

GeBE-Testbench Linerless

GPT-4673

OPERATING MANUAL



**Thermal test printer 3" in robust stainless steel housing
for text/graphic/barcode test printouts for evaluation of linerless papers**

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1 SAFETY INSTRUCTION

1.1 SYMBOLS AND THEIR MEANING

Carefully read the safety instructions!

The adherence of all instructions, as well as the appropriate application and use in accordance with the operating instructions are binding for product liability and product warranty.

It is essential to forward these instructions to all other personnel using this device.



ATTENTION

concerns your personal safety and must be observed at all times.



CAUTION hot surfaces

concerns your personal safety and signals a risk of being burned on touch.



CAUTION danger of squeezing

concerns your personal safety and signals a squeezing risk on touch.



CAUTION danger of cuts

concerns your personal safety and signals a risk of cuts.



HINT

concerns equipment safety and will help you to utilize your printer to its fullest.



SUPPORT

For technical questions, please contact GeBE-Technical Support.



TECHNICS

requires consultation with GeBE-Technical Support.



INFORMATION

refers to more detailed or additional information, such as documents or internet links.

1.2 DEVICE INFORMATION

The technology and equipment of the product described in this manual are in accordance with the latest state of national and international requirements in regard to function and safety. Further developments and advancements are continuously being considered.

For this reason, illustrations, dimensions, technical data and general content shown in the following may change without prior notice.

This operating manual is designed to help you to operate our product, which has been developed and manufactured according to modern technology standards, with its multiple options, optimally and securely. Please read this manual carefully before initial operation and store it in close proximity of the device, so it will be available if needed.



In case of any further questions, please contact our personnel, see chapter 8.4 GeBE-TECHNICAL SUPPORT, page 30.



Safe operation of this device is only warranted, if the instructions in this operating manual have been complied with. For installation: Always turn off the device and disconnect it from power supplies.

It is no longer possible to safely operate the device, if:

- the housing has been damaged due to mechanical overload.
- moisture reached the inside of the device.
- smoke is coming from the inside of the device.
- the power supply cord is damaged.
- the device stopped working properly.



Disconnect your device immediately from the mains and power supply, when such a failure occurs, and contact GeBE customer service. See chapter 8.4 GeBE-TECHNICAL SUPPORT, page 30.



Please make sure that the power supply cable is run in such a way that nobody trips over it, and it cannot be damaged by other devices.



During operation, surfaces in the surrounding area of the print head may heat up. Therefore, direct contact with the print head must be avoided to prevent burning accidents. Do not put heat sensitive objects close to this heat source.

- The device may only be opened or repaired by authorized personnel. Never open the device or carry out repairs yourself.



Always contact the GeBE customer service. See chapter 8.4 GeBE-TECHNICAL SUPPORT, page 30.

- Before the device is turned on, make sure that the system voltage of your installation matches the supply voltage of the device. The device characteristics are printed on the name plate and in the technical data. The name plate is located on the underside of the device. For the technical data of this device, refer to the chapter 12 TECHNICAL DATA, page 33.
- Peripheral devices that are connected to the interfaces and the DC circuits of this device have to meet the requirements (SELV) for low safety voltage (limited power) in accordance with EN/IEC 60950.
- Assure, that the printer is protected against overpower according to EN/IEC 60950.
- Switching off the device does not completely disconnect it from the power supply. Your device is only disconnected completely, when the power is unplugged.
- Avoid constant high humidity and condensation. Protect the device from being splashed and from coming in contact with chemicals.
- Only use spare parts and accessories supplied or authorized by GeBE. The use of unauthorized parts or accessories may considerably affect the function and safety of the device and will make all warranty claims null and void. All supplied parts and original accessories/spare parts are listed in chapter 4.3 ACCESSORIES AND SPARE PARTS, page 10.

1.3 WARRANTY

We guarantee that all goods supplied by GeBE possess the warranted features according to the intended use. The guarantee period for OEM's is 12 months unless other terms have been agreed upon in writing, and is calculated from the date of shipment.

1.4 DISCLAIMER OF LIABILITY

We explicitly state that all product liability and guarantee claims are null and void:

1. if the device has not been used in accordance with the instructions in this operating manual or hints on the device itself.
2. if the device has been used outside the intended use, see chapter 1.5 INTENDED USE and chapter 1.6 NON-INTENDED USE, page 5.
3. if the device has been used outside the specifications according to CE declaration.
4. if the customer fails to claim an occurring defect without delay and in writing. Detailed information on our warranty is part of our terms of delivery and payment, which can be seen and downloaded at www.gebe.net (footer: AGB).
5. when opening or operating the device in a state of error.
6. for attempts by the customer to repair the device.
7. for usage/installation of parts and accessories others than the manufacturer's original.
8. for damages due to ESD or EOS.
9. for damages due to printing on the wrong paper (side).
10. for damages through overloading and foreign influence.
11. for normal wear and tear.
12. for visual defects.
13. for damages through force majeure of any kind.

1.5 INTENDED USE

The GeBE-Testbench Linerless was developed as a test printer for the following examinations:

- Silicone and adhesive contamination of the printhead
- Print quality of linerless paper
- Partial detachments (strips) of silicone
- Slip test of the linerless platen material
- Sticking the paper to the platen during service life

1.6 NON-INTENDED USE

- Usage/installation of parts and accessories others than the manufacturer's original's.
- Usage of the printer in non-compliance to this manual.
- Changes/modifications not approved by GeBE could void the user's authority to operate the equipment.
- Not complying to the safety instructions.
- Usage of the printer outside the intended use (see chapter 1.5 INTENDED USE, page 5).

2 SYSTEM DESCRIPTION

CONFIGURATION



The thermal printer GeBE-Testbench Linerless in a stainless steel housing is especially suitable for the testing of papers without carrier material (linerless). The material of the platen, as well as the cutter knives is adhesive repellent whereby linerless papers are easily transported and cut.

PAPER



While running longer tests, the NPE (near-paper-end) sensor mounted on the paper roll holder for cores of 40 mm (1.57 inch) and 76 mm (2.99 inch) signals the approaching paper end.

LAYOUT



A wide range of available layout commands and several character sizes allow attractive ticket design.

POWER SUPPLY



The thermal printer GeBE-Testbench Linerless is operated with a voltage of 24 VDC.

TEMPERATURE RANGE



Due to the specification for linerless papers, the printer can be used in a temperature range of -10°C to +40°C (14°F to 104°F) and depending on the paper used.

BARCODE



Barcode support for Code39, Code128, 2of5interleaved, EAN8/EAN13, UPCA and QR Code.

INTERFACES



The GeBE-Testbench Linerless can be addressed via an USB interface.

3 LAYOUT AND FUNCTIONS

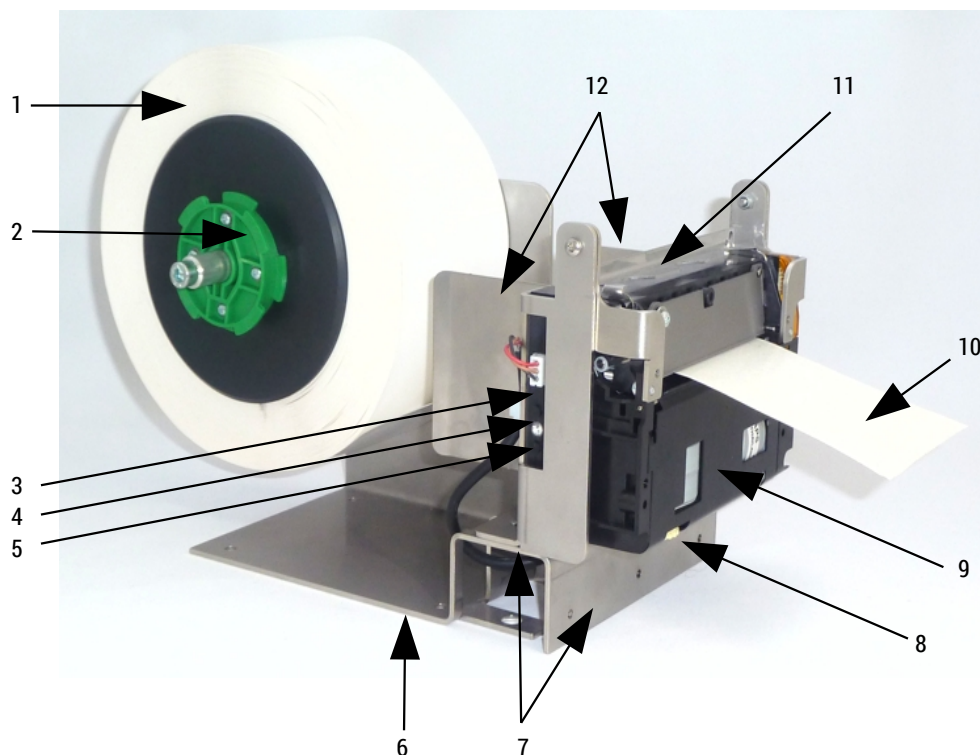


Figure 1: Parts and functions

No.	Designation
1	Paper roll
2	Stopper for paper roll
3	Button TEST (freely programmable)
4	Status LED
5	Button FEED
6	Paper roll holder
7	Mounting wholes for vertical or horizontal assembly
8	Rotating wheel
9	Printer mechanism
10	Printout
11	Opening lever
12	Paper guides left/right adjustable

3.1 BUTTON FUNCTIONS

The buttons may have different functions depending on the status. The time for which the buttons are held down is also an issue.



A detailed description is available in our software manual SoMAN-C32-E-0793.

FEED BUTTON

The FEED button (5/figure 1) serves to feed the paper forwards. When pressing the FEED button, the paper feeds first only one line of the set font. When holding the FEED button down for more than two seconds, the paper feeds continuously.

SELF TEST (programmable)

By starting a self test printout, the printer functions can be tested. For this purpose, the FEED button (5/figure 1) has to be pressed down when switching on the printer. The interfaces are not tested. Software version and character set are printed out. For OEM, special printouts can be activated during the self test.

TEST BUTTON (programmable)

By default, the TEST button (3/figure 1) is not programmed. If required, 3 different functions can be programmed for this key (macro → batch file):

	Time	Description
T1	briefly pressed	programable: execution of a macro batch file T15
T15	kept pressed for minimum 2 seconds	factory set to print the character set and software version
RESET	kept pressed for minimum 12 seconds	execution of a RESET

3.2 CONNECTIONS

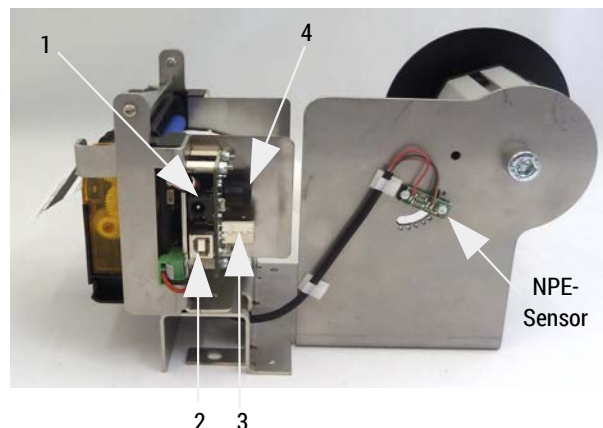


Figure 2: Connections – right side

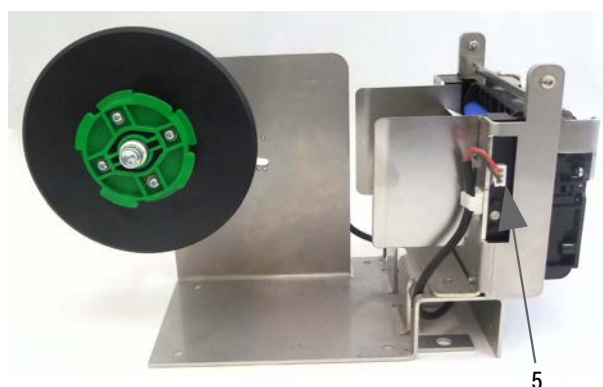


Figure 3: Connections – left side

Overview connections

No.	Designation	GCT-4663-50
1	Power supply horizontal	J1
2	USB horizontal	J2
3	USB vertical	J212
4	Power supply vertical	J211
5	Connection NPE-Sensor	J40



IMPORTANT:

For the power supply only J1 or J211 may be used.

For USB connection only J2 or J212 may be used.

3.3 STATUS MESSAGES

The integrated STATUS LED (4/figure 1) indicates two printer states:

No.	Indication	Description
1	LED permanently on	paper available and all functions are in order
2	LED flashes	no paper available, case of error



A list of statusbytes is available in the software manual SoMAN-C32-E-0793.

3.4 CHARACTER SETS

Character sets are stored in the flash memory of the controller. Other character sets are available on request.



Standard character sets are listed in the software manual SoMAN-C32-E-0793.

3.5 OEM OPTIONS



- program variants
- special fonts
- special functions

The setup settings, such as density, text size, etc. can be set up by the user himself and stored user-specifically in the EEPROM.



A detailed description of the setup settings is available in the software manual SoMAN-C32-E-0793.



On request, command and character set adjustments are also made ex factory. Contact the GeBE customer service, see chapter 8.4 GeBE-TECHNICAL SUPPORT, page 30.

3.6 CONTROLLER AND DRIVERS

Following drivers support the printer controller GCT-4663:

- Windows® 7, 8, 8.1, 10
- Cups for Linux Ubuntu 16.04 LTS

3.7 SENSOR

Overview

Sensor	Connection
PE sensor	integrated in printer mechanism on thermal side
AUX sensor	integrated in printer mechanism on thermal side
NPE sensor	connection to the printer (5/figure 3)

3.7.1 NPE/PE-SENSOR

Both sensors detect the paper status.

The PE sensor is integrated in the printer mechanism and sends a signal as soon as paper is no longer available.

The NPE sensor is assembled to the paper roll holder and detects the near paper end depending to its mounting position (see figure 2).

3.8 LABEL AND TICKET PRINTING



A detailed description is available in the software manual SoMAN-C32-E-0793.

4 DELIVERY CONTENT

4.1 UNPACKING



Please check during the unpacking process, if all parts have been delivered completely and undamaged.

Make sure to remove all parts from the packaging. Claims for damages caused during transport can only be asserted, if the carrier is informed without delay. Please prepare a survey report and send it back to the supplier along with the damaged part.

4.2 STANDARD LAYOUT

The standard OEM-printers of series GeBE-Testbench Linerless include standard accessories as described in chapter 4.3.1 ACCESSORIES DELIVERY CONTENT.

Further accessories, please order separately according to the table in chapter 4.3 ACCESSORIES AND SPARE PARTS.

Article number	Article description	USB
14062	GPT-4673-LL-Testbench	x

4.3 ACCESSORIES AND SPARE PARTS

4.3.1 ACCESSORIES DELIVERY CONTENT

The standard versions of the thermal printer are packaged in sets.

The printer sets contain the following parts:

Article number	Article description
Cable	
11002	Power supply cable for power supply (art. 13619) with Schuko plug and socket C13, length 1,500 mm (59.1 inch)
12538	Data round cable USB 2.0 FS, USB B to USB A, length 1.800 mm (70.9 inch)
Power supply	
13619	Power supply 24VDC / 2.7A with coaxial power connector and power supply cable (art. 11002)

4.3.2 OPTIONAL ACCESSORIES AND SPARE PARTS

Article number	Article description
Spare parts	
14113	Support platen
14112	Print platen

5 OPERATION



During installation: Always disconnect system power supplies.

During installation and operation, the user (commissioning engineer) must comply with the regulations according to IEC 60950-1: Protection against contact with parts of hazardous voltage and compliance with insulation requirements.

5.1 START UP

The GeBE-Testbench Linerless can be assembled horizontal or vertical to the paper roll holder with 3 screws (Torx T10).

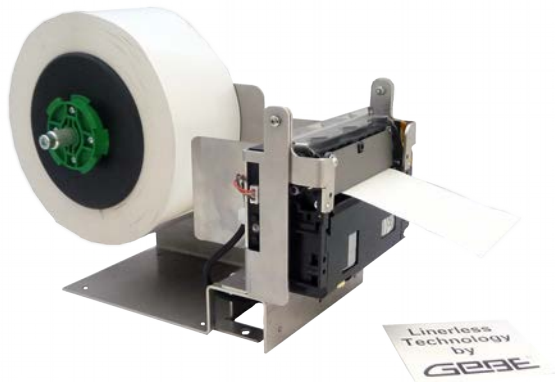


Figure 4: Horizontal assembly / roll holder with paper axis for 3" roll core

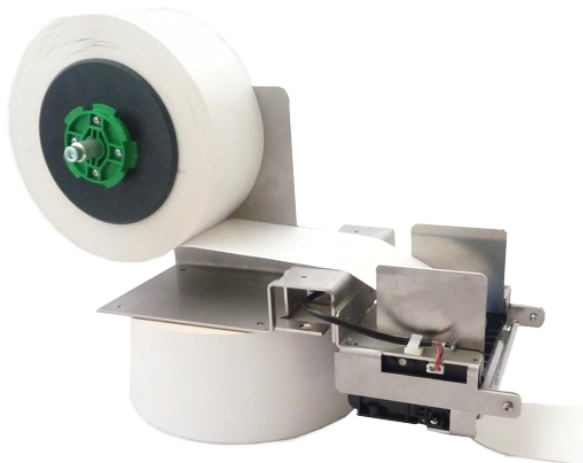
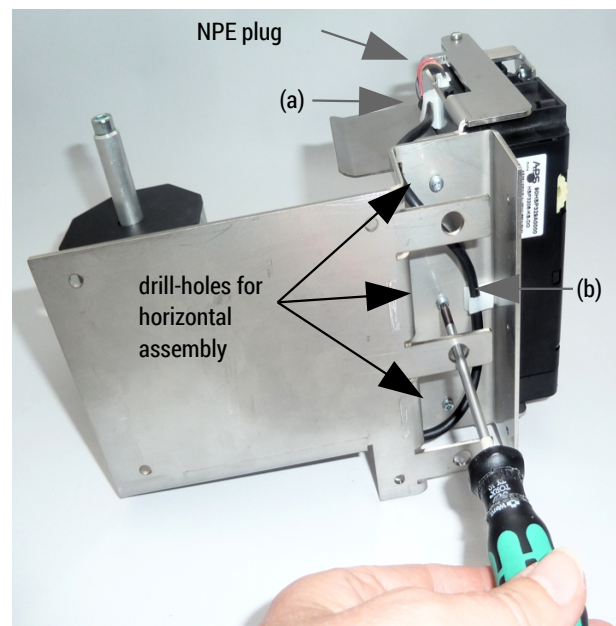


Figure 5: Vertical assembly / roll holder with paper axis for 3" roll core

5.1.1 VERTICAL ASSEMBLY

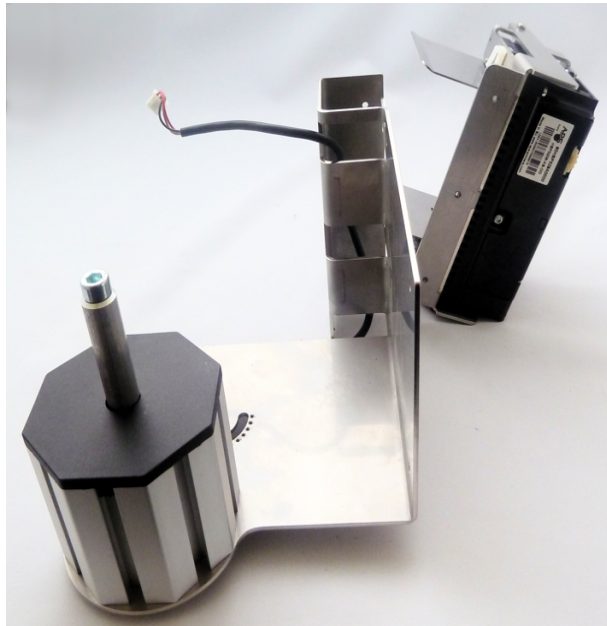
The GeBE-Testbench Linerless will be converted from horizontal assembly to vertical application, as follows:

1. According to chapter 8.1 INSERT PAPER, page 26 remove the paper roll and put the printer aside to the paper roll holder side.
2. Unplug NPE connection and remove cabling from the holding clips (a) + (b).

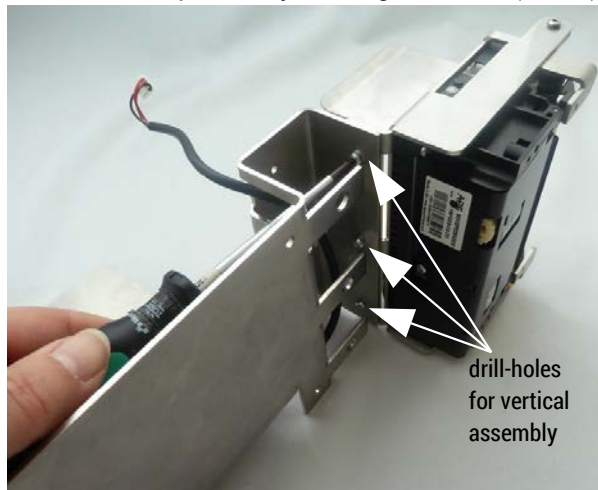


3. Use a TORX screw driver to unscrew the 3 assembly screws (3x T10).

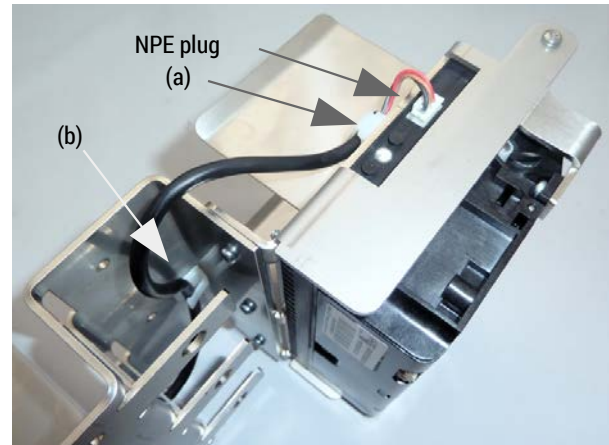
Now the GeBE-Testbench Linerless is disassembled from the horizontal position.



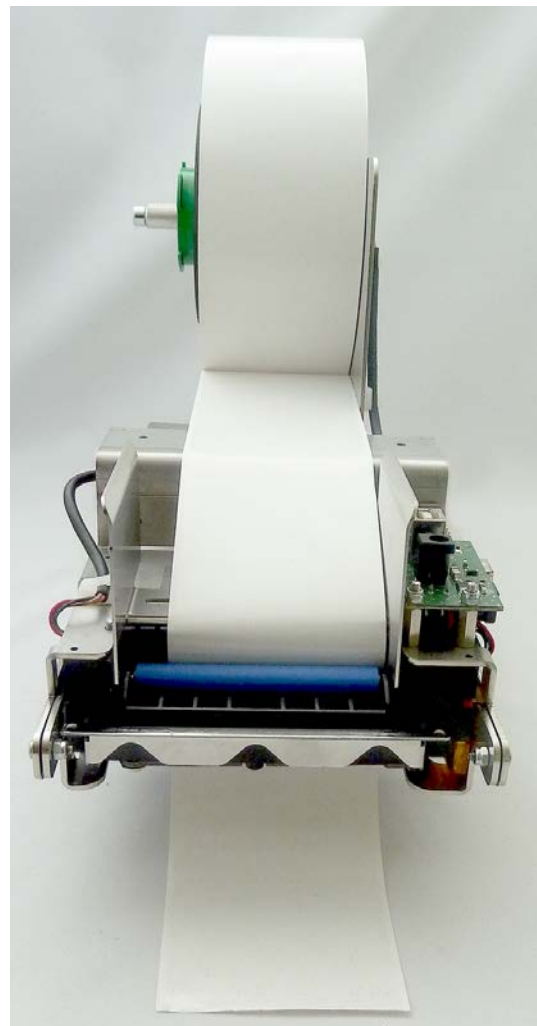
4. Assemble the GeBE-Testbench Linerless in vertical position by screwing the screws (3x T10).



5. Plug the NPE connection and attach cabling to the holding clips (a) + (b).

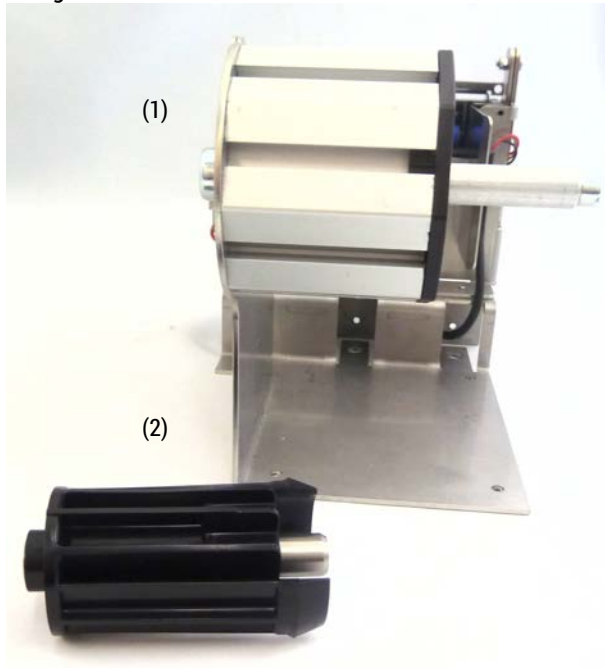


6. Push paper roll on roll holder axis, according to chapter 8.1 INSERT PAPER, page 26.



5.1.2 ASSEMBLY OF ROLL AXIS

The paper roll holder is delivered with two different octagonal roll axis.



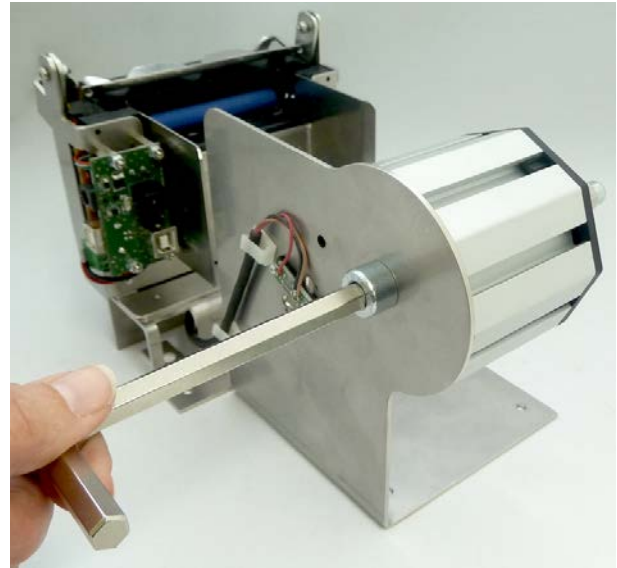
- roll axis for 3" paper roll core (1)
with stopper (see 2/figure 1)

- roll axis for 2" paper roll core (2) self-locking

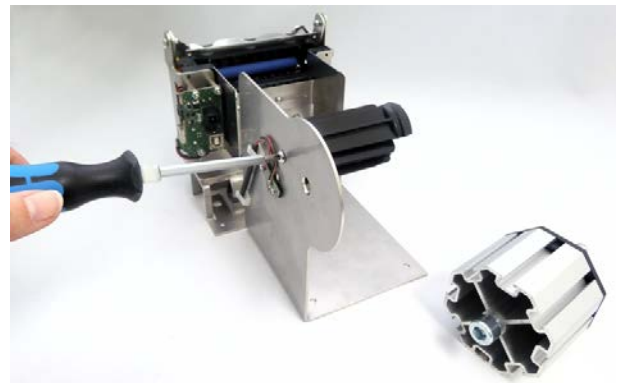
The axis can be changed, as follows:

1. According to chapter 8.1 INSERT PAPER, page 26 remove the paper roll.

2. Unscrew allen screw M10x16 from the roll axis 3".



3. Mount the roll axis 2" by screwing the allen screw M6x10.



5.2 ADJUSTMENTS

5.2.1 ADJUST THE PAPER GUIDE

The paper guide can be adjusted according to the paper width (e.g. 58 or 80 mm).

Therefore loosen the 2 phillips head screws M3x6 (a), adjust the width by moving the paper guide plate (b) and fix the screw again.

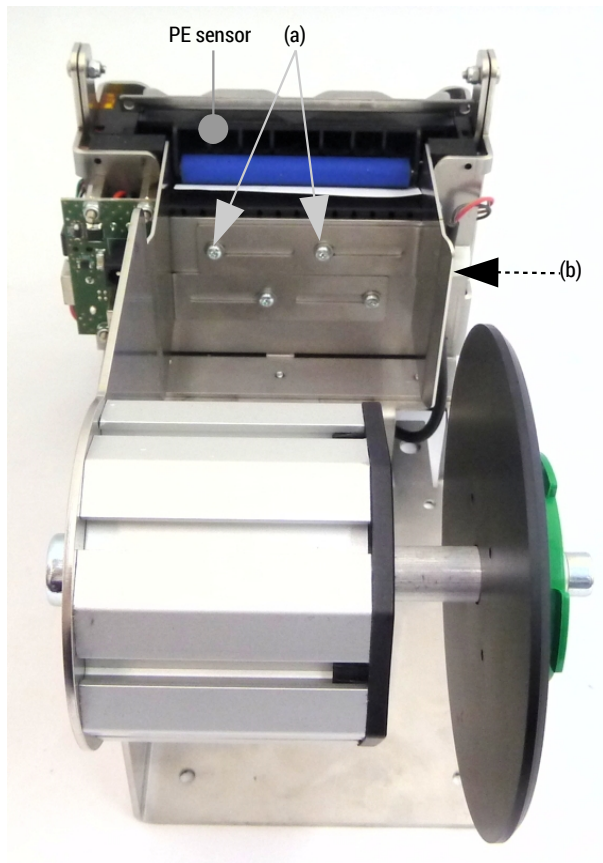


Figure 6: Paper guide plates



In order that the PE sensor still recognizes the paper end, only the guide plate (b) must be adjusted.

5.2.2 ADJUST NPE SENSOR POSITION

By changing the NPE sensor position (screws M2x6), the approaching paper end detection can be set from much (o) to less (u) residual paper on the roll.

Recognizable distance to the paper roll is 0.5 to 1.5 mm; on request also 2-5 mm.

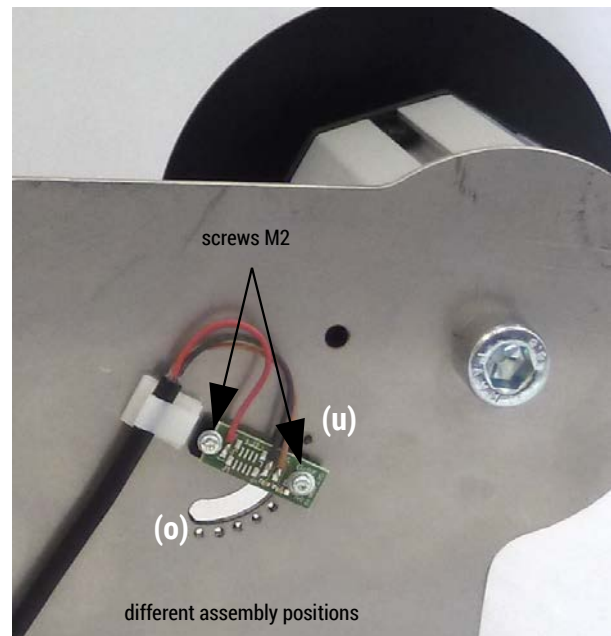


Figure 7: NPE mounted to paper roll holder

With linerless paper rolls the end of the paper is firmly glued. Thus, in the event that the NPE signal is ignored and no new paper has been inserted, a software shutdown function of the printer is necessary.

Otherwise, the printer would be incessantly printing in the same place. This would cause extremely dirtying, overheating and taking a lot of damage to the printer.

5.3 TEST-FUNCTIONS

The thermal printer GeBE-Testbench Linerless is developed for the following tests:

1. Silicone and adhesive contamination of the printhead
2. Print quality of linerless paper
3. Partial detachments (strips) of silicone
4. Slip test of linerless platen material
5. Sticking of the paper to the platen during downtimes

5.3.1 PRINTHEAD CONTAMINATION

SILICONE AND ADHESIVE CONTAMINATION OF THE PRINTHEAD

To produce linerless paper, silicone is applied to the thermal layer of the base paper.

The silicone serves as a separation layer for the adhesive on the paper back side.

The amounts of silicone vary from 0.6 g/m² up to 1.4 g/m² depending on the roughness of the base paper.

The more silicone that has been applied, depending on how it is anchored to the substrate, the more it will be scraped off and deposited by the printer mechanism during the run. The accompanying ingredients in the silicone create a kind of self-cleaning effect. Therefore small amounts of removed silicone do not lead to an accumulating contamination. But larger quantities can not be sufficiently removed and accumulate more and more.

If the silicone layer is not completely closed, adhesive components can penetrate through the silicone layer, which destroys the thermal layer and deposits on the printhead during printing. These adhesive components stick very hard on the printhead and are difficult to remove. In addition, they insulate the heating elements of the printhead and, if they are not removed in time, lead to the destruction of the printhead. Adhesive residues on the printhead are an indication that the silicone layer is not sufficiently closed.

The GeBE Standard Test prints 2700 typical retail tickets in a row. Thereafter, the printhead is inspected.



Picture 1 shows a very low level contamination on the print rail

With this linerless paper tested, it can be assumed that even after 100,000 tickets printed in a row no major contamination occurs.



Picture 2 shows a low level contamination on the print rail

With this linerless paper tested, it can be assumed that the printhead has only be cleaned after 30,000 – 50,000 tickets. Adhesive residues can be identified on the left.



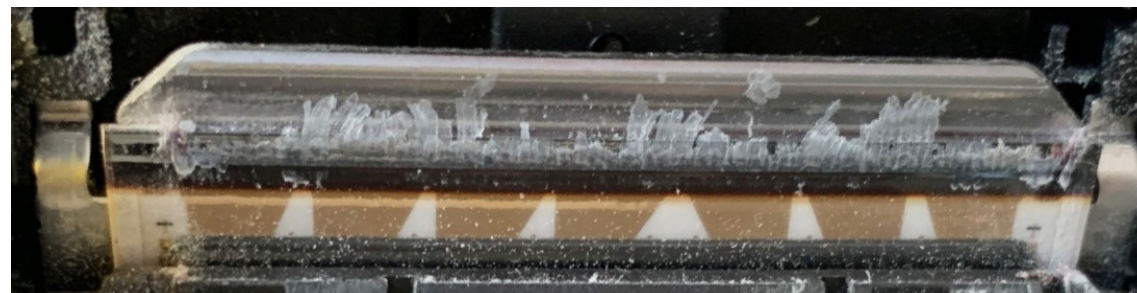
Picture 3 shows a high level contamination on the print rail

First printing interruptions already occur. The printhead needs to be cleaned.



Picture 4 shows the extreme contamination on the print rail

After printing 10,000 tickets with a low-quality linerless paper.



5.3.2 PRINT QUALITY

The print quality depends primarily on the sensitivity of the base thermal paper and also on the amount of silicone applied.

The higher the amount of silicone applied, the more printing energy is needed to achieve a certain intensity (blackening). In addition, the printed image is becoming increasingly blurred. At low application rates of about 0.6 g/m², the standard printing energy of parameter 18.6: = 25 is sufficient to produce a good print image. With a standard application rate of 0.8–1.0 g/m², a good blackening is achieved at 18.6: = 28.

Ultimately, the print quality and print intensity of the same base paper could be used to deduce the amount of silicone applied.

The test uses a standard retail ticket. This ticket contains critical elements which also allows the conclusions on the print quality (see 1.-4.).

1. A horizontal 1 dot line:

The GeBE Testbench Linerless uses a two-stage history control with 50% more energy for the first "cold" line, which should be clearly printed.

2. An EAN13 barcode:

An important quality criterion is the module of the barcode. So the ratio of the widths of dark and light stripes. If the printing energy is too high or the printout is blurred, legibility will be reduced.

3. A horizontal 2 dot line:

The GeBE Testbench uses a two-stage history control with 50% more energy for the first "cold" line.

25% for the next line.

Both lines should be roughly the same black. In the worst case, the first line is barely visible.

4. A thin text:

Here, the resulting dissolution of the paper becomes visible with silicone. A good paper hardly produces any imperfections.



The picture shows three printouts of a good paper with approx. 0.7–0.8 g/m² silicone coating with adjusted density: parameter 18,6: = 25, 28 and 30



5.3.3 STICKING DURING DOWNTIMES

STICKING OF THE PAPER TO THE PLATEN DURING DOWNTIMES

The linerless platen can be easily clipped out and replaced. This makes it easy to test different silicone materials for the drive platen. In particular, the liability for longer service life or the wear and tear of the platen are interesting parameters. In addition, there are adhesives that can "react" with the platen materials and attack them.

So that the back of the paper does not stick at all or sticks marginally to the linerless platen, on the one hand a special non-stick silicone has to be used, but also the surface has to be kept as small as possible. The platens are sanded accordingly. The duller these "teeth" become, the more the paper sticks to the platen.

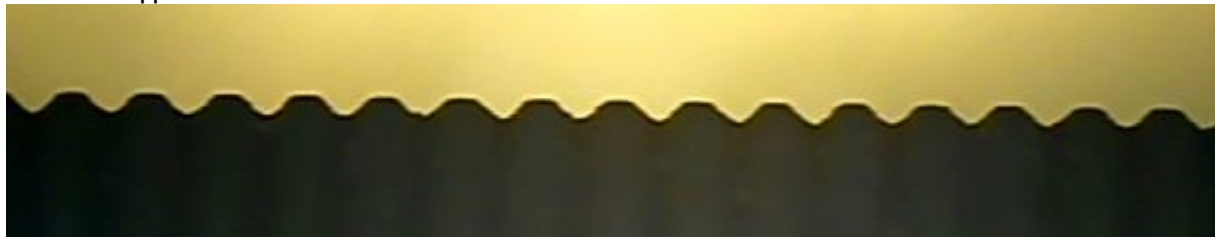
In operation with use of a new platen, a paper with a good adhesive and low adhesive application will stick to the platen after approx. one week; with a used platen already after one hour.

The pictures below show a new platen compared to a platen that has reached the end of life.

New platen



Platen after approx. 20 km runtime



5.4 TEST PROCEDURE WITH GeBE TOOLBOX

The GeBE Toolbox is supplied with several files:

Standard test retail tickets with different print width:

BON-tahoma-640x480.prn

BON-tahoma-448x480.prn

BON-tahoma-448x480L.prn

Grey print for silicone peeling off:

grey640.prn

Platen slip test:

Schlupftest.prn

Standard test printout:

testprint640.prn

testprint448.prn

testprint448L.prn

5.4.1 TEST PREPARATION

1. The printhead is clean.
2. The printhead temperature is 20°C – 25°C.
3. Do not use the first approx. 0.5 m of a new paper roll.



Hint:

If there are any fluctuations in the print quality, first clean the printhead and eliminate any possible causes of contamination. Due to the nature of the process, silicone deposits on the printhead coming from the paper can occur during operation. These deposits increasingly occur:

1. with a cold printhead.
2. at very low print speed. This is especially the case at printing start, where the print speed is nearly zero at the first print lines.
3. if large areas has to be blackened.
4. if the quality varies within a paper roll.

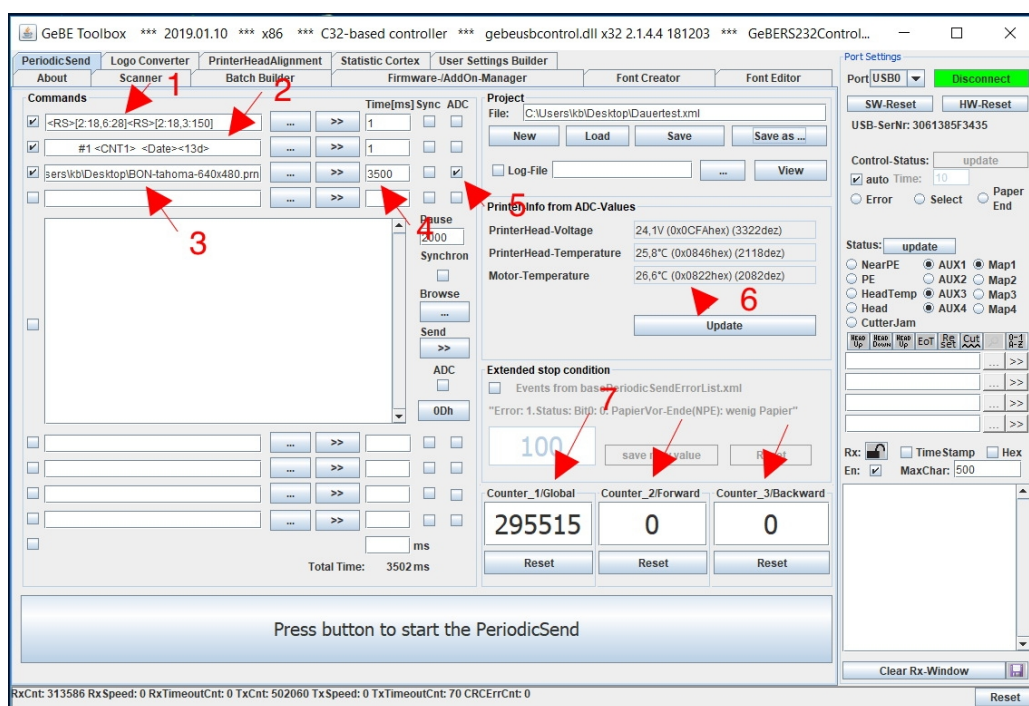
5.4.2 ENDURANCE TEST

The function "Periodic Send" in short „PS“ of the GeBE Toolbox serves as an endurance test tool for all GeBE printers. Files, commands and actions can be executed and monitored repeatedly.



A detailed description is available in our technical information of GeBE-Toolbox INFO-Toolbox-DE-0819, which can be requested at GeBE support via email info@gebe.net.

All entries in PS can be saved as a project in a file and also loaded again. The example below can be found in the file "Dauertest.xml". Files, commands and actions can be entered in the „Commands“ fields 1,2,3 and activated with the tick of the checkbox. In field (4) "Time", the waiting time in milliseconds is specified until the next "Command" field is executed.



Field 1: Entry of two system commands of the printer.

<RS> [2:18,6:28] sets the density at 28.

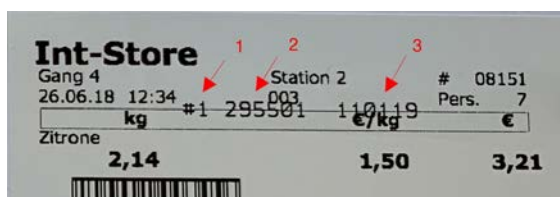
<RS> [2:18,3:150] sets the max. print speed to 150 mm/s.

These can be easily adapted.

Field 2: Using Toolbox, an already existing ticket, such as a standard retail ticket, can be printed with a supplement of counter and the current date of the test PC.

The commands <CNT1>, <CNT2> and <CNT3> transparently print the counter reading 1, 2 or 3 at the current print position. The <Date> command returns the current date in the format: ddmmjj.

1: = Text "# 1" 2: <Print Counter 1> 3: <Print current date, here: 26.06.18> <Carriage Return>



Field 3: Printout of the graphics test file "Bon-Tahoma-640x480.prn".

In Field 4: Time (ms), the waiting time for the next field and thus the next printout is entered.

Field 5+6: Please make sure that the motor does not overheat. We recommend that the motor temperature does not exceed 45°C (5) (6), otherwise the heat can greatly influence the adhesive properties. An e.g. side-mounted room fan with low speed brings significant cooling. An attachable cooler system for the GeBE Testbench Linerless is in preparation.

Field 7: PS has 3 counters, which are also stored with storage of the project. Counters 1 and 2 count upwards indefinitely. Counter 3 counts down to 0 and then stops the test run.

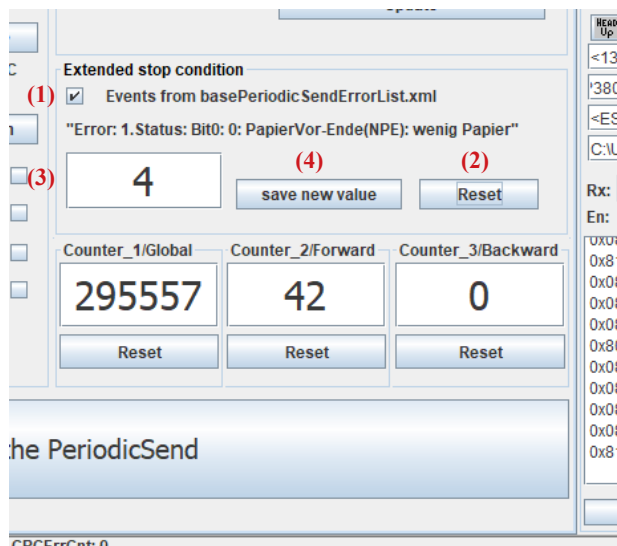
Partial detachments tests or slip tests have to be performed with the batch builder.

5.4.3 PROGRAMMING STOP AT PAPER END

The software GeBE-Toolbox defines how many tickets will be printed after the NPE sensor has been triggered. The right combination of NPE position and software settings must be determined by testing.

The entry field for the stop condition is located in the bottom right of the GeBE-Toolbox menu „Periodic Send“.

1. Activate the stop function by setting the activation hook (1).

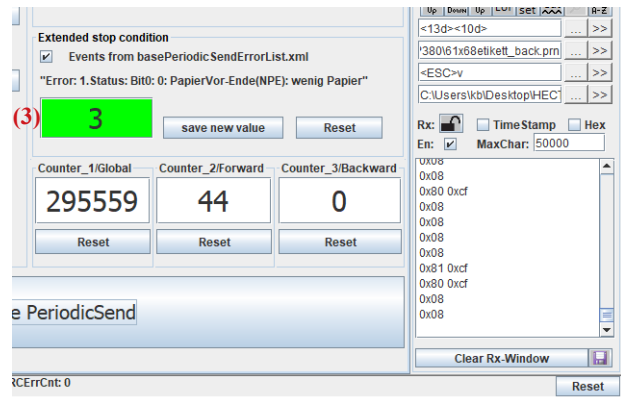


2. Press the button „Reset“ (2).
3. Enter the desired number of tickets to be printed after NPE activation, in the field (3). Here in the example above: 4 tickets.
4. Confirm the entry by pressing the "save new value" button (4).
5. Start the printing process (longruntest.xml).



A detailed description is available in our technical information of GeBE-Toolbox INFO-Toolbox-DE-0819, which can be requested at GeBE support via email info@gebe.net.

6. In field (3) a countdown starts with each printed ticket until 0 = stop.



6 POWER SUPPLY



During installation: Always disconnect system power supplies.

During installation and operation, the user (commissioning engineer) must comply with the regulations according to IEC 60950-1: Protection against contact with parts of hazardous voltage and compliance with insulation requirements.

6.1 FIXED VOLTAGE POWER SUPPLY

The printer can be operated with a fixed voltage power supply of 24 VDC $\pm 10\%$.

Depending on the mounting position: horizontal or vertical, the corresponding socket is used according to the chapter 3.2 CONNECTIONS, page 8.



The connected power supply has to be protected against overvoltage in accordance with EN/IEC 60950. Suitable power supplies for the printer is available from GeBE, see chapter 4.3 ACCESSORIES AND SPARE PARTS, page 10.



It is recommended to select the cable length as short as possible. Long cable lengths lead to high resistance that results in a poor print image up to failure of the printer.

Connection horizontal J1 (GCT-4663-50)

Pin	Function
1	GND
2	GND
3	VP
4	VP

Socket:	KLD-SMT2	J1
Mating connector:	Coaxial power connector	ø 5,5/2,1mm

Connection vertical J211 (GCT-4663-50)

Pin	Function
1	VP
2	GND
3	GND

Socket:	KLDVX-0202	J211
Mating connector:	Coaxial power connector	ø 5,5/2,1mm



IMPORTANT: Only connection J1 or J211 may be used.

Suitable connection cable: please refer to chapter 4.3 ACCESSORIES AND SPARE PARTS, page 10.

7 INTERFACES

The controller GCT-4663 contains two USB full speed interfaces.



Avoid connecting cables when the power supply is switched on. If this is not possible, make sure that the USB interface is always connected after the power supply has been plugged in.



Detailed controller information is available from the hardware description HaMAN-E-0813, which can be requested from GeBE via email (info@gebe.net).

7.1 USB INTERFACE

The suitable interface cable has to be connected at horizontal application to the socket (2/figure 2) or at vertical application to the socket (3/figure 2). On the other side directly to an USB connection (COM port of a PC).

The USB device class is consistent with the "Printer Class". After the PC is plugged in, it reports "USB printer support" and installs an "USB00x" USB port. During the installation of the printer driver, it has to be allocated to the USB port.

Connection J2 or J212 (GCT-4663)

Pin	Function	Dir
1	USB-Power	-
2	USB D-	I/O
3	USB D+	I/O
4	GND	-
5	Frame GND	-

Socket:	USB-B	J2 / J212
Mating connector:	USB-B 90°	J2
	USB-B 180°	J212



IMPORTANT: Only connection J2 or J212 may be used.

Suitable connection cable: please refer to chapter 4.3 ACCESSORIES AND SPARE PARTS, page 10.



USB specification	USB 2.0 FS
Device type	Printer Class
USB	Full Speed 12 Mbit/s

7.2 NPE-SENSOR

Connection J40 (GCT-4663)

Pin	Function	Dir
1	USB-Power	-
2	NPE in	I
3	NPE LED	O

Socket:	JST S3B-XH-A	J40 / J240
Mating connector:	JST XHP-3	AWG 30 - 2

8 MAINTENANCE/SERVICE



The closed printer is protected against static discharges in accordance with the EMC guidelines. Since the user may come in contact with parts that are electrically sensitive, when the printer is open (like the print head during cleaning or the electronics), the user must assure that all possible static charges are discharged through sufficient grounding before touching the printer (e.g. by touching grounded objects like radiators), in order to safely avoid damage to the printer.

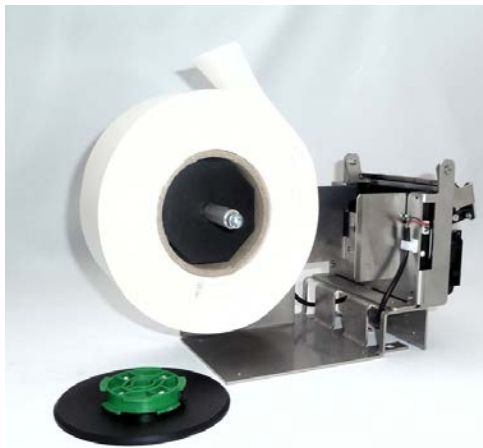
8.1 INSERT PAPER



Which side of the thermal paper can be printed on? On the paper roll, the printable side is the outside in almost all cases.

Insert the paper:

1



1. Remove the stopper and the empty paper roll core from the axle. Slide the new paper roll onto the axle so that the printable side faces the printer mechanism.

2



2. Slide the paper into the paper feeder until stop. As soon as the PE sensor recognizes the paper, it is automatically drawn in - with the autoloader activated - and positioned for printing.

3



3. Place the stopper on the axle to secure the paper roll.



The axis for small paper core diameter is used without stopper.

8.1.1 SUITABLE PAPER



The GeBE-Testbench Linerless serves for testing of linerless papers.

8.2 CLEANING

After larger print jobs, depending on the paper quality and adverse environmental conditions, it may be necessary to clean print head, sensors, cutter blades, support and print platen.

Especially, when the print is no longer properly performed.



Never use sharp objects for cleaning. This may damage the print head.

8.2.1 OPEN THE PRINTER MECHANISM

In order to get access to the components to be cleaned, it is necessary to open the printing unit.



Before opening, the moveable cutter blade must be located in the lower position (see figures 7 + 8).



When opening and closing the printing mechanism there is a risk of squeezing the hands/fingers.



When reaching inside the printing mechanism there is a risk of cuts to hands/fingers, as the cutter blades are very sharp.

1. Pull the metal bar latch forward.



2. Now the printer mechanism (together with the presenter unit) can be opened and fold downwards.

3. Push the upper printer unit upwards and fold it up to the stop.



Figure 7: Open the printer mechanism

8.2.2 CLEANING PROCESS



The linerless components of the printer require a special cleaning process, see chapter 8.2.2.1 LINERLESS COMPONENTS, page 28.

1. Open the printer mechanism according to chapter 8.2.1 OPEN THE PRINTER MECHANISM, page 27.
2. Manually remove existing scraps of paper.
3. Forcefully blow into the paper tray in order to remove the coarse dust.



In principle the printer must be kept dust-free.

8.2.2.1 LINERLESS COMPONENTS

- print platen
- support platen
- cutter blade fixed (above)
- cutter blade moveable (below)

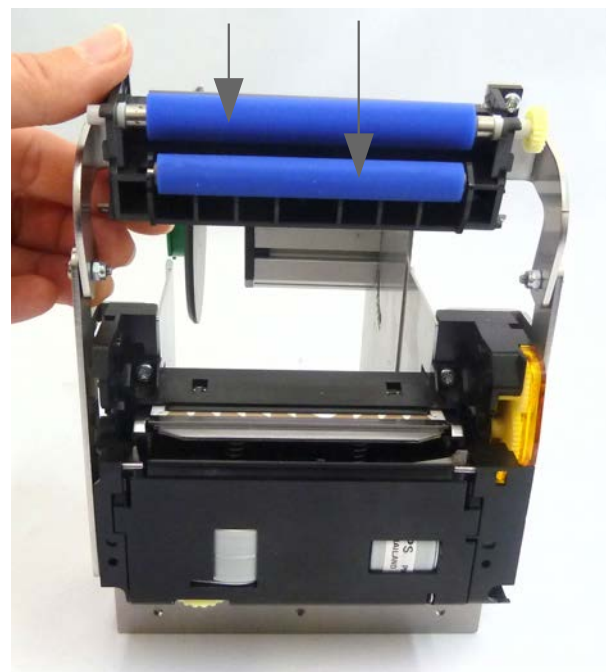


The linerless components must NEVER be cleaned with solvent-based liquids or alcohol, as this will attack the coating. Even rubbing on the surface or using hard cleaning items will damage the coating irreparably.

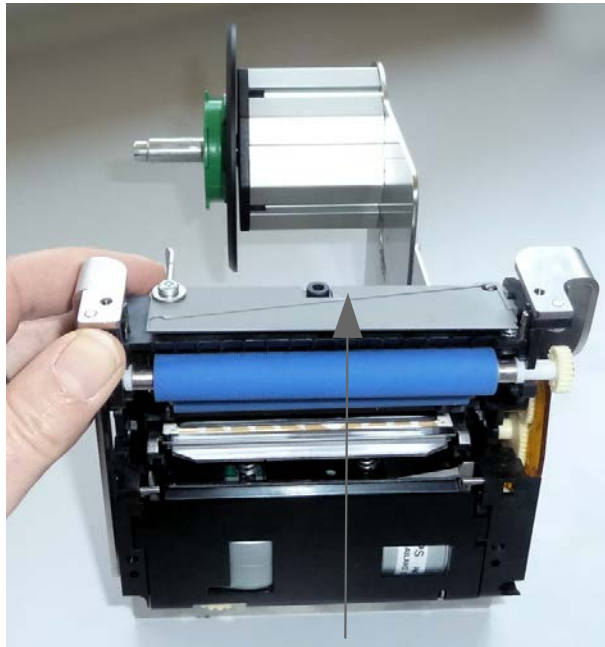
For cleaning start with point 1.–3. of chapter 8.2.2 CLEANING PROCESS, page 28.

4. Adhesive residues on the linerless components may only be "dabbed" with a label.
5. Particularly strong contaminations can be removed with a suitable silicone oil (e.g.: OKS 1010/2) and a cut-resistant cloth or soft cotton buds.

print platen support platen

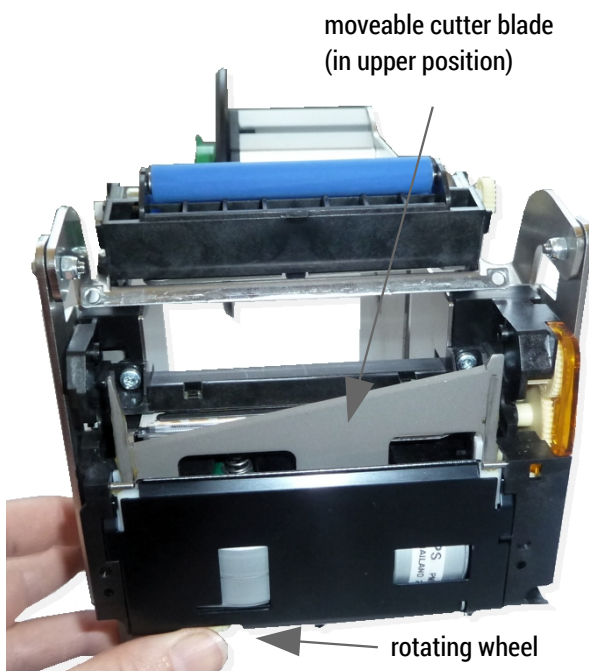


6. Support and print platen can also be removed from the holder for cleaning and be replaced, if necessary.



fixed cutter blade

7. To clean the moveable cutter blade, it must be manually pushed upwards with the rotating wheel.



moveable cutter blade
(in upper position)

rotating wheel

Figure 8: Moveable cutter blade (in upper position)



Please observe the instructions in INFO-Cutter-DE-0919 "Cleaning GeBE-Cutter linerless". It may directly be requested from GeBE via email (info@gebe.net).

8.2.2.2 PRINTER MECHANISM COMPONENTS

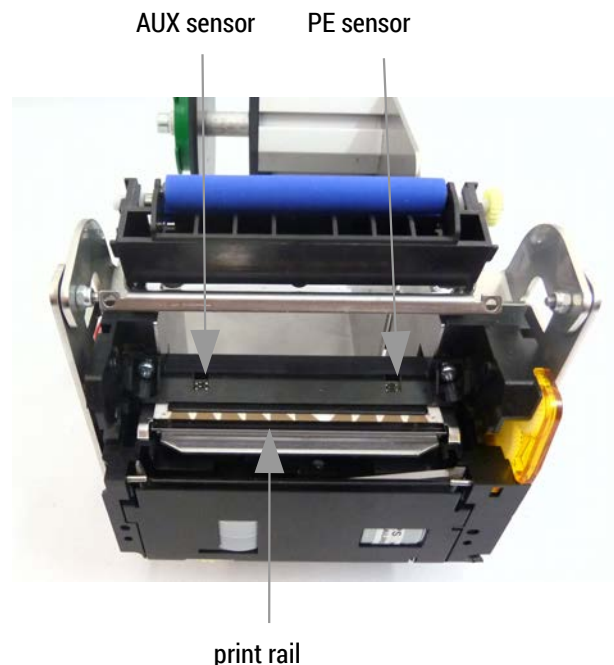
- print rail
- sensors



When cleaning with solvent-based liquids or alcohol, NEVER touch the linerless components, as this will damage their coating irreparably. See chapter 8.2.2.1 LINERLESS COMPONENTS, page 28.

For cleaning start with point 1.–3. of chapter 8.2.2 CLEANING PROCESS, page 28.

4. Soak a cotton bud with isopropanol (IPA) for cleaning the components of the printer mechanism. Alternatively use a head cleaning pin or cleaning card.
5. Other contaminations may also be removed with a cotton bud and isopropanol (IPA).



AUX sensor

PE sensor

print rail

8.3 DOCUMENTS OF GPT-4673



All further documents are listed on the Internet www.gebe.net, which you can also request directly from GeBE by email (info@gebe.net).

The software manual SoMAN-C32-E-0793 or SoMAN-C32-D-0792 (German) may directly be requested from GeBE via email (info@gebe.net).

8.4 GeBE-TECHNICAL SUPPORT



In case of service, please contact:
GeBE Elektronik und Feinwerktechnik GmbH
Beethovenstr. 15
82110 Germering /Germany

Tel: +49 (0)89/89 41 41-0

Fax: +49 (0)89/89 41 41-33

In case of questions, please find your personal contact person under www.gebe.net or send an email to info@gebe.net.

9 TROUBLESHOOTING AND RECOVERY

Not every failure means that there is an error that cannot be cleared by the user himself. You will save time and money by recognizing and fixing simple errors on your own. The following tips are meant to assist you:

Test printout: Keep FEED button pressed down while switching on the printer (if programmed).

SYMPTOM	POSSIBLE CAUSE	REMEDY
Paper		
The printer seems to print, paper is feeded forwards but it is not blackened.	Paper: Wrong paper side towards the print head. Only the thermosensitive side can be printed on.	Insert paper correctly: Mostly the paper outside of the roll is the thermosensitive side. You can test this with the fingernail-test: Drag the tip of a finger nail across the paper, pressing down. The friction heat causes the thermosensitive side to blacken.
	Paper is too humid.	Only use dry paper.
Power supply		
The LED only extinguishes briefly during print start.	The power supply is not optimal. External power supply: The power lead cable diameter of the external power supply is too thin. Power output of the external power supply is too low.	External power supply: Use short power supply lead cables in the right diameter dimensions. Test the contact resistance of all plug connections. Thermal printers often have peak currents, which creates incorrect voltage decline at little contact resistances. (No power supply will be strong enough for those cases.)
The printer only prints a few characters in one line.		
Paper feed works, but the self test does not work.		
The printer only prints a few characters in one line. If more is entered, printing stops totally.		
USB interface		
The printout breaks off after a short period of time or is continuously repeated.	COM port setting is incorrect or an action is enabled on the „Job end“ of the Windows® driver.	Set virtual COM port according to installation instructions. Disable the „Job end“ action of the Windows® driver.

10 CE CERTIFICATE



The test setup includes the power supply S-150-24 of MEAN WELL, article no.: 13694.

EU Konformitätserklärung / EU Declaration of Conformity

www.gebe.net

Thermal Printer

- Gerätetyp/Produkt** (Apparatus model/Product): Drucker (Printer)
- Name und Anschrift des Herstellers:** (Name and address of the manufacturer) GeBE Elektronik und Feinwerktechnik GmbH
Beethovenstr. 15, 82110 Germering, Germany
- Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.**
(This declaration of conformity is issued under the sole responsibility of the manufacturer.)
- Gegenstand der Erklärung:** (Object of the declaration) beginnend mit Seriennummer (starting with serial number): 1801 xxxx
baugleich mit (identically constructed as): GPT-4673-M-63-USB/V.24-Linerless
GPT-4673-M-C32-63-USB/V.24-Linerless
- Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union.**
(The object of the declaration described above is in conformity with the relevant Union harmonisation legislation.)

RICHTLINIE 2014/30/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 26.2.2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit.
(DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.)

EMVG: 14. Dezember 2016
(EMC Law: December 14, 2016)

Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln
(Law on the electromagnetic compatibility of equipment)

- Angabe der einschlägigen harmonisierten Normen, die zugrunde gelegt wurden, einschließlich des Datums der Norm oder Angabe anderer technischer Spezifikationen, für die die Konformität erklärt wird, einschließlich des Datums der Spezifikation:**
(References to the relevant harmonised standards used, including the date of the standard or references to the other technical specifications, including the date of the specification, in relation to which conformity is declared.)

DIN EN 55022; VDE 0878-22:2011-12
EN 55022:2010
Deutsche Fassung (German edition)

Einrichtung der Informationstechnik (Information technology equipment)
– Funkstöreigenschaften (Radio disturbance characteristics)
– Grenzwerte und Messverfahren (Limits and methods of measurement)
CISPR 22:2008, modifiziert (modified)

DIN EN 55024; VDE 0878-24:2016-05
EN 55024:2010+A1:2015
Deutsche Fassung (German edition)

Einrichtung der Informationstechnik (Information technology equipment)
– Störfestigkeitseigenschaften (Immunity characteristics)
– Grenzwerte und Messverfahren (Limits and methods of measurement)
CISPR 24:2010+Cor.:2011+A1:2015

- Nicht zutreffend** (Not applicable): ---

- Gültigkeit** (Validity):

Beginn (Start): – mit Datum der Ausstellung (with the date of issue)
Ende (End): – mit Freigabe einer neuen Version (release of a new version)
– bei Änderung des Gegenstandes (Punkt 4) ohne Zustimmung des Herstellers (Punkt 2) (at any change of the object (item 4) without agreement of the manufacturer (item 2))

Unterzeichnet für und im Namen von:
(Signed for and on behalf of)

Ort und Datum der Ausstellung:
(Place and date of issue)

Name und Funktion (Signed for and on behalf of):

GeBE Elektronik und Feinwerktechnik GmbH
Beethovenstr. 15, 82110 Germering, Germany
Germering, 10.07.2018

ppa. Klaus Baldig

ppa. Klaus Baldig / Entwicklungsleiter (head of R&D)

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GeBE-document-no. GPT-4673-M-LL-C32-DE-Conform
date July 10, 2018
page 1 | 1
Our general terms of business are to be applied.
Errors and changes reserved.

11 DIMENSIONS

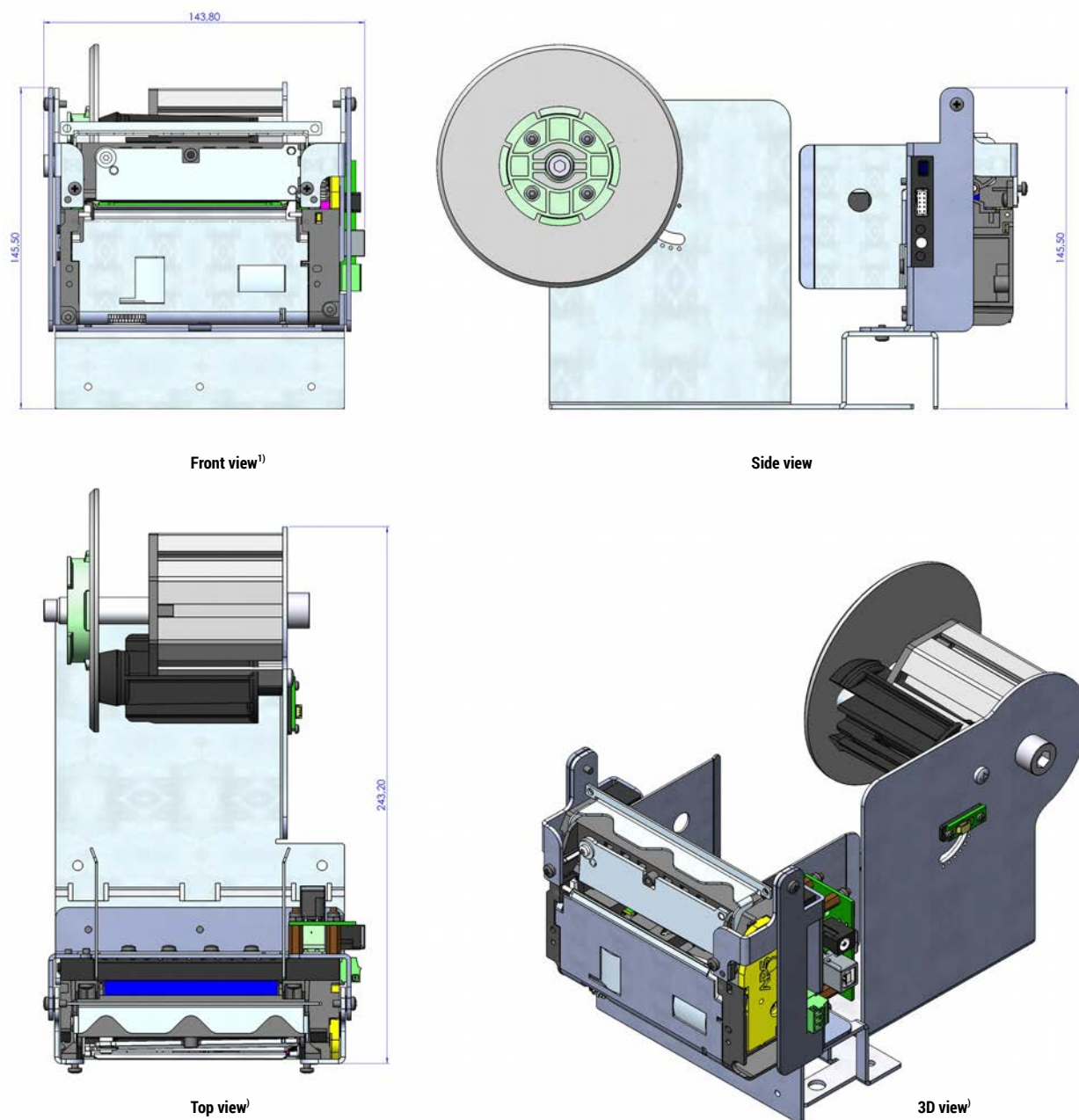


Figure 9: Dimensions GeBE-Testbench Linerless in mm

¹⁾ optional $\varnothing 40$ mm (1.57 inch) axis is also displayed (black)
- only one axis can be mounted

12 TECHNICAL DATA

	GPT-4673-LL-Testbench
Insert paper	auto paper loading
Print procedure	thermal direct print
Resolution	8 dots/mm (203dpi), 640 dots/line
Print speed	max. 250 mm/s (9.84 inch/s)
Paper width	58 – 80 mm (2.28 – 3.15 inch)
Print width	80 mm (3.15 inch)
Paper thickness	70 – 120 µm (2.76 – 4.72 mil)
Paper roll diameter	150 mm (5.91 inch)
Supply voltage	24 VDC ±10%
Current consumption print	adjustable via command: 3 – 12 A (peak)
Current consumption without print	approx. 80 mA
Available interfaces	USB 2.0 FS
Fonts	23 fonts, extendable, UTF-able
Barcode	EAN8, EAN13, UPCA, Code39, 2of5int, Code128, QR Code
MTBF*)	100 km (62.14 mile) / 500,000 cuts (depending on paper)
Dimensions (W x H x D)	143.8 x 145.5 x 243.2 mm (5.66 x 5.73 x 9.57 inch)
Weight incl. paper roll	approx. 1,850 g
Housing	stainless steel
Environment**)	-10°C – +40°C (14°F – +104°F), due to linerless paper specification
Humidity	10 – 90 % rel. humidity, without condensation
Storage condition	-20°C – +70°C (-4°F – +158°F) at 10 – 90 % rel. humidity, without condensation

*) Life cycle according to mechanism testing conditions of the manufacturer with specified paper only. Please inquire. The life cycle of the print head is an averaged expectable performance and no guaranteed data. Under optimum conditions, the above listed data can be achieved using specified paper according to our documentation TI-DE-0606.

**) In case the print head reaches the maximum ambient temperature, the printer will interrupt operation until cooling down and sends an error message.

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