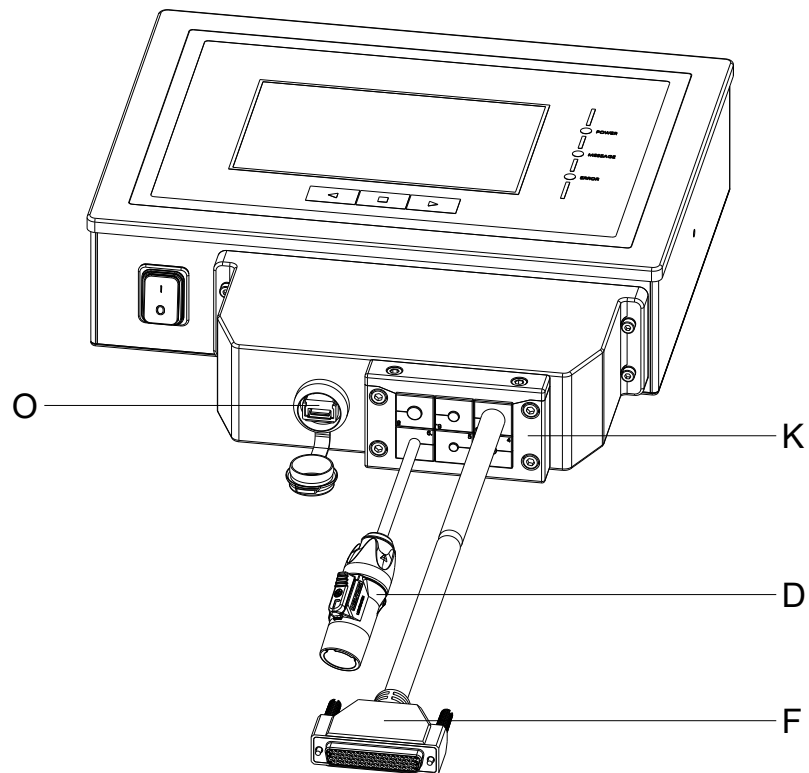
Unnecessary cable grommets (M) must be closed with the enclosed suitable plugs (N).

12. Fix the upper part of the cable entry strip (K) with the screws (J), so that the connecting cables are still movable.
13. Fix the cable entry strip (K) to the protective cover (G) with the screws (L).
14. Screw tight the upper part of the cable entry strip (K).

**NOTICE!**

Check that all cables are safely enclosed by the grommets (M) so that no water or dust can enter. Too large grommets and loose cables lead to entering of impurities into the case.

Suitable cable grommets in different sizes are available ex works. The size (diameter) is indicated on the respective grommet.

**Figure 14**

For loading of print data, the integrated USB interface (O) is accessible from the outside.

**NOTICE!**

The protection class IP 65 is only achieved if the cap of the interface is firmly closed, i.e. no USB stick or data cable is inserted.

Do not bend the connection cable (D, F and others) directly at the cable entry strip (K).

5.5 Connect the Printing System

Connect to power supply

The printing system is equipped with a versatile power supply unit. The device may be operated with a mains voltage of 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 to a 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.

5.6 Initial Operation of the Printing System

Before initial operation

- ⇒ Mount the print mechanics.
- ⇒ Connect all cables between the print mechanics and control unit and protect the cables against unintentional unscrewing.
- ⇒ Connect the control unit and PC by interface.
- ⇒ Connect the control unit and packaging machine by inputs and outputs.
- ⇒ Connect the power cable of control unit.
- ⇒ After all connections are completed, switch on the control unit.

Insert material

- ⇒ Insert label material and transfer ribbon (see chapter 6. Flat Type – Load Media, page 41 or see chapter 7. Corner Type – Load Media, page 47).
- ⇒ Go to menu Menü *Label Settings* and select the menu item *Measure label* to start the measuring process.

**NOTICE!**

To enable a 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 Settings/Label length* and *Gap length*.

6 Flat Type – Load Media

6.1 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.

Load label roll in
dispenser mode

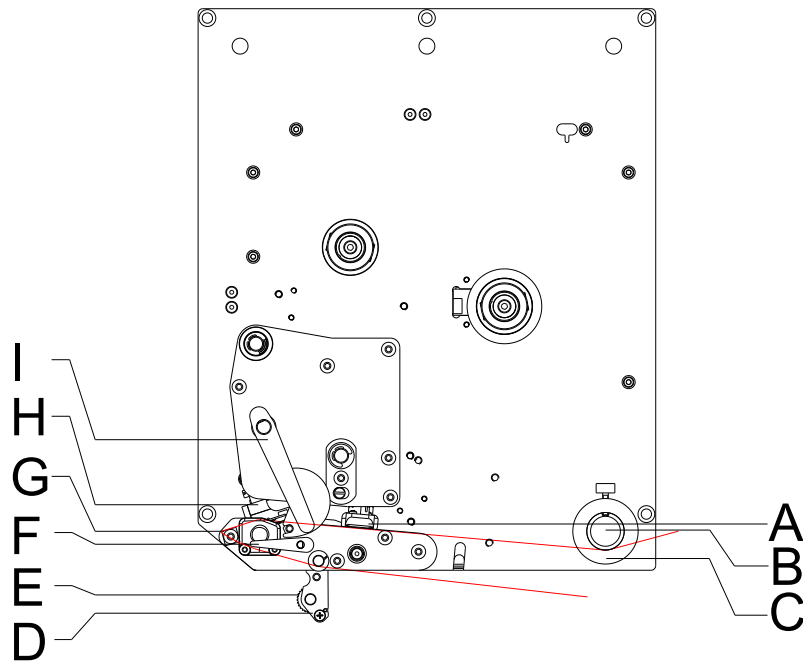


Figure 15

1. Open the cover of print module.
2. Open the printhead (H) by turning the pressure lever (I) anticlockwise.
3. Lead the label material below the label guiding (B) and printhead (H) and take care that the labels run through the photocell (A).
4. Move the printhead (H) down by turning the pressure lever (I) in clockwise direction until it locks.
5. Adjust the adjusting rings (C) of the label guiding to the width of material.
6. Turn the locking lever (F) upwards in clockwise direction while turning the dispenser whip (D) downwards.
7. Remove some labels from the supporting paper and feed the material over the dispensing edge (G) and between the groove plastic roller (E) and the shaft of the dispensing whip (D).
8. Press again the dispensing whip (D) to the top and lock it.

9. Lead the supporting paper backwards and fix it at the rewinding unit.
10. Enter the offset value in menu *Dispenser I/O*.
11. Close the cover of print module.

Load label roll in passing mode

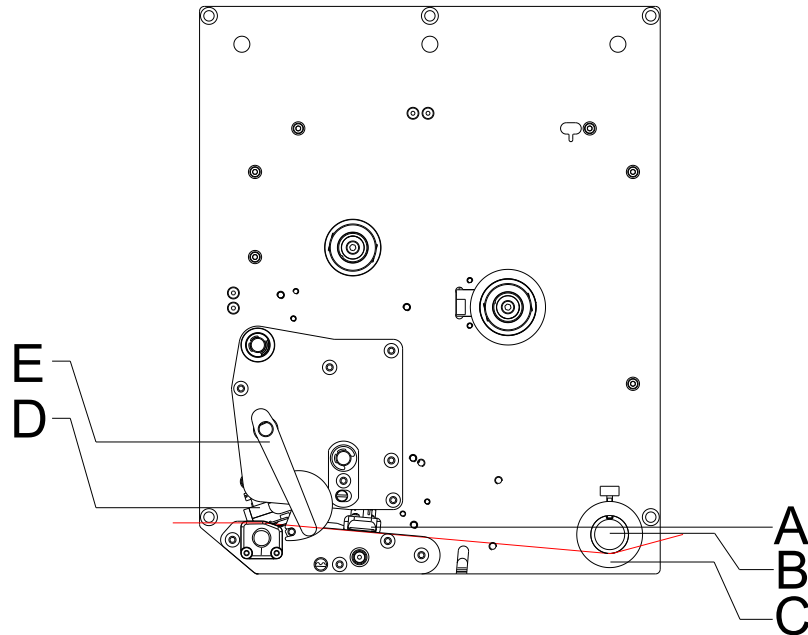


Figure 16

1. Open the cover of print module.
2. Open the printhead (D) by turning the pressure lever (E) anticlockwise.
3. Lead the label material below the label guiding (B) and printhead (D) and take care that the labels run through the photocell (A).
4. Move the printhead (D) down by turning the pressure lever (E) in clockwise direction until it locks.
5. Adjust the adjusting rings (C) of the label guiding to the width of material.
6. Close the cover of print module.

6.2 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.

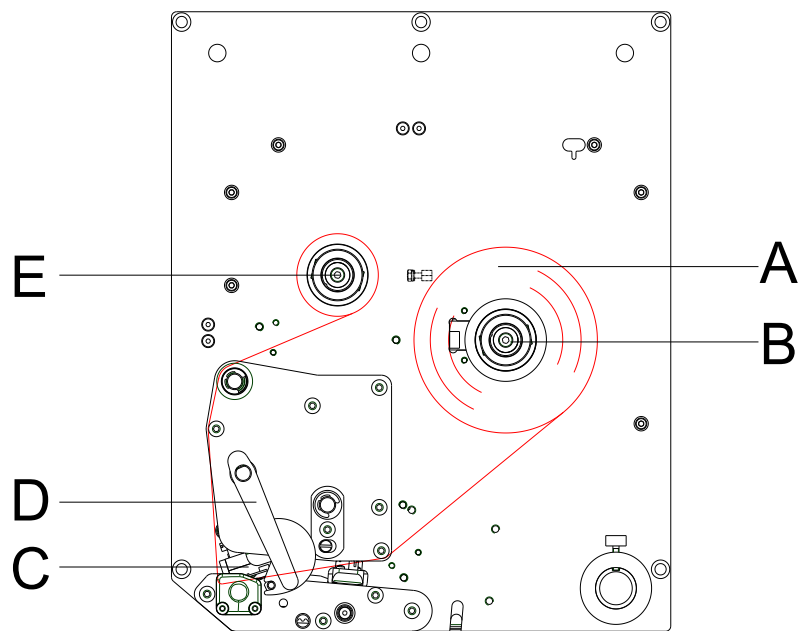


Figure 17



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 cover of print module.
2. Open the printhead (C) by turning the pressure lever (D) 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!

3. Load the transfer ribbon roll (A) with outer winding onto the unwinding roll (B).
4. Place an empty ribbon roll on the winding roll (E).
5. Lead the transfer ribbon below the printhead (C).
6. Fix the beginning of the transfer ribbon with an adhesive strip to the empty core of the rewinding roll (E). It is important to pay attention to the rotation direction of the transfer ribbon rewinding.
7. Move the printhead (C) down by turning the pressure lever (D) in clockwise direction until it locks.
8. Close the cover of print module.

**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 malfunctions and the guarantee can expire.

**CAUTION!**

Impact of electrostatic material on people!

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

6.3 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

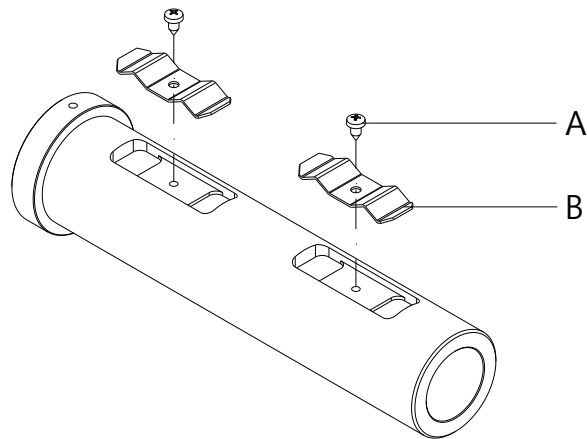


Figure 18

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

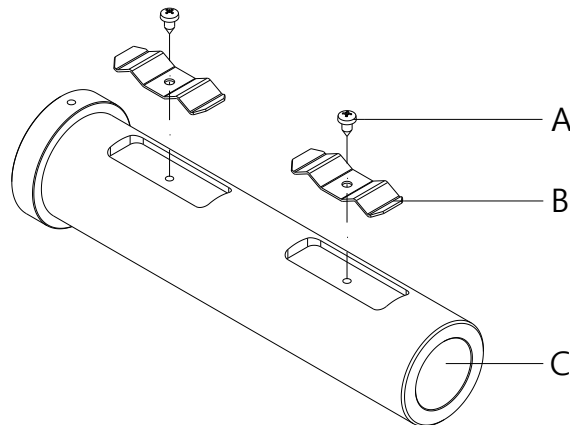


Figure 19

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!

7 Corner Type – Load Media

7.1 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.

Load label roll in
dispenser mode

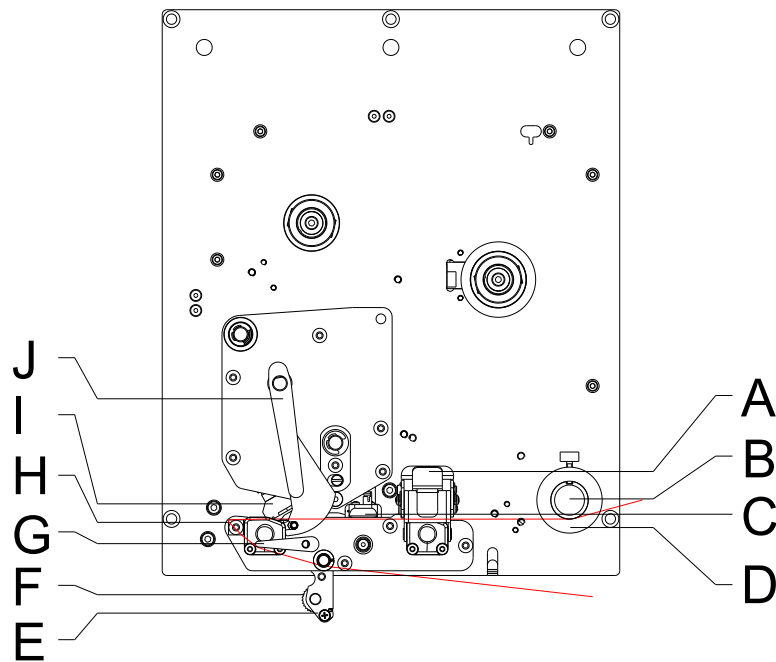


Figure 20

1. Open the cover of print module.
2. Open the printhead (I) by turning the pressure lever (J) anticlockwise.
3. Pull up the latch of the bearing rail to open the bearing rail (A).
4. Lead the label material below the label guiding (B) and printhead (I) and take care that the labels run through the photocell (C).
5. Press the bearing rail (A) down again until it engages.
6. Move the printhead (I) down by turning the pressure lever (J) in clockwise direction until it locks.
7. Adjust the adjusting rings (D) of the label guiding to the width of material.
8. Turn the locking lever (G) upwards in clockwise direction while turning the dispenser whip (E) downwards.
9. Remove some labels from the supporting paper and feed the material over the dispensing edge (H) and between the groove plastic roller (F) and the shaft of the dispensing whip (E).

10. Press again the dispensing whip (E) to the top and lock it.
11. Lead the supporting paper backwards and fix it at the rewinding unit.
12. Enter the offset value in menu *Dispenser I/O*.
13. Close the cover of print module.

Load label in passing mode

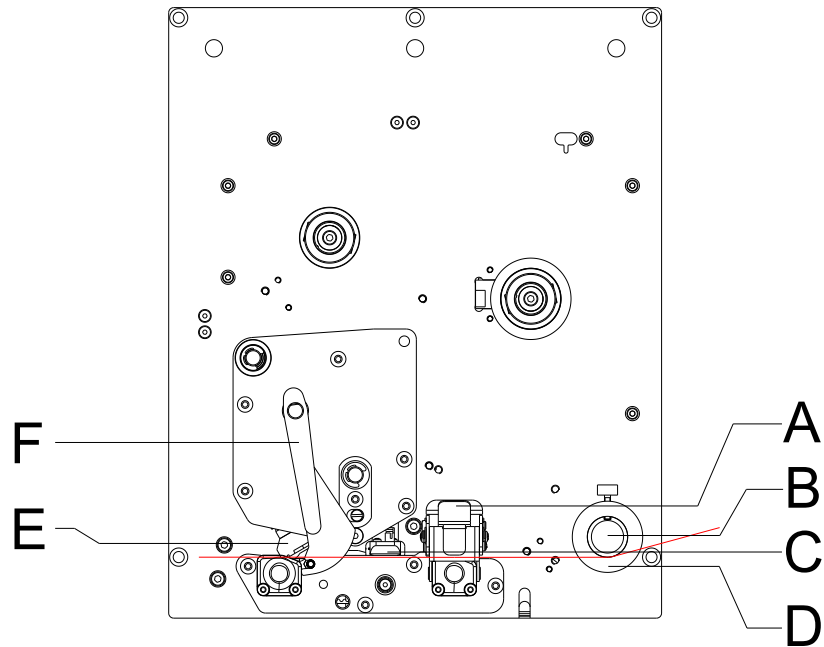


Figure 21

1. Open the cover of print module.
2. Open the printhead (E) by turning the pressure lever (F) anticlockwise.
3. Pull up the latch of the bearing rail to open the bearing rail (A).
4. Lead the label material below the label guiding (B) and printhead (E) and take care that the labels run through the photocell (C).
5. Press the bearing rail (A) down again until it engages.
6. Move the printhead (E) down by turning the pressure lever (F) in clockwise direction until it locks.
7. Adjust the adjusting rings (D) of the label guiding to the width of material.
8. Close the cover of print module.

7.2 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.

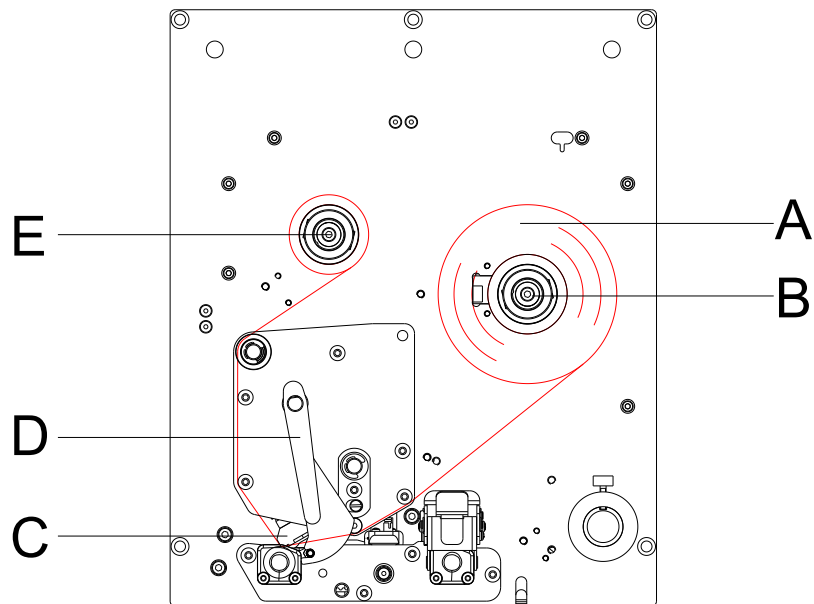


Figure 22



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 cover of print module.
2. Open the printhead (C) by turning the pressure lever (D) 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!

3. Load the transfer ribbon roll (A) with outer winding onto the unwinding roll (B).
4. Place an empty ribbon roll on the winding roll (E).
5. Lead the transfer ribbon below the printhead (C).
6. Fix the beginning of the transfer ribbon with an adhesive strip to the empty core of the rewinding roll (E). It is important to pay attention to the rotation direction of the transfer ribbon rewinding.
7. Move the printhead (C) down by turning the pressure lever (D) in clockwise direction until it locks.
8. Close the cover of print module.

**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 malfunctions and the guarantee can expire.

**CAUTION!**

Impact of electrostatic material on people!

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

7.3 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

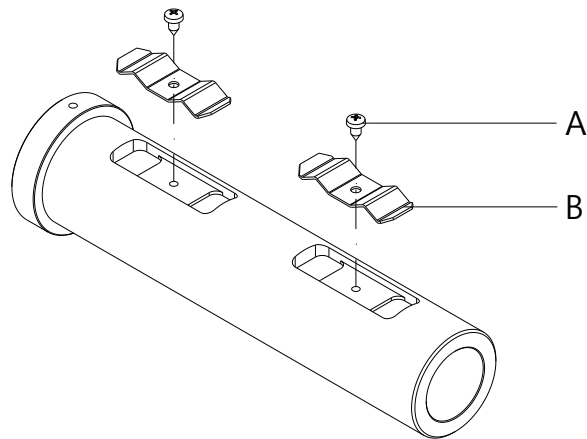


Figure 23

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

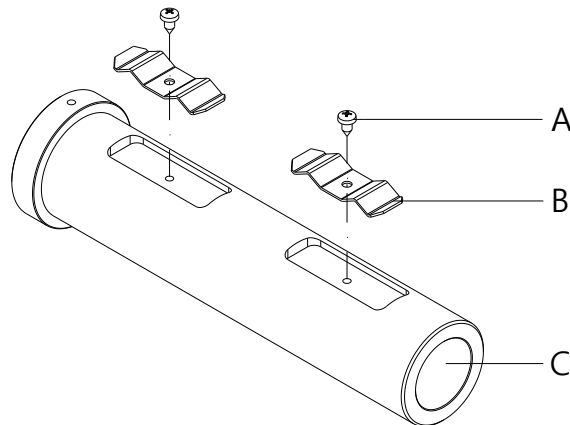
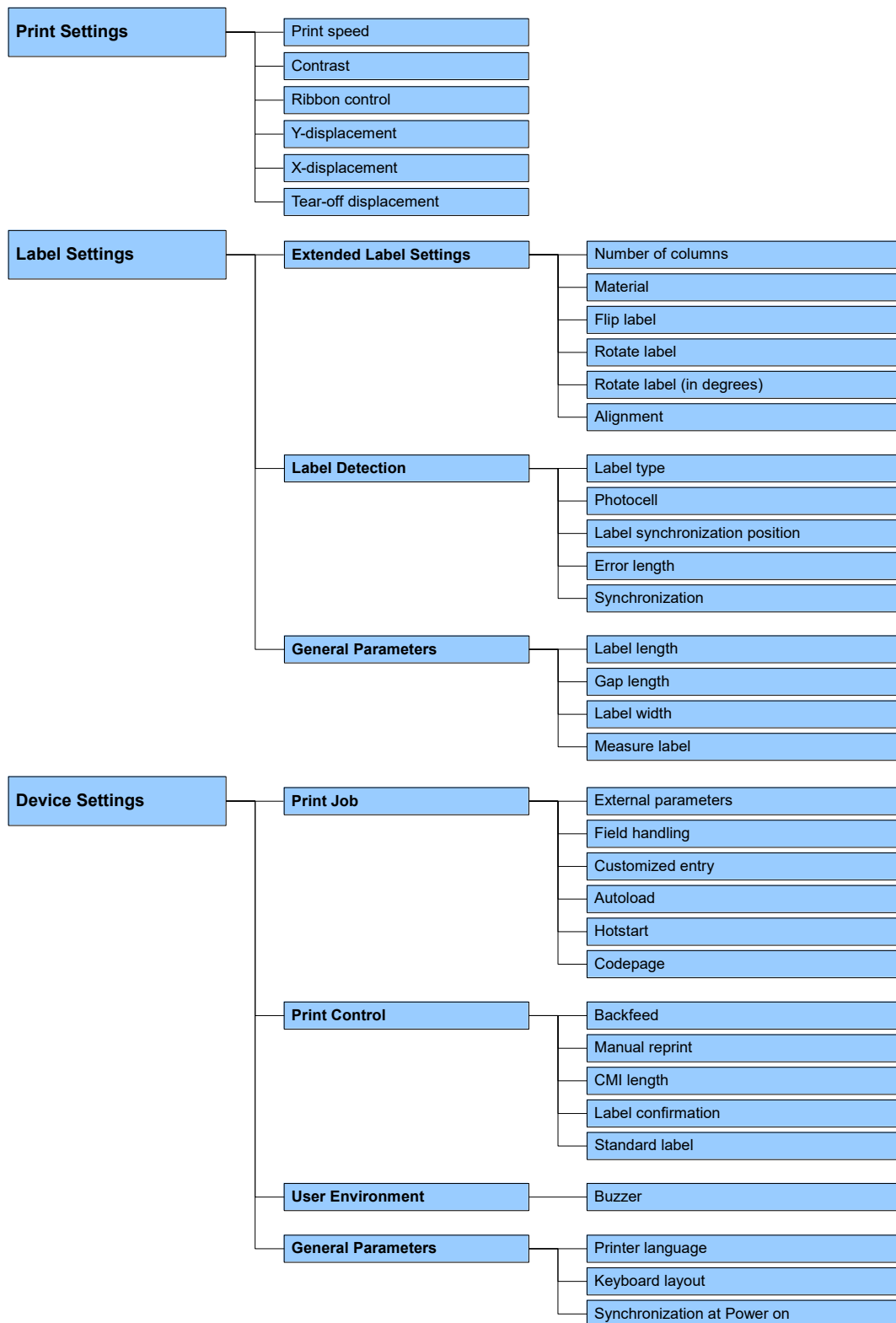


Figure 24

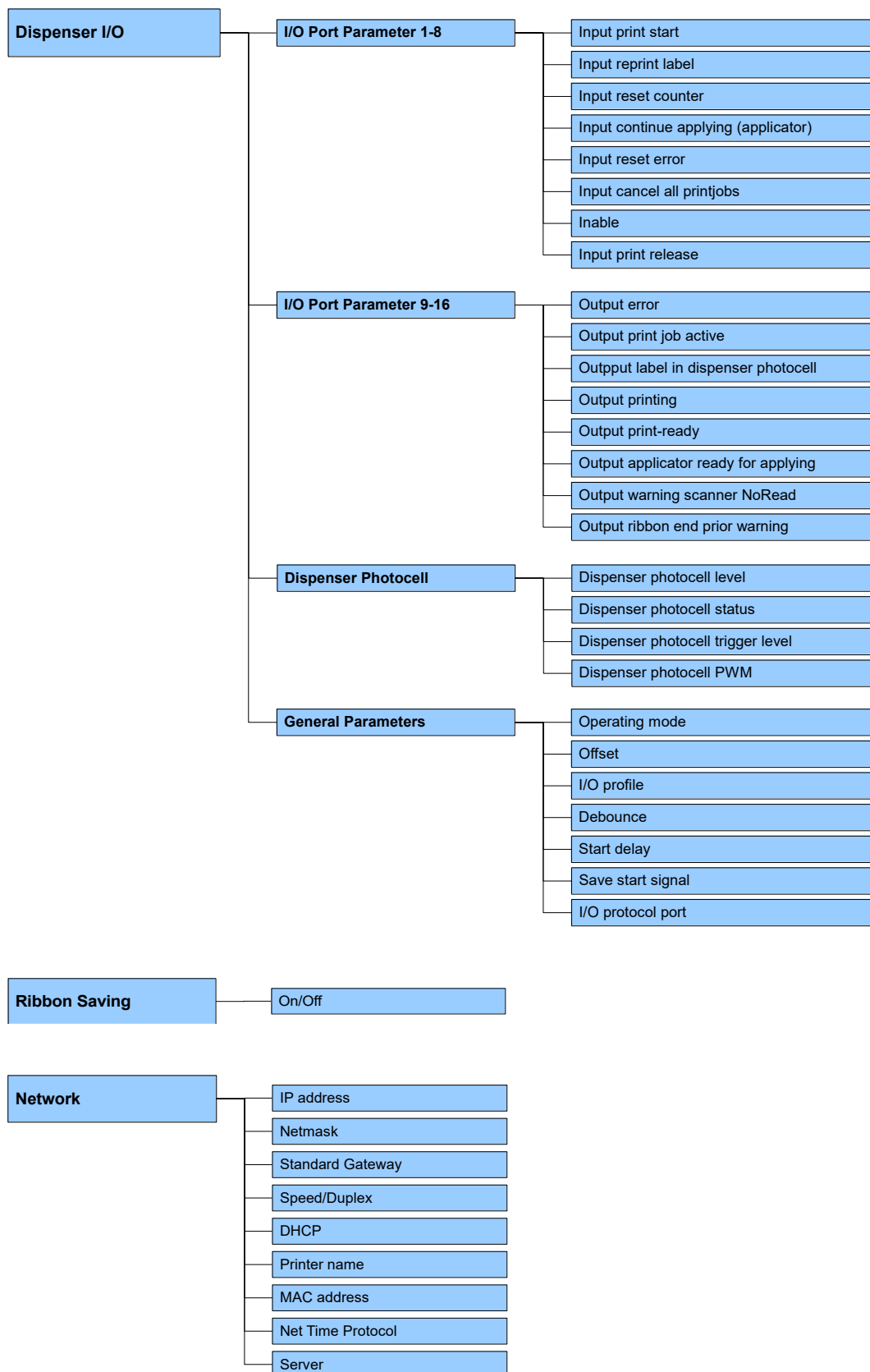
5. Remove the screws (A) and spring plates (B).
6. Turn the transfer ribbon roll (C) 180° until the other two alternative grooves are visible.
7. Fasten the spring plates (B) with the screws (A).
8. Insert the transfer ribbon roll (C) and empty cardboard core on the rewinding/unwinding unit. Check firm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

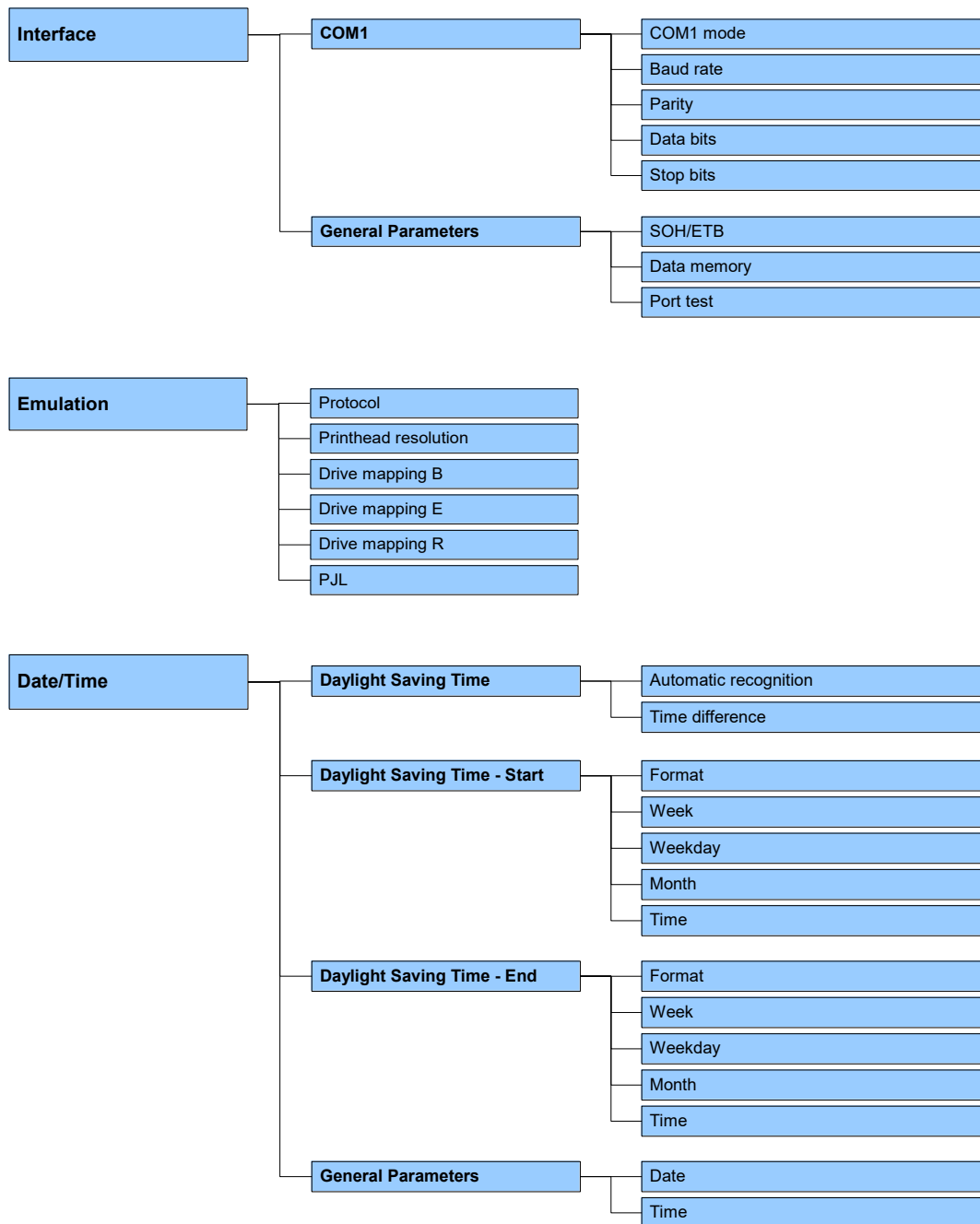
8 Function Menu

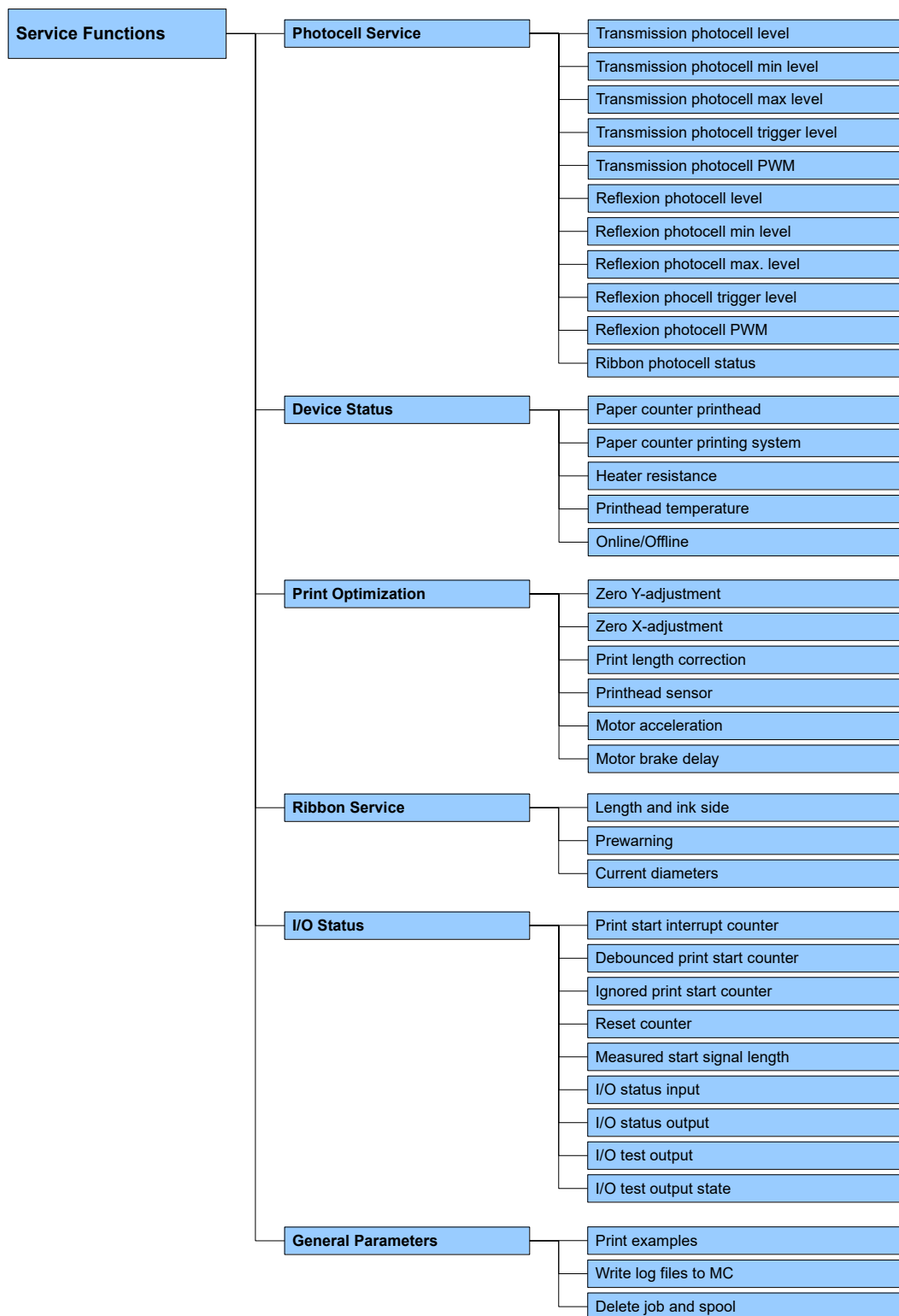
8.1 Menu Structure (Touch-Screen)

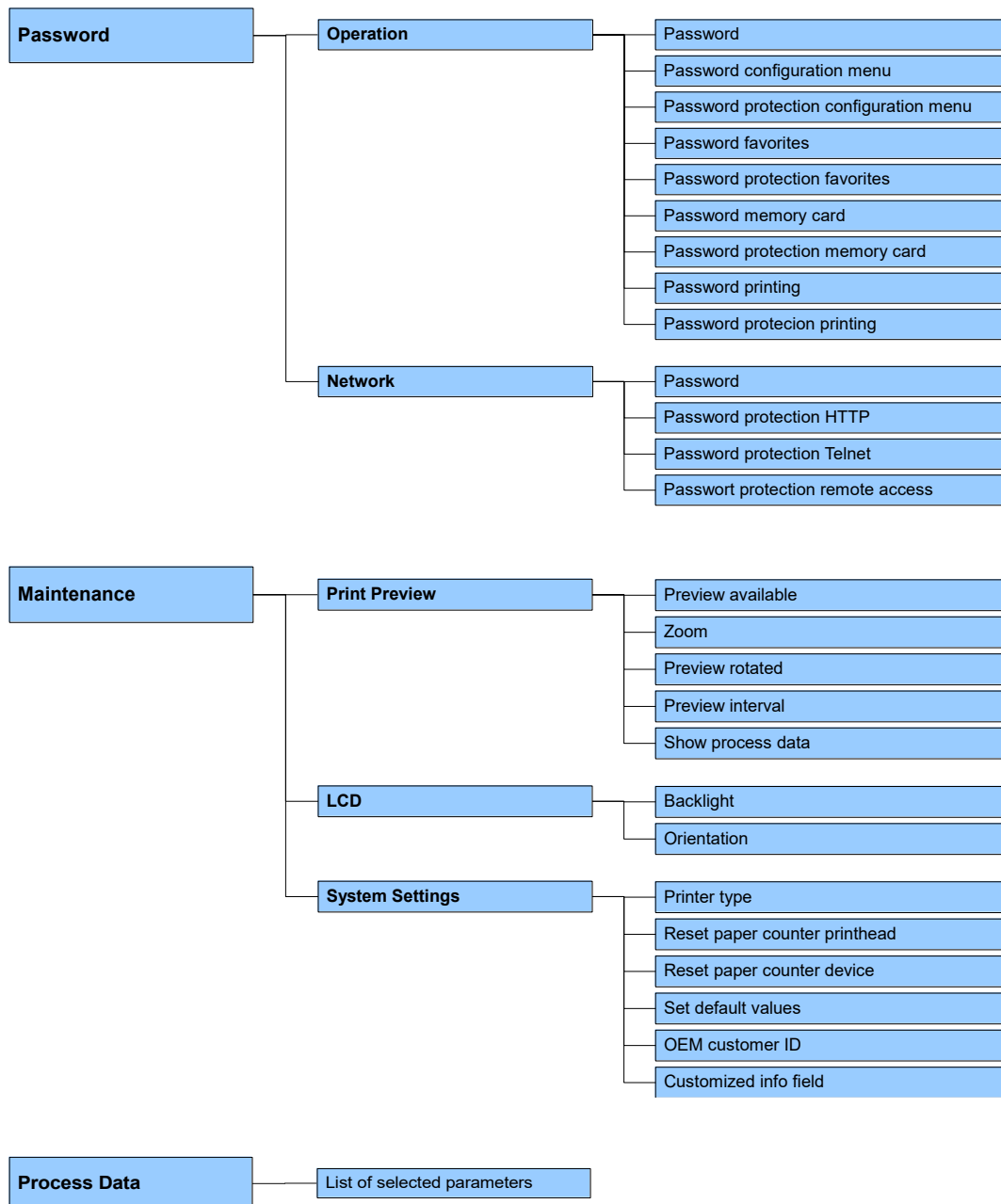


Export the latest menu structure from ConfigTool.
Printer settings --> Configuration --> Export

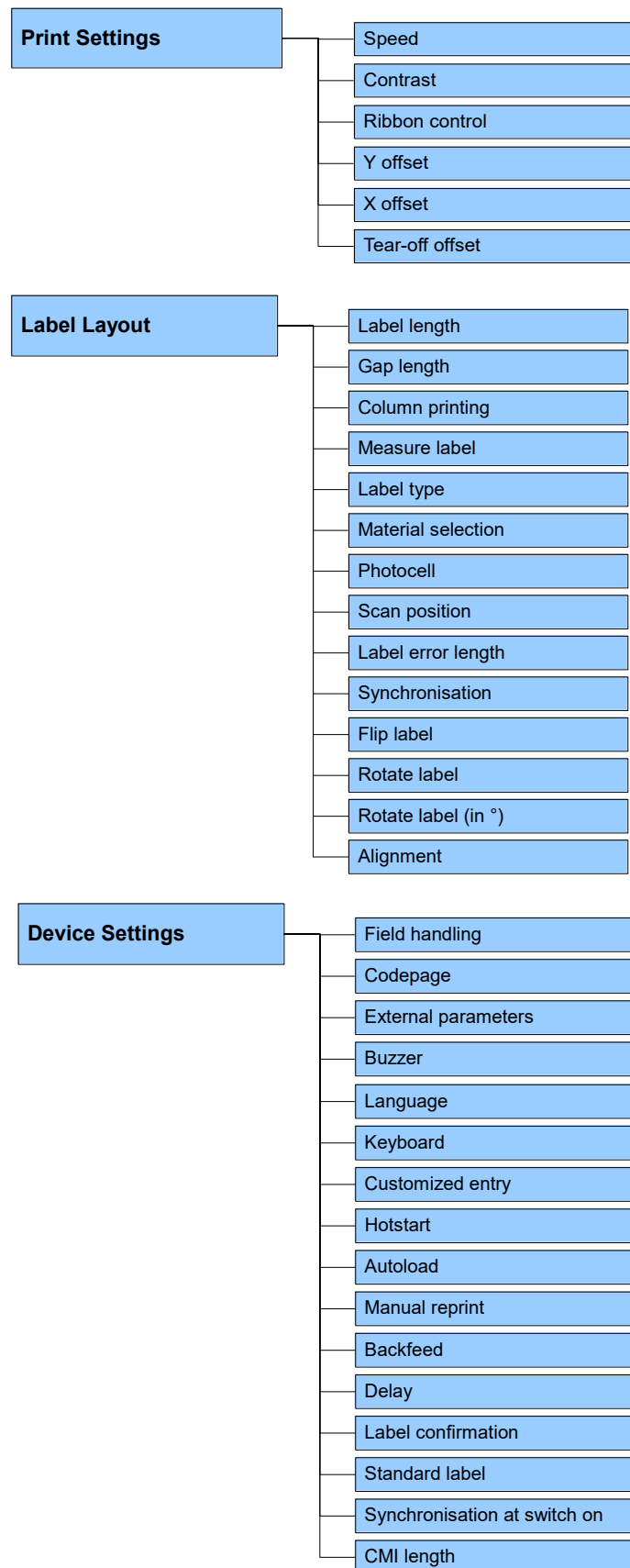




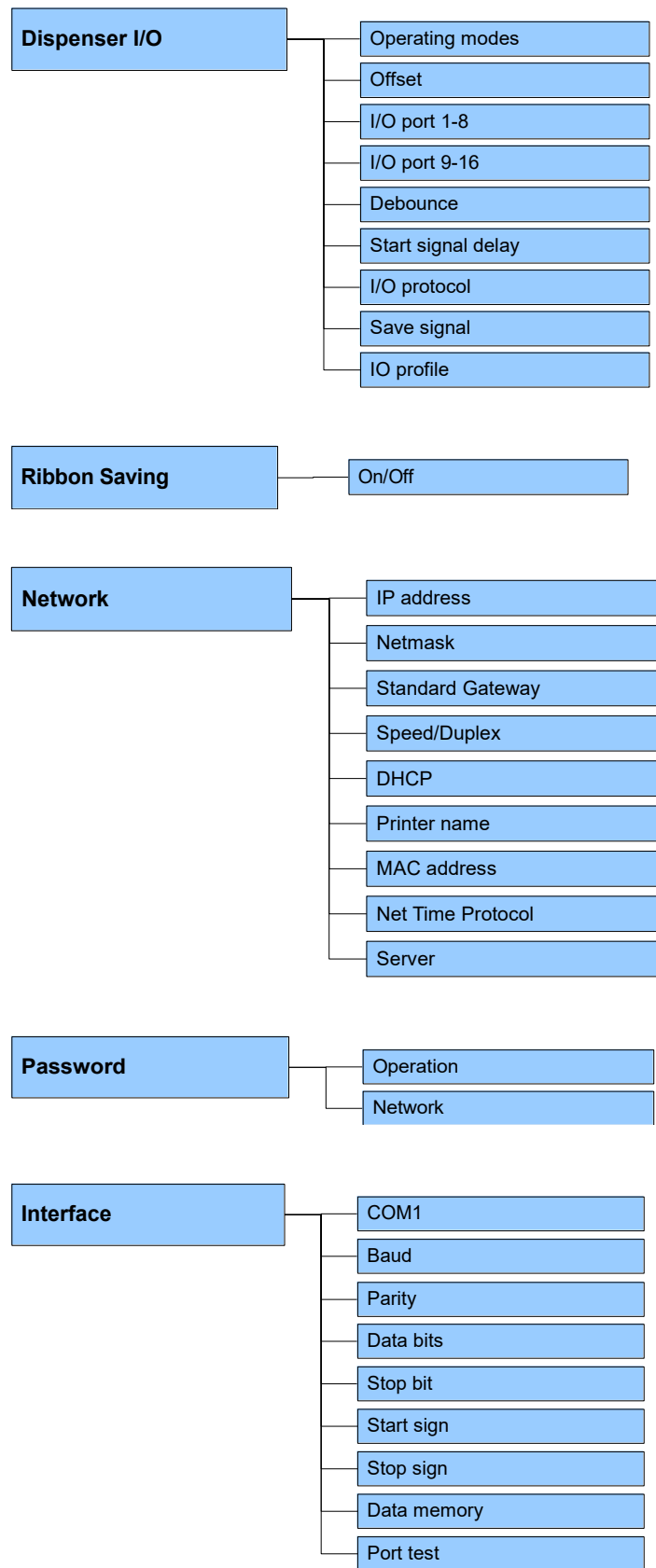


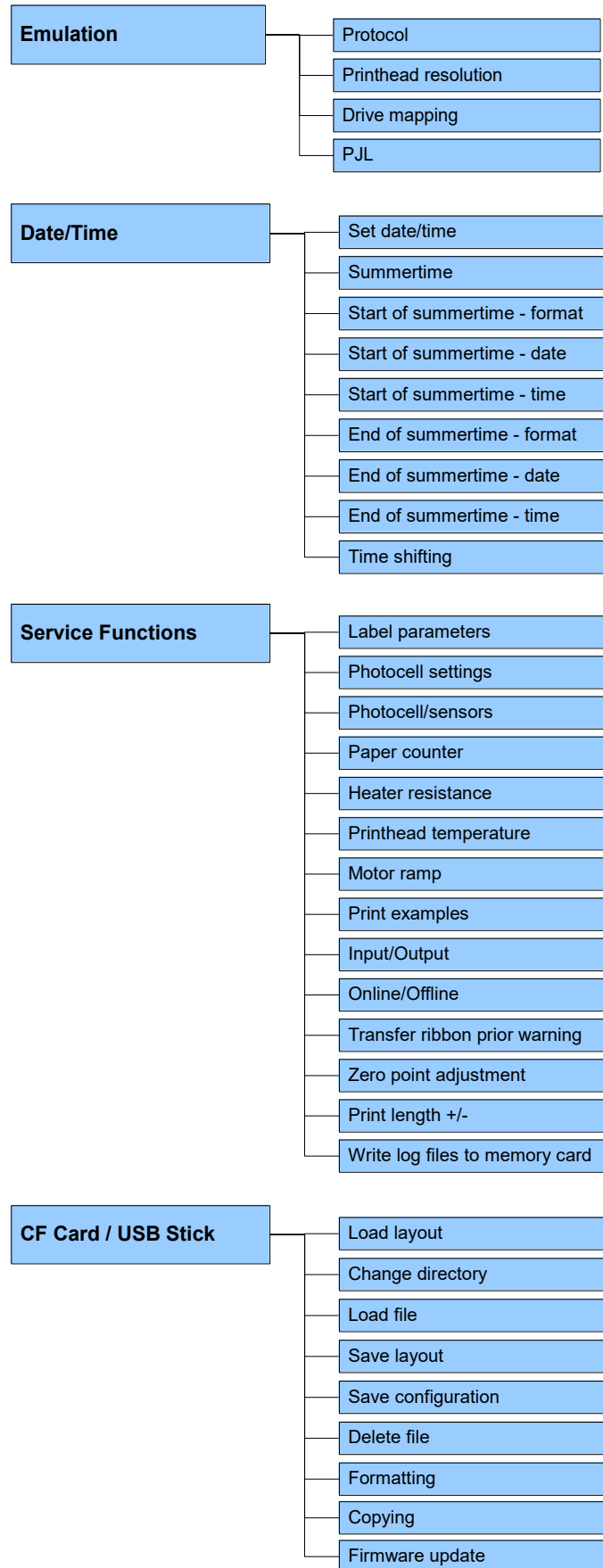


8.2 Menu Structure (LCD)

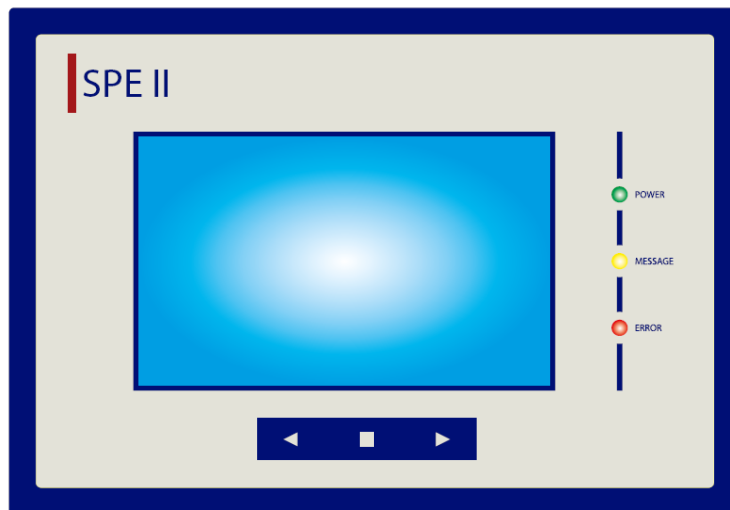


Export the latest menu structure from ConfigTool.
Printer settings --> Configuration --> Export





8.3 Operation Panel



Display	The header of the display indicates the device type. The display provides information about the status of the printing system and the print job, indicates errors and displays the device settings in the menu.
	No function.
	Pause and resume the current print job.
	Print job active, not stopped: Manual print start. Print job active, stopped: Reprint.
	Power LED Printing system is switched On.
	Message LED No function.
	Error LED The printing system is in error mode. The display shows the error number (see chapter 10, page 101).

**NOTICE!**

The order of the functions described can be different depending on the display (touch-screen or LCD).

8.4 Print Settings

Print speed	Indication of print speed in mm/s. 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.
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 display of printing system. 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.
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.
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.
Tear off displacement	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 terminating the print order without a label loss by tearing up.

8.5 Label Settings

8.5.1 Label Layout

Number of columns	Indication how many labels are side by side on the liner. With column printing, the label width is to be changed to the width of the layout (see chapter 11.1, page 113).
Material	Selection of the used label and transfer ribbon material.
Flip label	The axis of reflection is in the middle of the layout. 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.
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.
Rotate label (in °)	Corresponding to the parameter Rotate label, 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.
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.

8.5.2 Label Recognition

Label type	Selection of adhesive labels or continuous material is used in the printing system. As default, adhesive labels is set. If the menu item <i>Label length/Gap length</i> contains a gap value, this value is added to the label length.
-------------------	--

Photocell	Selection of the used photocell. The selection of one of the following photocell types is possible: transmission photocell normal and inverse, reflexion photocell normal and inverse (option), ultrasonic photocell (option) (see chapter 11.4, page 117).
Label synchronization position	Entry of percental label length by that the label end is searched. Marks onto the label can be skipped.
Error length	If no new label can be recognized, indication after how many mm a message appears in the display.
Synchronization	On: If no new label is recognized, it is not printed. The new data remains in the memory. Off: Although no new label is recognized, the next data is printed and removed from the memory.

8.5.3 General Parameters

Label length	Indication of label length in mm.
Gap length	Indication of distance between two labels in mm (not for continuous labels).
Label width	Indication of label width in mm.
Measure label	Press the key  to start the measuring process. The printing system stops automatically after termination of measuring. The determined values are displayed and saved.

8.6 Device Settings

8.6.1 Print Job

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 printing system internal memory. 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 were changed. The generating time is saved.

Delete graphic: The graphics res. TrueType fonts stored in the printer-internal memory is 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 system. 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.

External parameters

Label dimension only: The parameters for label length, gap length and label width can be transferred by the interface of the printing system. All other parameter settings were ignored at the interfaces and are to be made directly at the printing system.

On: Parameters such as print speed and contrast can be transferred to the printing system with our Labelstar Office. Parameters which are set directly at the printing system before are no longer considered.

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

Customized entry

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 the customized variable appears after every layout without additional query for the quantity.

Autoload

On: A layout loaded once from CF card, can be reloaded after a restart of the printing system automatically.

Procedure: The used label is saved onto CF card. The label is loaded from CF card and printed. After switching the printing system Off and again On, the label is loaded from CF card automatically and can be printed again.

**NOTICE!**

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

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

Hotstart

On: A discontinued print order can be continued 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).

Codepage

Indication of the font used in the printing system. 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.

8.6.2 Print Control

Backfeed

Backfeed mode: The backfeed was optimised in the operating modes dispenser (optional) and cutter (optional). Now, when driving into the offset, the following label is 'pre-printed' if possible and therefore the backfeed of label is no necessary and time can be saved.

Auto backfeed delay: The adjustable delay time is only important with mode 'backfeed automatic' (see chapter 11.3, page 115).

Manual reprint

On: If the printing system is e.g. in stoppin mode after an error, the last printed label can be reprinted with the key 'Reprint'.

Off: Only empty layouts are moved forward.

CMI length

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 at the selection of backfeed mode 'optimised backfeed'.

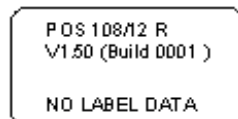
Label confirmation

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 control unit.

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.

8.6.3 User Environment

Buzzer

On (1-7): An acoustic signal is audible when pressing a key.

Off: No signal is audible.

8.6.4 General Parameters

Language	Selection of language in which you want to display the text in the display of printing system. At the moment 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.
Keyboard layout	Selection of region for the desired keyboard layout. The following possibilities are available: German, English, French, Greek, Spanish, Swedish, US American, Russian.
Synchronization at power on	Off: The synchronization is disabled, i.e. the measuring and label feed have to be released manually. Measure: After switching on the printing system, the loaded label is automatically measured. Feed: After switching on the printing system the label is synchronized to the beginning of label. For this one or multiple labels are fed.

8.7 Dispenser I/O



NOTICE!

In order to operate the printing system in dispenser mode a print order has to be started and the printing system has to be in 'waiting' mode.

8.7.1 I/O Port Parameter 1-8

Input print start (and cut)

Input reprint label

Input reset counter

Input applicator continue apply

Input reset error

Inactive

Inactive

Input external print release (default: disabled)

8.7.2 I/O Port Parameter 9-16

Output error

Output print order active

Output label under dispenser photocell

Output printing

Output print-ready

Output applicator ready for apply

Output warning scanner no read

Output Ribbon end prior warning

8.7.3 General Parameters

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.

Dispenser offset

Setting the dispenser offset, i.e. the distance from printhead focal line to the dispensing edge.

I/O profile

Selection of the available configurations *Std_Label* (factory setting), *StdFileSelLabel*, *Appl*, *Std_Machine* or *Appl_Machine* (see chapter 4.1, page 22).

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.

Start delay

Indication in time per second of the delay for the start signal.

Value range: 0.00 ... 9.99.

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.

I/O protocol port

Indication of interface at which the modifications of input signals (I/O)

8.8 Ribbon Saving

Ribbon save = maximum utilisation of transfer ribbon

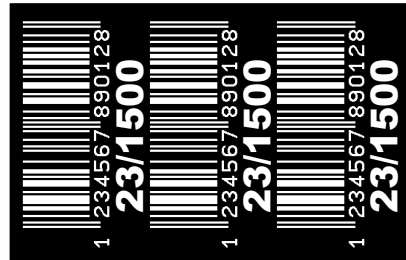
Label



Transfer ribbon w/o ribbon saving



Transfer ribbon with ribbon saving



Procedure

In principle the ribbon save is achieved by the way that the transfer ribbon in phases in those no printing is effected stopped or decelerated. If sufficient time is available, the transfer ribbon which was not used for printing can be retracted to print on it afterwards. The possibilities of ribbon save and in this way of the print quality are to be connected with the available time which is needed for decelerating and accelerating of transfer ribbon.

The above example clearly illustrates that the transfer ribbon consumption is much lower when using the ribbon save mode 'Standard'.

In the ribbon save mode 'Off', the printhead is not moved up, i.e. no reduction of transfer ribbon is effected.

8.9 Network

IP adress	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.
Netmask	In connection with the IP address of the printer, the netmask determines which IP addresses this device searches in the own network.
Standard gateway	The IP address of the network gateway. If the IP address was referred to by DHCP then DHCP is indicated in brackets.
DHCP	DHCP permits 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.
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.
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.
Net Status Info (password protected)	NoLink: Network cable not plugged in. LinkOnly: Network cable plugged in; IP configuration incorrect. FixIP: Network is connected; IP works with a fixed IP. Search: Waiting for automatic IP assignment. AutoIP: Network is connected; no DHCP server found; AutoIP is used. DHCP: Network is connected; DHCP was successfull.

Network Time Protocol**NTP Active:****On:** The NTP function is active**Off:** The NTP function is deactivated, i.e. no synchronisation takes place.**NTP Zone:**

Value is added to the GMT time of the NTP server.

NTP Serv IP Addr:

IP address of the -NTP server; not the server name.

(e.g. ptbtime1.ptb.de) but only the IP address, e.g. (192.53.103.108).

NTP Status:**Status:** 0 = Establishing connection

1 = Connected

2 = Error (e.g. server unavailable)

Counter: Counter until next update in seconds.**Interval:** Update interval in seconds (default 5 minutes or 300 seconds).**Example**

If the counter is set to 250 and the interval to 300, it will take 50 seconds until the next time synchronisation.

NTP Sync Now:

When performing this action, an immediate time synchronisation is performed. This function is used to test the functionality 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.

Server

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

Parameter Port9100**Spool:** Can accept the next connection even when the printers page management is still busy with the previous data. Enables the maximum throughput rate for single print orders.**Simple:** If problems occur with the spool setting.

8.10 Interface

8.10.1 COM1

COM1 mode	Off: serial interface Off On (mode 1): serial interface On On (mode 2): serial interface On; no error message appears in case of a transmission error
Baud rate	Indication of bits which are transferred per second (speed of data transfer). Value range: 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.
Parity	None: No parity Even: Even parity Odd: Odd parity
Data bits	Setting of data bits. Value range: 7 or 8 Bits.
Stop bits	Indication of stop bits between bytes. Value range: 1 or 2 stop bits.

8.10.2 General Parameters

SOH/ETB	SOH: Start of data transfer block → Hex format 01 ETB: End of data transfer block → Hex format 17 Two different start / en 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.
Data memory	Off: After starting a print order no more data is received. 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.
Port test	Check whether the data are transferred via the interface.

8.11 Emulation

Protocol

CVPL: Carl Valentin Programming Language

ZPL: Zebra® Programming Language

Change between CVPL protocol and ZPL II® protocol.

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

Printhead resolution

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



NOTICE!

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

Drive mapping

The access to Zebra® drives

B: CF card

E: Flash drive

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

is rerouted to the corresponding Valentin drives

A: CF

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 printing system and be stored permanently.



NOTICE!

As the printing system build-in fonts in Zebra® printing systems are not available in Valentin printing systems, this can cause small differences in the text image.

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.

8.12 Date/Time

8.12.1 Daylight Saving Time (DST)

Daylight saving time

On: Printing system automatically adjust clock for daylight saving changes.

Off: Summertime is not automatically recognized and adjusted.

DST difference (HH:MM)

Indication of time difference in hours and minutes for summer/winter time changeover.

8.12.2 Start Daylight Saving Time

DST start (format)

Selection of format to enter the start of the daylight saving time (European format).

DD = day

WW = week

WD = weekday

MM = month

YY = year

NWD = only next day is taken into consideration

DST start date (week)

Selection of the week when the daylight saving time should begin.

DST start date (weekday)

Selection of weekday when the daylight saving time should begin.

DST start date (month)

Selection of month when the daylight saving time should begin.

DST start time (HH:MM)

Selection of time when the daylight saving time should begin.

8.12.3 End Daylight Saving Time

DST end (format)

Selection of format to enter the end of the daylight saving time. The example shows the standard settings (European format).

DST end date (week)

Selection of the week when the daylight saving time should end.

DST end date (weekday)

Selection of the weekday when the daylight saving time should end.

DST end date (month)

Selection of the month when the daylight saving time should end.

DST end time (HH:MM)

Selection of time when the daylight saving time should end.

8.12.4 General Parameters

Date (DD.MM.YY)

Indication of current date.

Time (HH:MM:SS)

Indication of current time.

8.13 Service Functions

8.13.1 Photocell Service

Transmission photocell level	Indication of current level at the transmission photocell. No adjustment possible.
Min transmission photocell level	Indication of the lower level at the transmission photocell. No adjustment possible. The value is determined during the procedure 'measure label'.
Max transmission photocell level	Indication of the upper level at the transmission photocell: No adjustment possible. The value is determined during the procedure 'measure label'.
Transmission photocell trigger level	This value defines the level at the limit between label and liner and should be approx. 1,0 V above the level. The value is determined during the 'measure label' procedure and can be readjusted manually, if necessary.
Transmission photocell PWM	Setting the contrast of transmission photocell. With particularly strong, opaque liners, the label recognition can be improved.
Reflexion photocell level	Indication of the current level at the reflexion photocell. No adjustment possible.
Min. reflexion photocell level	Indication of the lower level at the reflexion photocell. No adjustment possible. The value is determined during the procedure 'measure label'.
Max. Pegel Reflexion Lichtschanke	Indication of upper level at the reflexion photocell. No adjustment possible. The value is determined during the procedure 'measure label'.
Reflexion photocell trigger level	This value defines the level at the limit between mark and liner and should be approx. 1,0 V above the minimum level. The value is determined during the 'measure label' procedure and can be readjusted manually, if necessary.
Reflexion photocell PWM	Setting the contrast of reflexion photocell. With problematic marks (color), the label recognition can be improved.

Ribbon sensor status Indication of current transfer ribbon photocell status. The function of transfer ribbon photocell can be examined (manual rotation of ribbon unwinder). No adjustment possible.

8.13.2 Device Status

Paper counter printhead Indication of printhead performance in meters.

Paper counter printing system Indication of printing system performance in meters.

Heater resistance To achieve a high print quality, the indicated Ohm value must be set after replacing the printhead.

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 display of printing system.

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. The respective state is indicated in the display.

Standard: Off

Online: Data can be received by interface.

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.

8.13.3 Print Optimization

Zero Y adjustment

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 X adjustment

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.

Print length correction

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.

Printhead sensor

The printing system (printer-dependent) recognizes automatically whether the printhead is attached correctly. No adjustment possible.

Motor acceleration

This function is often required when using high print speeds, since this prevents the tearing of transfer ribbon.

The higher the value is set, the more slowly is the feed motor accelerated.

Motor brake delay

This function is often required when using high print speeds, since this prevents the tearing of transfer ribbon.

The smaller the value is set, the faster the feed motor is braked

8.13.4 Ribbon Service

Length and ink side

Selection of the used transfer ribbon length.

Selection of the coating side of transfer ribbon, either outside or inside.

Default: Coating outside

Prewarning

Ribbon prior warning: Before the end of transfer ribbon, a signal is send by the control output.

Ribbon prior 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 prior 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'.

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

Current diameters

Roll diameter: Indication how much transfer ribbon is still on the transfer ribbon roll. For a correct display some labels must be reprinted.

Time left: Indication during a current print order, how long it can be printed with the existing transfer ribbon.

8.13.5 I/O Status

Relevant results are counted and registered in RAM memory. The protocols get lost after switching off the device.

PrtStrtIntsReal = Real Interrupts

The start input impulses are counted directly at the interrupt.

PrtStrtIntsDebounced = 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.

PrtStrtIntsNoPrint = 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.

I/O status input

Indication of input signal level

0 = Low

1 = High

Port	Function
1	= Print start
2	= Reprint label
3	= Reset counter
4	= Applicator continue apply
5	= Reset error
6	= Delete print jobs
7	= No function
8	= External print release (default: disabled)

I/O status output

Indication of output signal level

0 = Low

1 = High

Port	Function
9	= Error
10	= Print order active
11	= Label available at dispenser photocell – with dispenser photocell
12	= Printing
13	= Ready
14	= Applicator ready for apply
15	= Warning scanner no read
16	= Ribbon end prior warning

8.13.6 General Parameters

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.

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 or USB stick). 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 printing system parameters in human readable form.

TaskStatus.txt: Status of all printing system 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 „---“.

8.14 Password

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

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

8.14.1 Operation

Password	Entering a 4-digit numeric password.
Protection configuration	Settings of printing system can be changed (contrast, speed, operating mode, ...). The password protection prevents modifications at the settings.
Protection favorites	The password protection prevents the access to the favorites.
Protection memory card	With the functions of the memory card, labels can be stored, loaded, etc. The password protection has to decide if no access or only readable access on CF card is allowed. No protection: No password protection Userview only: Only reading access Protected: Access blocked
Protection Printing	In case the printing system is connected to a PC, it can be useful, that the user is not able to produce a print manually. So the password protection prevents that prints can be produced manually. In order to execute a blocked function, first of all the valid password has to be entered. If the correct password is entered then the desired function can be executed.

8.14.2 Network

Password	Entering a 15-digit password. The password can consists of alphanumeric and special characters.
Protection HTTP	The communication by HTTP can be avoided.
Protection Telnet	The settings of the Telnet service cannot be changed.
Protection remote access	The password protection prevents the remote control of the printing system. In order to execute a blocked function, first of all the valid password has to be entered. If the correct password is entered then the desired function can be executed.

8.15 Maintenance (depending on printing system)

8.15.1 Print Preview

Preview available	With activated print preview a picture of the currently printed layout is shown on the display. If the function is not activated, the field remains empty.
Zoom	Selection of a certain zoom value for the representation of print preview. Label: The complete layout is fit to the indication zone. Fields: Only the print range is fit to the indication zone. 1 .. 8: Manual zoom factor to scale the complete layout down.
Preview rotated	The display of label preview can be rotated on the touch-screen display. On: The label preview is shown rotated by 180° on the display. Off: The label preview is represented in read direction.
Preview interval	During a running print order the preview is refreshed in the set interval.
Show process data	With activated print preview, the currently printed layout is shown on the display. Wipe to the right to change to the process data view. In order to show the process data, the parameter must be activated before in the menu <i>Maintenance/Print preview</i>.

8.15.2 LCD

Backlight	Setting of contrast of background lighting.
LCD orientation	Landscape 180°: The display is represented turned by 180 degrees to the function 'Landscape'. Landscape: The display is represented turned by 90 degrees to the reading direction. Portrait: The display is represented in reading direction. Portrait 180°: The display is represented turned by 180 degrees.

8.15.3 System Settings

**NOTICE!**

All settings and modifications in system settings require the respective password.

The following system settings can be made:

- Printing system type
- Reset paper counter printhead
- Reset paper counter printing system
- Set default settings
- OEM client ID
- Customized info field

8.16 Memory Card Menu

Load: The selected layout is loaded. After the number of copies have been entered, the print order is started.

Administrative tools: Switching to the file manager (File Explorer).

File explorer

The file explorer is the management system of the printing system. The main functions for the memory menu surface is provided in the file explorer.

The following functions can be selected:

- Load file
- Change drive/directory
- Save current label
- Create new folder
- Save current configuration
- Format memory card
- Create user directory

Context menu

By long pressing (> 3 s) on a folder, the context menu is opened. The selected folder can be deleted or selected as **User directory** (key: set).

By long pressing (> 3 s) on a file, the context menu to **Delete**, **Rename** or **Load** is opened.

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 chapter 9.1, page 88).	As necessary.
Clean the transfer ribbon drawing roller (see section 9.2, page 88).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the pressure roller (see chapter 9.3, page 88).	Each time the label roll is changed or when the printout and label transport are adversely affected.
Clean the printhead (see chapter 9.4, page 90).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the label photocell (see chapter 9.5, page 91).	When replacing the label roll.
Replace printhead (see chapter 9.6, page 92).	When errors in the printout occur.



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 print roll can lead to reduced print quality and can affect transport of material.

1. Open the cover of printing system.
2. Remove the transfer ribbon from the printing system.
3. Remove deposits with roller cleaner and a soft cloth.
4. If the roller appears damaged, replace it.
5. Reload the transfer ribbon.
6. Close the cover of the printing system.

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.

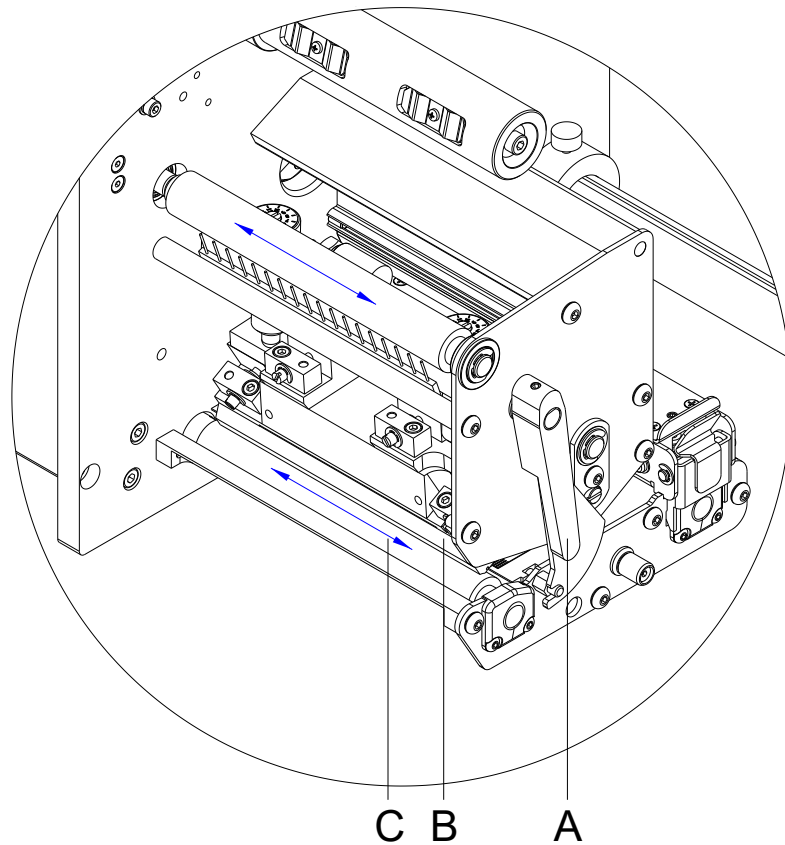


Figure 25

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

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.

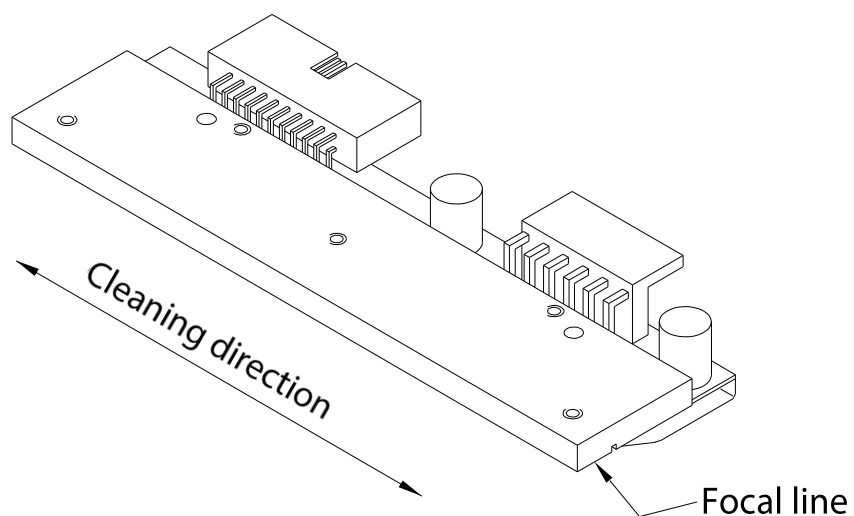


Figure 26

1. Open the cover of printing system.
2. Turn the lever (A, Figure 25) counter clockwise to lift up the printhead.
3. Remove labels and transfer ribbon from the printing system.
4. Clean the printhead surface with a special cleaning pen or a cotton swab dipped in pure alcohol.
5. Before using the printing system, let the printhead dry for about two to three minutes.
6. Reload labels and transfer ribbon.
7. To move the printhead down, turn the lever (A, Figure 25) in clockwise direction until it locks.
8. Close the cover of the printing system.

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 the label detection.

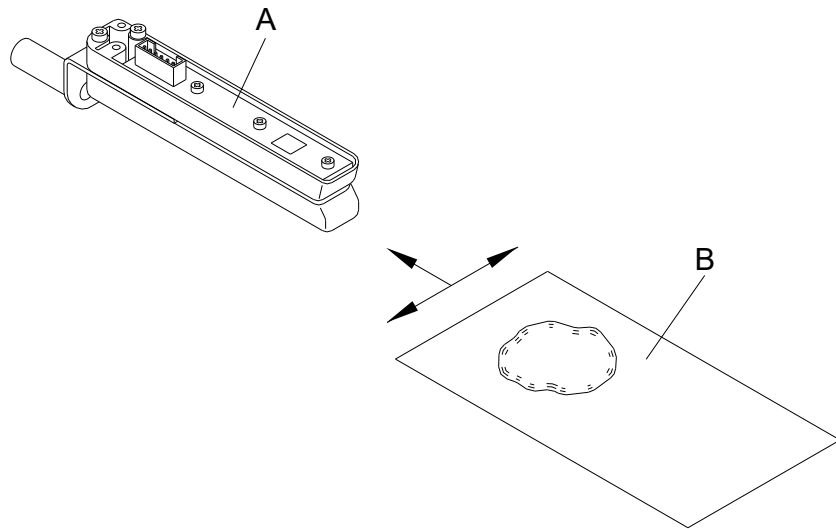


Figure 27

1. Open the cover of printing system.
2. Turn the lever counter clockwise to lift up the printhead.
3. Remove labels and transfer ribbon from the printing system.
4. Blow out the photocell (A) with pressure gas spray. Observe strictly the instructions on the spray can!
5. 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).
6. Reload labels and transfer ribbon (see chapter 6 Flat Type – Load Media, page 41 or chapter 7 Corner Type – Load Media, page 47).
7. To move the printhead down, turn the lever in clockwise direction until it locks.
8. Close the cover of the printing system.

9.6 Replace the Printhead (General)



NOTICE!

The printhead (D) is preinstalled on a head plate (A) and aligned at the factory.

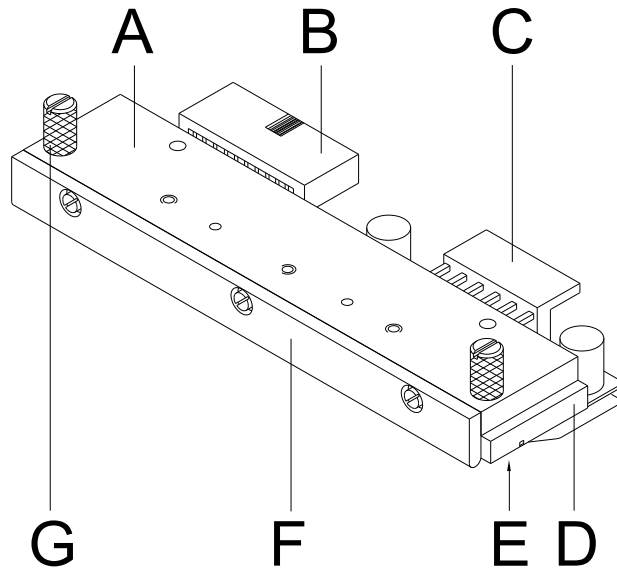


Figure 28

- A Head plate
- B Plug connection signal
- C Plug connection tension
- D Printhead
- E Focal line
- F Guiding
- G Knurled 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 the contacts on the plug connections (B, C).
- ⇒ Do not touch the printhead (D) with hard objects or your hands.

9.7 Replace the Printhead (Flat Type)

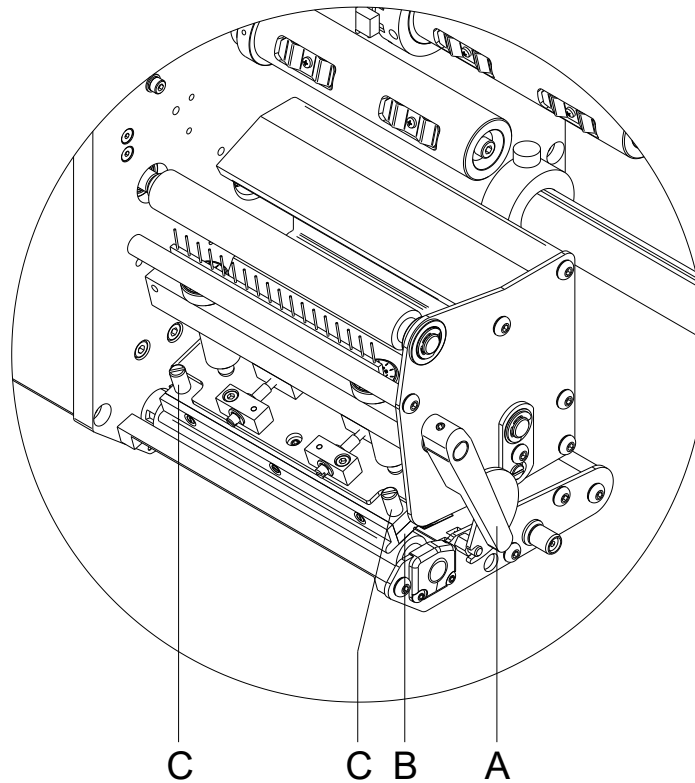


Figure 29

Remove the printhead

1. Remove labels and transfer ribbon from the printing system.
2. When the printhead is closed, loosen the screws (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 loosen the screws (C).
5. Remove the printhead 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 pin is secured in the corresponding hole 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. Tighten again the screws (C).
5. Reload labels and transfer ribbon (see chapter 6 Flat Type – Load Media, page 41).
6. To move the printhead (B) down, turn the lever (A) 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 *Service functions/heater resistance*.

9.8 Adjust the Printhead (Flat Type)

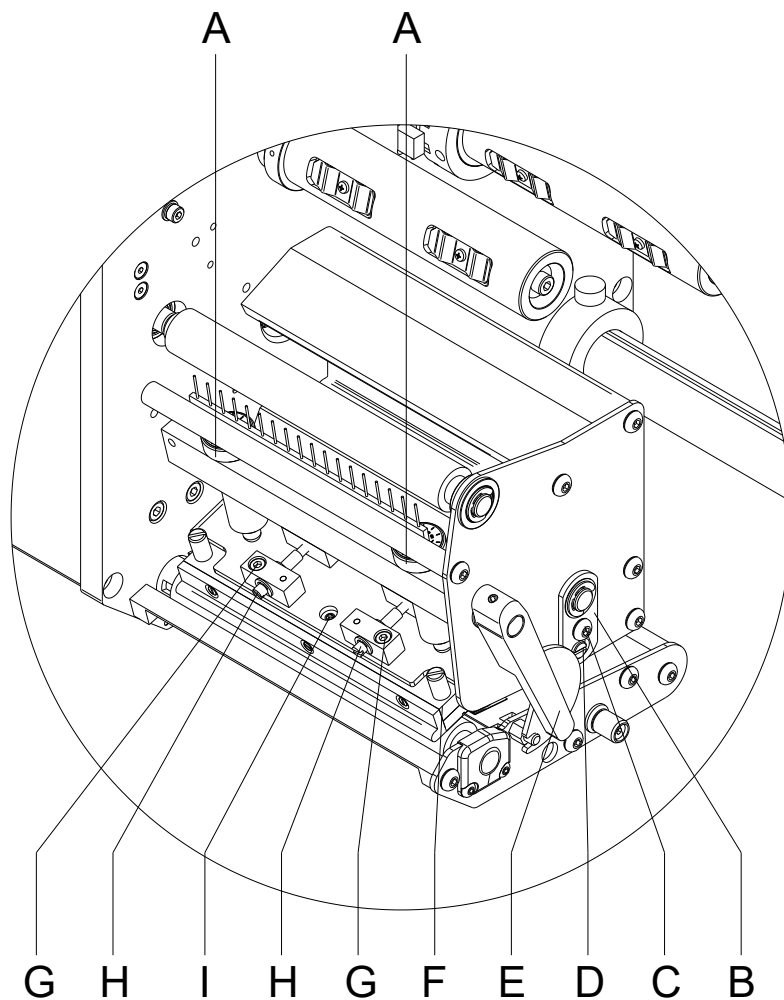
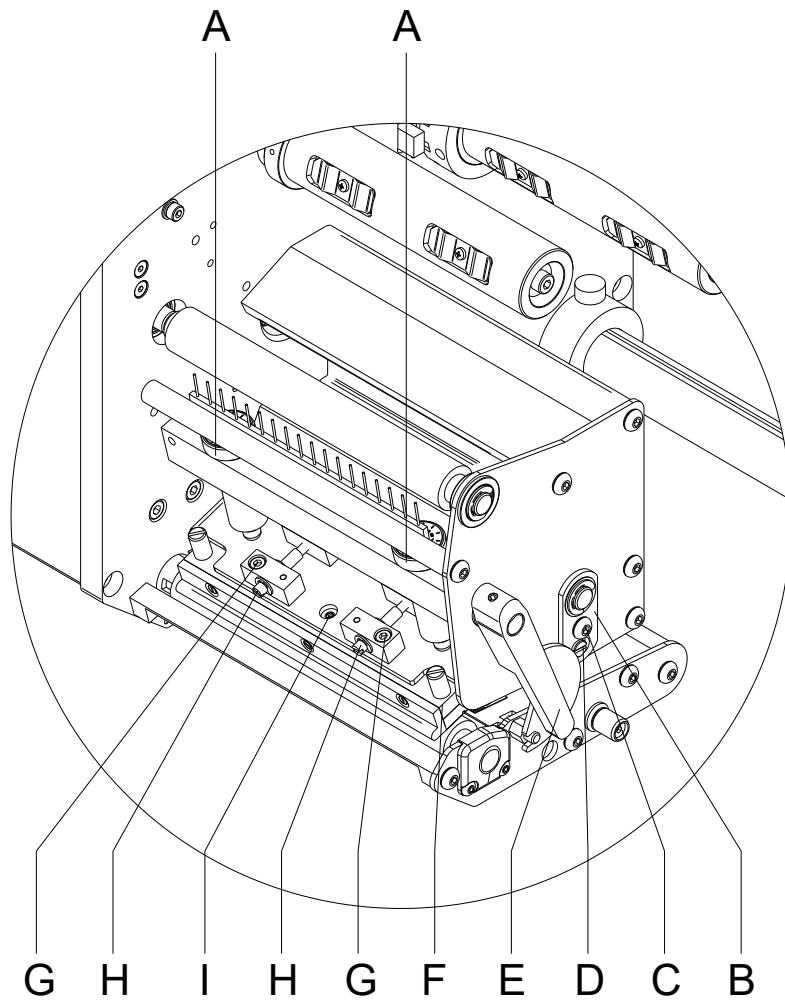


Figure 30

Parallelism

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

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

**Figure 31****Pressure balance
right/left**

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

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

Pressure

Increasing the head contact pressure 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 optimise the life cycle of printhead.

1. Turn the pressure screws (A, Figure 31) to change the pressure of printhead.
2. Turning the pressure screws (A, Figure 31) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory setting.
3. Turning the pressure screws (A, Figure 31) from the limit stop counter clockwise to the corresponding scale value (see table) result in the factory settings.

Printhead	Scale value
SPE II 106, 108, 162	6
SPE II 107, 160	12

**NOTICE!**

It is important 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.

9.9 Replace the Printhead (Corner Type)

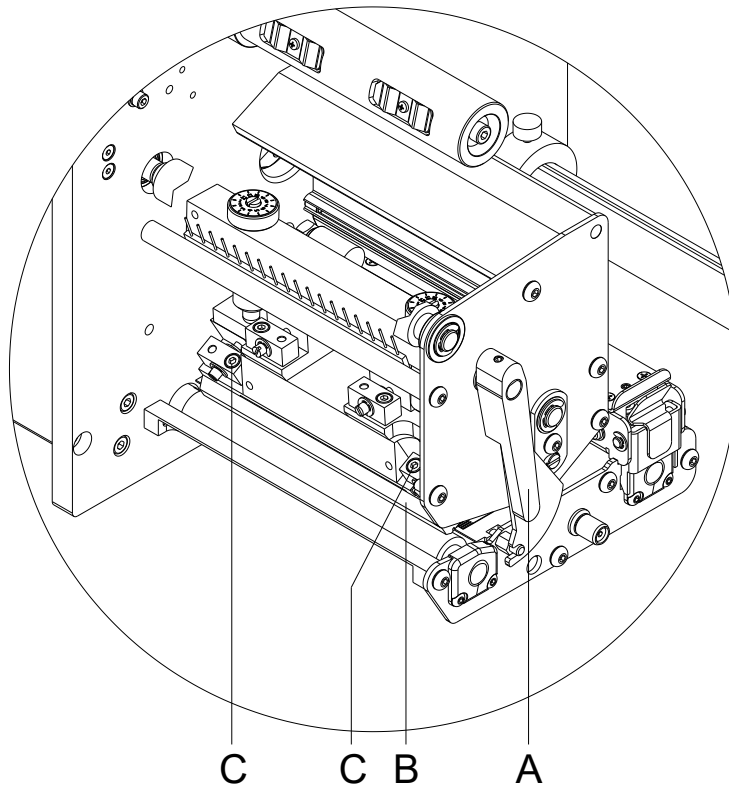


Figure 32

Remove the printhead

1. Remove labels and transfer ribbon from the printing system.
2. When the printhead is closed, loosen the hex (Allen) screws (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 loosen the hex (Allen) screws (C).
5. Remove the printhead carefully to the front until you can reach the plug connections.
6. Remove the plug connections and then remove printhead (B).

Install the printhead

1. Attach the plug connections.
2. Position the printhead in the printhead mounting bracket in such a way that the pin is secured in the corresponding hole 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. Tighten again the screws (C).
5. Reload labels and transfer ribbon (see chapter 7 Corner Type – Load Media, page 47).
6. To move the printhead (B) down, turn the lever (A) 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 *Service functions/heater resistance*.

9.10 Adjust the Printhead (Corner Type)

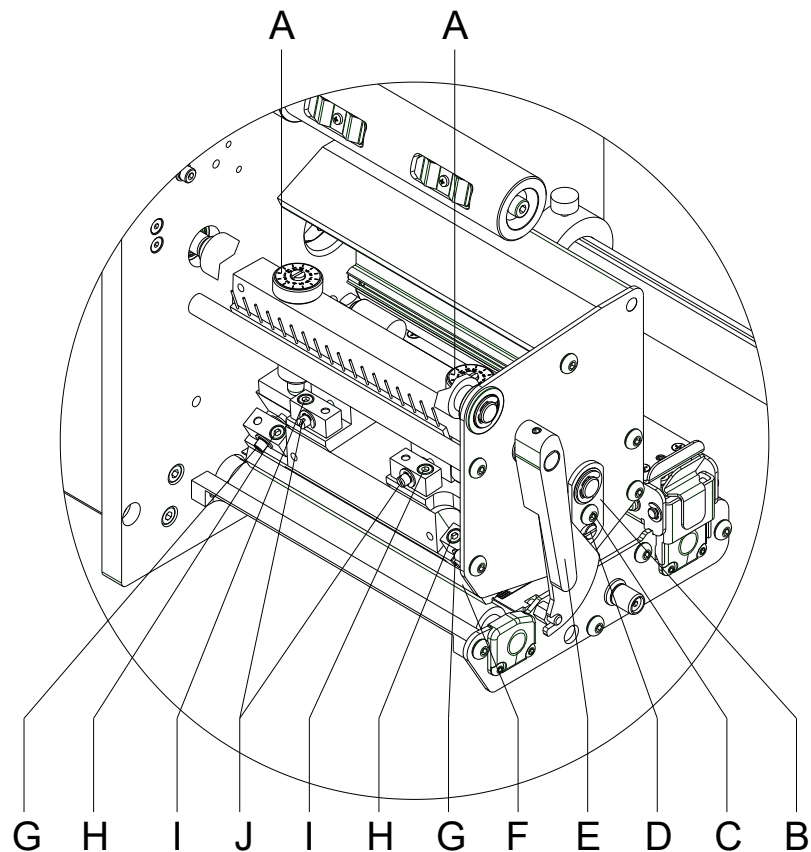


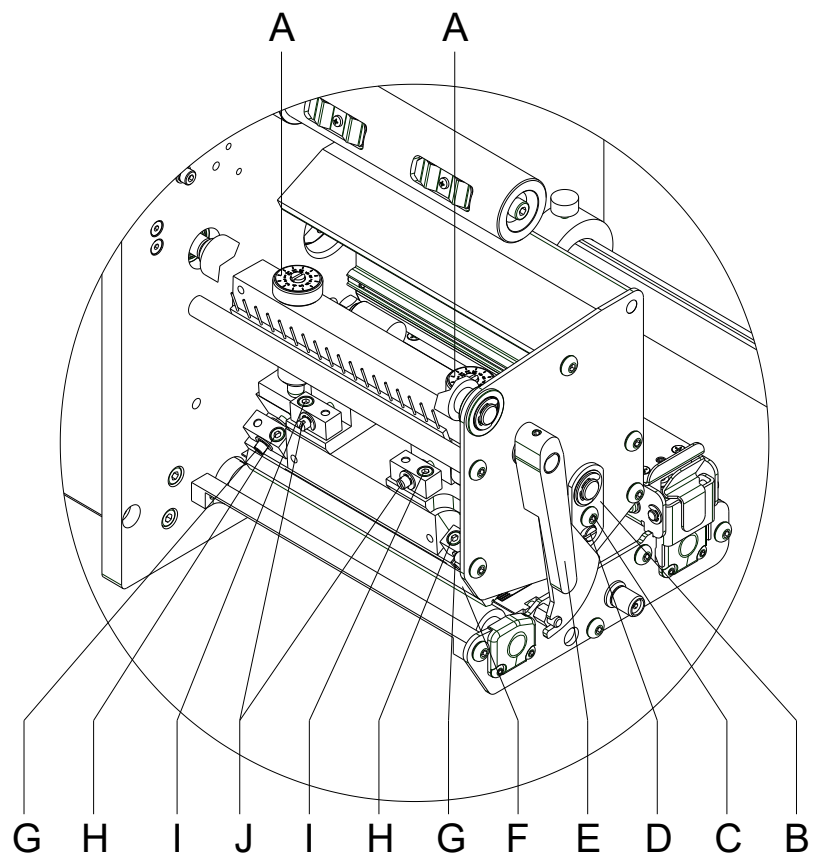
Figure 33

Parallelism

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

The form of the CornerType printhead needs the setting of parallelism in direction of the adjusting angle and in horizontal position. It needs a little bit of experience to know in which direction you have to adjust the printhead to receive a high quality printing.

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

**Figure 34****Pressure balance
right/left**

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

1. Loosen the screw (C) by approx. $\frac{1}{4}$ rotations.
2. In order to achieve a pressure balance, turn the excentric bolt (D) as long as the printing result comes up to your full expectation.
3. Tighten again the screw (C).
4. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure

Increasing the head contact pressure 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 optimise the life cycle of printhead.

1. Turn the pressure screws (A, Figure 34) to change the pressure of printhead.
2. Turning the pressure screws (A, Figure 34) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory setting.
3. Turning the pressure screws (A, Figure 34) exactly one rotation from the right stop position counter clockwise results in the factory settings.

**NOTICE!**

It is important 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 up 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 up completely or partly over the bottom edge of label.	Move line up (reduce X value). Check rotation and font.
3 Character set	One res. several characters of the text is res. 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 (front printhead). Defect at the transfer ribbon photocell (front 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 CF interface	Interrupted connection CPU - CF card. Defective CF card interface.	Check connection CPU - CF card interface. Check CF card interface.
34 No print memory	Not enough print memory available.	Check CF 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	CF card not found / not correctly inserted.	Insert CF card correctly.
42 Drive error	Impossible to read CF card (faulty).	Check CF card, if necessary change it.

Error message	Cause	Remedy
43 Unformatted	CF Card not formatted.	Format CF 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 CF 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 CF capacity is reached.	Use new CF 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 CF interface	No CF card drive found.	Check connection of CF card drive. Contact your distributor
60 No media	No CF card is inserted.	Insert CF 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 replace (if necessary). Reduce print speed.
70 Scanner data	Scanned data does not correspond to the data which is to print.	Replace 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 CF	No CF card found.	If option hotstart was activated, a CF 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 also 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 CF 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 (rear printhead). Defect at the transfer ribbon photocell (rear 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	The 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.

Error message	Cause	Remedy
127 Module not found	RFID module not available.	Check the RFID module connection. Please contact your responsible distributor.
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.

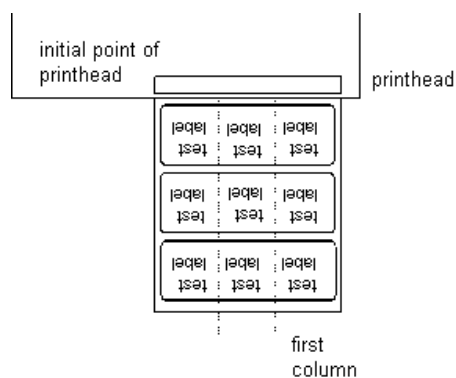
Error message	Cause	Remedy
142 No print mechanics	No print mechanics connected.	Check connection (print mechanics – control unit)
143 Printhead sensor	No signal change at the printhead photocell.	Check printhead photocell for proper functioning.
144 FreeType error	Problem with generating TrueType text.	Check print data.
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 label is always the one with the largest x coordinate, i.e. it has the largest distance to the printhead.



11.2 Hotstart



NOTICE!

The data is saved onto CF card. Therefore the CF 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 to be continued after switching on the printing system anew.



NOTICE!

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

However the following conditions have to be fulfilled:

- CF card inserted in drive A.
- Enough free storage space onto CF card.

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

Save print order state

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

However the following conditions have to be fulfilled:

- CF card inserted in drive A.
- Enough free storage space onto CF card.

Load label and print order state

When restarting the label 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 CF card. Because of this reason, when switching on the printing system a CF card has to 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 by means of 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 by means of the update intervals.

**NOTICE!**

Make sure that in case graphics are onto the label they have to be saved onto CF card.

11.3 Backfeed/Delay

Backfeed modes

In continuous dispenser mode (IO dynamic 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

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

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

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 of the fact that 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.

Optimized backfeed

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



NOTICE!

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

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.

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.

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 transmission photocells inverse, the printing system must measure a difference of 2.5 V and for reflexion photocells inverse 1 V between translucent and opaque material. Otherwise the printing system does not recognize a difference between label and gap (bar).

11.5 Ultrasonic photocell (option)

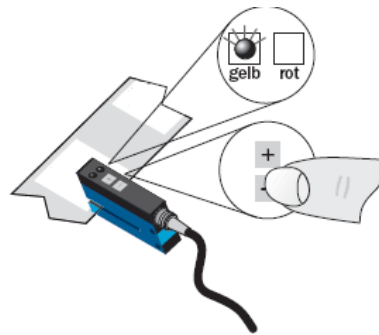


NOTICE!

The ultrasonic photocell must be adjusted on the currently used label material.

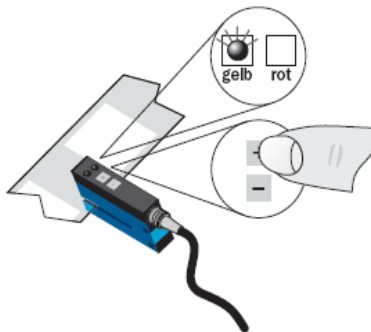
This photocell type is particularly suitable for the use of transparent labels on transparent backing paper.

Adjustment of photocell

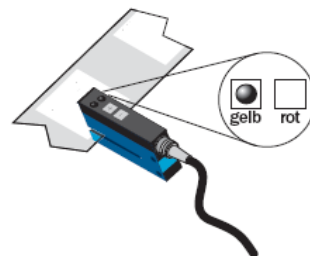


Adjustment of switching point in 'light-switching' mode:
The switching output Q is active if the backing paper is detected between the labels (gap detection).

Position the label between the active surface of the fork sensor (see arrow on sensor). With key **-** and/or **+** adjust until the switching output indicator is off.



Position the backing paper in the active area of the fork sensor. The switching output indicator (yellow) must light up again. Otherwise increase the sensitivity with **+** until the switching threshold is correctly adjusted.



If necessary, adjust the switching point slightly in the other direction.

Sensitivity setting

Slow setting:
Press key  and/or  once.
The red LED lights with each key press.

Fast setting:
Press key  and/or  permanently.
The red LED flashes after 2 seconds.

Light (L) / dark (D) switching

Press key  and  simultaneously for 6 seconds.
The yellow LED changes status and the red LED flashes slowly.
Release keys  and .

Locking the keys

Press keys  and  simultaneously for 3 seconds to enable/disable the key lock.

Locking the keys:
The red LED goes off after 3 seconds.
Release keys  and  and the red LED lights permanently.

Unlocking the keys:
The red LED lights after 3 seconds.
Release keys  and  and the red LED goes off.

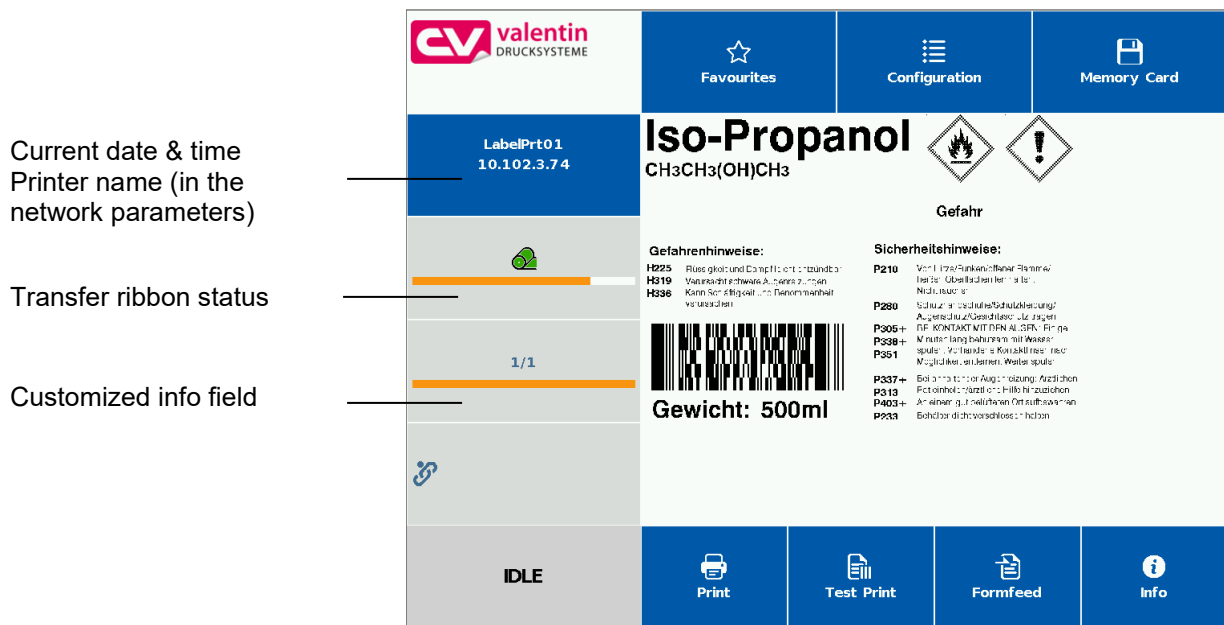
12 Touch Screen Display

12.1 Touch Screen Display Structure

The touch-screen display shows an intuitive graphic user interface with well-defined symbols and buttons.

The touch-screen display informs about the current device status and status of the print order, alerts in case of an error and indicates the device settings in the menu.

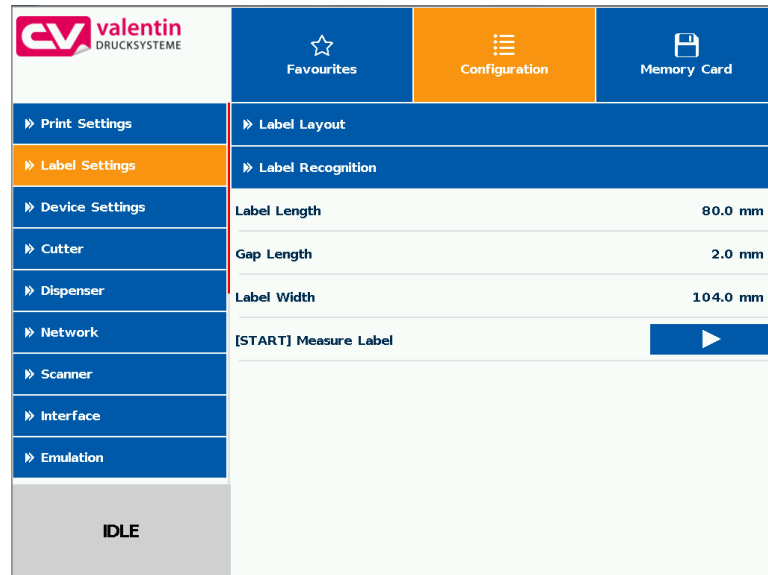
The desired settings are made by selecting the buttons on the touch-screen display.



Favorites	Display favorites list
Configuration	Select parameter settings
Memory Card	Access to memory card menu
Print	Start print job
Test print	Start test print
Formfeed	Start layout feed
Info	List of the installed components

12.2 Indication of Menus

Indication of main menus

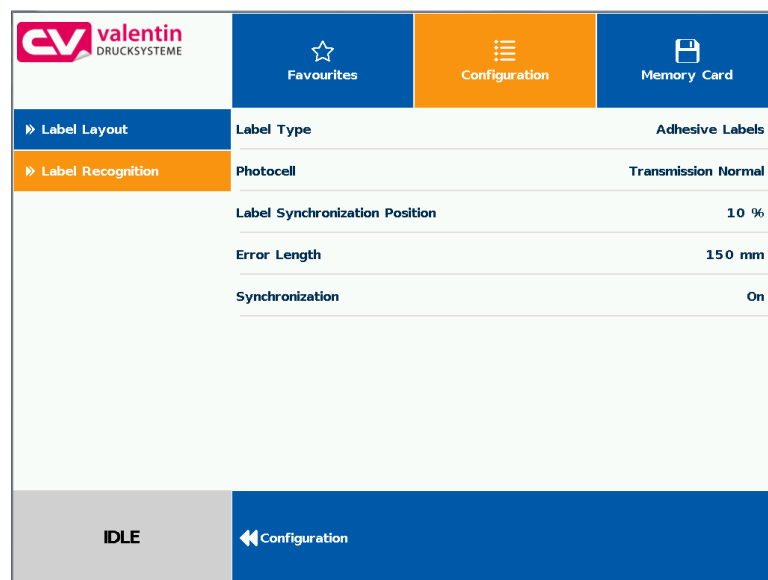


The selected (active) menu is highlighted on orange background.

If a selected menu contains so-called submenus, these are blue highlighted.

Indication of submenus

Different parameters are combined in a submenu.

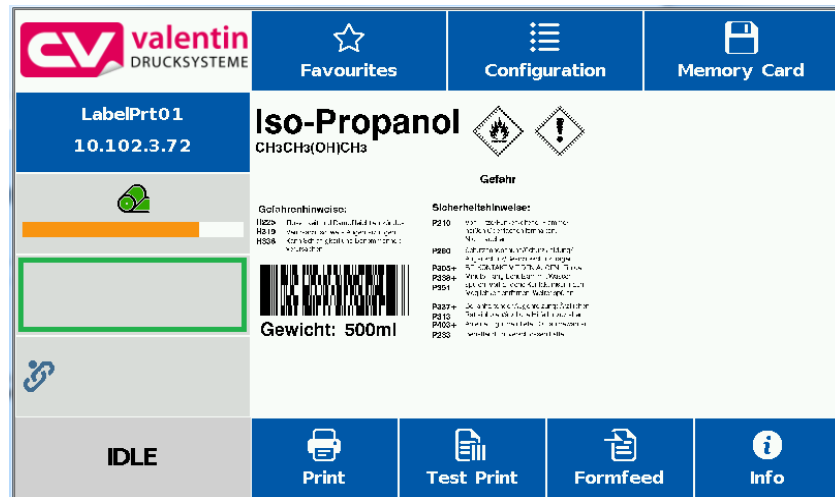


The left display side shows the available submenus. The currently selected (active) submenu is highlighted on orange background.

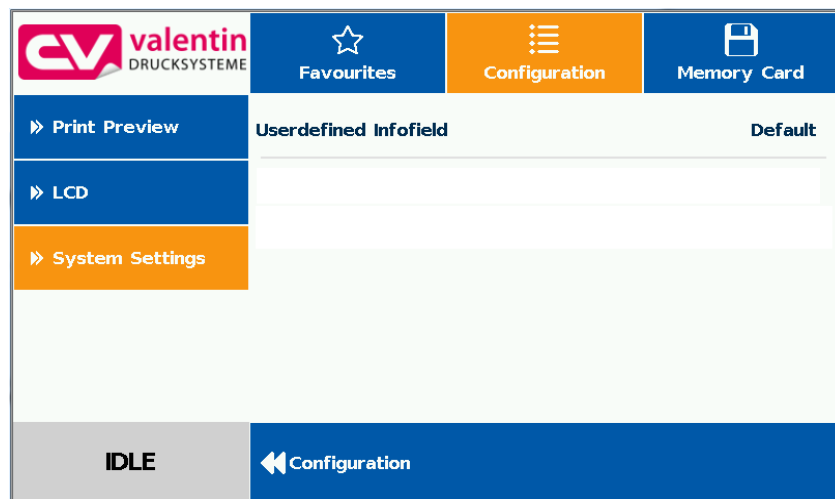
Press  to return one level.

12.3 User-Defined Info Field

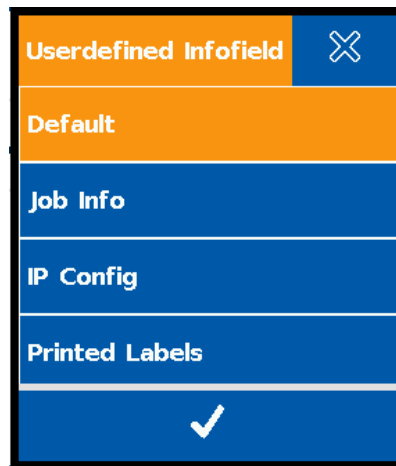
From the predefined contents, the user can define the display of the user-defined info field (green).



Select the menu *Maintenance/System settings/User-defined info field* to specify what is to be displayed in the user-defined info field.



Selection of parameters



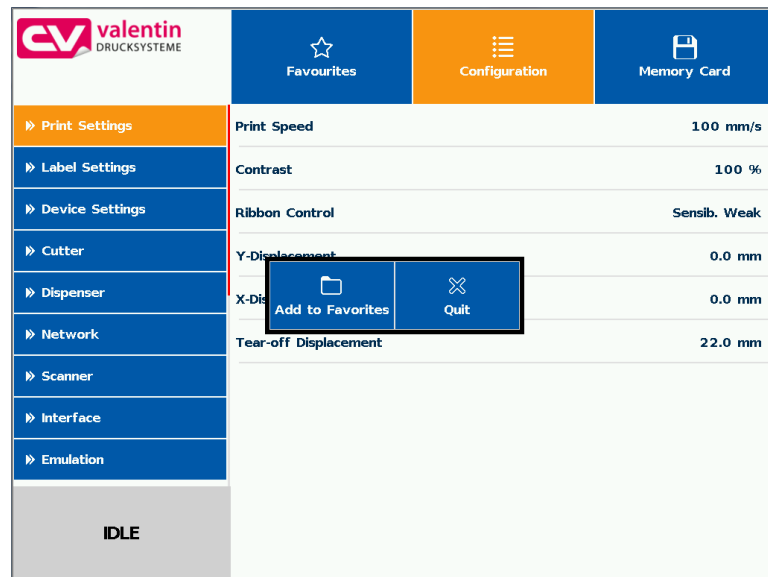
Standard:	Horizontale display orientation: Empty info field Vertical display orientation: Indication of job info (label name and number of printed labels)
Job info:	Indication of label names and the number of already printed
IP configuration:	Indication of IP address and MAC address of printing system
Printed labels:	Indication of printed labels as enlarged text output

Display of predefined configuration



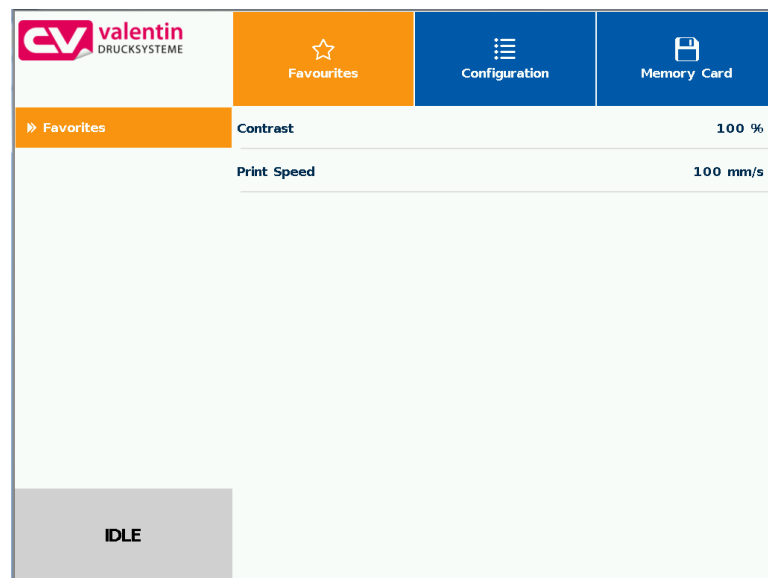
12.4 Favorites List

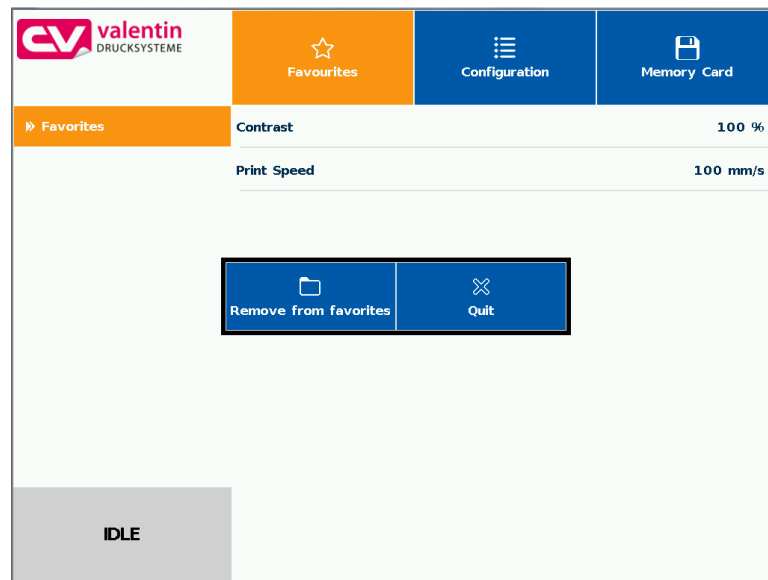
Add parameters to favorites



Press long (2 s) on a parameter (e.g. print speed) to display the appropriate selection.

Press *Add to favorites* to add the selected parameter to the favorites list.



**Remove parameters
from favorites**

Press long (2 s) on a parameter (e.g. print speed) to display the appropriate selection. Press *Remove from favorites* to remove the selected parameter from the favorites list.

12.5 Parameter Input

Parameter input

		 Favourites	 Configuration	 Memory Card
» Print Settings	Print Speed	100 mm/s		
» Label Settings	Contrast	100 %		
» Device Settings	Ribbon Control	Sensib. Weak		
» Cutter	Y-Displacement	0.0 mm		
» Dispenser	X-Displacement	0.0 mm		
» Network	Tear-off Displacement	22.0 mm		
» Scanner				
» Interface				
» Emulation				
IDLE				

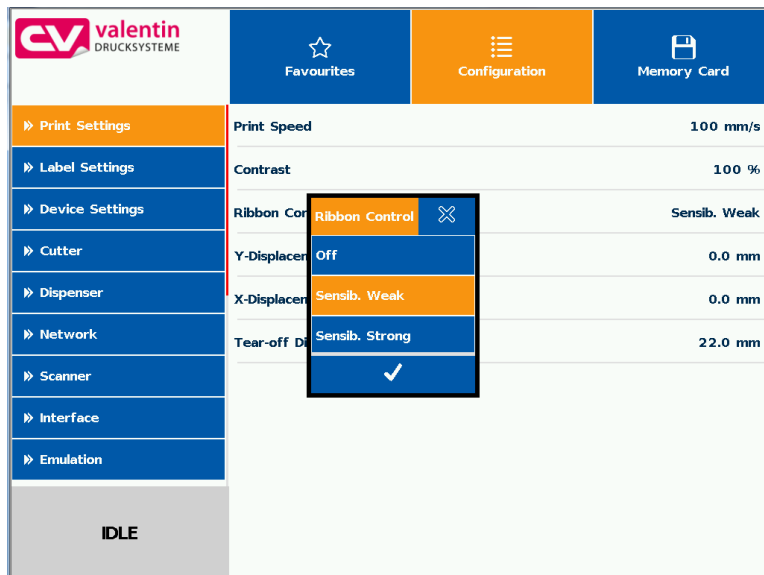
Numeric input

		 Favourites	 Configuration	 Memory Card
» Print Settings	Print Speed	100 mm/s		
» Label Settings	Print Speed [50...250 mm/s]	100 %		
» Device Settings		Sensib. Weak		
» Cutter		0.0 mm		
» Dispenser		0.0 mm		
» Network		22.0 mm		
» Scanner				
» Interface				
» Emulation				
IDLE				

Print Speed [50...250 mm/s] 			
1	2	3	▲ +10
4	5	6	
7	8	9	150
	0	del	▼ -10
✓			

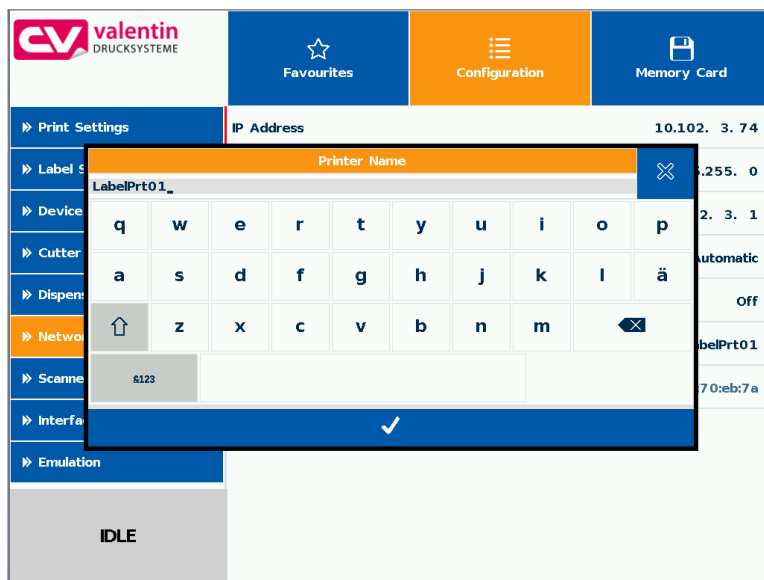
In the header of input dialog the name of the parameter and the permissible value range are shown. The input is checked for validity. If the entered value is not permissible, the button  is blocked.

Selection from list



Select the parameter for which you want to change the selection.
 The currently selected value is highlighted on orange background.
 Press  to confirm the selection.

Alphanumeric input



The alphanumeric input is shown in the header of input dialog.
 Press  to confirm the selection.

12.6 Navigation Zones

		 Favourites	 Configuration	 Memory Card
» Print Settings	Print Speed 100 mm/s			
» Label Settings	Contrast 100 %			
» Device Settings	Ribbon Control Sensib. Weak			
» Cutter	Y-Displacement 0.0 mm			
» Dispenser	X-Displacement 0.0 mm			
» Network	Tear-off Displacement 22.0 mm			
» Scanner				
» Interface				
» Emulation				
IDLE				

The respective navigation zone can be moved with an appropriate swipe movement from top to bottom or from the bottom up.



NOTE!

With the used resistive touch screen variant a certain pressure on the display is needed.
It is not possible to navigate on the display with the swipe movement to the left and right with a finger (well-known from smartphones).

The position indications signalise the detail of the total list currently visible. If no position indication is visible then the total list can be displayed on the display. A swipe movement from top to bottom and/or from the bottom up is not possible.

12.7 Maintenance Zone

Different settings for the display indication can be done.

Maintenance - Print preview

		 Favourite	 Configuration	 Memory Card
» Test Function	Preview Available		On	
» Print Preview	Zoom		Fields	
» LCD	Preview rotated		Off	
» Printer Info	Preview Interval		3	
IDLE		 Configuration		

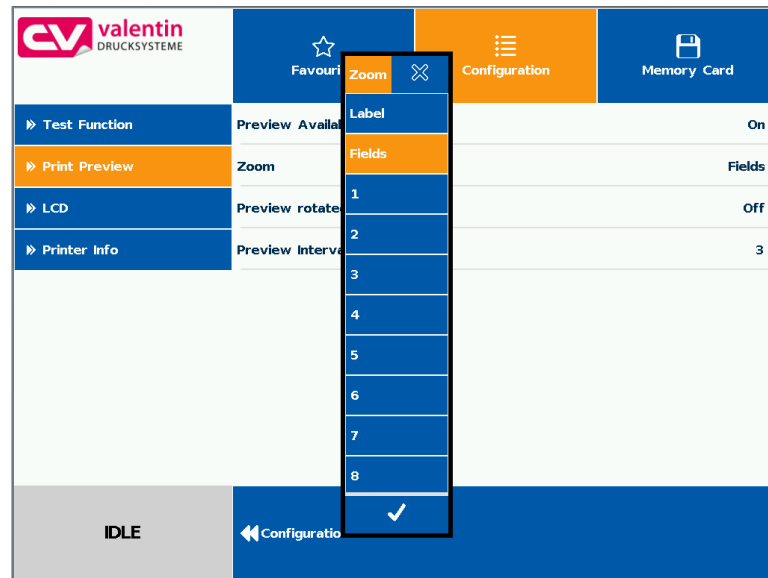
Print preview activated On/Off

With activated print preview a picture of the currently printed layout is shown on the display. If the function is not activated, the field remains empty.

		 Favourites	 Configuration	 Memory Card
LabelPrt01 10.102.3.7.4	  Iso-Propanol CH₃CH₃(OH)CH₃ Gefahr Gefahrenhinweise: H225 Flüssig und Dampf leicht entzündlich. H319 Verursacht schwere Augenreizung. H336 Kann Schläfrigkeit und Benommenheit verursachen. Sicherheitshinweise: P210 Von Hitze / Funken / offener Flamme fernhalten. Überhitzung vermeiden. P280 Schutzhandschuhe / Schutzkleidung / Augenschutz / Gesichtsschutz tragen. P306+P361+P353 Bei Kontakt mit der Haut: Für die Kontamination vermeiden. Bei Berührung mit der Haut: Mit Wasser waschen. Bei Berührung mit den Augen: Mit Wasser waschen. Bei Berührung mit der Kleidung: Die Kleidung ausziehen und mit Wasser waschen. Gewicht: 500ml			
				
1/1				
				
IDLE	 Print	 Test Print	 FormFeed	 Info

Print preview – Zoom

Selection of a certain zoom value for the representation of print preview.



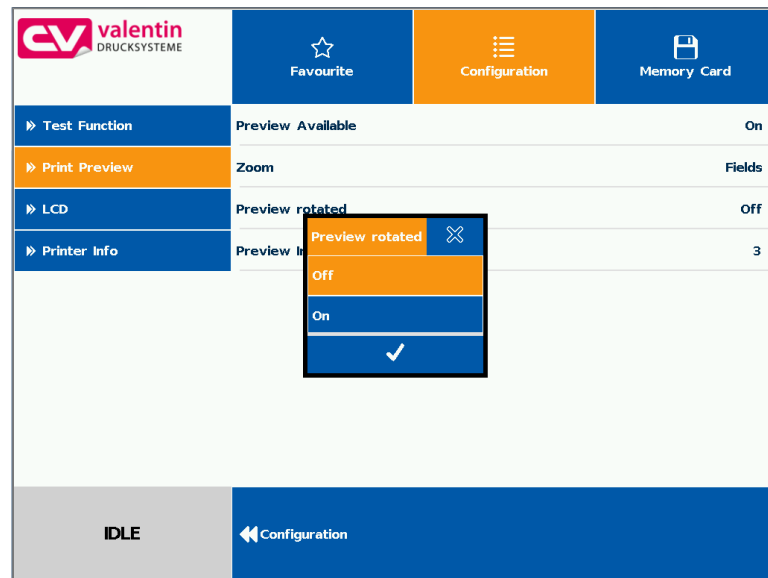
Label: The complete layout is fit to the indication zone.

Fields: Only the print range is fit to the indication zone.

1 .. 8: Manual zoom factor to scale the complete layout down.

Print preview – Preview rotated

The display of label preview can be rotated on the touch-screen display.



On: The label preview is shown rotated by 180° on the display.

Off: The label preview is represented in read direction.

Print preview – Interval

During a running print order the preview is refreshed in the set interval.

Preview Interval [2..10]			
1	2	3	▲ +1
4	5	6	3
7	8	9	▼ -1
	0	del	
✓			

Value range: 0 .. 10 seconds

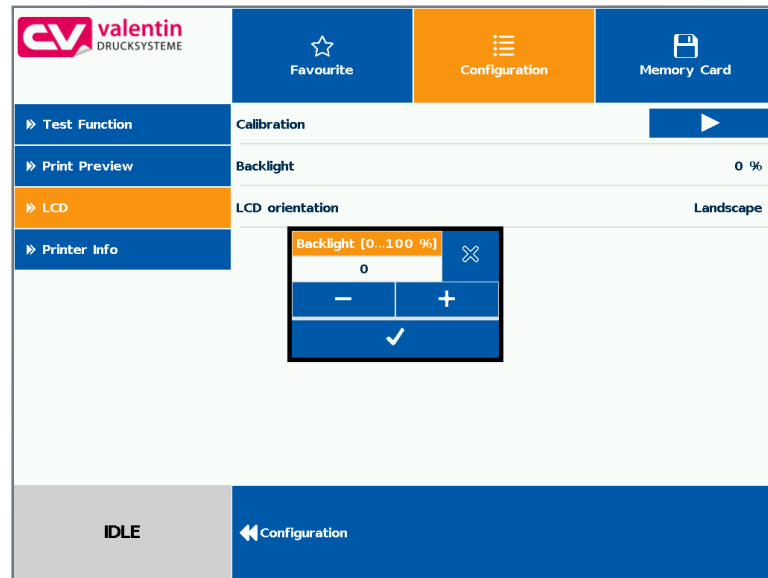
Maintenance - LCD

In the LCD maintenance sector, different parameters to the touch-screen display can be set.

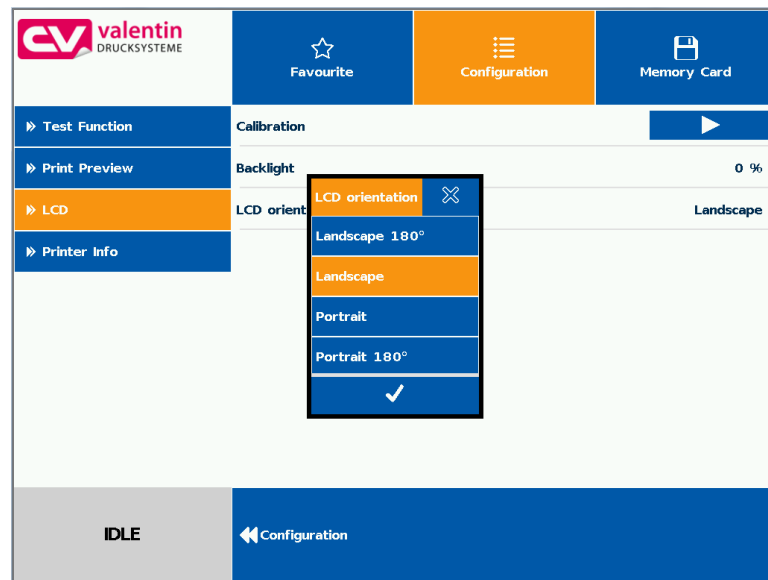
» Test Function	Calibration	▶
» Print Preview	Backlight	0 %
» LCD	LCD orientation	Landscape
» Printer Info		

LCD – Backlight

Setting the brightness of background lighting.



Value range: 0 .. 100 %.

LCD - Orientation

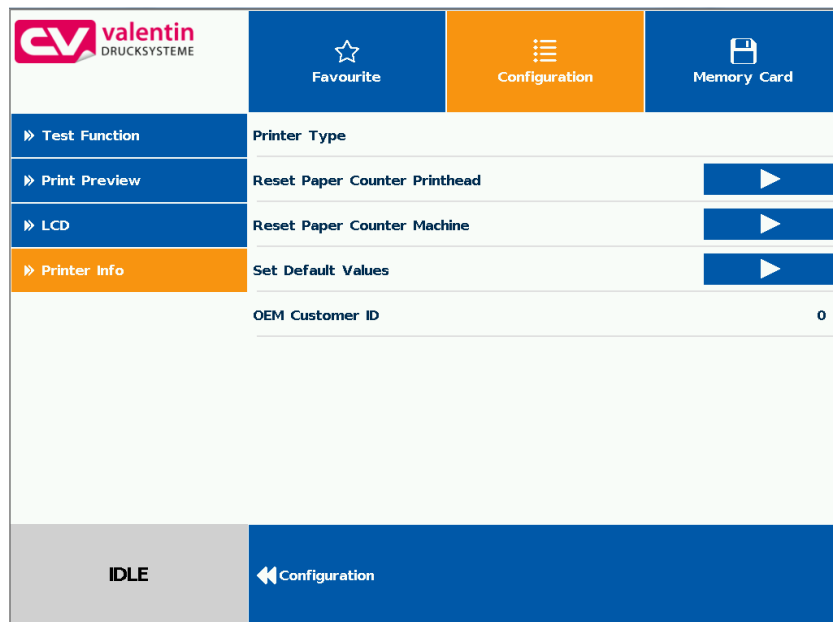
Landscape 180°: The display is represented turned by 180 degrees to the function 'Landscape'.

Landscape: The display is represented turned by 90 degrees to the reading direction.

Portrait: The display is represented in reading direction.

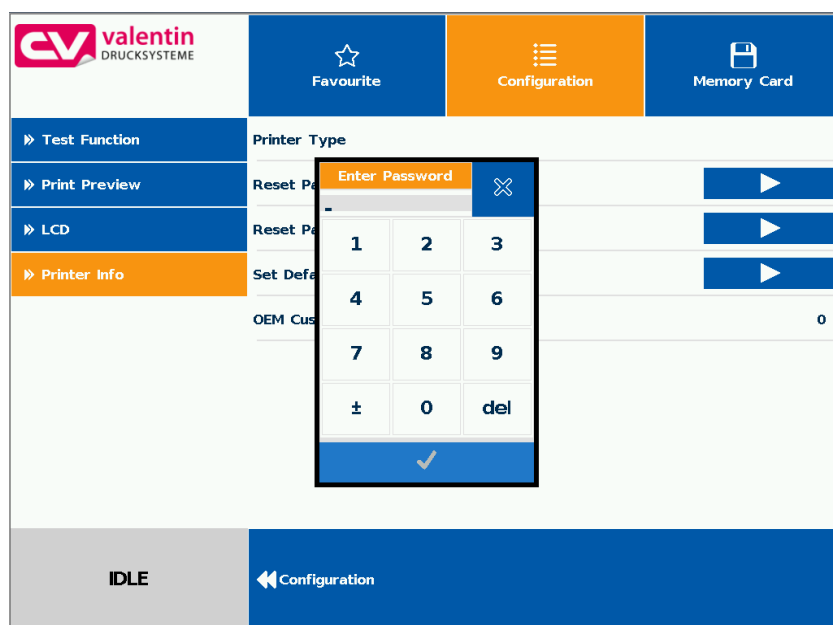
Portrait 180°: The display is represented turned by 180 degrees.

Maintenance - System settings



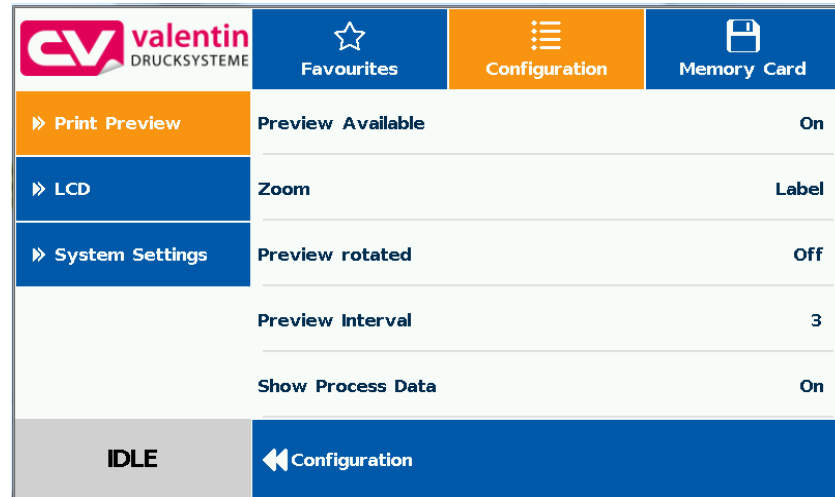
Different system settings such as set type of printing system, reset paper counter etc. can be made.

However, for the settings the corresponding password is necessary.



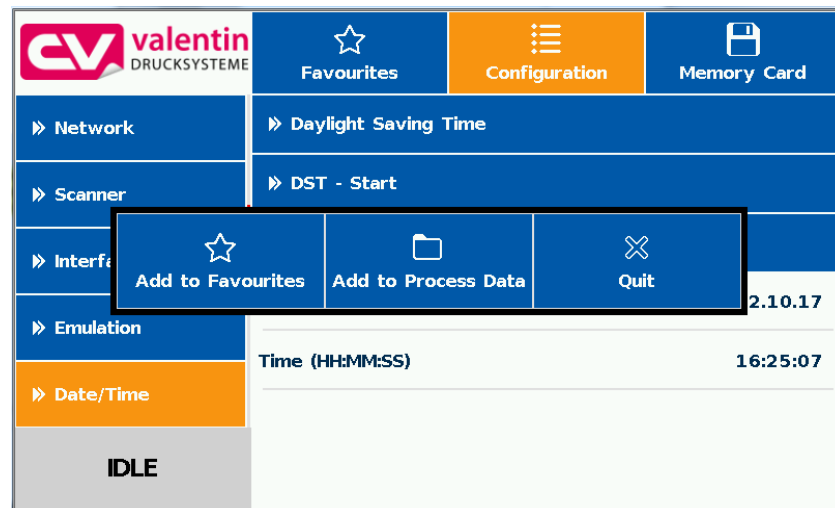
12.8 Process Data

Activation of display for process data



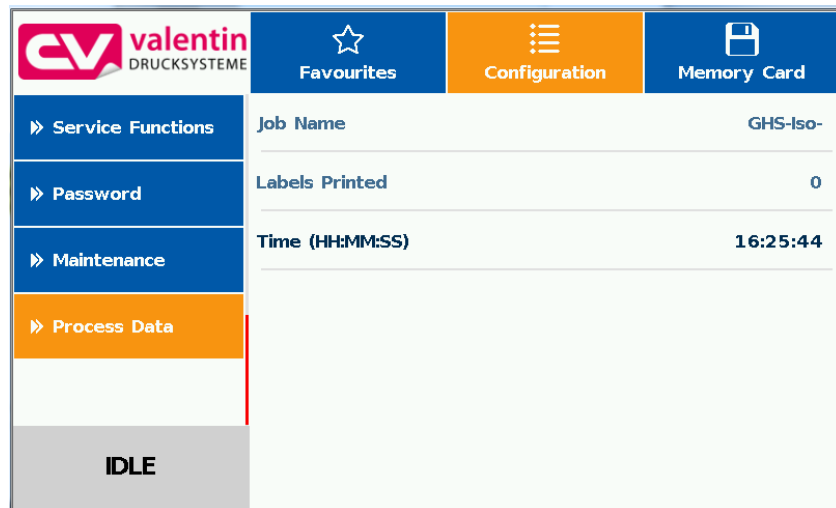
In order to show the process data, the parameter must be activated before in the menu *Maintenance/Print preview*.

Add parameter to process data

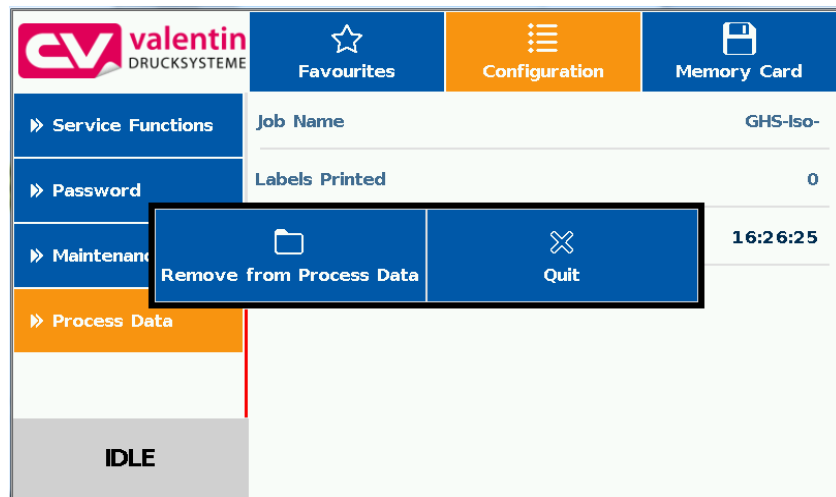


Press long (2 s) on a parameter (e.g. current time) to display the appropriate selection.

Press *Add to process data* to add the selected parameter to the process data list.



Remove parameter from process data



Press long (2 s) on a parameter (e.g. current time) to display the appropriate selection. Press *Remove from process data* to remove the selected parameter from the process data list.

Change of display vies Process data – Print preview

With activated print preview, the display shows a picture of the currently printed layout. The change to the process data view is effected by wiping to the right.

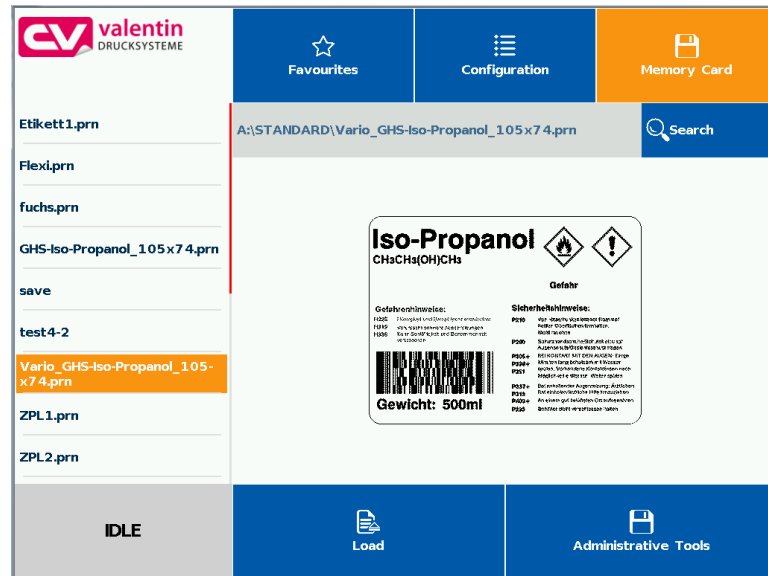
With activated print preview on the display a picture of the up-to-date printed layout is shown.

12.9 Memory Menu

Compact Flash Card USB Stick

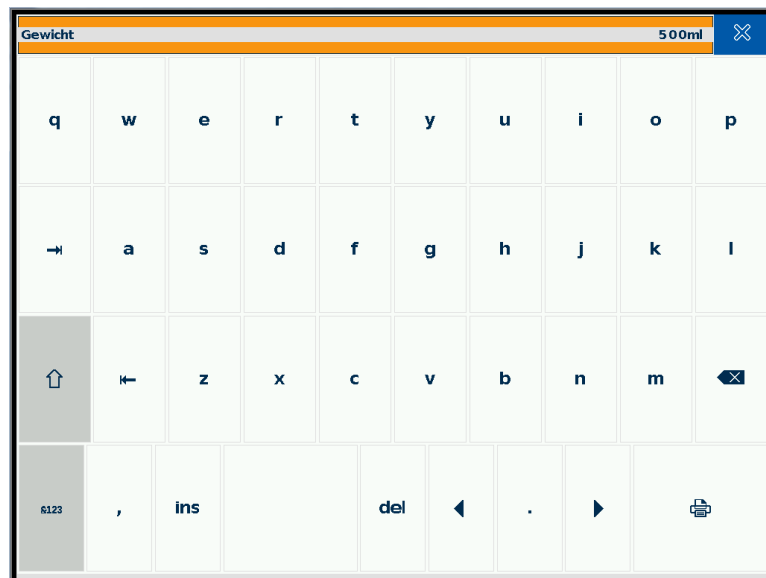
On the left side, the content of the currently selected directory is shown one below the other.

The preview zone in on the right side is. If available, the preview of the selected layout is shown.



Load: The selected layout is loaded. After the number of copies have been entered, the print order is started.

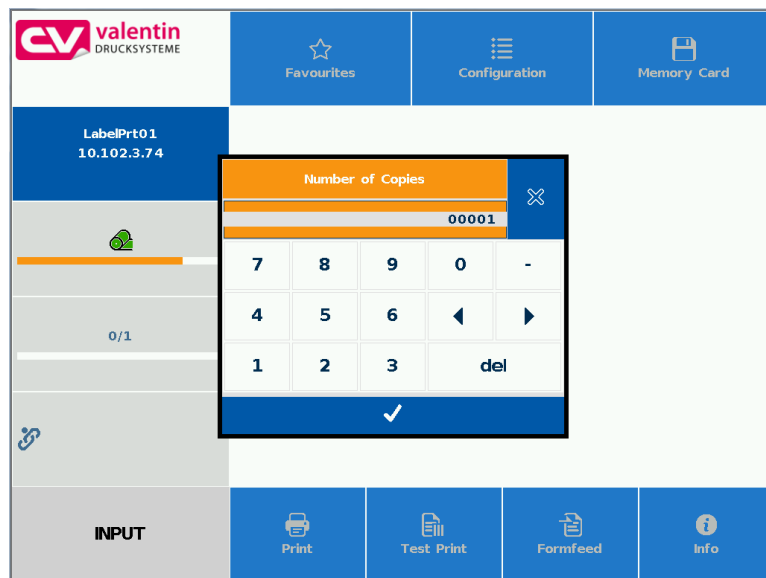
Administrative tools: Switching to the file manager (File Explorer).



The user query can be entered at the cursor position.

Press  to change to the input of number of copies.

Number of copies



Enter the number of layouts to be printed.

12.10 Information Zone

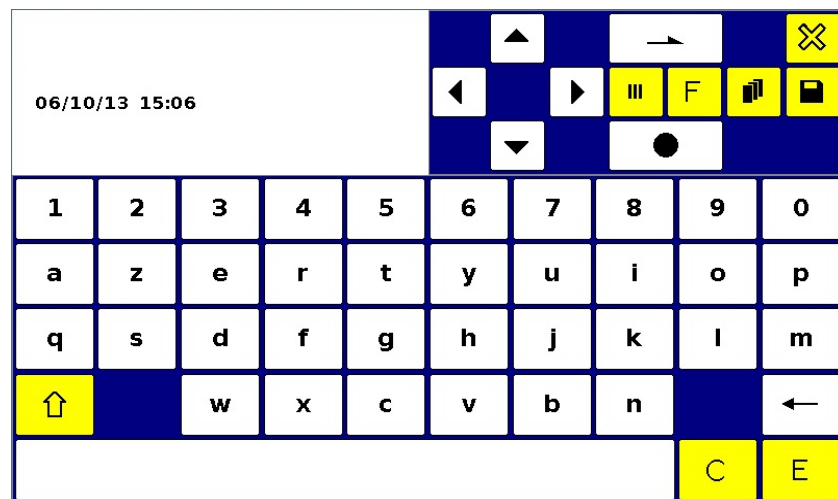
		 Favourite	 Configuration	 Memory Card
LabelPrt01 10.102.1.119  0/1  IDLE	Printer Type		V1.71 RC Build 3201	
	FirmwareAndBuild		May 17 2017	
	Firmware Time of Build		10.102. 1.119	
	IP Address		LabelPrt01	
	Printer Name		8689	
	SVN Version		OS 2 HW 67	
	Hardware Version		4.026	
	HMIVersion		B-Font: V5.01	
	Version Bitmap Font		V-Font: V91.00	
	Version TrueDoc Font		FPGA V:5.70.0.102	
Version FPGA		8MB F/16MB RAM		
Memory Configuration		NO Response		
Version Atmel 1		NO Response		
Version Atmel 2		NO Response		
Version Atmel 3		NO Response		
		 Print	 Test Print	 Formfeed
		 Info		

By pressing the **Info** button the versions of the installed components are displayed.

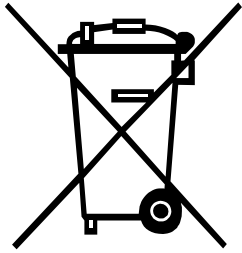
By pressing the **Info** button once more, the **Home** view is again displayed.

12.11 Change to Foil Keyboard

Press long (> 3 s) on the company logo left above, and the display changes to the indication of a conventionalized foil keyboard. The settings can be done by the standard operating panel. Press  to change to the previous view.



13 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 organised, 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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