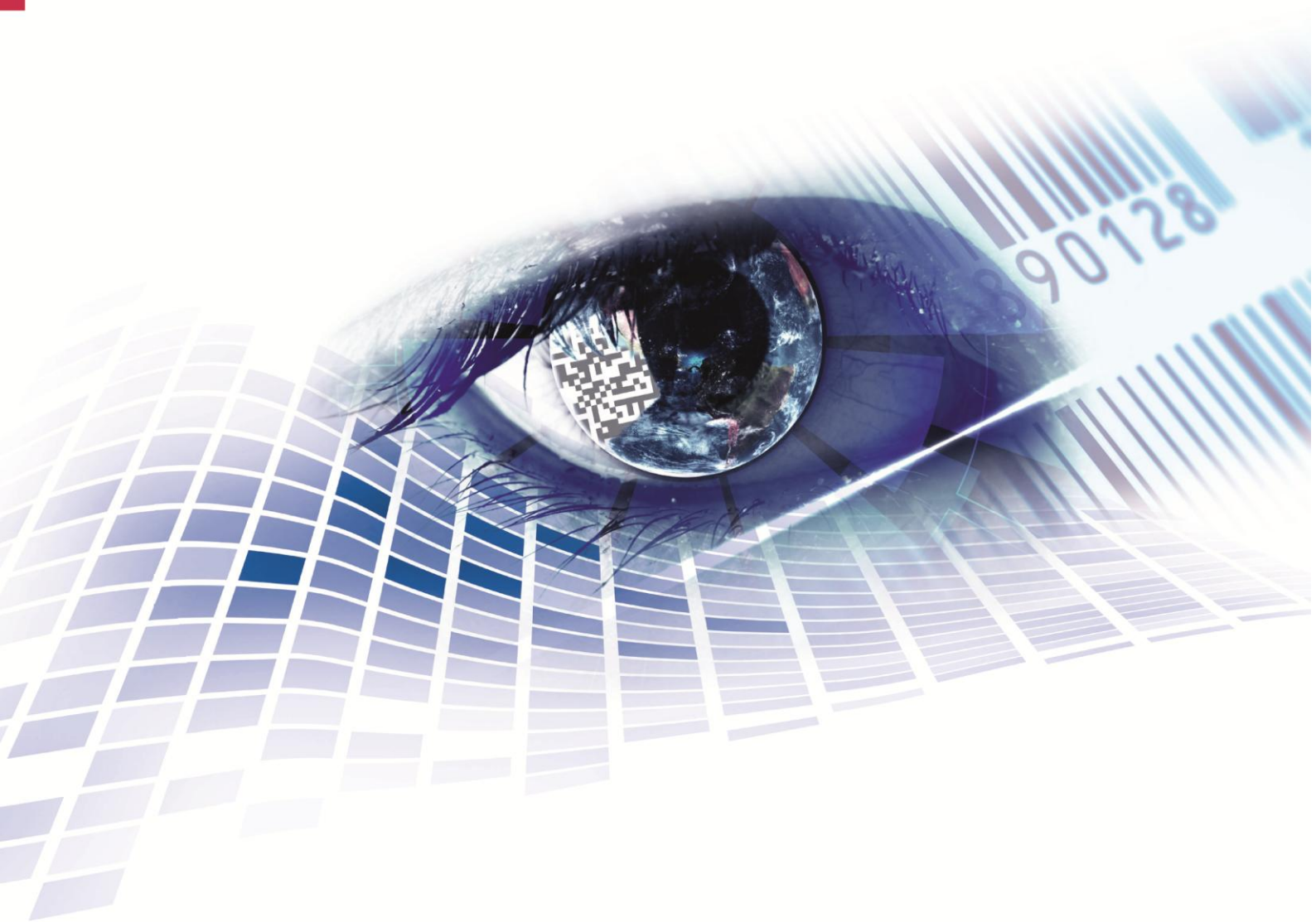
valentin DRUCKSYSTEME

VARIO V

Service Instructions



Quality . Tradition . Innovation

Edition: 08/25

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1 Notes on this Document

1.1 User Notes

This service manual is intended for qualified service and maintenance staff.

This manual contains information about the electronics and the mechanical part of the printing system.

Information about operation of printer can be taken from our operating manual.

If a problem arises that cannot be solved with help of this service of manual, then please contact your responsible distributor.

1.2 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

1.3 Cross References

Drawings

References to specific items in a figure are marked with letters. They are identified with parentheses in the text, e.g. (A). If no figure number is provided, letters in the text always refer to the graphic directly above the text. If a reference is made to another graphic, the figure number is specified, e.g. (A, in figure 5).

Cross references to chapters and sections

For a cross reference to chapters and sections, the chapter number and page number are specified, e.g. a reference to this section: see chapter 1.3.2, page 35).

References to other documents

References to other documents have the following form: See *'operating manual'*.

2 Safety Instructions

2.1 General Safety Instructions

Workplace and method of working

⇒ Keep the area around the device clean during and after maintenance.

⇒ Work in a safety-conscious manner.

⇒ Store dismantled device parts in a safe place while maintenance is being performed.

Clothing



CAUTION!

The drawing in of items of clothing by moving parts can lead to injuries.

⇒ If possible, do not wear clothing which could be caught by moving device parts.

⇒ Button or roll up shirt or jacket sleeves.

⇒ Tie or pin up long hair.

⇒ Tuck the ends of scarves, ties and shawls into your clothing or secure them with non-conductive clips.



DANGER!

Risk of death from increased flow of current via metals parts which come into contact with the device.

⇒ Do not wear clothing with metal parts.

⇒ Do not wear jewellery.

⇒ Do not wear glasses with a metal frame.

Protective clothing

If a possible danger to your eyes is present, wear protective goggles, especially in the following cases:

- when knocking in or knocking out pins and similar parts with a hammer
- when using an electric drill
- when using spring hooks
- when loosening or inserting springs, snap rings and gripping rings
- when soldering
- when using solvents, cleaning agents or other chemicals

Protective equipment



WARNING!

Risk of injury in case of missing or faulty protective equipment.

⇒ After performing maintenance work, attach all safety equipment (covers, safety precautions, ground cables etc.).

⇒ Replace faulty parts and those which have become unusable.

General safety instructions

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

Couple the label printer to devices using extra low voltage only.

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

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

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.

If the label printer is operated with the cover open, ensure that clothing, hair, jewellery and similar personal items do not contact the exposed rotating parts.

The print unit and parts of it (e.g. 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.

There is a risk of injury at the tear-off edge. If the tear-off edge is not used, attach the edge protection profile.

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 direct print module can endanger operational safety.

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

There are warning stickers on the direct print modules 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.

2.2 Safety Handling When Working With Electricity

Qualifications of personnel

⇒ The following work may only be performed by instructed and trained electricians:

- work on the electrical assemblies
- work on the device while it is open and connected to the power supply.

General precautions to be heeded when beginning maintenance

⇒ Locate the emergency-stop or power switch so that it can be actuated in case of an emergency.

⇒ Unplug the device from the electrical outlet before performing the following work:

- removing or installing power supply units
- working in the immediate vicinity of exposed power supply parts
- mechanical inspection of power supply parts
- modifying the device circuits.

⇒ Ensure that the device is de-energized.

⇒ Check the workplace for possible sources of danger, e.g. moist floors, defective extension cables, faulty protective conduction connections.

Additional precautions to be heeded for devices with exposed energized parts

⇒ Give another person the task of remaining near the workplace. This person must be familiar with the location and operation of the emergency-stop and power switches and switch off the power if danger arises.

⇒ Use only one hand while working on electrical circuits when a device is switched on. Hold the other hand behind your back or put it in your jacket pocket.
This prevents the electricity from flowing through your body.

Tools

⇒ Do not use worn or damaged tools.

⇒ Use only tools and testing equipment that is suitable for the respective task.

What to do in case an accident occurs

⇒ Proceed in a very cautions and calm manner.

⇒ Avoid endangering yourself.

⇒ Switch the power off.

⇒ Request medical help (emergency physician).

⇒ Call for first aid if necessary.

3 Connector Pin Assignment (Printer Rear)

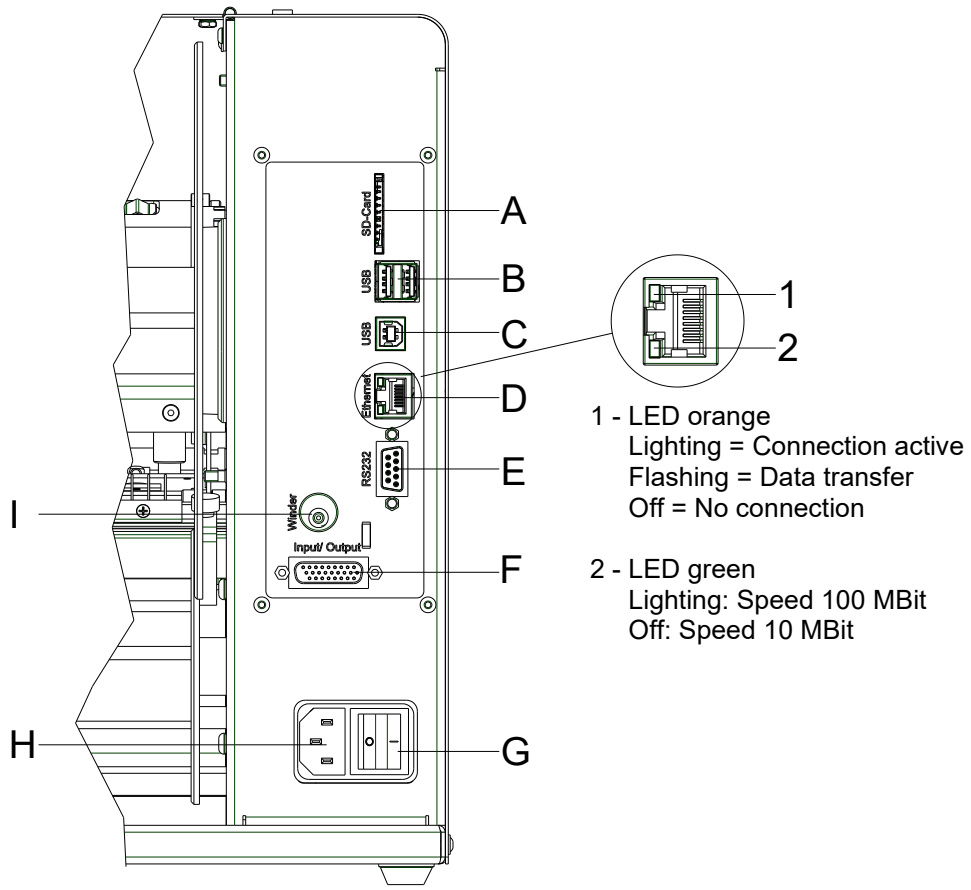


Figure 1

A	Plug-in for SD card
B	2x USB host
C	USB 2.0 Hi-Speed Device (for connection PC)
D	Ethernet 10/100 interface
E	Serial interface RS-232
F	External output/input (option)
G	Switch On/Off
H	Power supply
I	Winder connection

CAUTION!

The label printer can be damaged by non-compliant winders.

⇒ Attach only winders of Carl Valentin.

4 Cleaning



DANGER!

Risk of death by electric shock!

⇒ Before opening the housing cover, disconnect the label printer 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 label printer, personal protective equipment such as safety goggles and gloves are recommended.

Cleaning plan

Cleaning task	Frequency
General cleaning (see chapter 4.1, page 14).	As necessary.
Clean the transfer ribbon drawing roller (see section 4.2, page 15).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the pressure roller (see chapter 4.3, page 15).	Each time the label roll is changed or when the printout and label transport are adversely affected.
Clean the printhead (see chapter 4.4, page 16).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the label photocell (see chapter **4.5**, page 17).	When replacing the label roll.



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 label printer and cleaned.

4.1 General Cleaning



CAUTION!

Abrasive cleaning agents can damage the label printer!

⇒ Do not use abrasives or solvents to clean the outer surface of the label printer.

⇒ 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.

4.2 Clean the Transfer Ribbon Drawing Roller

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

1. Open the printer cover.
2. Remove the transfer ribbon from the label printer.
3. Remove deposits with the roller cleaner and a soft cloth.
4. If the roller appears damaged, replace it.
5. Insert again the transfer ribbon material.
6. Close the printer cover.

4.3 Clean the Pressure Roller

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

CAUTION!

Pressure roller can be damaged!

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

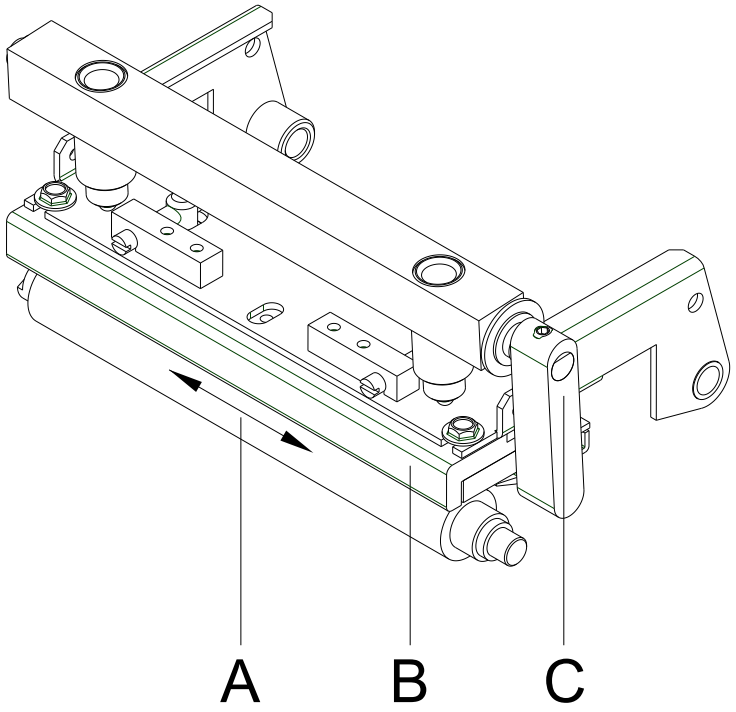


Figure 2

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

4.4 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 the printhead e.g. by colour particles of the 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.

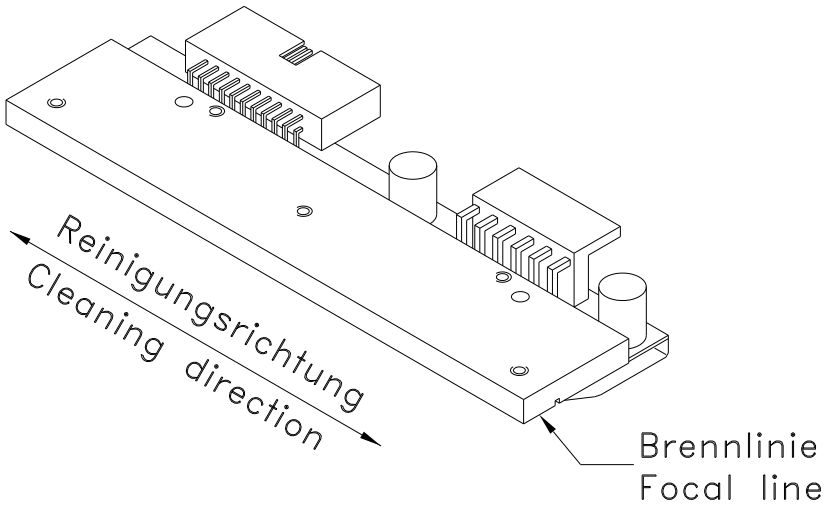


Figure 3

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

4.5 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 scanning.

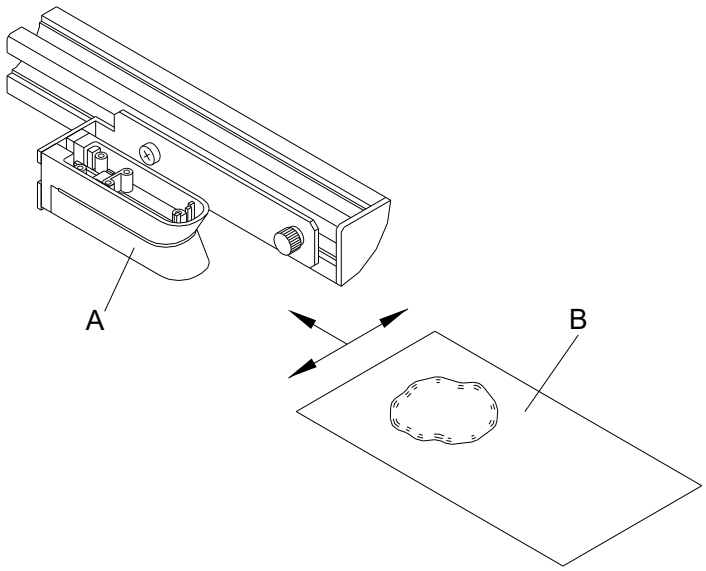


Figure 4

1. Open the printer cover.
2. Turn the lever counter clockwise to lift up the printhead.
3. Remove labels and transfer ribbon from the label printer.
4. Blow out the photocell (A) with the 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.
7. To move the printhead down, turn the pressure lever in clockwise direction until it locks.
8. Close the printer cover.

5 Replacing Components



DANGER!

Risk of death via electric shock!

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

5.1 Tools List

Some service work requires the following tools:

- Philips-head screwdriver, size 1
- Slot screwdriver, size 1
- Hexagonal wrench 2.5 mm
- Flat wrench size 0.5

5.2 Replace the Printhead

CAUTION!

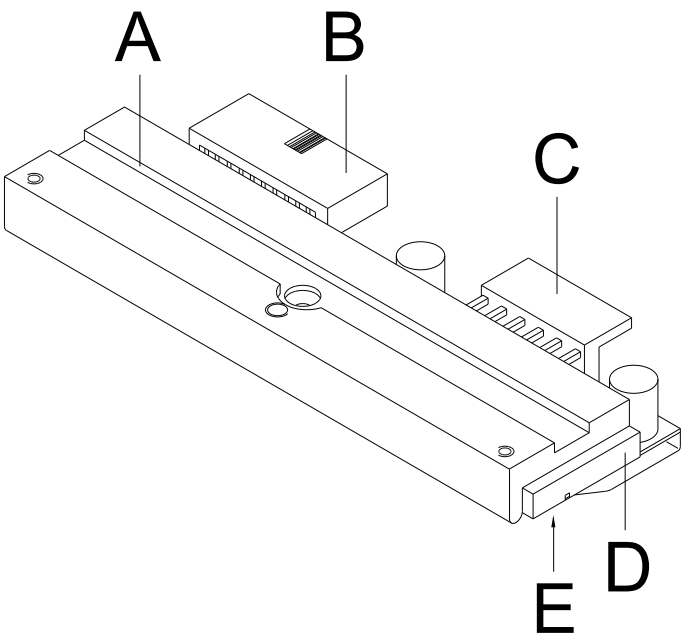
The printhead can be damaged by static electricity discharges and impacts!

⇒ Set up the printer on a grounded, conductive surface.

⇒ 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 printing line (E) with hard objects or your hands.



A Head plate
B Plug connection signal
C Plug connection voltage
D Printhead
E Focal line

Figure 5

NOTICE!

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

CAUTION!

Danger of abrasion when removing/installing the printhead!

⇒ Pay attention to the toothing when the tear-off edge is installed.

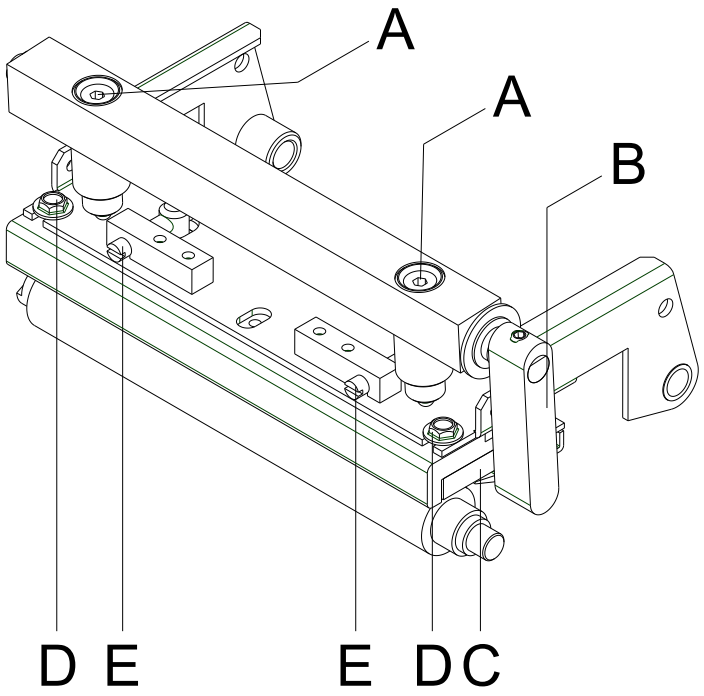


Figure 6

Remove the printhead

1. Open the printer cover.
2. Remove labels and transfer ribbon from the label printer.
3. When the printhead is closed, loosen the screws (D).
4. Turn the lever (B) counter clockwise to lift up the printhead.
5. If the printhead (C) is not disengaged on the pressure roller, continue loosen the screws (D).
6. Remove the printhead carefully to the front until you can reach the plug connections.
7. Remove the plug connections and then remove the printhead (C).

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 printer roller with one finger and check for correct positioning of the printhead.
4. Tighten again the screws (D).
5. Reload labels and transfer ribbon.
6. To move the printhead down, turn the pressure lever in clockwise direction until it locks.
7. Close the printer cover.
8. Check the resistance value on the type plate of printhead and if necessary change the value in the *Service functions/heater resistance*.
9. Check the position of the printout and adjust the print position if necessary.

5.3 Adjust the Print Position

Press the key F to access the function menu.

Press the key ▬ until the menu *Service Functions* is displayed.

Press the key ● to select the menu.

Press the key ▬ until the menu item *Zero point adjustment* is displayed.

Zero point adjustment in Y direction

Indication of value in 1/100 mm.
After replacing the printhead - the print cannot be continued at the same position on the label, the difference can be corrected in printing direction.

NOTICE!

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

Press the key ▶ to move to the next menu item.

Zero point adjustment in X direction

Indication of value in 1/100 mm.
After replacing the printhead - the print cannot be continued at the same position on the label, the difference can be corrected 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.

5.4 Replace the Pressure Roller

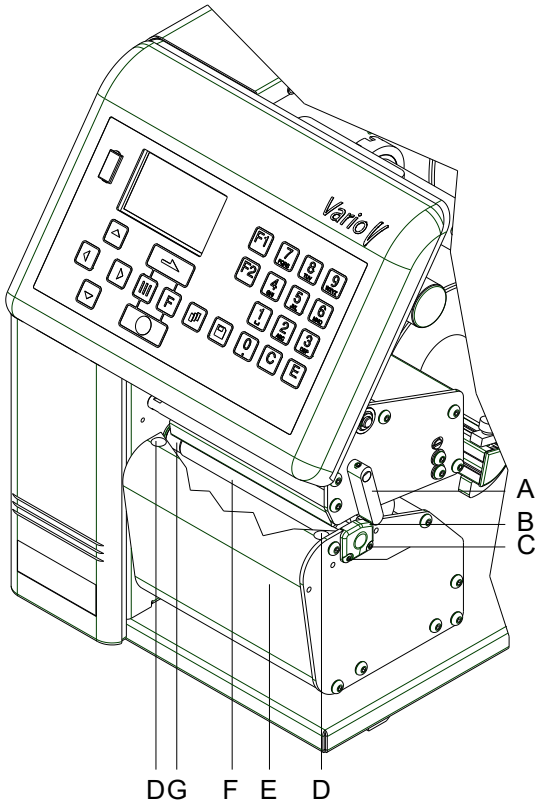


Figure 7

Remove the pressure roller

1. Open the printer cover.
2. Turn the lever (A) counter clockwise to lift up the printhead.
3. Remove labels and transfer ribbon from the printer.
4. Lift up approx. 3 - 4 mm the pins of the two-parts plastic rivet (D) with help from a tweezers or a small screwdriver. After pulling 2 rivets (D) the front plate (E) can be removed.
5. Unscrew two screws (C) at the bearing cover (B) and then remove the bearing cover (B).
6. Remove the pressure roller (F) from the striker arm (G).

Install the pressure roller

1. Press the pressure roller (F) into the striker arm (G).
   Pay attention to the correct position of striker arm pins of the pressure roller (F).
2. Mount the bearing cover (B) with two screws (C) to the bottom side of sole plate.
3. At reassembly pay attention to a precise fitting of the pressure roller (F).
4. Remove the possible axial play of the pressure roller by interlocking the striker arm (G) and the mounted pressure roll (F).
5. Insert the pins of the plastic rivets (D) and install again the front plate (E).
6. Close the printer cover.

5.5 Replace the Label Photocell

NOTICE!

Soiling of the label photocell can also cause malfunctions. Before replacing the label photocell, check whether it is soiled and clean it if necessary (see chapter 4.5, on page 17).

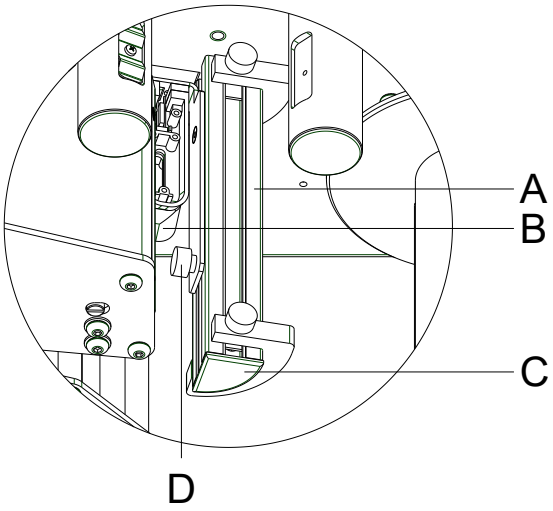


Figure 8

Remove the label photocell

1. Open the printer cover.
2. Remove media from the printer.
3. Remove the left printer cover.
   Loosen two screws at the lower left printer edge and two screws at the chassis upper edge.
4. Remove the protective conductor at the inside of the printer cover.
5. Pull out the plug of the photocell connecting cable from the plug housing ST22 on the CPU.
6. Remove the cap (C) of the profile (A) with a screwdriver.
7. Loosen the red knurled knob (D) and pull the complete photocell unit outwards.

Install the label photocell

1. Guide the photocell cable through the aperture in the chassis.
2. Insert the photocell unit (B) from the cover side into the guiding and push up against direction of the left printer cover. Pay attention to the correct position of the sliding blocks.
3. Tighten the red knurled knob (D).
4. Apply again the cap (C) of the profile.
5. Connect the plug of the photocell connecting cable with the plug housing ST22 onto the CPU.
6. Connect the protective conductor to the inside of cover.
7. Install the left printer cover.
8. Adjust the label photocell.
9. Close the printer cover.

5.6 Replace the CPU PCB

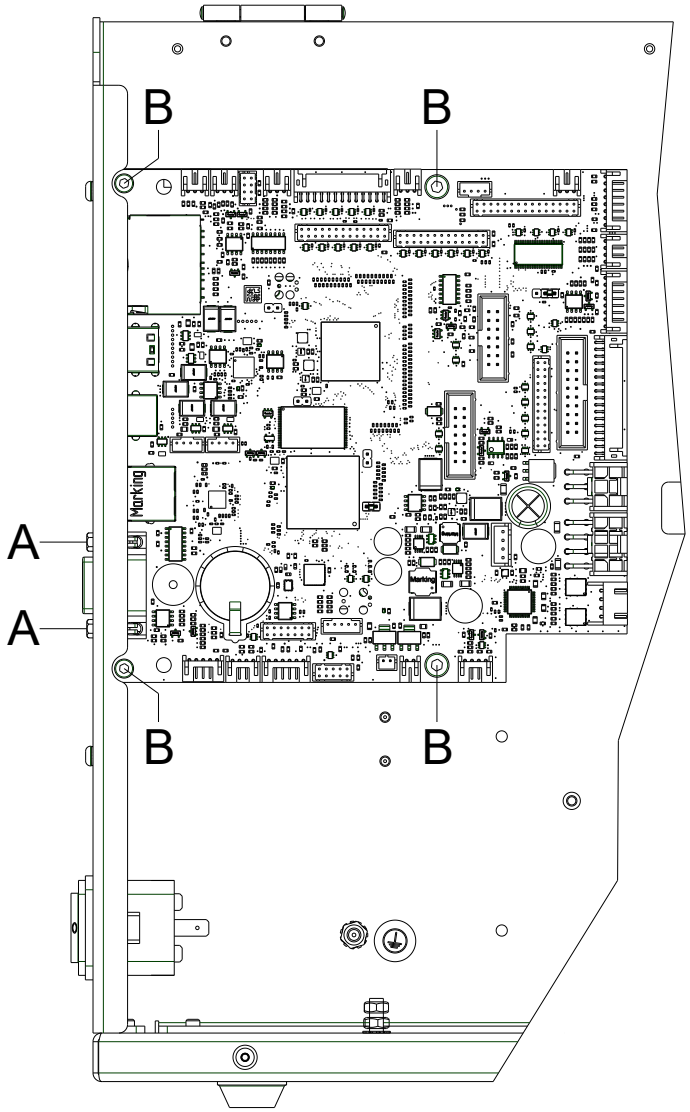


Figure 9

Remove the CPU PCB

1. If possible, save the printer configuration to a Compact Flash card.
2. Unplug the printer from the electrical outlet.
3. Remove the left printer cover.
   Loosen two screws at the lower left printer edge and two screws at the chassis upper edge.
4. Remove the protective conductor at the inside of the printer cover.
5. Detach all interface cables from the back of the printer.
6. Remove the memory card from the slot.
7. Unplug all side plug connections from the CPU PCB.
8. Remove two screw bolts (A) at the parallel interface and four fixing bolts (B) from the CPU PCB.
9. Carefully remove the CPU PCB.

Install the CPU PCB

1. Place the CPU PCB into the printer.
2. Secure the PCB to the chassis with two screw bolts (A) and four fixing screws (B).
3. Insert all plug connections on the PCB.
4. Restore all interface connections on the back of the printer.
5. Connect the protective conductor to the inside of cover.
6. Mount again the left printer cover.
7. Connect the power cable at the rear of the printer.
8. Update the firmware if necessary.
9. Adjust the label photocell.
10. Load the printer configuration from the memory card if possible. Otherwise, set the printer configuration via the operating panel.

5.7 Replace the Power Supply

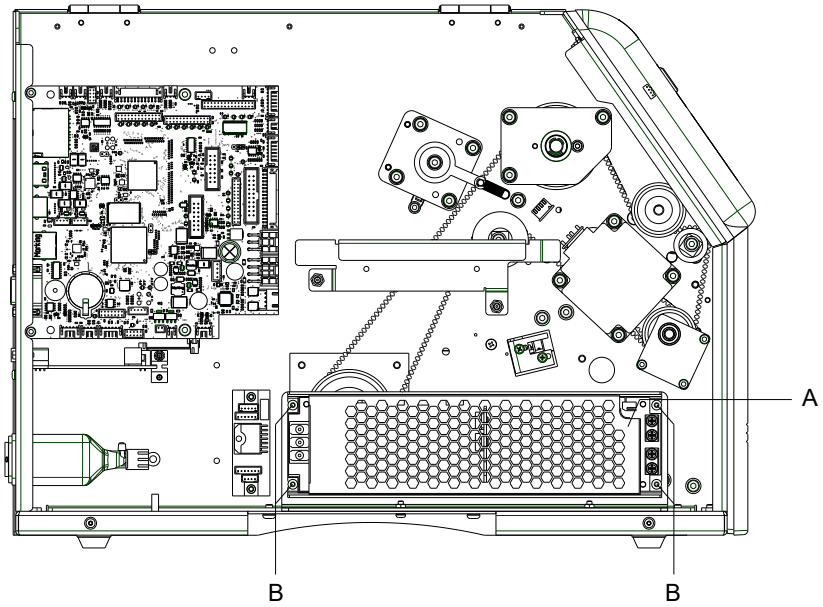


Figure 10

Remove the power supply

1. Unplug the printer from the electrical outlet.
2. Remove the left printer cover.

3. Remove the protective conductor at the inside of the printer cover.
4. Unplug all cable connections from the power supply (A).
5. Remove four fixing screws (B).
6. Remove the power supply unit (A).

Install the power supply

1. Insert the new power supply (A) and fix it with the screws (B).

   CAUTION!

   Jamming of lines can cause short-circuits.

   ⇒ Do not jam lines under the power supply.

2. Restore all cable connections to the power supply (A).
   Make sure the polarity is correct!
3. Connect the protective conductor to the inside of cover.
4. Mount again the left printer cover.

5.8 Replace the Battery

DANGER!

Danger of explosion due to improper replacement of the battery!

⇒ Use non-conductive tools.

⇒ Pay attention to polarity.

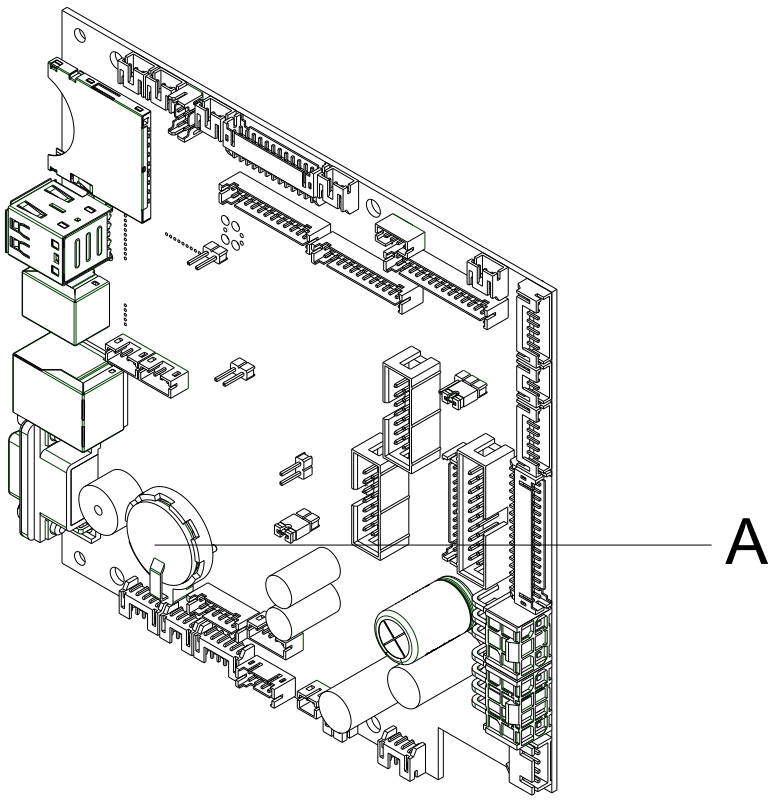


Figure 11

1. Lift up the fixing bracket by means of a non-metallic device (e.g. plastic ruler).
2. Remove the battery.
3. Insert a new battery (CR 2032) into the support (A) and pay attention to position of polarity.

NOTICE!

The battery is responsible for the current supply of the real-time clock. After changing the battery the clock is to be set anew in menu *Date/Time*.

6 Adjustments, Settings and Alignments



DANGER!

Risk of death via electric shock!

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

6.1 Adjust the Print Mechanism

Major adjustment of the printing mechanism beyond format-based settings is only required if the printhead assembly has been removed or parts in this area have been replaced. Excluded from this is the replacement of the printhead, after which readjustment is generally not required.

The following print quality imperfections may indicate maladjustment of the printing mechanism:

- Print image too light
- Print image is spotty
- Print image lighter on one side
- Horizontal lines not parallel to the horizontal label edges
- Clear lateral drift of the transfer ribbon



NOTICE!

Print image errors can also arise from wrinkling of the transfer ribbon. This is why the transfer ribbon feed path and the head locking system should be checked before making adjustments to the printing mechanism (see *'operating manual'*).

6.2 Adjust the Printhead

CAUTION!

The printhead assembly can be damaged.

Attempting to adjust the printhead when the fixing screw (D, Figure 11) is tight can lead to defects at the printhead assembly.

⇒ Always loosen the fixing screw (D, Figure 11) before adjusting the printhead.

Complete the following printhead settings to achieve the best possible print image:

⇒ Align the heating line with the highest point of the pressure roller. Density of the print image is the greatest at this point.

⇒ Set the parallelism of horizontal lines with the edge of the label.

NOTICE!

Open and close the printhead locking device after each step of the adjustment.

6.3 Adjust the Parallelism of Printhead

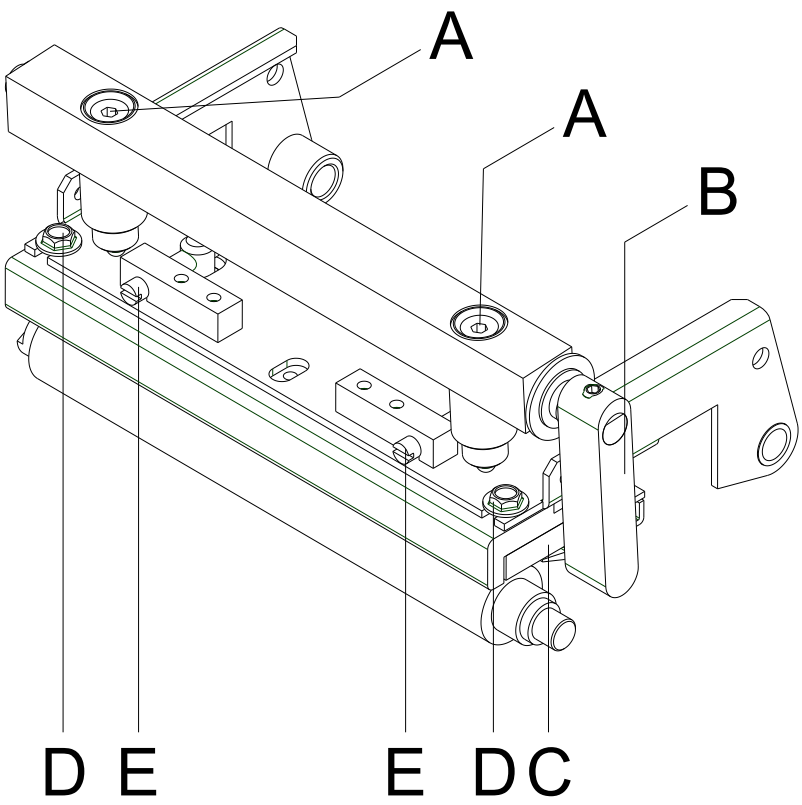


Figure 12

NOTICE!

An important characteristic for a high quality print is the parallelism of the focal line of the thermal printhead to the pressure roll. Because 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 fixing screws (D) with a hexagon key by approx. ¼ rotations.
2. Adjust the parallelism with the adjusting screws (E).
   Clockwise = printhead moves forwards
   Counter clockwise = printhead moves backwards
3. Adjust the parallelism as long as the printing result comes up to your full expectation.
4. Tighten again the finging screws (D).
5. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

6.4 Adjust the Pressure of Printhead

CAUTION!

Damage of printhead by unequal use!

⇒ Only change the factory settings in exceptional cases.

NOTICE!

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.

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

1. Turn the pressure screws (A, Figure 12) to change the pressure of printhead.
2. Turning the pressure screws (A, Figure 12) in clockwise direction results in a pressure increase.
3. Turning the pressure screws (A, Figure 12) counter clockwise results in a pressure decrease.

6.5 Adjust the Pressure Balance Right/Left

NOTICE!

After adjusting parallelism and no even strong pressure exists over the complete print width, use the eccentric (A) to set the balance.

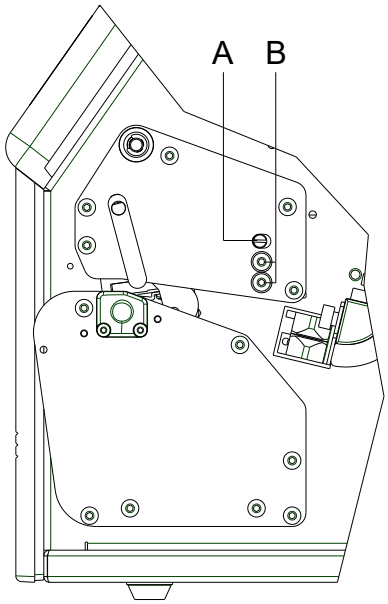


Figure 13

1. Loosen the screw (B) with a screwdriver by approx. ¼ turn.
2. Turn the eccentric pin (A) in order to obtain a pressure balance. Adjust as long as the printout is perfect for the complete print width.
3. Tighten again the screw (B).

6.6 Adjust the Ribbon Rewinder/Unwinder

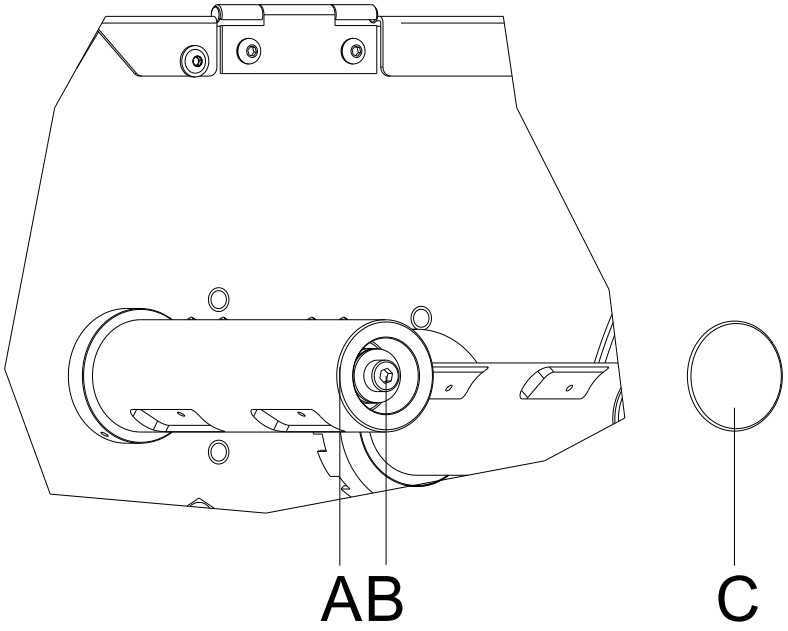


Figure 14

Due to the many different transfer ribbon variants regarding roller width, length and qualities it is necessary to provide the possibility to set the transfer ribbon tension.

The transfer ribbon tension is to set in such way that no wrinkles in the ribbon appear but it is transported in the same way as the labels.

When using a too high ribbon tension this results usually in an excellent run of the transfer ribbon but this could lead to streaks onto the label or to a rip of ribbon particularly with narrow roles.

Ex factory the role tension is set to a transfer ribbon 110 mm width and standard quality.

In ordert o make adjustments, the cover (C) must be removed.

As approximate values for the factory setting the following can be accepted:

Transfer ribbon unwinder:
Distance of the screw head (B) to the roller face (A) = 2 mm

Transfer ribbon rewinder:
Distance of the screw head (B) to the roller face (A) = 4 mm

Tighten the hex. head screw (B) = Increasing the transfer ribbon tension

Loosen the hex. head screw (B) = Reducing the transfer ribbon tension

6.7 Adjust the Cutter Ledge

CAUTION!

Risk of injury, particularly during maintenance, the cutter blades are sharp!

⇒ Switch off the printer before attaching the cutter!

⇒ The cutter may only be used when it is mounted on the printer!

⇒ The cutter may only be used when the cover plate (A) is installed!

⇒ Do not try to cut any materials which exceed the maximum width or thickness specifications.

⇒ Do NOT touch the area of the moving blades!

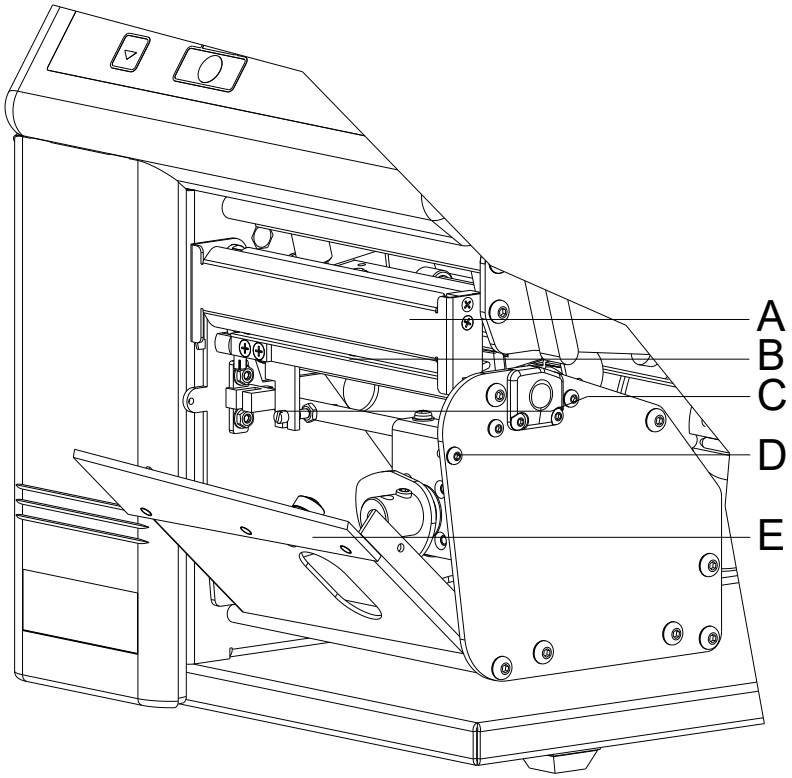


Figure 15

1. Remove two countersunk screws at the front plate and hang front plate out.
2. Unscrew the screw (D) and remove the front shaft.
3. Loosen the counter nut on the rear of the adjusting screw (C).
4. Insert a piece of paper or labels between the lower plate (B) and fix cutter ledge. Move by hand the flexible cutter ledge (E) carefully upwards and control the cut.
   The cutter has to start cutting approx. 5 mm from the left edge (of the fix cutter ledge).

5. Tighten the counter nut on the rear of the adjusting screw (C).
6. Install front shaft and front plate.
7. Press the key ▸ to test the cutter function.

6.8 Error Correction of Cutter Ledge

If the cut is too far right please follow the steps:

1. Move the flexible cutter ledge (E) to the front.
2. Turn the adjusting screw (C) in clockwise direction until the correct value is reached.
3. Close again the cutter ledge.
4. Screw again the counter nut at the rear of the adjusting screw (C).
5. Install the front shaft and the front plate.
6. Press the key ▸ to test the cutter function.

If the flexible cutter ledge (E) pushes from the bottom to the fix cutter ledge please follow the steps:

1. Move the flexible cutter ledge (E) to the front.
2. Turn the adjusting screw (C) counter clockwise direction until the correct value is reached.
3. Screw again the counter nut at the rear of the adjusting screw (C).
4. Install the front shaft and the front plate.
5. Press the key ▸ to test the cutter function.

6.9 Oil and Lubricate

NOTICE!

Make sure when oiling and greasing that no lubricants deposit on photocells, electronic components, circuit boards, printhead and rolls.

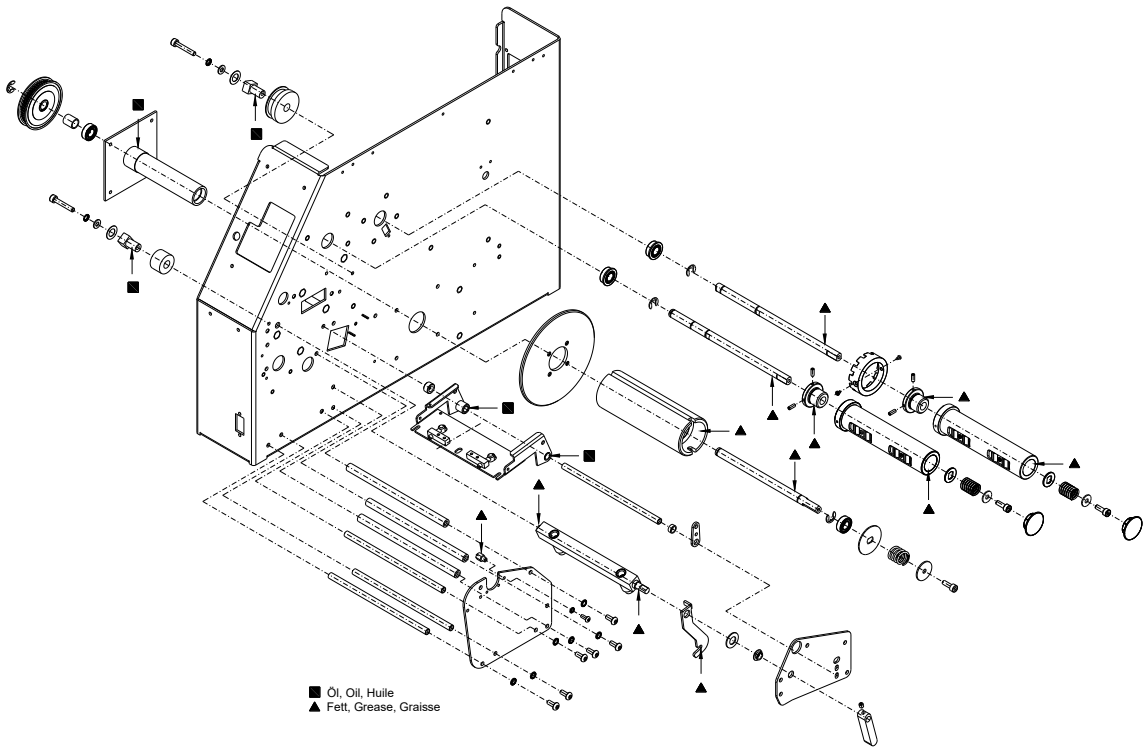


Figure 16

In case that dust or other dirt is deposit you have to clean the lubrication at first with alcohol.

Apply rather in regular intervals (1-2 per year) a bit of lubricant, as only rarely too much. Otherwise the surplus of lubricant could settle on neighbouring components and disturb the functions.

In case those components should have run it because of lack of lubricant, replace these as soon as possible so the functions of the components and the printer remain.

Install again all components which you have dismantled for the lubrication in the correct position.

Take care e.g. tensions of belt, springs etc.

7 Retrofit with Options

DANGER!

Risk of death via electric shock!

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

7.1 I/O Plate

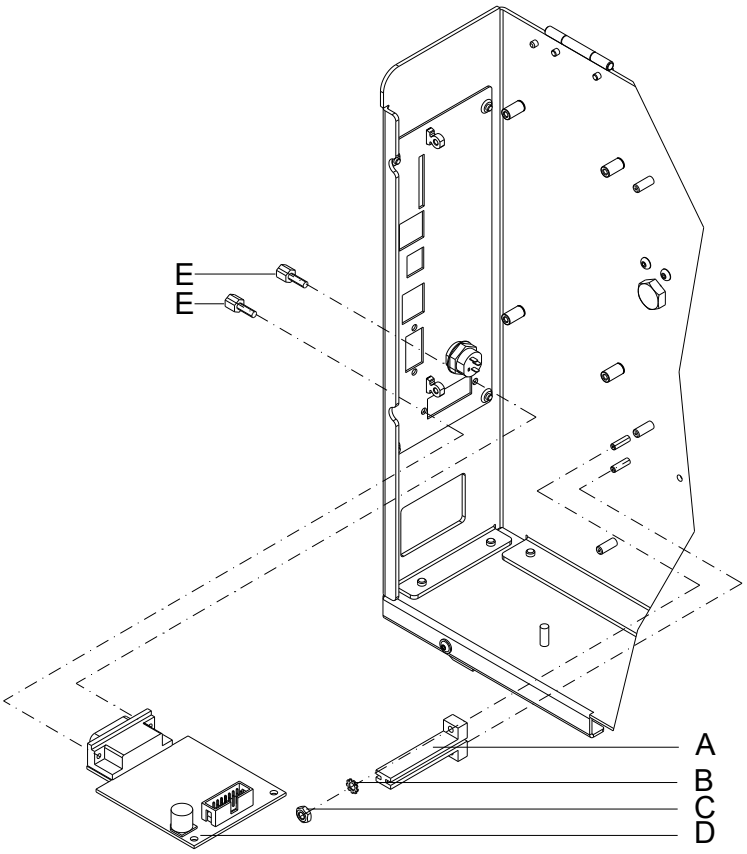


Figure 17

1. Remove the CPU PCB (see page 25).
2. Remove the cover at the interface disruption from the chassis rear.
3. Install the I/O plate (D) with the fixing screws (E) at the disruption of the chassis rear.
4. Fasten the circuit board holder (A) to the chassis with the lock washer (B) and hexagon nut (C).
5. Insert the connecting cables for the inputs/outputs corresponding to the wiring plan (see chapter 9, page 55) into the appropriate plug-in positions of the I/O plate.
6. Install the CPU PCB (see page 26).

7.2 Dispenser Unit

Dispenser unit without photocell

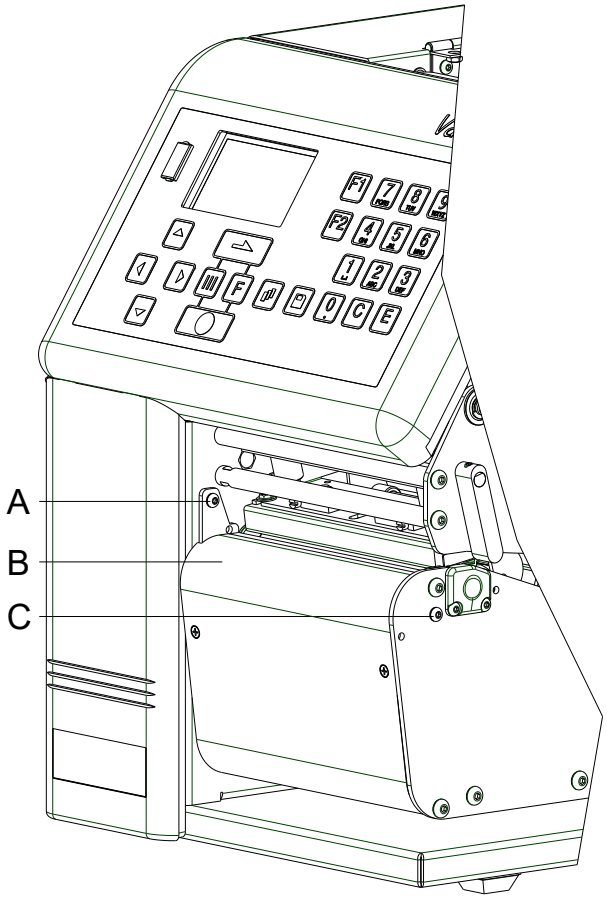


Figure 18

1. Remove winding plate (if mounted) and the subjacent square-end at the printer front.
2. Open the dispensing whip by pulling the dispensing axe to the left.
3. Mount the dispenser unit (B) with the enclosed screws (A + C) at the printer.
4. Engage again the dispensing whip.

Dispenser unit with photocell

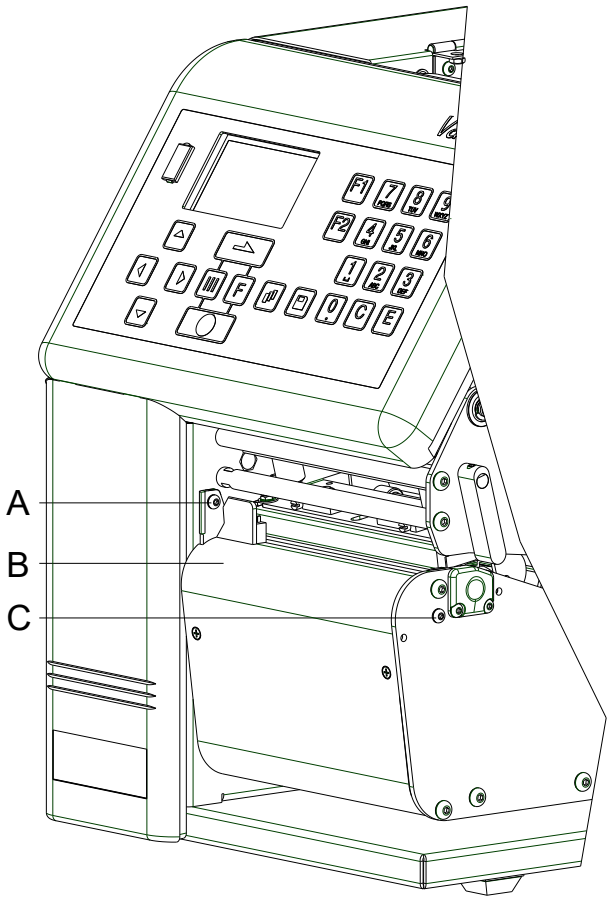


Figure 19

1. Remove the left printer cover.
   Loosen two screws at the lower left printer edge and two screws at the chassis upper edge.
2. Remove the protective conductor at the inside of printer cover.
3. Remove the winding plate (if mounted) and the subjacent square-end at the printer front.
4. Open the dispensing whip by pulling the dispensing axe to the left.
5. Place the dispenser unit (B) before the pressure roller. Guide the photocell cable through the visible chassis hole.
6. Mount the dispenser unit (B) with the enclosed screws (A + C) at the printer.
7. Insert the photocell cable corresponding to the wiring plan (see chapter 9, page 55) into the appropriate plug-in positions of the dispenser photocell.
8. Engage again the dispensing whip.
9. Connect the protective conductor to the inside of printer cover.
10. Mount again the printer cover.

7.3 Cutting Unit

CAUTION!

Risk of injury, particularly during maintenance, the cutter blades are sharp!

⇒ Switch off the printer befoere attaching the cutter!

⇒ The cutter may only be used when it is mounted on the printer!

⇒ The cutter may only be used when the cover plate (B) is installed!

⇒ Do not try to cut any materials which exceed the maximum width or thickness specifications.

⇒ Do NOT touch the area of the moving blades!

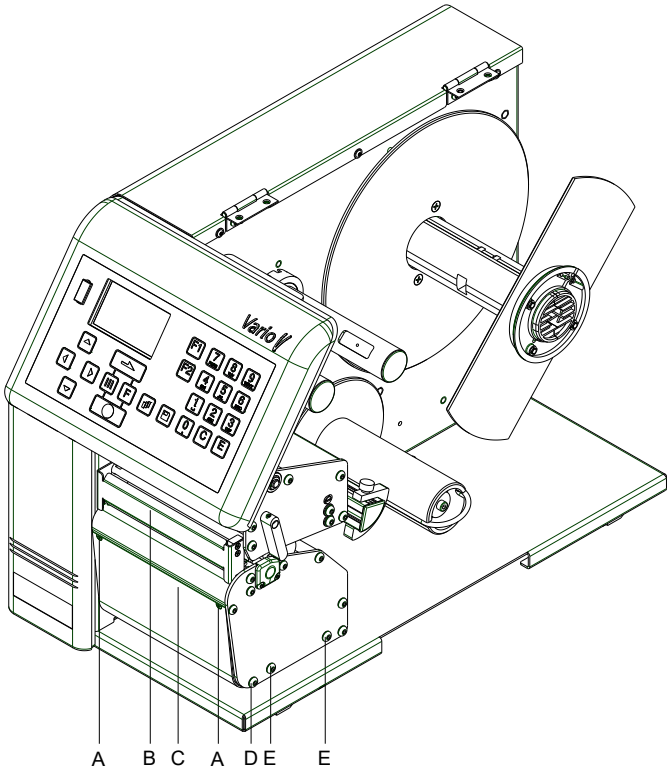


Figure 20

1. Remove the winding plate (if mounted) and the subjacent square-end at the printer front.
2. Remove the left printer cover.
   Loosen two screws at the lower left printer edge and two screws at the chassis upper edge.
3. Remove the protective conductor at the inside of the printer cover.
4. Place the cutting unit before the printer and guide the connection cable through the visible chassis hole.

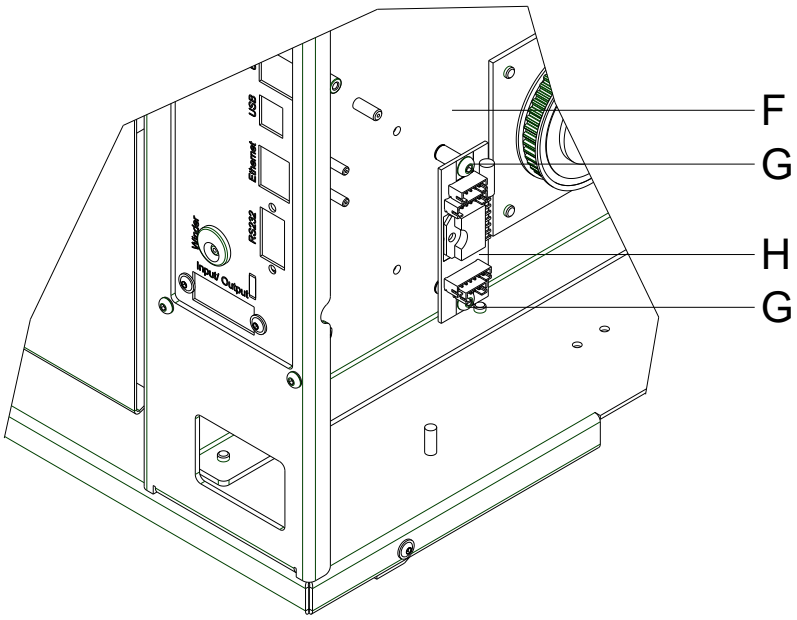


Figure 21

5. Fix the cutting unit with the sole plates onto the spacer shafts (E).
6. Push the cutting unit back until it engages into the spacer shafts. For this purpose press the cutting unit a bit downwards.
7. Fix the cutting unit with the enclosed screws at the printer.
8. Insert the front shaft into boring of the left sole plate of the cutting unit and fix with the screw at the printer.
9. Put the front plate (C) into the spacer shaft (D). Swing the front plate upwards and fix it with the enclosed screws (A) to the front shaft.
10. Mount the motor plate (H) with the screws (G) at the printer chassis (F).
11. Insert the cutter cable and connection cable corresponding to the wiring plan (see chapter 10, page 63) into the appropriate plug-in positions of the PCB.
12. Connect the protective conductor to the inside of printer cover.
13. Mount again the printer cover.
14. Insert the protective plate (B) into the spacer shaft of the upper bearing plate and engage it.

8 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.
43 Unformatted	CF Card not formatted.	Format CF card.

Error message	Cause	Remedy
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.
61 Webserver error	Error at start of web server.	Please contact your distributor.

Error message	Cause	Remedy
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.
77 Flip/Rotate	Selection of print of several columns and also mirror/rotate.	It is only possible to select one of both functions.

Error message	Cause	Remedy
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.
93 RFID programming	Error at programming the RFID label.	Check RFID definitions.

Error message	Cause	Remedy
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.
105 Printhead	No original printhead is used.	Check the used printhead. Contact your distributor.

Error message	Cause	Remedy
106 Invalid Tag type	Wrong Tag type. Tad 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.
118 Invalid variable	Transferred variable is invalid with customized entry.	Select correct variable without customized entry and transfer it.

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

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

Error message	Cause	Remedy
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.

9 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 printer 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 printer 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 circuitry

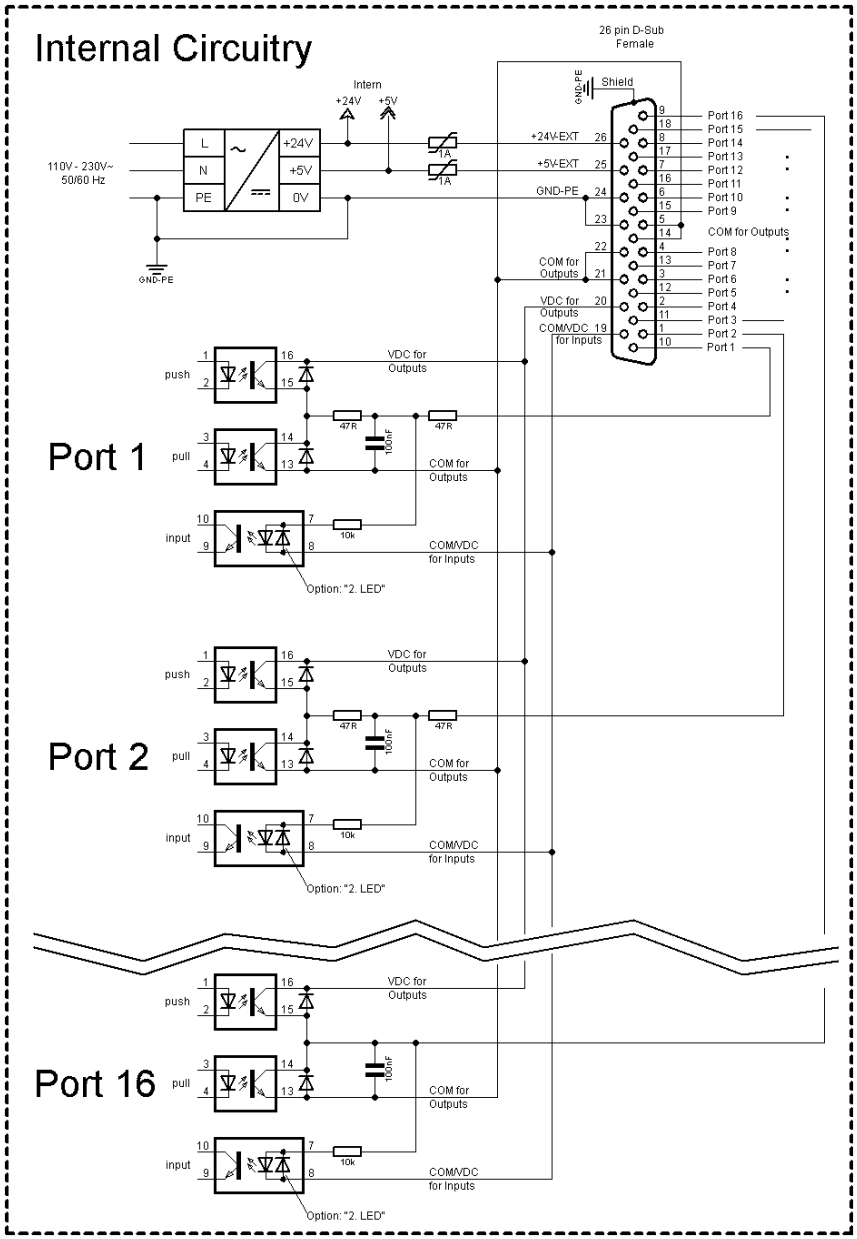


Figure 22

Configuration of D-Sub socket

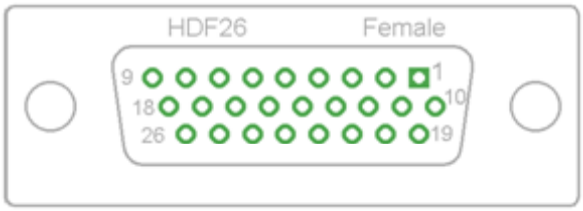


Figure 23

Cable identification

Number	Color
1	white
2	brown
3	green
4	yellow
5	grey
6	pink
7	blue
8	red
9	black
10	violet
11	grey-pink
12	red-blue
13	white-green
14	brown-greed
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 and cut (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 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	Option applicator only: Ready for application (Output)
Port 15	18	Option scanner only: Bar code not readable (Output)
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 printer 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 direct print module 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 direct print module 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	Dispenser photocell: Label exists at dispenser photocell (Output)
Port 12	7	Printing (Output)
Port 13	17	Ready (Output)
Port 14	8	No function
Port 15	18	Option scanner only: Bar code not readable (Output)
Port 16	9	Transfer ribbon prior warning (Output)

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

Identification	Pin	Description / Function
Port 1	10	Print start and cut (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	Dispenser photocell: Label exists at dispenser photocell (Output)
Port 12	7	Printing (Output)
Port 13	17	Ready (Output)
Port 14	8	Option applicator only: Ready for application (Output)
Port 15	18	Option applicator only: Pad is in printing position (Output)
Port 16	9	Transfer ribbon prior warning (Output)

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

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

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

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

Technical data

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

Example 1 Device connection to a machine with S7-300 SPS.

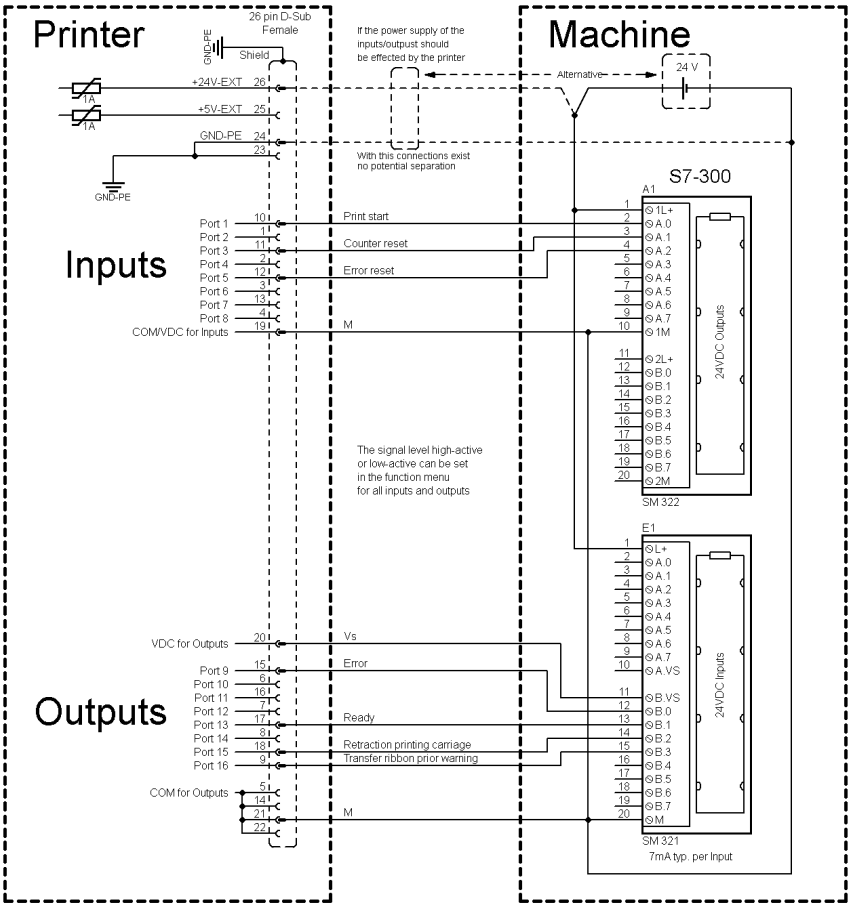


Figure 24

Example 2 Device connection to a operating panel.

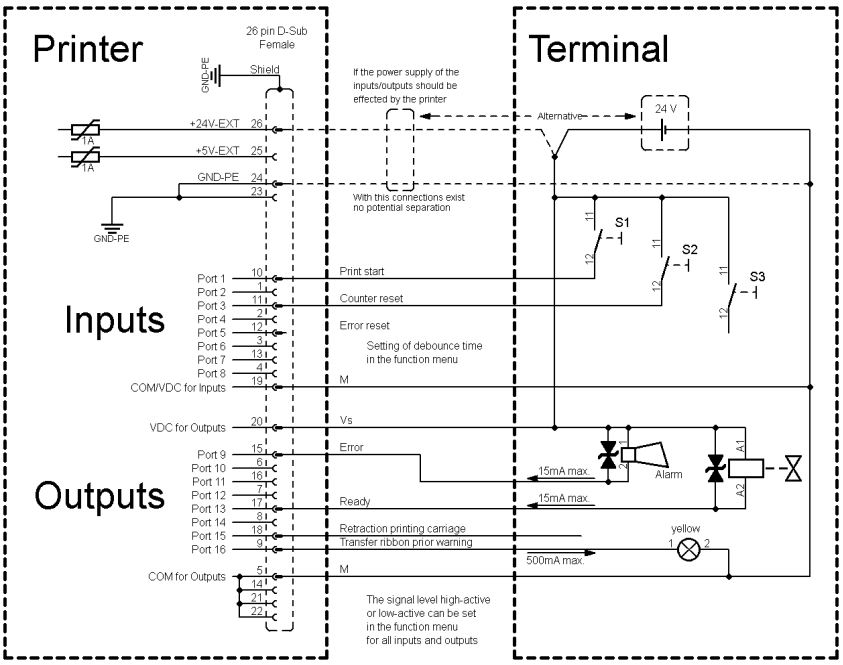


Figure 25

Example 3

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

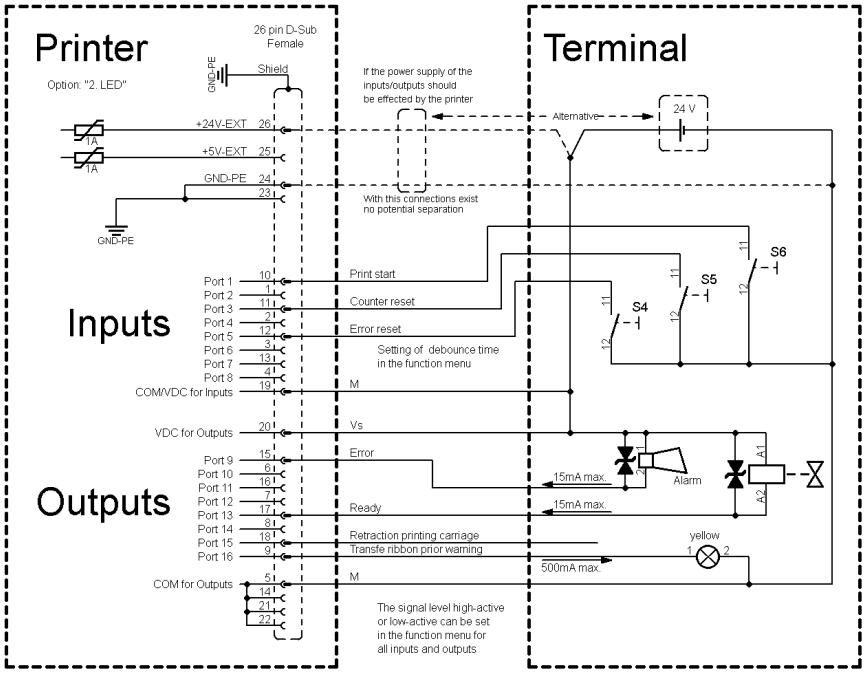


Figure 26

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.

10 Wiring Plan

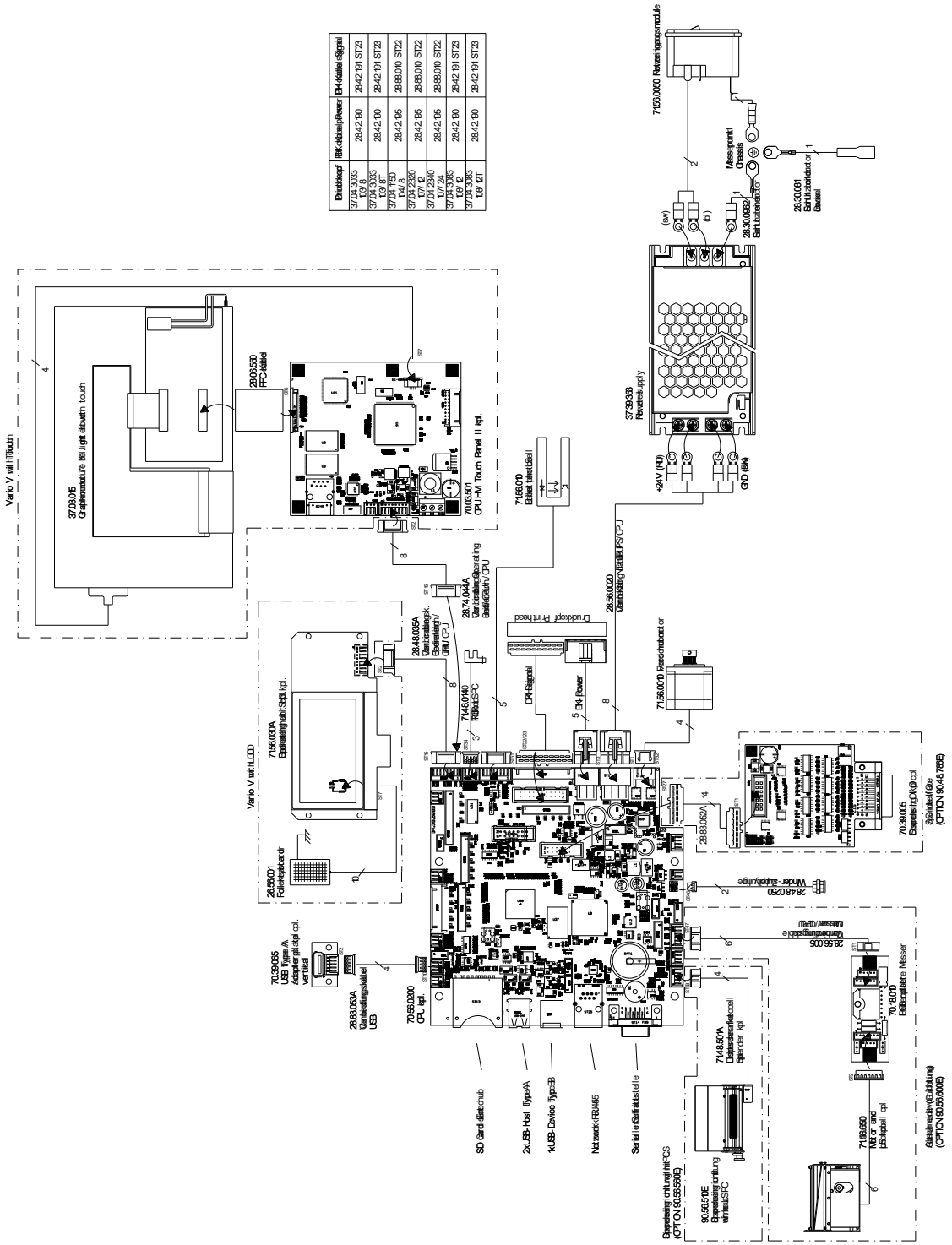


Figure 27

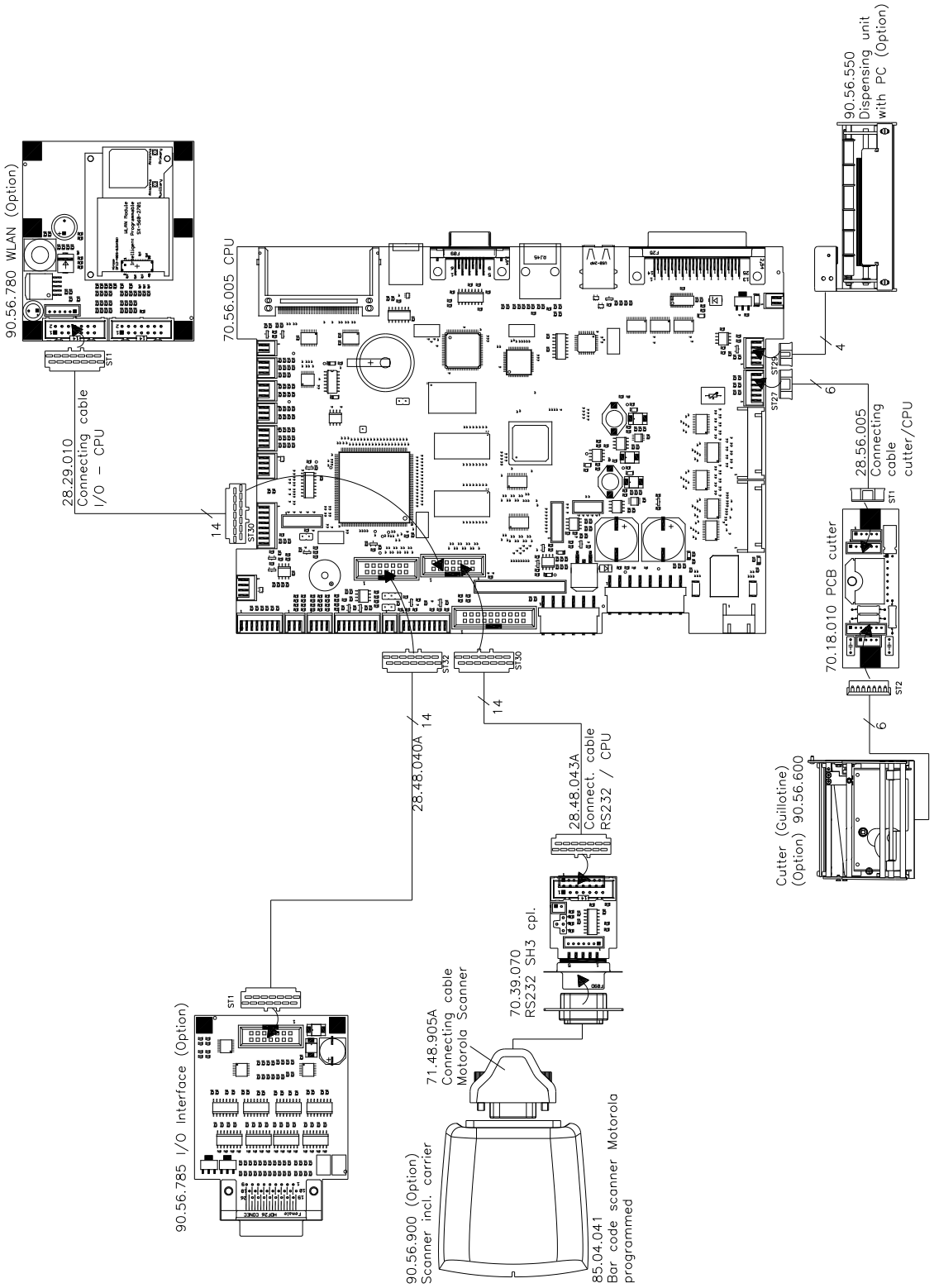

90.56.780 WLAN (Option)
70.56.005 CPU
90.56.550 Dispensing unit with PC (Option)
28.29.010 Connecting cable I/O – CPU
28.56.005 Connecting cable cutter/CPU
70.18.010 PCB cutter
28.48.040A
28.48.043A Connect. cable RS232 / CPU
70.39.070 RS232 SH3 cpl.
71.48.905A Connecting cable Motorola Scanner
90.56.785 I/O Interface (Option)
90.56.900 (Option) Scanner incl. carrier
85.04.041 Bar code scanner Motorola programmed
Cutter (Guillotine) (Option) 90.56.600

Figure 28

10.1 CPU Component Placement Specification

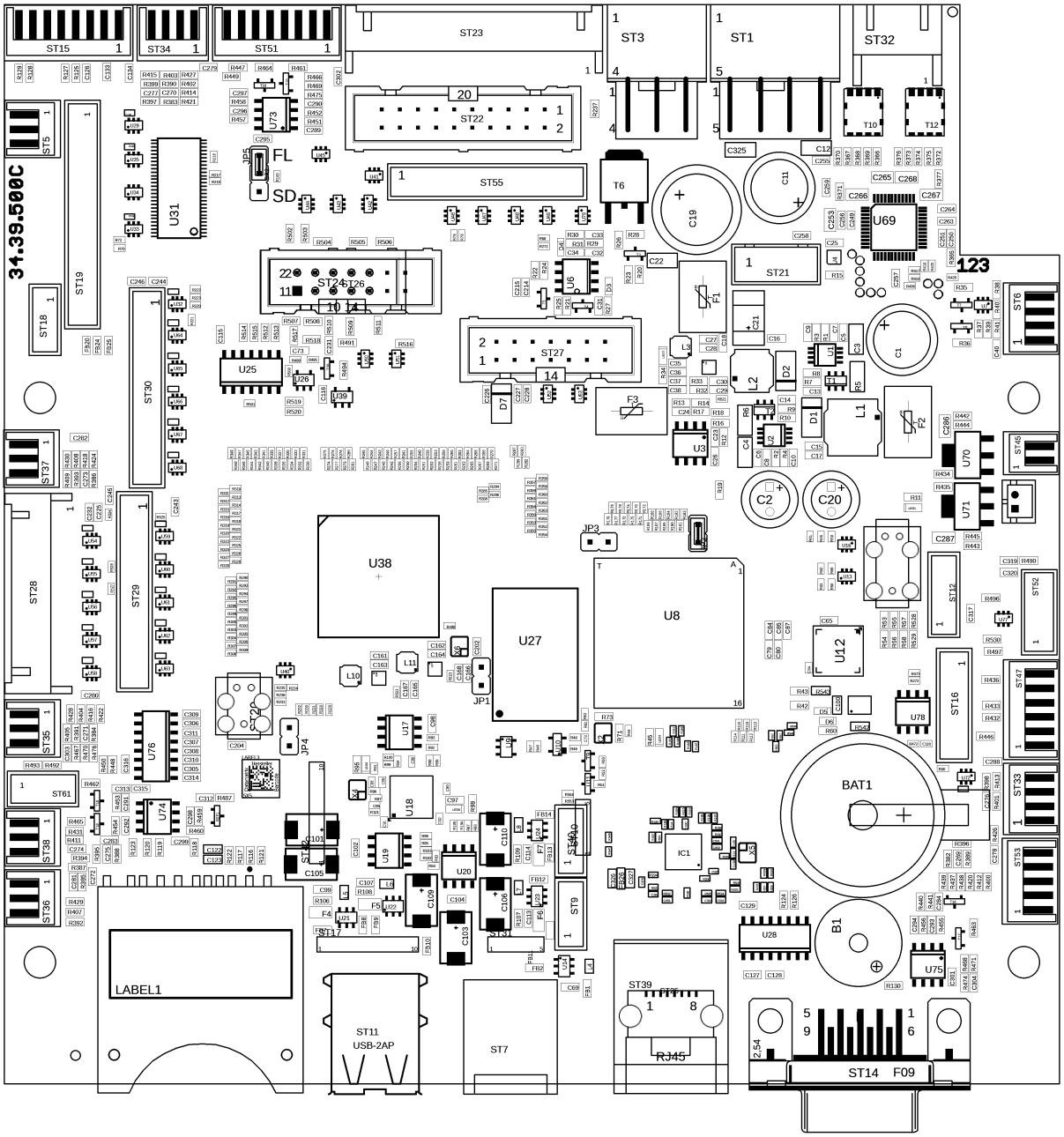


Figure 29

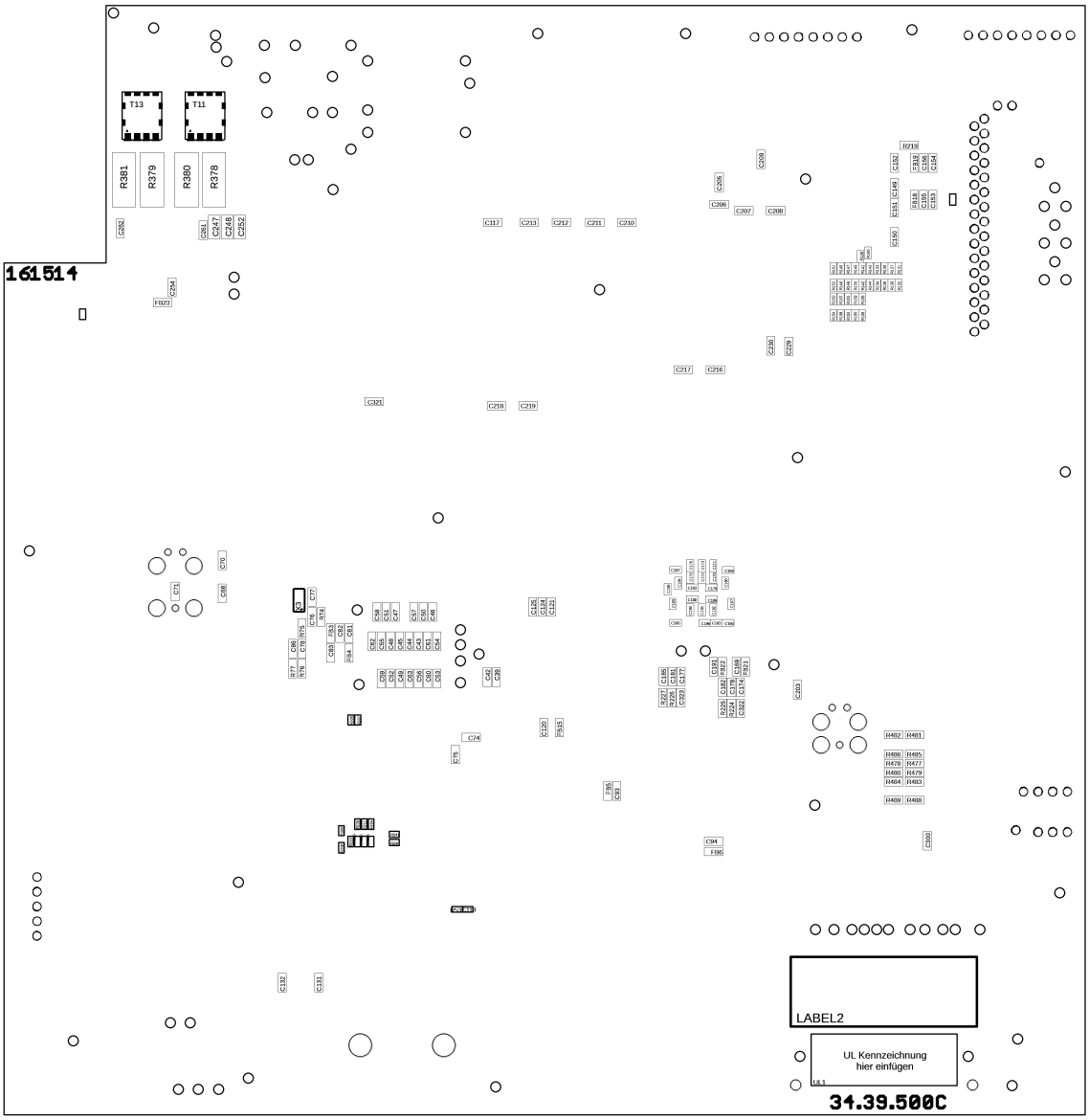
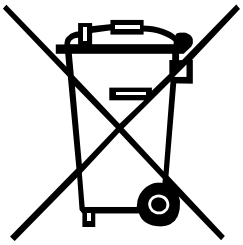

T13
T11
R381
R379
R380
R378
161514
LABEL2
UL Kennzeichnung
hier einfügen
34.39.500C

Figure 30

11 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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